IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

FIRST INVENTOR:	John J. Giobbi
PATENT NO:	10,698,989
ISSUE DATE:	June 30, 2020
APPLICATION NO:	15/049,060
FILING DATE:	February 20, 2016
TITLE:	Biometric Personal Data Key (PDK) Authentication
EXAMINER:	Phy Anh Tran Vu
GROUP ART UNIT:	2438
ATTY. DKT. NO:	10001-05488 US
CONFIRMATION NO:	2423

CERTIFICATE OF EFS-WEB TRANSMISSION UNDER 37 CFR § 1.8

I hereby certify that this correspondence is being transmitted via the U.S. Patent and Trademark Office electronic filing system (EFS-Web) to the USPTO on the date below.

Date: August 23, 2022 By: /Greg T. Sueoka/
Greg T. Sueoka, Reg. No. 33,800

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RESPONSE TO REQUEST FOR INFORMATION

Responsive to the Request for Information mailed on July 14, 2022, Petitioner responds as follows:

1) Petitioner confirms that the district court proceeding (Proxense LLC v. Samsung Electronics, Co. LTD and Samsung Electronics America, Inc., 6:21-CV-00210 (W.D. Tex.) is ongoing;

2) Petitioner is not aware of any additional ongoing court proceedings involving this patent at this time;

3) Petitioner has not notified the district court in the proceeding identified in 1) above that the petition was filed, so the Petitioner does not know whether the court would object to the USPTO issuing a decision on the petition filed March 3, 2022.

4) Petitioner is not aware of any other information including any documents or other evidence that may reasonably be deemed material to the decision on the petition.

The Office of Petitions is welcome to contact the undersigned as indicated below if there is any additional information needed, are any additional questions or concerns.

Respectfully submitted,
PROXENSE, LLC

Dated: August 23, 2022 By: /Greg T. Sueoka/

Greg T. Sueoka, Reg. No. 33,800
Attorney for Applicant
PATENT LAW WORKS LLP
310 East 4500 South, Suite 400
Salt Lake City, UT 84107
Tel.: (801) 258-9821
Fax: (801) 355-0160
Email: gsueoka@patentlawworks.net

GTS/kdl

Electronic Acknowledgement Receipt

EFS ID:	46468792
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Greg T. Sueoka
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	23-AUG-2022
Filing Date:	20-FEB-2016
Time Stamp:	16:01:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	05488US_20220823_ResponsetoRequestforInformation.pdf	23177 89ccd33678a9d8511f832acf59021e992bbd728f	no	2

Warnings:

Information:	
Total Files Size (in bytes):	23177

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

89194 7590 07/14/2022

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	

ART UNIT	PAPER NUMBER
2438	

NOTIFICATION DATE	DELIVERY MODE
07/14/2022	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@patentlawworks.net
patents@patentlawworks.net

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

In re Patent No. 10,698,989
Issue Date: 30 Jun 2020
Application No. 15/049,060
Filing or 371(c) Date: 20 Feb 2016
Attorney Docket No. 10001-05488 US

REQUEST FOR INFORMATION

This is a request for clarifying information regarding the petition requesting the acceptance of a fee deficiency submission, filed under 37 CFR 1.28, on March 3, 2022.

On April 16, 2021, paper(s) was/were filed indicating that there is a district court proceeding which involves this patent.

In order to receive a decision on the petition filed on March 3, 2022, petitioner is required to respond to this notice with the following information: 1) a confirmation or denial that the district court proceeding is ongoing; 2) an identification of any other ongoing court proceeding(s) which involve this patent; 3) for any ongoing court proceeding identified in this notice or in the response, petitioner should additionally confirm that a) the court(s) has/have been alerted that the petition was filed and b) that the court(s) does/do not object to the USPTO issuing a decision on the petition filed March 3, 2022; and 4) any other information including any documents or other evidence that may reasonably be deemed material to the decision on the petition.

Telephone inquiries concerning this notice may be directed to Anna Pagonakis at (571) 270-3505.

/Cheryl Gibson-Baylor/
Cheryl Gibson-Baylor
Office of Petitions

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

FIRST INVENTOR:	John J. Giobbi
APPLICATION NO:	15/049,060
FILING DATE:	February 20, 2016
TITLE:	Biometric Personal Data Key (PDK) Authentication
EXAMINER:	Phy Anh Tran Vu
GROUP ART UNIT:	2438
ATTY. DKT. NO:	10001-05488 US
CONFIRMATION NO:	2423

CERTIFICATE OF EFS-WEB TRANSMISSION UNDER 37 CFR § 1.8
I hereby certify that this correspondence is being transmitted via the U.S. Patent and Trademark Office electronic filing system (EFS-Web) to the USPTO on the date below.
Date: March 3, 2022 By: /Greg T. Sueoka/
Greg T. Sueoka, Reg. No. 33,800

MAIL STOP 16
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

NOTIFICATION OF LOSS OF SMALL ENTITY STATUS UNDER 37 CFR 1.27(g)(2) AND PAYMENT OF DEFICIENCY IN FEES

Sir/Madam:

This communication hereby notifies the United States Patent and Trademark Office that small entity status is not applicable for the above-identified patent application. The undersigned was made aware of the above-identified property having been licensed to a large entity since November 20, 2019. The undersigned is hereby taking action to rectify the situation and the pay

the fees associated with this application as a large entity. The amount of additional fees to be paid as a large entity are as follows:

Date Paid	Fee Code	Description	Amount Paid	Undiscounted Fee (Code)	Amount Owed
05-19-2020	2501	Utility issue fee	$500	$1000 (1501)	$500
				Total Amount Owed:	$500

The Director is hereby authorized to charge the above-identified fees totaling $500, and any additional fees which may be required, including any petition fees, or credit any overpayment to Deposit Account No. 603148.

Respectfully submitted,

PROXENSE, LLC

Dated: March 3, 2022 By: /Greg T. Sueoka/

Greg T. Sueoka, Reg. No. 33,800
Attorney for Applicant
PATENT LAW WORKS LLP
310 East 4500 South, Suite 400
Salt Lake City, UT 84107
Tel.: (801) 258-9821
Fax: (801) 355-0160
Email: gsueoka@patentlawworks.net

GTS/kkt/kdl

Electronic Acknowledgement Receipt

EFS ID:	45134759
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Greg T. Sueoka
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	03-MAR-2022
Filing Date:	20-FEB-2016
Time Stamp:	12:41:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions	05488US_20220303_NotificationofLossofSmallEntityStatus.pdf	25728 42d0a7efc682769c9d421147524c8b538dd96b71	no	2

Warnings:

Information:	
Total Files Size (in bytes):	25728

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY.DOCKET NO./TITLE	REQUEST ID
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	157943

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 02/02/2022 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant changing to regular undiscounted fee status.

NOTE: Checking this box will be taken to be notification of loss of entitlement to small or micro entity status, as applicable.

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Greg T. Sueoka/
Name:	Greg T. Sueoka
Registration Number:	33800

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 **Director of the U.S. Patent and Trademark Office** **P.O. Box 1450** **Alexandria, VA 22313-1450**	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
6:21-cv-00210	3/5/2021	Western District of Texas

PLAINTIFF	DEFENDANT
PROXENSE,LLC,	SAMSUNG ELECTRONICS,CO., LTD. and SAMSUNG ELECTRONICSAMERICA, INC,

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	8,352,730	1/8/2013	Proxense, LLC
2	9,298,905	3/29/2016	Proxense, LLC
3	10,698,989	6/30/2020	Proxense, LLC
4	9,049,188	6/2/2015	Proxense, LLC
5	9,235,700	1/12/2016	Proxense, LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	06/30/2020	10698989	10001-05488 US	2423

89194 7590 06/10/2020

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Proxense, LLC, Bend, OR;
John J. Giobbi, Bend, OR;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

89194 7590 02/24/2020
Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Greg T. Sueoka	(Typed or printed name)
/Greg T. Sueoka/	(Signature)
May 19, 2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

TITLE OF INVENTION: Biometric Personal Data Key (PDK) Authentication

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	05/26/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
VU, PHY ANH TRAN	2438	713-186000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Patent Law Works LLP
2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: Proxense, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Bend, Oregon

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ☒ Corporation or other private group entity ❑ Government

4a. Fees submitted: ☒ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

☒ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature /Greg T. Sueoka/ Date May 19, 2020

Typed or printed name Greg T. Sueoka Registration No. 33,800

APPLE EX1002
000014

Electronic Patent Application Fee Transmittal

Application Number:	15049060
Filing Date:	20-Feb-2016
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Filer:	Greg T. Sueoka/Kristi LaMont
Attorney Docket Number:	10001-05488 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**500**

Electronic Acknowledgement Receipt

EFS ID:	39476746
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Greg T. Sueoka
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	19-MAY-2020
Filing Date:	20-FEB-2016
Time Stamp:	11:13:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$500
RAM confirmation Number	E20205IB14213345
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	05488US_20200519_IssueFeeTransmittal.pdf	1227321 0dad7e0701afc12865b9ed91c64d9c290e68dcf4	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30255 b3f724fc6e58ffd0e85764fa08cc5d57d2d435cb	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1257576		

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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

89194 7590 04/17/2020

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	

ART UNIT	PAPER NUMBER
2438	

NOTIFICATION DATE	DELIVERY MODE
04/17/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

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docketing@patentlawworks.net
patents@patentlawworks.net

Corrected ***Notice of Allowability***	**Application No.** 15/049,060	**Applicant(s)** Giobbi, John J.	
	Examiner PHY ANH T VU	**Art Unit** 2438	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 04/08/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1,3,7,9-10,14-15 and 20-21 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 01/30/2019.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☐ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/PHY ANH T VU/
Primary Examiner, Art Unit 2438

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	03/21/2016	12/23/2016	07/22/2017	01/04/2018	11/09/2018	06/04/2019	10/11/2019	04/15/2020	
1	1	✓	✓	✓	✓	✓	✓	✓	=	
	2		✓	-	-	-	-	-	-	
2	3		✓	✓	✓	✓	✓	✓	=	
	4		✓	✓	✓	✓	✓	✓	-	
	5		✓	✓	✓	✓	✓	✓	-	
	6		✓	✓	✓	✓	✓	✓	-	
3	7		✓	✓	✓	✓	✓	✓	=	
	8		✓	✓	✓	✓	✓	✓	-	
5	9		✓	✓	✓	✓	✓	✓	=	
6	10		✓	✓	✓	✓	✓	✓	=	
	11		✓	✓	✓	✓	✓	✓	-	
	12		✓	✓	✓	✓	✓	✓	-	
	13		✓	✓	✓	✓	✓	✓	-	
7	14		✓	✓	✓	✓	✓	✓	=	
8	15		✓	✓	✓	✓	✓	✓	=	
	16		✓	✓	✓	✓	✓	✓	-	
	17		✓	✓	✓	✓	✓	✓	-	
	18		✓	✓	✓	✓	✓	✓	-	
	19		✓	✓	✓	✓	✓	✓	-	
9	20		✓	✓	✓	✓	✓	✓	=	
4	21			✓	✓	✓	✓	✓	=	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

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Art Unit	2438
Examiner Name	VU, PHY ANH TRAN
Attorney Docket Number	10001-05488 US

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	First Named Inventor	John J. Giobbi
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	Examiner Name	VU, PHY ANH TRAN
	Attorney Docket Number	10001-05488 US

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15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

89194 7590 04/07/2020

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	

ART UNIT	PAPER NUMBER
2438	

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Corrected ***Notice of Allowability***	**Application No.** 15/049,060	**Applicant(s)** Giobbi, John J.	
	Examiner PHY ANH T VU	**Art Unit** 2438	**AIA (FITF) Status** No

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All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 03/25/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1,3,7,9-10,14-16 and 20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

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5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2020-03-25
Name/Print	Paige M. Alsbury	Registration Number	72,965

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	15049060
Filing Date:	20-Feb-2016
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Filer:	Paige McDede Alsbury/Kristi LaMont
Attorney Docket Number:	10001-05488 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
		Total in USD ($)		**120**

Electronic Acknowledgement Receipt

EFS ID:	38967170
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Paige McDede Alsbury
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	25-MAR-2020
Filing Date:	20-FEB-2016
Time Stamp:	15:57:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$120
RAM confirmation Number	E20203OF58068843
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	05488US_20200325_IDS.pdf	1034443 d012dcb0403a3ce9aad3d879b9c00d44309b9ad8	no	4
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30537 cec0f74f0be14ef818e5f1e81af75921cb0dd829	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1064980		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

89194 7590 02/24/2020

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	
ART UNIT	PAPER NUMBER
2438	

DATE MAILED: 02/24/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

TITLE OF INVENTION: Biometric Personal Data Key (PDK) Authentication

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	05/26/2020

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

89194 7590 02/24/2020
Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

TITLE OF INVENTION: Biometric Personal Data Key (PDK) Authentication

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	05/26/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
VU, PHY ANH TRAN	2438	713-186000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____
2_____
3_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑Issue Fee ❑Publication Fee (if required) ❑Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

APPLE EX1002
000062

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

89194 7590 02/24/2020

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	
ART UNIT	**PAPER NUMBER**
2438	

DATE MAILED: 02/24/2020

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 15/049,060	Applicant(s) Giobbi, John J.	
	Examiner PHY ANH T VU	Art Unit 2438	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 01/17/2020.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1,3,7,9-10,14-16 and 20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☑ Notice of References Cited (PTO-892)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 11/18/2019; 12/13/2019; 1/23/2020.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☑ Interview Summary (PTO-413), Paper No./Mail Date. 02/11/2020.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/PHY ANH T VU/
Primary Examiner, Art Unit 2438

DETAILED ACTION

This Office Action is in response to the Amendment filed 01/17/2020.

Authorization for this Examiner's Amendment was given by the attorney of record, Mr. Dave Duncan on 02/11/2020.

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

EXAMINER'S AMENDMENTS

Amend claims 1, 3, 8-10, 14-15 and 19 as follow:

Claim 1:

A method comprising:

receiving, at a smartphone ~~**mobile phone**~~, an **identification (**ID) code from a third-party trusted authority, the ID code uniquely identifying the **smartphone** ~~**mobile phone**~~ among a plurality of **smartphones** ~~**mobile phones**~~;

persistently storing biometric data **and the ID code on the smartphone,** ~~**including**~~ **wherein the biometric data is one selected from a group consisting of** facial recognition**, a fingerprint scan, and a retinal scan** of a legitimate user ~~**and the ID code on mobile phone**~~;

receiving, at the **smartphone** ~~**mobile phone**~~, scan data from a biometric scan using the **smartphone** ~~**mobile phone**~~;

comparing, using the **smartphone** ~~**mobile phone**~~, the scan data to the biometric data;

determining whether the scan data matches the biometric data; and

responsive to a determination that the scan data matches the biometric data, wirelessly sending, from the **smartphone** ~~**mobile phone**~~, the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code**, wherein the transaction being completed includes accessing one or more from a group consisting of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account**.

Claim 3:

The method of claim 1, further comprising:

Receiving a request for biometric verification, and responsive to a determination that the scan data does not match the biometric data, indicating the **smartphone** ~~**mobile phone**~~ cannot verify the scan data as being from the legitimate user, the **smartphone** ~~**mobile phone**~~ does not send the ID code.

Claim 8: **(Cancelled)**

Claim 9:

A **smartphone** ~~**mobile phone**~~ comprising:

a persistent storage having an input that receives an **identification (**ID**)** code from a third-party trusted authority, and biometric data**,** ~~**including**~~ **wherein the biometric data is one selected from a group consisting of** facial recognition**, a fingerprint scan, and a retinal scan,** of a legitimate user, the ID code uniquely identifying the **smartphone** ~~**mobile phone**~~ among a plurality of **smartphones** ~~**mobile phone**~~, the persistent storage storing the biometric data and the ID code, the persistent storage having an output configured to provide ~~**the**~~ **a** first set of biometric data and the ID code for use on the **smartphone** ~~**mobile phone**~~;

a validation module, coupled to communicate with the persistent storage ~~**media**~~ to receive the biometric data from the persistent storage, the validation module having a scan pad to capture scan data from a biometric scan, the validation module comparing the scan data to the biometric data to determine whether the scan data matches the biometric data; and

a wireless transceiver that, responsive to a determination that the scan data matches the biometric data, sends the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code**, wherein the transaction being completed includes accessing one or more from a group consisting of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account**.

Claim 10:

The **smartphone** ~~**mobile phone**~~ of claim 9, wherein the ID code is transmitted to the third-party trusted authority over a network.

Claim 14:

A system, comprising:

a smartphone that persistently stores biometric data **and an ID code**, ~~**including**~~ **wherein the biometric data is one selected from a group consisting of** facial recognition**, a fingerprint scan, and a retinal scan data** of a legitimate user, and ~~**an**~~ the ID code ~~**in the smartphone device**~~ **is received from a third-party trusted authority,** the ID code uniquely identifying the **smartphone** ~~**device**~~ among a plurality of **smartphones** ~~**devices**~~, the smartphone configured to indicate that a biometric authentication is requested, the smartphone configured to wirelessly send the ID code to the third-party trusted authority for authentication responsive to determining that scan data from a biometric scan performed using the smartphone matches the biometric data ~~**including facial recognition**~~ of the legitimate user, wherein a transaction is completed responsive to **successful** authentication of the ID code by the third-party trusted authority**, wherein the transaction being completed includes accessing one or more from a group consisting of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account**; and

the third-party trusted authority operated by a third party, the third-party trusted authority storing a plurality of legitimate ID codes and authenticating the ID code received based on a comparison of the ID code received and the legitimate ID codes included in the plurality of the legitimate ID codes.

Claim 15:

The system of claim 14, wherein the smartphone receives an authentication request, and in response, requests ~~the~~ biometric scan from a user to generate the scan data and, when the smartphone cannot verify the scan data as being from the legitimate user, the smartphone does not send the ID code.

Claim 19: **(Cancelled).**

ALLOWABLE SUBJECT MATTER

Claims **1, 3, 7, 9-10, 14-16 and 20** are allowed, while claims **2, 4-6, 8, 11-13** and **17-19** are cancelled.

The following is an examiner's statement of reasons for allowance:

The present invention is directed to method, smartphone and system for allowing a user to carry out a transaction after the user has been successfully authenticated using biometric information and ID code.

The closest prior arts cited are generally directed to various aspects of allowing user to carry out a transaction after the users have been successfully authenticated using biometric information and ID code. However, none of the cited arts found alone or

in combination suggests or teaches the combination of elements recited in the independent claims. For instance, no parts of the cited arts teach or suggest limitations such as persistently storing biometric data of a legitimate user and an ID code on the smartphone, wherein the ID code is received from a third-party trusted authority, the ID code uniquely identifies the smartphone from a plurality of smartphones. Then when the ID code is successfully verified by the third-party trusted authority, allowing the legitimate user to carry out a transaction, wherein the transaction is selected from a group consisting of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account.

Therefore, the claims are allowable for the above reason.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHY ANH TRAN VU whose telephone number is (571)270-7317. The examiner can normally be reached on Monday-Friday 7 am-1 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi T Arani can be reached on (571) 272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PHY ANH T VU/
Primary Examiner, Art Unit 2438

Examiner-Initiated Interview Summary	**Application No.** 15/049,060	**Applicant(s)** Giobbi, John J.	
	Examiner PHY ANH T VU	**Art Unit** 2438	**AIA (FITF) Status** No

All participants (applicant, applicant's representative, PTO personnel):

(1) PHY ANH TRAN. VU. (3) _____.

(2) Dave Duncan. (4) _____.

Date of Interview: 11 February 2020.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐ 101 ☐ 112 ☐ 102 ☐ 103 ☑ Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: N/A.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

In an effort to expedite prosecution, Examiner contacted Applicant's representative, Mr. Dave Duncan to suggest amending the independent claims to in order to place them in better condition for allowance. The suggestion was accepted by Mr. Duncan on 02/11/2020..

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/PHY ANH T VU/ Primary Examiner, Art Unit 2438	

Notice of References Cited	Application/Control No. 15/049,060	Applicant(s)/Patent Under Reexamination Giobbi, John J.	
	Examiner PHY ANH T VU	Art Unit 2438	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20020095586-A1	07-2002	Doyle, Ronald P.	G06F21/32	713/186
*	B	US-20020095587-A1	07-2002	Doyle, Ronald P.	G07F7/1008	713/186
*	C	US-20030051173-A1	03-2003	Krueger, Steven J.	G06F21/32	726/21
*	D	US-20050005136-A1	01-2005	Chen, Liqun	H04L9/3073	713/186
*	E	US-20050039027-A1	02-2005	Shapiro, Michael F.	G06F21/32	713/186
*	F	US-20030120934-A1	06-2003	Ortiz, Luis Melisendro	H04L63/0861	713/186
	G					
	H					
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	J					
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
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	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	03/21/2016	12/23/2016	07/22/2017	01/04/2018	11/09/2018	06/04/2019	10/11/2019		
1	1	✓	✓	✓	✓	✓	✓	✓		
	2		✓	-	-	-	-	-		
2	3		✓	✓	✓	✓	✓	✓		
	4		✓	✓	✓	✓	✓	✓		
	5		✓	✓	✓	✓	✓	✓		
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	12		✓	✓	✓	✓	✓	✓		
	13		✓	✓	✓	✓	✓	✓		
7	14		✓	✓	✓	✓	✓	✓		
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9	16		✓	✓	✓	✓	✓	✓		
	17		✓	✓	✓	✓	✓	✓		
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	19		✓	✓	✓	✓	✓	✓		
10	20		✓	✓	✓	✓	✓	✓		
4	21			✓	✓	✓	✓	✓		

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	Art Unit
	PHY ANH T VU	2438

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06F 21/32	03/21/2016; 11/08/2018; 6/4/2019; 10/11/2019; 2/14/2020	PVU
H04L 63/0861	03/21/2016; 10/11/2019; 2/14/2020	PVU
H04L 9/321	12/22/2016; 10/11/2019; 2/14/2020	PVU
G06F 21/35	11/08/2018 ; 10/11/2019; 2/14/2020	PVU

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

/PHY ANH T VU/ Primary Examiner, Art Unit 2438	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor names search	03/21/2016; 2/14/2020	PVU
Keywords search	03/21/2016; 12/22/2016; 7/22/2017; 01/04/2018; 11/08/2018; 6/4/2019; 10/11/2019; 2/14/2020	PVU
IEEE Xplore for NPL	10/11/2019	PVU
IP.com	02/14/2020	PVU

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
H04L	9/321	02/14/2020	PVU
H04L	63/0861	02/14/2020	PVU
G06F	21/32	02/14/2020	PVU
G06F	21/35	02/14/2020	PVU

/PHY ANH T VU/ Primary Examiner, Art Unit 2438	

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

CPC							
Symbol						**Type**	**Version**
G06F	/	21	/	32		F	2013-01-01
G07C	/	9	/	257		I	2020-01-01
G06F	/	21	/	35		I	2013-01-01
G05B	/	1	/	00		I	2013-01-01
H04L	/	9	/	321		I	2013-01-01

CPC Combination Sets								
Symbol						**Type**	**Set**	**Ranking**	**Version**
	/		/						

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	10	
/PHY ANH T VU/ Primary Examiner, Art Unit 2438	14 February 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

U.S. Patent and Trademark Office — Part of Paper No.: 20200203

APPLE EX1002
000078

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G06F	/	21	/	00

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

CROSS REFERENCES(S)						
CLASS	**SUBCLASS (ONE SUBCLASS PER BLOCK)**					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	10	
/PHY ANH T VU/ Primary Examiner, Art Unit 2438	14 February 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

U.S. Patent and Trademark Office — Part of Paper No.: 20200203

APPLE EX1002
000079

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☑ T.D. ☐ R.1.47

CLAIMS

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	6	10		19										
	2		11	10	20										
2	3		12	4	21										
	4		13												
	5	7	14												
	6	8	15												
3	7	9	16												
	8		17												
5	9		18												

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	10	
/PHY ANH T VU/ Primary Examiner, Art Unit 2438	14 February 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

U.S. Patent and Trademark Office Part of Paper No.: 20200203

APPLE EX1002
000080

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	1	0135334	WO	A1	2001-05-17	LI, KENNETH		

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /P.T.V/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

	1	CHEN, et al. "On Enhancing Biometric Authentication with Data Protection." KES2000. Fourth International Conference on Knowledge-Based Intelligent Engineering Systems and Allied Technologies. Proceedings (Cat. No.00TH8516), vol. 1, 2000, pp. 249-252 vol.1.	
	2	NOORE, A. "Highly Robust Biometric Smart Card Design." IEEE Transactions on Consumer Electronics, vol. 46, no. 4, 2000, pp. 1059–1063.	

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EXAMINER SIGNATURE

Examiner Signature	/PHY ANH T VU/	Date Considered	02/14/2020

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2019-11-18
Name/Print	Paige M. Alsbury	Registration Number	72,965

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

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   CURRENT ASSIGNEES: INTL GAME TECH
   AU2007329608A1 | AUSTRALIA APPLICATIONS | 12-JUN-2008

2. Token authentication
   CURRENT ASSIGNEES: INTL GAME TECH
   WO2008070480A2 | WIPO APPLICATIONS | 12-JUN-2008

3. Method of improving defect countermeasure of apparatus for reproducing optical information storage medium
   CURRENT ASSIGNEES: SAMSUNG ELTNC CO LTD
   US20080165648 | US APPLICATIONS | 10-JUL-2008

4. Automated Locking System
   CURRENT ASSIGNEES: SG GAMING INC
   US20080207335 | US APPLICATIONS | 28-AUG-2008

5. Token authentication
   CURRENT ASSIGNEES: INTL GAME TECH
   AU2007329608B2 | AUSTRALIA PATENTS | 16-AUG-2012

6. Biometric personal data key (PDK) authentication
   CURRENT ASSIGNEES: PROXENSE LLC
   US8352730 | US PATENTS | 08-JAN-2013

7. Virtualized magnetic player card

AU2007329608A1 Token authentication

DOCUMENT ACTIONS

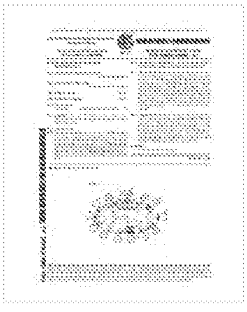
Front Page | Family | Citations | Description | Claims | Figures (0)

AUSTRALIA STANDARD APPLICATION PUBLICATION IPAU IPO Family enhanced

PUBLICATION NUMBER: AU 2007329608 A1
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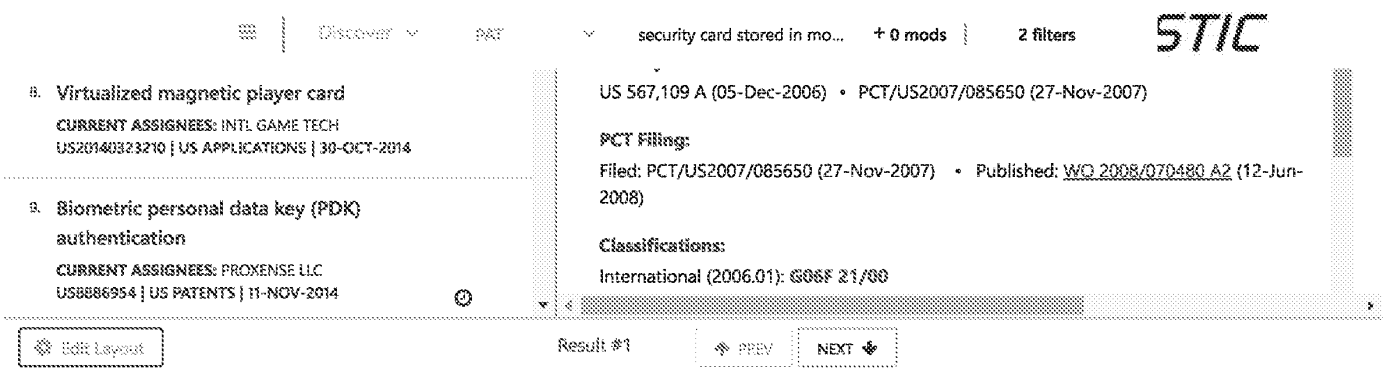
Abstract (English):

Methods and devices are described that authenticate portable tokens, such as plastic tokens used in casinos on card tables. The systems and methods assign authentication data to a token. The authentication data is verified when a person tries to redeem value on the token. A person's authentication data may be acquired via an interface provided by a gaming machine, for example, and the authentication data stored so that the authentication information is later be read when someone tries to redeem value on the token. Only a person who presents the tokens and authentication data could then negotiate such tokens.

Inventors:

TOLLES HARRY P • MUIR DAVID • PAULSEN CRAIG A • NGUYEN BINH T

Applicants:


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security card stored in mo...
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8. Virtualized magnetic player card
CURRENT ASSIGNEES: INTL GAME TECH
US20140323210 | US APPLICATIONS | 30-OCT-2014
9. Biometric personal data key (PDK) authentication
CURRENT ASSIGNEES: PROXENSE LLC
US8886954 | US PATENTS | 11-NOV-2014
US 567,109 A (05-Dec-2006) • PCT/US2007/085650 (27-Nov-2007)
PCT Filing:
Filed: PCT/US2007/085650 (27-Nov-2007) • Published: WO 2008/070480 A2 (12-Jun-2008)
Classifications:
International (2006.01): G06F 21/00
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Result #1
PREV
NEXT

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
		(smart$phone) same (authenticat$4 with biometric) and (transfer$4 send$4) with (code ID account))	US-PGPUB; USPAT	OR	OFF	2020/02/10 18:53
		(authenticat$4 with mobile) same (facial near3 recognition))	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:55
		(security adj card) with (public adj key))	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:28
		(ID code) with same (unique$4 near5 identify$4 near10 device)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:55
		(ID code) with same (unique$4 near5 identify$4 device)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:55
		"20040129787.pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:04
		(indicat$4 with flash$4) with (biometri9298905	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:38
		(indicat$4 near10 flash$4) with (biometric)	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:31
		(indicat$4 with flash$4) with (biometric)	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:29
S1	1	"13710109"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:38
S2	0	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:49
S3	0	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:49
S4	0	"15049060".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:31
S5	3	"11314199"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:32
S6	12	"8352730"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:33
S7	1	"8352730".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:34
S8	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:43
S9	2764	g06f21/32.cpc. and (biometric with authenticat$3)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:52
S10	1896	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:53
S11	603	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device) and (trusted or third$party)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:53
S12	365	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:54

		(approv$3 or authenticat$3))				
S13	81	S12 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:54
S14	0	h04/63/0861cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:00
S15	0	h04l63/0861cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:00
S16	237	h04l63/0861.cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:00
S17	38	S16 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:01
S18	82	(giobbi).in.	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:03
S19	5	"11292330"	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:04
S20	1	"6041410".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:54
S21	311	"6041410"	US-PGPUB; USPAT	OR	OFF	2016/12/19 16:05
S22	1	"6041410".pn.	US-PGPUB; USPAT	OR	OFF	2016/12/19 16:05
S23	1	"15049060"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:17
S24	4	h04l9/321.cpc. and (transmit$4 send$3) near10 (wireless$3) same ((number ID SSN PIN)) same (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:23
S25	1905	(transmit$4 send$3) near10 (wireless$3) same ((number ID SSN PIN)) same (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:24
S26	233	(transmit$4 send$3) near10 (wireless$3) with ((number ID SSN PIN)) with (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:24
S27	39	S26 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:25
S28	604	(stor$3 with (code ID account identifier) with fob)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:39
S29	0	(stor$3 with (code ID account identifier) with fob) and (trasmit$4 near10 (code id account identifier))	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:40
S30	401	(stor$3 with (code ID account identifier) with fob) and (transmit$4 near10 (code id account identifier))	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:41
S31	107	S30 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:41
S32	1	"6041410".pn. and fob	US-PGPUB; USPAT	OR	OFF	2016/12/22 12:57
S33	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 08:50
S34	1	"8352730".pn..pn.	US-PGPUB;	OR	OFF	2016/12/23

			USPAT			08:58
S35	2	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:00
S36	16	("6018739" "6025780" "6237848" "7137008" "20010026619" "20020023032" "20020071559" "20020091646" "20020116615" "20020174348" "20030115474" "20030149744" "20030172037" "20040123127" "20050006452" "20120226907").pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:37
S37	12	("6237848" "6325285" "7155416" "7278025" "7314164" "7341181" "7424134" "2020104006" "20020104019" "20040098597" "20050001028" "20050105734" "20070084523").pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:39
S38	7	("5623552" "6728397" "6879966" "7231068" "7349557" "7565329" "8678273").pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:40
S39	1	"20040128162".pn.	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:37
S40	563	(biometric near3 prompt)	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:49
S41	1	(biometric near3 prompt) with (light)	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:49
S42	63	S40 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:50
S43	1	"8856539".pn.	US-PGPUB; USPAT	OR	OFF	2018/01/04 12:29
S44	1	"20090016573".pn.	US-PGPUB; USPAT	OR	OFF	2018/01/04 12:33
S45	1	"9298905".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:38
S46	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:40
S47	1	"5317639".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 11:27
S48	1	"6185304".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 11:29
S49	1955	(security near3 card) same biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:20
S50	589	(security adj card) same biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:21
S51	394	(security adj card) same biometric and financial	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:21
S52	134	(security adj card) same biometric and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:21
S53	28	S52 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:22
S54	1	"6068184".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:27
S55	1	"20050103837".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:29
S56	1830	(security adj card) and (biometric) and (authenticat$4)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:45

S57	516	(security adj card) and (biometric) and (POS retailer) and bank	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S58	516	(security adj card) and (biometric) and (POS retailer) and bank and (number code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S59	390	(security adj card) and (biometric) and (POS retailer) and bank and (transmit$4 send$4) with (number code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S60	165	(security adj card) and (biometric) and (POS retailer) and bank same (transmit$4 send$4) with (number code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:47
S61	14	S60 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:47
S62	1098	(security adj card) and biometric and (merchant retailer)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:52
S63	22	"7389269"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:54
S64	1	"7389269".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:54
S65	1	"6325285".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:07
S66	513	(security adj card) and (authorization near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S67	231	(security adj card) and biometric and (authorization near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S68	46	S67 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S69	2157	(security adj card) and biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:27
S70	385	S69 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:27
S71	1709	(security adj card) and biometric and transaction	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:28
S72	308	S71 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:28
S73	579	(security near3 card) same biometric and (account near3 number)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38
S74	119426	(security near3 card) same biometric and (transmitt$4 send$4) wotj (account near3 number)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38
S75	78	(security near3 card) same biometric and (transmitt$4 send$4) with (account near3 number)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38
S76	45659	"l3" and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:39
S77	14	S75 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:39
S78	102	(security near3 card) same biometric and (transmitt$4 send$4) with (security near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:46
S79	8	S78 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:46
S80	1	"15029884"	US-PGPUB;	OR	OFF	2018/09/17

			USPAT			09:47
S81	117	stor$4 with (security adj card) same (code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:49
S82	15	stor$4 with (security adj card) same (code same biometric)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:49
S83	247	"6012049"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:50
S84	1	"6012049".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:50
S85	533	(security near3 card) same biometric and (financial near5 transaction)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:52
S86	36	(security near3 card) same biometric same(financial near5 transaction)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:52
S87	4949	(security near3 card) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:14
S88	730	(security near3 card) and (biometric) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:14
S89	621	(security near3 card) and (biometric) and code and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:15
S90	111	(security near3 card) and (biometric) and (print with code) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:15
S91	136	(security near3 card) and (biometric) and (pos) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:21
S92	121	S91 not S90	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:22
S93	4146569	(security near3 card) and (third$party) @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:27
S94	268	(security near3 card) and (third$party) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:27
S95	1	"6325285".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:21
S96	800	(security adj card) and (third$party) and (transaction and financial$)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:38
S97	146	(security adj card) and (third$party same bank) and (transaction and financial$)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:39
S98	16	S97 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:39
S99	29	(security adj card) and (transmit$4 send$4) same (third$party same bank)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:43
S100	2214	(security adj card) and (transmit$4 send$4) same (third$party bank provider)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:44
S101	1805	(security adj card) and (transmit$4 send$4) same (third$party bank provider) and (purchase)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:45
S102	1989	(security adj card) and (transmit$4 send$4) same (third$party bank provider) and (credit near3 card)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:46
S103	393	(security adj card) and (transmit$4 send$4) same (authorization) same (third$party bank provider) and (credit near3 card)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:47

S104	65	S103 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:50
S105	197	(security adj card) and (transmit$4 send$4) same (authorization) same (third$party bank provider) and biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:53
S106	44	S105 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:55
S107	1	"15029884"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:22
S108	2	"20040022384"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:23
S109	1	"20050103837"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:31
S110	96	(security adj card) and (biometric) and (credit adj card near3 provider)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:38
S111	891	(security adj card) and (biometric) and (point near3 sale)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:40
S112	0	(security adj card) and (biometric) and (point near3 of near3 sale)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:41
S113	1	g06f21/32.cpc. and (fob with security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:41
S114	845	g06f21/32.cpc. and (security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S115	748	g06f21/32.cpc. and (security near3 card) and biometric	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S116	378	g06f21/32.cpc. and (security near3 card) and biometric and (third near3 party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S117	318	S116 and (biometric with authenticat$3)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S118	98	S116 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:43
S119	198	g06f21/32.cpc. and (authenticat$4 with user with biometric) and (security adj card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:07
S120	43	S119 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:07
S121	19972	(transmit$4 wit credit near5 number) same (verif$7) and (biometric)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:12
S122	27016	(authenticat$4 with biometric) and (transmit$4 wit credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:12
S123	410	(authenticat$4 with biometric) and (transmit$4 with credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S124	157	(authenticat$4 with biometric) and (transmit$4 with credit near5 number) and (smart near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S125	15	S124 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S126	216	(authenticat$4 with biometric same card) and (transmit$4 with credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:16
S127	24	S126 and @ad<"20041220"	US-PGPUB;	OR	OFF	2018/11/08

			USPAT			10:16
S128	1256	(smart adj card) and ((authenticat$4 verif$) with (biometric)) and (transmit$4 with (ID (credit near3 card near3 number)))	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:06
S129	162	(smart adj card) and ((authenticat$4 verif$) with (biometric)) same (transmit$4 with (ID (credit near3 card near3 number)))	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:06
S130	26	S129 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:07
S131	82	g06f21/32.cpc. and (fob with smart near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:09
S132	9	S131 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:09
S133	94	(authenticat$4 with biometric same card) and (transmit$4 with credit near5 number) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:15
S134	13	S133 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:15
S135	461	(smart adj card) with (biometric) and (authenticat$4 with biometric) and financial near3 transaction	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:24
S136	1148	(smart adj card) with (biometric) and (authenticat$4 with biometric) and (financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:25
S137	0	(security adj card with biometric) and (transmit$4 send$4) same (authorization) same (third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:26
S138	47	(security adj card with biometric) and (transmit$4 send$4) same (financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:27
S139	11	(security adj card with biometric) and (register$4 with financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:28
S140	5	"10861864"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:30
S141	1	"20040091136".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:32
S142	1	"20040148526".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:33
S143	1	"20030061172".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:34
S144	1	"20060016875".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:36
S145	1	"20040232224".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:37
S146	4	(hong$sik near3 koo).in.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:39
S147	2	"20070136211"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:40
S148	1	"20040258281".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:45
S149	142	(fob with biometric) and (financial near3 transaction) and (third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:46
S150	51	S149 and @ad<"20041220"	US-PGPUB;	OR	OFF	2018/11/08

			USPAT			11:46
S151	8	(fob with biometric) and (security adj card) and (ID (account adj number)) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:50
S152	15	g06f21/35.cpc. and (fob with biometric) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:58
S153	1	"20040199469".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:00
S154	1	"20040139008".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:01
S155	1	"20040129787".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:04
S156	1	"20060000891".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:08
S157	405	g06f21/35.cpc. and (security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S158	145	g06f21/35.cpc. and (security near3 card) and (authenticat$4 with biometric)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S159	13	S158 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S160	1	"20040236701".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:15
S161	1276	(authenticat$4 with biometric) and (transmit$4 send$4) with (account near3 (ID number))	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S162	107	(authenticat$4 with biometric) with fob and (transmit$4 send$4) with (account near3 (ID number))	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S163	44	S162 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S164	0	(fob with biometric) with (financial with third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S165	83	(fob with biometric) same (financial with third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S166	33	S165 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S167	1	"20040129787".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:20
S168	1	"20060253710".pn. and (credit adj card near3 authentication near3 results)	US-PGPUB; USPAT	OR	ON	2018/11/09 07:01
S169	9	"2001035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S170	14821343	wo "2001035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2018/11/09 08:43

			IBM_TDB			
S171	0	wo2001035334	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S172	19	"20010035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S173	0	wo2001035334	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:44
S174	9	"2001035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:44
S175	715	"5623552"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:24
S176	4	"5623552".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:24
S177	2	"20020112177".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:29
S178	2	(fob with biometric) same (account near3 number) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:31
S179	2	(fob with biometric) same (account near3 (number ID)) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2018/11/09 10:32

			EPO; JPO; DERWENT; IBM_TDB			
S180	193	(fob with biometric) and (account near3 (number ID)) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:32
S181	57	S180 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/09 10:32
S182	0	(fob with biometric) and (thid$party) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:40
S183	182	(fob with biometric) and (third$party) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:40
S184	54	S183 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/09 10:40
S185	1	"20030225703".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/09 12:23
S186	59	g06f21/32.cpc. and (security adj card) with (biometric fingerprint)	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:19
S187	5	S186 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:19
S188	8	("4759060" "4993068" "5187352" "5296641" "5325285" "5392433" "5416780" "5422632").pn.	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:27
S189	237	("20010027439" | "20010044337" | "20020004783" | "20020007456" | "20020013772" | "20020014954" | "20020015494" | "20020026424" | "20020056043" | "20020073042" | "20020083318" | "20020098888" | "20020103027" | "20020108049" | "20020111919" | "20020124251" | "20020138767" | "20020140542" | "20020141586" | "20020144117" | "20020150282" | "20020152391" | "20020158750" | "20020178063" | "20020191816" | "20030036425" | "20030046552" | "20030054868" | "20030054881" | "20030055689" | "20030079133" | "20030127511" | "20030139190" | "20030176218" | "20030186739" | "20030195842" | "20030226031" | "20040127277" | "20040128162" | "20040129787" | "20040193925" | "20040209690" | "20040209692" | "20040215615" | "20040230488" | "20050054431" |	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:32

		"20050076242"	"20050081040"				
		"20050108164"	"20050109836"				
		"20050109841"	"20050138576"				
		"20050195975"	"20050215233"				
		"20050229007"	"20050251688"				
		"20050253683"	"20060022046"				
		"20060058102"	"20060063575"				
		"20060076401"	"20060113381"				
		"20060136742"	"20060143441"				
		"20060156027"	"20070032288"				
		"20070060319"	"20070087834"				
		"20070112676"	"20070159301"				
		"20070174809"	"20070213048"				
		"20070219926"	"20070220272"				
		"20070245157"	"20070245158"				
		"20070296544"	"20080008359"				
		"20080019578"	"20080188308"				
		"20090328182"	"20100117794"				
		"20110126188"	"20110238517"				
		"20110307599"	"20130019295"				
		"20130111543"	"20130276140"				
		"20130331063"	"20140074696"				
		"20160210614"	"20170085564"				
		"4759060"	"4993068"	"5187352"			
		"5296641"	"5325285"	"5392433"			
		"5416780"	"5422632"	"5450489"			
		"5619251"	"5629980"	"5644354"			
		"5666412"	"5692049"	"5784464"			
		"5825876"	"5835595"	"5857020"			
		"5892825"	"5892900"	"5894551"			
		"5898880"	"5917913"	"5928327"			
		"5991399"	"5991749"	"6016476"			
		"6035038"	"6035329"	"6038334"			
		"6042006"	"6055314"	"6070796"			
		"6088730"	"6104334"	"6121544"			
		"6148142"	"6161179"	"6185316"			
		"6209089"	"6219109"	"6219439"			
		"6247130"	"6256737"	"6266415"			
		"6295057"	"6336121"	"6336142"			
		"6343280"	"6363485"	"6367019"			
		"6381747"	"6385596"	"6392664"			
		"6397387"	"6401059"	"6411307"			
		"6424715"	"6425084"	"6434535"			
		"6446130"	"6463534"	"6480188"			
		"6484946"	"6487663"	"6490443"			
		"6510350"	"6523113"	"6529949"			
		"6546418"	"6550011"	"6563805"			
		"6564380"	"6628302"	"6632992"			
		"6645077"	"6647417"	"6657538"			
		"6667684"	"6671808"	"6683954"			
		"6697944"	"6709333"	"6711464"			
		"6775655"	"6785474"	"6788640"			
		"6804825"	"6806887"	"6850147"			
		"6853988"	"6873975"	"6950941"			
		"6963971"	"6973576"	"6975202"			
		"6983882"	"7012503"	"7090126"			
		"7111789"	"7112138"	"7137012"			
		"7159114"	"7168089"	"7191466"			
		"7218944"	"7225161"	"7242923"			
		"7249177"	"7272723"	"7305560"			
		"7317799"	"7370366"	"7472280"			
		"7529944"	"7574734"	"7587611"			
		"7617523"	"7624417"	"7640273"			
		"7644443"	"7715593"	"7765181"			

		"7773754" | "7865448" | "7883417" | "7904718" | "7957536" | "7996514" | "8112066" | "8135624" | "8352730" | "8432262" | "8433919" | "8484696" | "8508336" | "8522019" | "8918854" | "8979646" | "9230399" | "9276914" | "9305312" | "9405898" | "9418205" | "9542542").PN.				
S190	1	"6041410".pn.	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:24
S191	1	"20040230488".pn.	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:26
S192	1	"20160171200".pn. and (ID adj code)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:28
S193	7660	(ID code) with (unique$4 near5 identify$4 near10 device)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:56
S194	459	(ID code) with (unique$4 near5 identify$4 near10 device) and (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:56
S195	21	(ID code) with (unique$4 near5 identify$4 near10 device) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:57
S196	2	(public adj key) with (unique$4 near5 identify$4 near10 device) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:03
S197	4357	(transmit$4 send$4) same (code id) same (after or (in adj response adj to)) and (biometric) with (match$4 authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:09
S198	570	(transmit$4 send$4) same (code id) same (after or (in adj response adj to)) same (biometric) with (match$4 authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:10
S199	8	(transmit$4 send$4) same (code id) with (identify$4 near3 device)same (after or (in adj response adj to)) same (biometric) with (match$4 authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:10
S200	37	(security adj card) with (unique with (identifier identifying ID code))	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:22
S201	34	(security adj card) with (public adj key)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:28
S202	663	(account adj number) with (unique$3) with (identif$5 near5 device)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:31
S203	38	S202 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:32
S204	78	h04l63/0861.cpc. and (security near2 card) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/11 09:47
S205	34	h04l9/321.cpc. and (security near2 card) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:01
S206	12	S205 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:01
S207	112	G06F21/32.cpc. and (security near2 card) same (biometric with	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:02

		authenticat$4)				
S208	20	S207 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:02
S209	15	G06F21/35.cpc. and (security near2 card) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:08
S210	58	((mobile cell) near3 phone) same (biometric near5 authenticat$4) and (transmit$4 send$4) with (account near3 number)	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:31
S211	3	S210 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:31
S212	1	"20160171200"	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:54
S213	8186	(authenticat$4 same (facial near3 recognition))	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:54
S214	397	S213 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:54
S215	974	(authenticat$4 with mobile) same (facial near3 recognition)	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:55
S216	4	S215 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:55
S217	1	S215 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:57
S218	2	"20040230536"	US-PGPUB; USPAT	OR	OFF	2020/02/03 10:59
S220	1	"20020023217".pn. and (mobile cell)	US-PGPUB; USPAT	OR	OFF	2020/02/03 11:19
S221	1424	authenticat$4 same (smart$1phone) same biometric	US-PGPUB; USPAT	OR	OFF	2020/02/04 09:57
S222	3	S221 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2020/02/04 09:57
S223	1	"20020023217".pn.	US-PGPUB; USPAT	OR	OFF	2020/02/04 11:09
S224	1	"9298905".pn.	US-PGPUB; USPAT	OR	OFF	2020/02/04 11:15
S225	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2020/02/04 11:16
S226	1	"8352730".pn.	US-PGPUB; USPAT	OR	OFF	2020/02/04 11:16
S227	123	(stor$4 sav$4) with (account adj number) same (smart$1phone)	US-PGPUB; USPAT	OR	OFF	2020/02/04 11:24
S228	0	S227 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2020/02/04 11:24
S229	936	(stor$4 sav$4) with (account adj number) same ((mobile cell) adj phone)	US-PGPUB; USPAT	OR	OFF	2020/02/04 11:29
S230	42	S229 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2020/02/04 11:29
S231	416	(smart$phone) same (authenticat$4 with biometric) and (transfer$4 send$4) with (code ID account)	US-PGPUB; USPAT	OR	OFF	2020/02/10 18:53
S232	0	S231 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2020/02/10 18:53

S233	892	((cell mobile) near2 phone) same (authenticat$4 with biometric) and (transfer$4 send$4) with (code ID account)	US-PGPUB; USPAT	OR	OFF	2020/02/10 18:54
S234	39	S233 and @ad< "20041220"	US-PGPUB; USPAT	OR	OFF	2020/02/10 18:54
S235	34	("7167987" "7361919" "7447911" "7711152" "7813822" "10110385" "20030120934" "20060078176" "20050229240" "20050242921" "20050243787" "20050264416" "20050272403" "20050281320" "20050282558" "20050284932" "20060001525" "20060014430" "20060022042" "20060022800" "20060025180" "20060026673" "20060030353" "20060034250" "20060041746" "20060069814" "20060072586" "20060074713" "2006087407" "20060089138" "20060097949" "20060111955" "20060136728" "20060144943" "20060158308").pn.	US-PGPUB; USPAT	OR	OFF	2020/02/13 12:00
S236	200	("10073960" | "20010024428" | "20010027121" | "20020010679" | "20020019811" | "20020022455" | "20020037732" | "20020052193" | "20020062249" | "20020068605" | "20020080969" | "20020086690" | "20020089890" | "20020100798" | "20020105918" | "20020128017" | "20020143623" | "20020143655" | "20020147653" | "20020153996" | "20020158765" | "20020160820" | "20020177460" | "20020199120" | "20030022701" | "20030034877" | "20030036416" | "20030046228" | "20030063619" | "20030088441" | "20030109274" | "20030115351" | "20030117969" | "20030117980" | "20030128866" | "20030137404" | "20030146835" | "20030163388" | "20030167207" | "20030169697" | "20030174839" | "20030213840" | "20030223394" | "20030233458" | "20040002347" | "20040015403" | "20040029620" | "20040029635" | "20040030764" | "20040030894" | "20040035644" | "20040048570" | "20040048609" | "20040059682" | "20040059912" | "20040064728" | "20040068656" | "20040073792" | "20040081127" | "20040082385" | "20040114563" | "20040123106" | "20040128389" | "20040128500" | "20040128508" | "20040137912" | "20040158746" | "20040166875" | "20040167465" | "20040203923" | "20040208139" | "20040214582" | "20040217859" | "20040218581" | "20040222877" | "20040234117" | "20040243519" | "20040246103" | "20040246950" | "20040252659" |	US-PGPUB; USPAT	OR	OFF	2020/02/13 18:44

		"20040253996" | "20040254837" | "20040255139" | "20040255145" | "20050005136" | "20050025093" | "20050028168" | "20050035897" | "20050039027" | "20050040961" | "20050047386" | "20050049013" | "20050050324" | "20050055242" | "20050055244" | "20050058292" | "20050086115" | "20050089000" | "20050090200" | "20050091338" | "20050094657" | "20050097037" | "20050105600" | "20050113070" | "20050114149" | "20050114150" | "20050116020" | "20050119979" | "20050124294" | "20050138390" | "20050139656" | "20050141451" | "20050152394" | "20050154897" | "20050169292" | "20050180385" | "20050182661" | "20050182975" | "20050187792" | "20050200453" | "20050201389" | "20050210270" | "20050216313" | "20050216639" | "20050220046" | "20050229240" | "20050242921" | "20050243787" | "20050264416" | "20050272403" | "20050281320" | "20050282558" | "20050284932" | "20060001525" | "20060014430" | "20060022042" | "20060022800" | "20060025180" | "20060026673" | "20060030353" | "20060034250" | "20060041746" | "20060069814" | "20060072586" | "20060074713" | "20060087407" | "20060089138" | "20060097949" | "20060111955" | "20060136728" | "20060144943" | "20060158308" | "20060165060" | "20060170565" | "20060173991" | "20060187029" | "20060190348" | "20060190413" | "20060194598" | "20060195576" | "20060198337" | "20060205408" | "20060208066" | "20060208853" | "20060222042" | "20060229909" | "20060237528" | "20060238305" | "20060268891" | "20060273176" | "20060274711" | "20060279412" | "20060290580" | "20060293925" | "20060294388" | "20070005403" | "20070007331" | "20070008070" | "20070008916" | "20070016800" | "20070019845" | "20070029381" | "20070033072" | "20070038751" | "20070050259" | "20070060095" | "20070064742" | "20070069852" | "20070072636" | "20070073553" | "20070087682" | "20070100939" | "20070109117" | "20070118891" | "20070133478" | "20070136407" | "20070152826" | "20070156850" | "20070158411" | "20070159994").PN.				
S237	236	("20070169121" | "20070176756" | "20070187266" | "20070194882" | "20070204078" | "20070205860" |	US-PGPUB; USPAT	OR	OFF	2020/02/13 18:44

APPLE EX1002
000101

		"20070205861"	"20070214492"				
		"20070218921"	"20070229268"				
		"20070247366"	"20070260883"				
		"20070260888"	"20070266257"				
		"20070268862"	"20070271194"				
		"20070271433"	"20070277044"				
		"20070285212"	"20070285238"				
		"20070288263"	"20070288752"				
		"20070293155"	"20070294755"				
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S239	111	S237 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2020/02/13 18:45
S240	130	S236 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2020/02/13 19:33
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S242	8	("10110385" | "20030120934" | "20060078176" | "7167987" | "7361919" | "7447911" | "7711152" | "7813822").PN.	US-PGPUB; USPAT	OR	OFF	2020/02/14 09:36
S243	1690	g06f21/32.cpc. and (biometric with authenticat$3) and (smart$phone	US-PGPUB; USPAT	OR	OFF	2020/02/14 09:42

		cellphone)				
S244	5	g06f21/32.cpc. and (biometric with authenticat$3) and (smart$phone cellphone) same (security near3 token)	US-PGPUB; USPAT	OR	OFF	2020/02/14 09:42
S245	6	g06f21/32.cpc. and (biometric with authenticat$3) and (smart$phone cellphone) and ((casino adj machine) with (atm) with (keyless near3 lock) with computer)	US-PGPUB; USPAT	OR	OFF	2020/02/14 09:58
S246	6	(biometric with authenticat$3) and (smart$phone cellphone) and ((casino adj machine) with (atm) with (keyless near3 lock) with computer)	US-PGPUB; USPAT	OR	OFF	2020/02/14 09:58

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S247	56	g06f21/32.cpc. and (biometric with authenticat$3) and (smart$phone cellphone).ab.	US-PGPUB; USPAT	OR	OFF	2020/02/14 10:09
S248	5	g06f21/35.cpc. and (biometric with authenticat$3) and (smart$phone cellphone).ab.	US-PGPUB; USPAT	OR	OFF	2020/02/14 10:41
S249	647	(biometric with authenticat$3) and (smart$phone cellphone).clm.	US-PGPUB; USPAT	OR	OFF	2020/02/14 10:45
S250	18	(biometric with authenticat$3) and (smart$phone cellphone) and (casino).clm.	US-PGPUB; USPAT	OR	OFF	2020/02/14 10:45
S251	103	(biometric with authenticat$3) and (smart$phone cellphone) and (atm).clm.	US-PGPUB; USPAT	OR	OFF	2020/02/14 10:48
S252	2	(biometric with authenticat$3) and (smart$phone cellphone) same (atm).clm.	US-PGPUB; USPAT	OR	OFF	2020/02/14 10:48
S253	5	(biometric with authenticat$3) and (smart$phone cellphone) and (atm same casino).clm.	US-PGPUB; USPAT	OR	OFF	2020/02/14 10:59
S254	312	g06f21/35.cpc. and (biometric with authenticat$3) and (smart$phone cellphone)	US-PGPUB; USPAT	OR	OFF	2020/02/14 11:15
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2/ 14/ 2020 1:14:24 PM
C:\ Users\ pvu3\ Documents\ EAST\ Workspaces\ 15049060.wsp

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Doc code: IDS
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
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Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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	2	20050242921		2005-11-03	Zimmerman et al.	
	3	20050243787		2005-11-03	Hong et al.	
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Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

	6	20050281320		2005-12-22	Neugebauer	
	7	20050282558		2005-12-22	Choi et al.	
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Attorney Docket Number	10001-05488 US

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Examiner Name	Phy Anh Tran Vu
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Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2]i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
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Examiner Signature	/PHY ANH T VU/	Date Considered	02/14/2020

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Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2020-01-23
Name/Print	Paige M. Alsbury	Registration Number	72,965

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

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2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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CONFIRMATION NO. 2423

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
15/049,060	02/20/2016	713	2438	10001-05488 US

APPLICANTS
Proxense, LLC, Bend, OR;

INVENTORS
John J. Giobbi, Bend, OR;

**** CONTINUING DATA ***************************
This application is a CON of 14/521,982 10/23/2014 PAT 9298905
which is a CON of 13/710,109 12/10/2012 PAT 8886954
which is a CON of 11/314,199 12/20/2005 PAT 8352730
which claims benefit of 60/652,765 02/14/2005
and claims benefit of 60/637,538 12/20/2004

**** FOREIGN APPLICATIONS ***************************

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03/07/2016

Foreign Priority claimed ❑ Yes ☑ No 35 USC 119(a-d) conditions met ❑ Yes ☑ No Verified and Acknowledged /PHY ANH TRAN VU/ Examiner's Signature	❑ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		OR	6	1	1

ADDRESS
Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107
UNITED STATES

TITLE
Biometric Personal Data Key (PDK) Authentication

FILING FEE RECEIVED		
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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7167987		2007-01-23	Angelo	
	2	7361919		2008-04-22	Setlak	
	3	7447911		2008-11-04	Chou et al.	
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	5	7813822		2010-10-12	Hoffberg	
	6	10110385		2018-10-23	Rush et al.	

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	1	20030120934	A1	2003-06-26	Ortiz	
	2	20060078176	A1	2006-04-13	Abiko et al.	

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See attached certification statement.

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A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2019-12-13
Name/Print	Paige M. Alsbury	Registration Number	72,965

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Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

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	1	3739329		1973-06-12	Lester	
	2	3761883		1973-09-25	Alvarez et al.	
	3	4430705		1984-02-07	Cannavino et al.	
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	7	5317572		1994-05-31	Satoh	
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	9	5410588		1995-04-25	Ito	
	10	5428684		1995-06-27	Akiyama et al.	
	11	5473690		1995-12-05	Grimonprez et al.	
	12	5481265		1996-01-02	Russell	
	13	5506863		1996-04-09	Meidan et al.	
	14	5517502		1996-05-14	Bestler et al.	
	15	5541583		1996-07-30	Mandelbaum	
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	17	5589838		1996-12-31	McEwan	
	18	5594227		1997-01-14	Deo	
	19	5611050		1997-03-11	Theimer et al.	

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Attorney Docket Number	10001-05488 US

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First Named Inventor	John J. Giobbi
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	Examiner Name	Phy Anh Tran Vu
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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2020-01-23
Name/Print	Paige M. Alsbury	Registration Number	72,965

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Espacenet

Bibliographic data: JPH1049604 (A) — 1998-02-20

MEDICAL CARE SUPPORTING SYSTEM

Inventor(s): DEO TAKURO; INOUE NAOAKI ± (DEO TAKURO, ; INOUE NAOAKI)

Applicant(s): SHIMADZU CORP ± (SHIMADZU CORP)

Classification: **- international:** ***A61B5/00; G06F19/00; G06F21/62; G06Q10/00; G06Q50/00; G06Q50/10; G06Q50/22; G06Q50/24;*** (IPC1-7): A61B5/00; G06F17/60; G06F19/00

- cooperative:

Application number: JP19960207470 19960806

Priority number (s): JP19960207470 19960806

Abstract of JPH1049604 (A)

PROBLEM TO BE SOLVED: To provide a medical care supporting system in which medical care information of each pertinent can be quickly managed, and the acting state of the patient or the like can be grapsed. SOLUTION: A medical care nurse N allows a portable terminal 1 to read the ID number of herself and a patient P by making the portable terminal 1 close to an ID tag 11 for a medical care nurse of herself and an ID tag 22 for a patient of the patient P. The portable terminal 1 transmits the read ID number of the medical care nurse N and the patient P through a reference station 2 to a host computer 3. The host computer 3 recognizes the access right of the medical care nurse N based on the received ID number of the medical care nurse N and the patient P, and transfers the patient information corresponding to the patient P through the reference station 2 to the portable terminal 1 within the range of the access right. The portable terminal 1 displays the transferred patient information at a displaying part, and the medical care nurse N can obtain the patient information.

(19)日本国特許庁（ＪＰ）　(12) **公開特許公報（Ａ）**　(11)特許出願公開番号

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Ｇ０６Ｆ　17/60			Ｇ０６Ｆ　15/21	３６０	

審査請求　未請求　請求項の数９　ＯＬ　（全 11 頁）

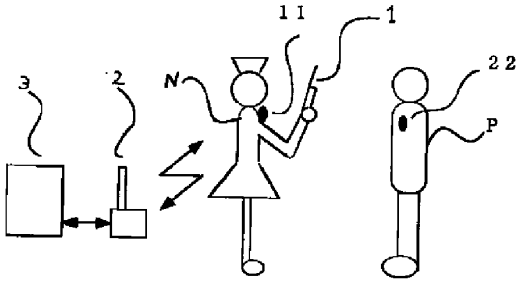
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(74)代理人　弁理士　西岡　義明

(54)【発明の名称】　医療支援システム

(57)【要約】
【課題】　患者毎の医療情報の管理を迅速になし得ると共に、患者の行動状態などの把握が可能な医療支援システムを提供する。
【解決手段】　医療従事者Ｎは携帯用端末１を自己の医療従事者用ＩＤタグ１１及び患者Ｐの患者用ＩＤタグ２２に接近させることで携帯用端末１に自己及び患者ＰのＩＤ番号を読みとらせる。携帯用端末１は、読みとった医療従事者Ｎ及び患者ＰのＩＤ番号を基準局２を介してホストコンピュータ３に送信する。ホストコンピュータ３は、受信した医療従事者Ｎ及び患者ＰのＩＤ番号に基づき、医療従事者Ｎのアクセス権を認識し、そのアクセス権の範囲内で患者Ｐに対する患者情報を基準局２を介して携帯用端末１に転送する。携帯用端末１は転送された患者情報を表示部に表示し、医療従事者Ｎは患者情報を得ることが可能となる。



APPLE EX1002
000188

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【特許請求の範囲】

【請求項１】　患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、

データの送受信を行う送受信部と、この送受信部より受信される患者情報を表示する表示部と、前記認識情報を読みとる読取部と、を有する端末手段と、

前記認識情報とそれに対応する患者情報を記憶する患者情報記憶手段と、

前記端末手段の送受信部から送信される前記認識情報に対応する患者情報を前記患者情報記憶手段から読み出し、前記端末手段の送受信部に送信するホストコンピュータと、

を備えたことを特徴とする医療支援システム。

【請求項２】　医療従事者に携帯させると共に当該医療従事者の認識情報を発信する医療従事者ＩＤ発信手段と、

データの送受信を行う送受信部と、この送受信部から受信される医療情報を表示する表示部と、前記認識情報を読みとる読取部と、を有する端末手段と、

前記認識情報とそれに対応するアクセス権との関係を記憶するアクセス権記憶手段と、

前記アクセス権に応じた医療情報を記憶する医療情報記憶手段と、

前記端末手段の送受信部から送信される前記認識情報に基づいて前記アクセス権記憶手段より対応するアクセス権を認識し、当該アクセス権の範囲内で医療情報を前記医療情報記憶手段から読み出し、前記端末手段の送受信部に送信するホストコンピュータと、

を備えたことを特徴とする医療支援システム。

【請求項３】　前記端末手段は、医療従事者が携帯する携帯用端末であって、前記読取部から医療従事者のＩＤが読みとられていないとき、前記表示部に表示されている医療情報を一時的に消去することを特徴とする請求項２記載の医療支援システム。

【請求項４】　患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、

患者情報を入力する入力部と、前記認識情報を読みとる読取部と、読みとった認識情報及び入力した患者情報を送信する送信部と、を有する端末手段と、

前記認識情報とそれに対応する患者情報を記憶する記憶領域を有する患者情報記憶手段と、

前記端末手段の送信部から送信される前記認識情報及び患者情報を受信し、受信した認識情報に対応する前記患者情報記憶手段の記憶領域に当該受信した患者情報を書き込むホストコンピュータと、

を備えたことを特徴とする医療支援システム。

【請求項５】　医療従事者に携帯させると共に当該医療従事者の認識情報を発信する医療従事者ＩＤ発信手段と、

医療情報を入力する入力部と、前記認識情報を読みとる

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読取部と、読みとった認識情報及び入力した医療情報を送信する送信部と、を有する端末手段と、

前記認識情報とそれに対応するアクセス権との関係を記憶するアクセス権記憶手段と、

医療情報を記憶する医療情報記憶手段と、

前記端末手段の送信部から送信される認識情報と医療情報を受信し、受信した認識情報にに基づき前記アクセス権記憶手段より対応するアクセス権を認識し、当該アクセス権の範囲内で前記受信した医療情報を前記医療情報記憶手段に書き込むホストコンピュータと、

を備えたことを特徴とする医療支援システム。

【請求項６】　前記端末手段は、医療従事者が携帯する携帯用端末であって、前記読取部から医療従事者のＩＤが読みとられていないとき、前記入力部からの医療情報の入力を一時的に禁止することを特徴とする請求項５記載の医療支援システム。

【請求項７】　患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、

医療検査装置における検査データを入力する入力部と、前記認識情報を読みとる読取部と、前記認識情報及び前記検査データを送信する送信部とを有する端末手段と、

前記認識情報とそれに対応する検査データを記憶する記憶領域を有する検査データ記憶手段と、

前記端末手段の送信部から送信される認識情報及び検査データを受信し、受信した認識情報に対応する前記検査データ記憶手段の記憶領域に当該受信した検査データを書き込むホストコンピュータと、

を備えたことを特徴とする医療支援システム。

【請求項８】　患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、

前記認識情報を読みとる読取部と、前記識別情報を送信する送信部とを有し、病院内各所に取り付けられる複数の端末手段と、

前記複数の端末手段から送信される前記認識情報を受信すると共に当該認識情報の発信端末手段を識別するホストコンピュータと、を備えたことを特徴とする医療支援システム。

【請求項９】　前記端末手段は、医療従事者が携帯する携帯用端末であって、前記送受信部或いは送信部は、ホストコンピュータとの送受信を無線通信で行うことを特徴とする請求項１乃至請求項５記載の医療支援システム。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、病院内における医療従事者の医療情報等の管理業務を支援する医療支援システムに関する。

【０００２】

【従来の技術】医師、看護婦などによる患者の診断等がなされる場合、検査データや患者の過去の様態などその

患者に対する種々の情報が参照される。かかる場合、病院で一括管理されているカルテに基づき、医師、看護婦などの医療従事者に患者情報が提供されるが、近年、医療機器や診断技術の発展及び高度化に伴い、患者数や病院内での患者一人当たりに蓄積される医療情報が膨大となっており、これらの医療情報の管理が複雑化している。

【０００３】このため、膨大化した医療情報を整理し迅速に医療従事者に提供すべく、患者情報のコンピュータ管理化が各病院で進んでおり、従来のカルテに換え、医療従事者がコンピュータを用いて一括管理された患者情報にアクセスし、読み出すシステム等が広く開発されている。

【０００４】

【発明が解決しようとする課題】しかしながら、医療従事者が患者情報をアクセスする場合、患者名などの患者認識情報を患者の名札等から読みとり入力しなければ成らず、その入力作業が煩雑であった。

【０００５】また、医療従事者が患者を診察或いは検査し、診察結果や検査内容及び結果等を入力する場合も、作業が煩雑で入力に時間がかかると共に入力誤り等も生じやすいという問題があった。

【０００６】特に、医療従事者が入院患者などを往診などする場合、往診用のノートに患者の体温、脈拍や様態等を書き込み、それを所定の端末より患者毎に入力することが必要となり、患者情報の管理には多大な時間と労力を要していた。

【０００７】かかる場合、携帯用端末を用いて、患者情報の表示及び入力を行うことや、患者に磁気カードやＩＣカードを携帯させることも考えられるが、メモリ容量には限界があり、十分な患者情報を記憶させることはできない。

【０００８】また、想定される患者情報を固定ディスクなどに格納して患者のいる病棟部へ持ち出すことも考えられるが、その持ち運びが煩雑となる。

【０００９】さらに、機密性を要求される患者情報も多数存在することから、上述した端末機などで患者情報をアクセスするシステム、特に、患者情報をホストコンピュータより他の携帯端末や磁気カードなどにコピーするシステムでは、機密管理が大変煩雑となり、患者データの盗難の危険性や患者に未告知の情報が読み出される等の危険性が高まる。

【００１０】一方、従来のシステムでは、過去に収集された患者情報を記憶し管理するのみであるから、患者の行動状態を把握することや、集団検診などにおいて各検査項目の待ち状態を把握することは困難であった。

【００１１】本発明は、上記課題を解決するために創案されたもので、患者毎の医療情報の管理を迅速になし得ると共に、患者の行動状態などの把握が可能な医療支援システムの提供を目的とする。

【００１２】

【課題を解決するための手段】上記目的を達成するために、本発明にかかる医療支援システムは、患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、データの送受信を行う送受信部と、この送受信部より受信される患者情報を表示する表示部と、前記認識情報を読みとる読取部と、を有する端末手段と、前記認識情報とそれに対応する患者情報を記憶する患者情報記憶手段と、前記端末手段の送受信部から送信される前記認識情報に対応する患者情報を前記患者情報記憶手段から読み出し、前記端末手段の送受信部に送信するホストコンピュータと、を備えたことを特徴とする。

【００１３】また、本発明は、医療従事者に携帯させると共に当該医療従事者の認識情報を発信する医療従事者ＩＤ発信手段と、データの送受信を行う送受信部と、この送受信部から受信される医療情報を表示する表示部と、前記認識情報を読みとる読取部と、を有する端末手段と、前記認識情報とそれに対応するアクセス権との関係を記憶するアクセス権記憶手段と、前記アクセス権に応じた医療情報を記憶する医療情報記憶手段と、前記端末手段の送受信部から送信される前記認識情報に基づいて前記アクセス権記憶手段より対応するアクセス権を認識し、当該アクセス権の範囲内で医療情報を前記医療情報記憶手段から読み出し、前記端末手段の送受信部に送信するホストコンピュータと、を備えたことを特徴とする。

【００１４】前記端末手段は、医療従事者が携帯する携帯用端末であって、前記読取部から医療従事者のＩＤが読みとられていないとき、前記表示部に表示されている医療情報を一時的に消去することを特徴とする。

【００１５】また、本発明は、患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、患者情報を入力する入力部と、前記認識情報を読みとる読取部と、読みとった認識情報及び入力した患者情報を送信する送信部と、を有する端末手段と、前記認識情報とそれに対応する患者情報を記憶する記憶領域を有する患者情報記憶手段と、前記端末手段の送信部から送信される前記認識情報及び患者情報を受信し、受信した認識情報に対応する前記患者情報記憶手段の記憶領域に当該受信した患者情報を書き込むホストコンピュータとを備えたことを特徴とする。

【００１６】さらに、本発明は、医療従事者に携帯させると共に当該医療従事者の認識情報を発信する医療従事者ＩＤ発信手段と、医療情報を入力する入力部と、前記認識情報を読みとる読取部と、読みとった認識情報及び入力した医療情報を送信する送信部と、を有する端末手段と、前記認識情報とそれに対応するアクセス権との関係を記憶するアクセス権記憶手段と、医療情報を記憶する医療情報記憶手段と、前記端末手段の送信部から送信される認識情報と医療情報を受信し、受信した認識情報

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にに基づき前記アクセス権記憶手段より対応するアクセス権を認識し、当該アクセス権の範囲内で前記送信された医療情報を前記医療情報記憶手段に書き込むホストコンピュータと、を備えたことを特徴とする。

【００１７】前記端末手段は、医療従事者が携帯する携帯用端末であって、前記読取部から医療従事者のＩＤが読みとられていないとき、前記入力部からの医療情報の入力を一時的に禁止することを特徴とする請求項５記載の医療支援システム。

【００１８】一方、本発明は、患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、医療検査装置における検査データを入力する入力部と、前記認識情報を読みとる読取部と、前記認識情報及び前記検査データを送信する送信部とを有する端末手段と、前記認識情報とそれに対応する検査データを記憶する記憶領域を有する検査データ記憶手段と、前記端末手段の送信部から送信される認識情報及び検査データを受信し、受信した認識情報に対応する前記検査データ記憶手段の記憶領域に当該受信した検査データを書き込むホストコンピュータと、を備えたことを特徴とする。

【００１９】また、本発明は、患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、前記認識情報を読みとる読取部と、前記識別情報を送信する送信部とを有し、病院内各所に取り付けられる複数の端末手段と、前記複数の端末手段から送信される前記認識情報を受信すると共に当該認識情報の発信端末手段を識別するホストコンピュータと、を備えたことを特徴とする前記端末手段は、医療従事者が携帯する携帯用端末であって、前記送受信部或いは送信部は、ホストコンピュータとの送受信を無線通信で行うことを特徴とする。

【００２０】また、前記患者ＩＤ発信手段または前記医療従事者ＩＤ発信手段は、ＩＤタグにより構成されていることを特徴とする。

【００２１】

【発明の実施の形態】本発明の一実施例を図１～図１８に基づいて説明する。図１は、本発明の一実施例である医療支援システムの概略図であり、大きく携帯用端末１、基準局２、ホストコンピュータ３、医療従事者用ＩＤタグ１１、及び患者用ＩＤタグ２２により構成される。

【００２２】携帯用端末１は、医療従事者Ｎに携帯され、患者ＩＤの読み込み、基準局２を介したホストコンピュータ３との送受信、及び患者情報の入力及び表示などを行う。

【００２３】図２は、携帯用端末１の外観図を示し、ＩＤリーダ１ｃは、医療従事者用ＩＤタグ１１或いは患者用ＩＤタグ２２から発信される医療従事者或いは患者のＩＤ信号を読み込み、ＰＨＳ１ａは、基準局２との間で患者情報やＩＤ信号の送受信い、液晶ディスプレイ等で構成される表示手段１ｂは患者情報などを表示する。入力手段１ｄは表示手段１ｂ上に配設されたパネル状入力部と入力ペンで構成され、この入力ペンで直接文字などを表示手段１ｂ上で入力できるよう構成されている。

【００２４】図３は携帯用端末１のブロック図であり、電源１ｅ投入により動作し、上述したＰＨＳ１ａ～入力手段１ｄはすべて制御手段１ｚの指示の基に動作する。また、制御手段１ｚは、表示手段１ｂに医療情報などが表示されているとき、ＩＤリーダ１ｃから逐一読み込まれるＩＤが医療従事者のものでない場合に、一時的に表示されている医療情報を消去する機能も備えている。

【００２５】図１において、医療従事者用ＩＤタグ１１は、医療従事者Ｎに取り付けられ、小電力で半径１ｍ程度の範囲に医療従事者Ｎの認識情報を示すＩＤ信号を発信し、携帯用端末１との距離が２０～４０ｃｍ程度に近づくとＩＤリーダ１ｃによりそのＩＤ信号が読みとられる。

【００２６】患者用ＩＤタグ２２は、患者Ｐに取り付けられ、医療従事者用ＩＤタグ１１と同様、小電力で半径１ｍ程度の範囲に患者ＰのＩＤ信号を発信し、携帯用端末１との距離が２０～４０ｃｍ程度に近づくとＩＤリーダ１ｃによりそのＩＤ信号が読みとられる。

【００２７】なお、このとき、読み込まれるＩＤは、ＩＤリーダ１ｃに近い方から読み込まれる。

【００２８】携帯用端末１の送受信部１ａから送信されたＩＤ信号や患者情報等は病院内の種々の場所に配置された基準局２を中継点として検知され、構内回線を介してホストコンピュータ３に送信される。ホストコンピュータ３は病院内に配設され、医療情報全般を一括管理する。

【００２９】図４は、ホストコンピュータ３のブロック図であり、送受信部３ａは、図１の基準局２を介して携帯用端末１のＰＨＳ１ａとの間でデータの送受信を行う。携帯用端末１のＰＨＳ１ａから受信され、或いは携帯用端末１のＰＨＳ１ａに対して送信するデータは、制御手段３ｚの制御のもと、送受信部３ａを介して、磁気ディスク３ｃに記憶或いは磁気ディスク３ｃから読み出される。

【００３０】操作部３ｂは、制御手段３ｚに対して動作指示などを与えるための機能を有し、表示手段３ｄは、システムの動作状態等を表示するが、これらは主にメインテナンス用に使用されるものである。

【００３１】次に、本発明の作用を携帯用端末１の制御手段１ｚ及びホストコンピュータ３の制御手段３ｚの動作をそれぞれ示す図５及び図６のフローチャートに沿って説明する。

【００３２】図５において、まず、図１の医療従事者Ｎは、携帯用端末１を自己の医療従事者用ＩＤタグ１１及び患者Ｐの患者用ＩＤタグ２２に近づけることで、当該従業者用ＩＤ及び患者用ＩＤを図２のＩＤリーダ１ｃより読み込む（Ｓ１）。

【００３３】制御手段１ｚは、読み込まれた両ＩＤが従業者用ＩＤ及び患者用ＩＤのものであるか否かを判断し、適合しない場合は、読み込み未完了として、再度自己の従業者用ＩＤ及び患者用ＩＤの読み込み待機状態に戻る（Ｓ２、Ｓ１）。

【００３４】これにより、医療従事者以外の者、例えば患者や外部の者によって病院内の患者情報にアクセスすることが阻止され、患者情報の機密性が保持される。なお、読み込まれた両ＩＤが従業者用ＩＤ及び患者用ＩＤのものであるか否かの判断は、例えば、図７に示されるように、医療従事者用ＩＤタグ１１及び患者用ＩＤタグ２２から発信されるＩＤ信号のフォーマットを設定し、そのヘッダ部分で判断するようにすればよい。すなわち、図７では、医療従事者のヘッダ部最上位ビットを１、患者のそれを０とするようにＩＤを決定し、読み込んだ両ＩＤ信号において、ヘッダの最上位ビットが携帯用端末１のものと０のものがそれぞれ含まれているか否かを判断することで、判別可能となる。

【００３５】図５において、医療従事者用ＩＤ及び患者用ＩＤの読み込みが終了すると、それらのＩＤ信号をＰＨＳ１ａから基準局２を介してホストコンピュータ３に転送する（Ｓ３）。

【００３６】図６において、ホストコンピュータ３は、携帯用端末１より転送された従業者用ＩＤ及び患者用ＩＤ信号を受信し（Ｓ１１）、従業者用ＩＤがアクセス権のあるものか否かを判断する（Ｓ１２）。

【００３７】ここで、アクセス権有無の判断は、図８に示された、従業者に与えられているアクセス権のランクとその従業者ＩＤとの関係を磁気ディスク３ｃに記憶したテーブルに基づき行うことが可能となる。

【００３８】アクセス権とは、例えば、医師、看護婦、医療事務員など医療従事者に与えられた医療情報をアクセスための権利範囲を示すもので、例えば、医師をアクセス権１、看護婦をアクセス権２、医療事務員をアクセス権３としてそれらのランクを対応づけ、それぞれの医療従事者は、図９に示されるように、それぞれ与えられたアクセス権に応じた情報を読み出し或いは記憶することが可能となる。

【００３９】ホストコンピュータ３は、転送された医療従事者にアクセス権が無いと判断した場合、携帯用端末１に対して転送不可通知を送信して、アクセスできないことを知らせる（Ｓ１３）。

【００４０】かかる場合、図５において、携帯用端末１は、患者情報として転送不可通知を受信し（Ｓ４）、アクセス権なしとして従業者用ＩＤ及び患者用ＩＤの読み込み待機状態に戻る（Ｓ５、Ｓ１）。

【００４１】これにより、医療従事者用ＩＤタグ１１が紛失或いは盗難等に遭い、医療従事者以外の者が医療従事者用ＩＤタグ１１及び患者用ＩＤタグ２２を用いて患者情報をアクセスしようとしても、事前に当該ＩＤに対するアクセス権を禁止し、すなわち、磁気ディスク３ｃに書き込まれた図８に示すアクセス権のランクをアクセス権のないもの、例えば－１等に書き換えておくことで、他者による医療情報のアクセスを阻止できる。

【００４２】図６において、転送された従業員ＩＤにアクセス権がある場合、そのアクセス権の範囲内で磁気ディスク３ｃに記憶された患者情報を読み込み、携帯用端末１に対して転送する（Ｓ１２、Ｓ１４）。

【００４３】磁気ディスク３ｃに記憶された患者情報は、例えば図９に示されるように、患者単位でアクセス権毎に分けて記憶されており、例えばアクセス権１の医師は、アクセス権１～アクセス権３の全情報への読み込み可能であり、アクセス権３の医療事務員であれば、アクセス権３の情報のみ読み込み可能となる。

【００４４】図５において、携帯用端末１は、ホストコンピュータ３より転送された患者情報及びアクセス権を受信し（Ｓ４）、アクセス権が存在することを判断したうえで（Ｓ５）、図２の表示手段１ｂに転送された患者情報を表示する（Ｓ６）。

【００４５】このとき、携帯用端末１のＩＤリーダ１ｃは、常にＩＤ読み込み状態にあり、携帯用端末１の制御手段１ｚは、逐一読み込んだＩＤが医療従事者のものである場合のみ、患者情報を表示手段１ｂに表示し、読み込んだＩＤが医療従事者以外のものとなった場合は、一時的に患者情報を表示手段１ｂ上で消去する。

【００４６】ここで、図１０及び図１１は、図２の表示手段１ｂにおけるアクセス権毎の医療情報の表示例を示しており、図１０ａは、アクセス権１を有する医師が、図１ａは、アクセス権２を有する看護婦が、さらに、図１ｂは、アクセス権３を有する医療事務員が、それぞれ医療情報をアクセスした場合の例を示している。

【００４７】図１０ａでは、すべてのデータが表示されているのに対して、図１１ａでは、アクセス権１に属する所見Ｂ部が表示されておらず、図１１ｂでは、アクセス権１に属する所見Ｂ部、及びアクセス権２に属する所見Ａ部、検査データ、病名が表示されていないことがわかる。

【００４８】図５において、制御手段１ｚは、患者情報表示後、書き込み情報の入力待機状態に入る（Ｓ７）。

【００４９】このとき、携帯用端末１のＩＤリーダ１ｃは、常にＩＤ読み込み状態にあり、携帯用端末１の制御手段１ｚは、逐一読み込んだＩＤが医療従事者のものである場合のみ、患者情報を表示手段１ｂに表示し、読み込んだＩＤが医療従事者以外のものとなった場合は、一時的に患者情報を表示手段１ｂ上で消去し、書き込み可能状態を解除する。

【００５０】これにより、携帯用端末１が医療従事者の手元にあるときのみ、医療情報が表示され或いは書き込まれるため、患者など医療従事者以外の不特定の者による医療情報、例えば告知情報などの機密情報の閲覧及び

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書き込みを確実に阻止することができる。

【００５１】この状態で、例えば、医師が、図１０ａの表示画面において、患者の診断スケジュールの表示部に図2の入力手段１ｄの入力ペンなどによって図１０ｂに示されるように、「８／１０△△」なる診断予定を書き込んだとすると、制御手段１ｚは、書き込まれた情報をブリンク表示等通常と異なる態様で表示手段１ｂの書き込み位置に表示すると共にＰＨＳ１ａからの入力情報をホストコンピュータ３に転送し（Ｓ７）、書き込まれた情報が終了指示でないことを確認した後（Ｓ８）、ホストコンピュータ３からの転送情報の受信待機状態に入る（Ｓ９）。

【００５２】図６において、制御手段３ｚは、転送された書き込み情報を受信し（Ｓ１５）、それが終了通知でないことを確認した後（Ｓ１６）、アクセス権の範囲内で入力された患者情報の書き込みを図９に示される磁気ディスク３ｃに記憶されたテーブルに対して行うと共に書き込んだことを示す情報を携帯用端末１に転送し（Ｓ１７）、再び書き込み情報の受信待機状態に入る（Ｓ１５）。

【００５３】図５において、制御手段１ｚは、転送された書き込み情報を受信した後（Ｓ９）、書き込んだことを示す情報が転送された場合には、Ｓ７で書き込んだ情報を通常の表示態様に修正する。

【００５４】なお、ここで、書き込みのためのアクセス権と読み込みのためのアクセス権は必ずしも一致するものではなく、図１０に示した場合、診断スケジュール情報は、読み込みのためのアクセス権のランクは３であるが、書き込みのためのアクセス権のランクは１となる。このため、上述したように、アクセス権がランク１である医師がスケジュール情報を入力した場合、正しく書き込めるが、アクセス権がランク２或いは３の看護婦或いは医療事務員が同様の動作を行ったとすると、図６のＳ７で、制御手段３ｚによってその書き込みが阻止され、書き込み不可を示す情報が携帯用端末１に転送される。

【００５５】また、ホストコンピュータ３における書き込み情報に対するアクセス権の認識は、例えば、図１０及び図１１で示した携帯用端末１の表示手段１ｂの表示欄毎に書き込み場合のアクセス権を予め特定しておき、制御手段１ｚが情報が書き込まれた部位からアクセス権を認識して、書き込み情報に当該アクセス権を所定フォーマットで付加してホストコンピュータ３に送信するようにすればよい。

【００５６】かかる場合、制御手段１ｚは、図５において、Ｓ７で書き込んだ情報をＳ１０で消去し、書き込み前の状態に修正して再び書き込み待機状態に入ることとなる（Ｓ７）。この場合も、携帯用端末１のＩＤリーダ１ｃは、常にＩＤ読み込み状態にあり、携帯用端末１の制御手段１ｚは、読み込んだＩＤが医療従事者のものである場合のみ、患者情報を表示手段１ｂに表示し、読み込んだＩＤが医療従事者以外のものとなった場合は、一時的に患者情報を表示手段１ｂ上で消去し、書き込み可能状態を解除する。

【００５７】ここで、入力動作を終了する場合は、図２の入力手段１ｄの入力ペンを用いて表示手段１ｂの終了指示部（不図示）を押圧などすることで、終了指示信号がホストコンピュータ３へ転送され（Ｓ７）、制御手段１ｚは、従業員及び患者のＩＤ読み込み待機状態に移行する（Ｓ８、Ｓ１）。

【００５８】一方、図６において、制御手段３ｚも転送情報が終了通知であることを認識して（Ｓ１５、Ｓ１６）、従業員及び患者のＩＤの受信待機状態に入る（Ｓ１１）。

【００５９】以上の動作を繰り返し行うことで、図１の医療従事者Ｎは、携帯用端末１に自己のアクセス権に応じた患者情報を容易に表示させることができると共に、患者Ｐに対して行った診断情報や検査情報などを自己のアクセス権の範囲内で一括管理されたホストコンピュータ３の磁気ディスク３ｃに対して記憶させることができる。

【００６０】図１２は、本発明の他の実施例を示しており、患者Ｐに取り付けた患者用ＩＤタグ２２からのＩＤ信号を読み取りホストコンピュータ３に転送する配設端末手段１０が医療検査装置Ｍに配設されている。

【００６１】図１３は、端末手段１０のブロック図であり、制御手段１０ｚは、ＩＤリーダ１ｃ及び医療検査装置Ｍからの検査データの読み込み制御を行うと共に、これらの情報を図１４に示すフォーマットに加工して送受信手段１ｆよりホストコンピュータ３に送信する。

【００６２】なお、医療検査装置Ｍは、ＭＲＩ、Ｘ線ＣＴ装置、超音波診断装置等の診断装置であり、ここで得られた診断情報をディジタルデータとして制御手段１０ｚに出力するよう構成されている。

【００６３】図１５は、制御手段１０ｚの動作を示したフローチャートである。同図において、制御手段１０ｚは、まず、患者ＩＤの受信状態となるが、患者が端末手段１０に対して所定距離に近づくことで、患者に取り付けた患者用ＩＤタグ２２から発信されるＩＤ信号をＩＤリーダ１ｃを介して読みとる（Ｓ２１）。なお、通常、診断装置に近づく患者は、検査を受ける者であることから、かかるＩＤの入力は、その患者が検査を行う直前に入力されることとなる。

【００６４】そして、実際に検査が行われると、その検査データを医療検査装置Ｍより読み込み（Ｓ２３）、図１４に示されるフォーマットに加工した状態でホストコンピュータ３に転送する（Ｓ２４）。

【００６５】以上の動作により、患者の検査データがホストコンピュータ３に自動的にデータベースとして蓄積させることとなり、逐一増大する患者情報の管理が極めて容易となる。

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【００６６】図１６は、病院内での患者Ｐの行動状態を把握するシステムの実施例を示しており、病院内での検査室４ａ、４ｂを区画する壁面に読取端末１０ａ～１０ｅが所定間隔毎に配設されている。読取端末１０ａ～１０ｅは、図２で示した携帯用端末１のＰＨＳ１ａとＩＤリーダ１ｃの機能を備えており、それぞれ近傍に存在する患者Ｐに携帯された患者用ＩＤタグ２２から発信するＩＤ信号を読みとり、読取端末１０ａ～１０ｅの近傍に存在する基準局２’を介してホストコンピュータ３’に転送する。

【００６７】ホストコンピュータ３’は、受信したＩＤ信号がどの読取端末で読みとられたものかを把握することで各患者Ｐの病院内での存在位置を認識することが可能となる。

【００６８】認識された各患者Ｐの病院内での存在位置情報には、種々の利用用途が存在する。例えば、各検査項目イ～チを行う集団検診等の場合、病院内の各所にＣＲＴ等の表示手段を設置し、図１７に示されるように、各検査項目イ～チ毎の患者Ｐの待ち行列を表示することで、各患者Ｐは効率よく各検査を受けることが可能となる。

【００６９】又、例えば、ナースセンタなど医療従事者の待機室の表示手段に図１８に示されるように病院内の平面見取図と患者の存在位置を示すことで、入院患者等の入退室管理、感染症の病棟部などの領域への患者の侵入有無の管理、一定時間以上動かず危険な状態にある患者の管理等を行うことができる。

【００７０】かかる場合、ホストコンピュータ３’に各患者が動いたか否かや、危険区域への患者の侵入状態をモニターさせることで、図１８に示されるように、一定時間以上動いていない患者や危険区域に侵入した患者がいる場合に、警告メッセージを表示させたり、別の表示態様で表示することも可能である。

【００７１】

【発明の効果】本発明によれば、患者の診断を行う際、その患者認識を迅速かつ正確に行うことが可能になると共に、一元管理された患者の診断情報等を迅速に得ることができる。

【００７２】また、患者の診断情報等の医療情報を得る場合、別媒体にコピーすることがないため、医療情報が外部に漏れる可能性が低くなる。

【００７３】さらに、医療従事者にそれぞれアクセス権のランクを設定し、各医療従事者は自己に与えられたランクの範囲内でのみ医療情報の書き込み及び読み込みをなし得るため、医療情報の機密性がより高まる。

【００７４】また、携帯用端末が医療従事者の手元にあるときのみ、医療情報が表示され或いは書き込まれるため、患者など医療従事者以外の不特定の者による医療情報、例えば告知情報などの機密情報の閲覧及び書き込みを確実に阻止することができる。

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【００７５】一方、患者が検査などを受けた場合、その検査情報と患者の認識情報が自動的にデータベース化されるため、医療情報の管理を極めて迅速になし得る。

【００７６】また、従来不可能であった病院内での患者の行動状態の把握をリアルタイムで行うことが可能となる。

【図面の簡単な説明】

【図１】本発明にかかる医療支援システムの一例を示す概略図である。

【図２】本発明にかかる携帯用情報端末の外観図である。

【図３】本発明にかかる携帯用情報端末のブロック図である。

【図４】本発明にかかるホストコンピュータのブロック図である。

【図５】本発明にかかる携帯用情報端末の動作を示すフローチャートである。

【図６】本発明にかかるホストコンピュータの動作を示すフローチャートである。

【図７】医に付与されるＩＤ番号のフォーマットを示す図である。

【図８】医療従事者と付与されたアクセス権のランクとの対応表である。

【図９】患者毎に記憶させるアクセス権のランク毎の患者情報を示す図である。

【図１０】本発明にかかる携帯用情報端末における患者情報の表示例を示す図である。

【図１１】本発明にかかる携帯用情報端末における患者情報の表示例を示す図である。

【図１２】医療検査装置に情報端末を取り付けた場合の実施例を示す図である。

【図１３】医療検査装置に取り付けた情報端末のブロック図である。

【図１４】医療検査装置に取り付けた情報端末からホストコンピュータへ転送される情報のフォーマットを示す図である。

【図１５】医療検査装置に取り付けた情報端末の動作を示すフローチャートである。

【図１６】病院各所に情報端末を取り付けた場合のの実施例を示す図である。

【図１７】病院各所の患者の存在位置情報を利用して各検査項目の待ち行列を示す場合の表示例である。

【図１８】病院各所の患者の存在位置情報を利用して病院内の患者の存在位置を示す場合の表示例である。

【符号の説明】

１　携帯用端末
２　基準局
３　ホストコンピュータ
１１　医療従事者用ＩＤタグ
２２　患者用ＩＤタグ

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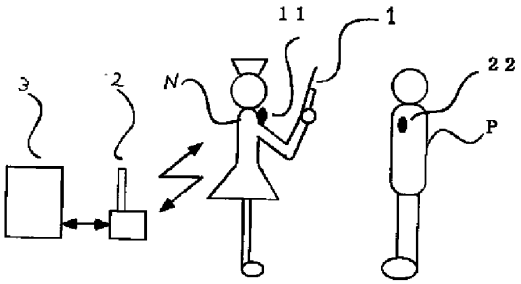
１３

P　　患者

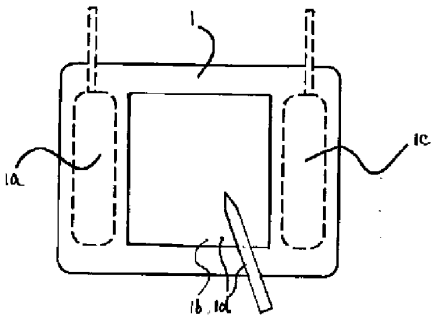
１４

N　　医療従事者

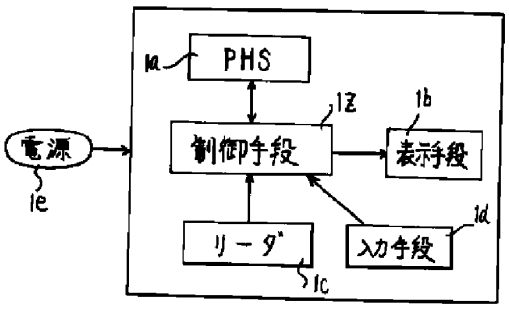
【図１】



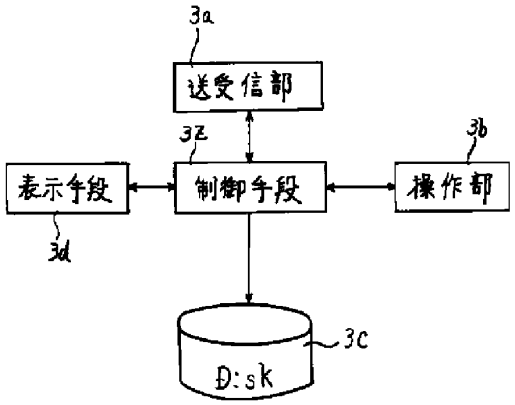
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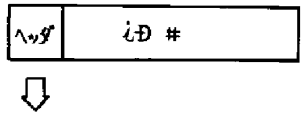
【図３】



【図４】

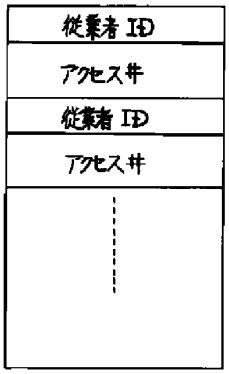


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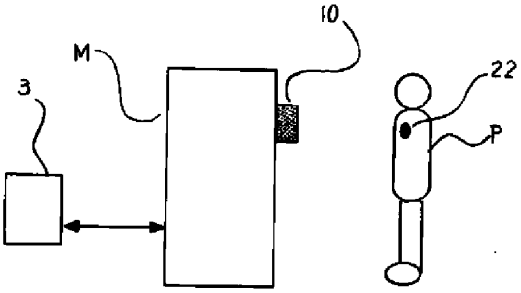


100：医者
101：看護婦
102：事務員
000：患者

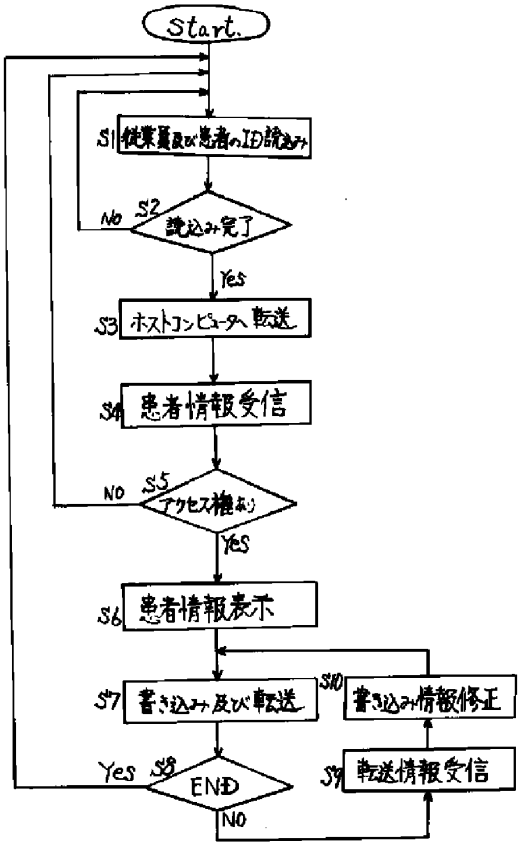
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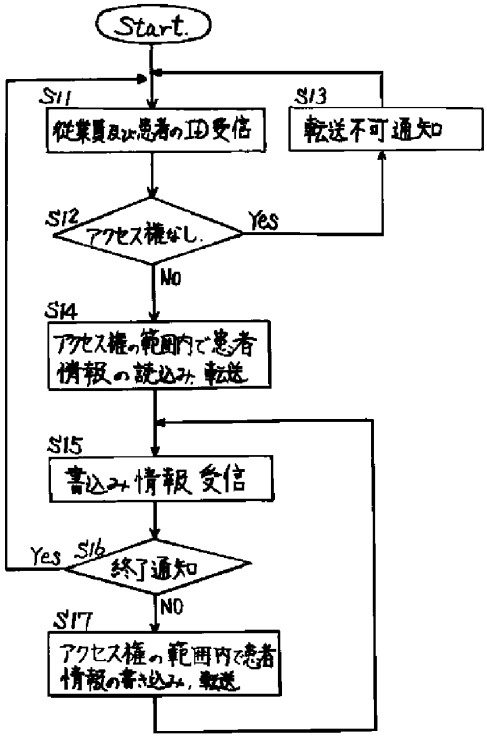
【図１２】



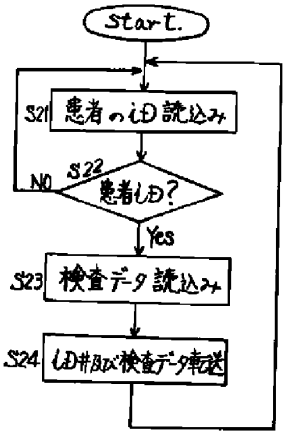
【図５】



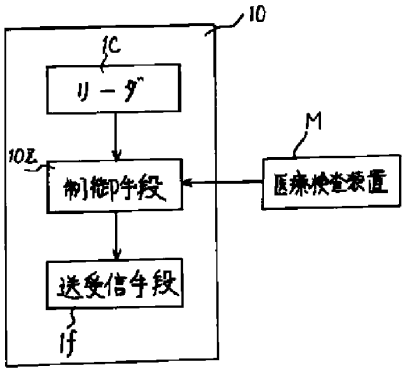
【図６】



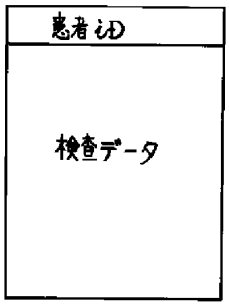
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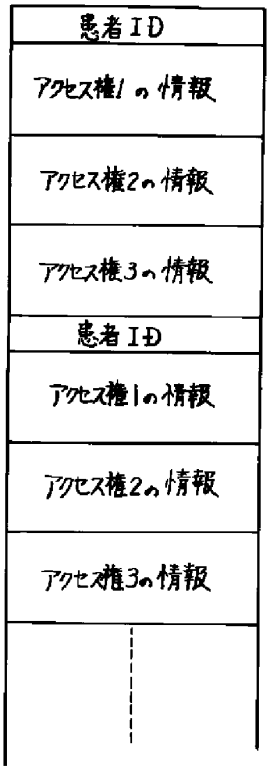
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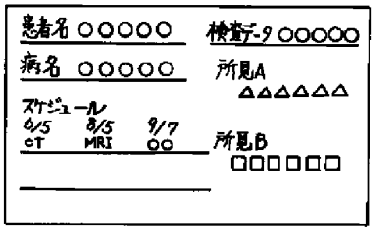
【図１４】



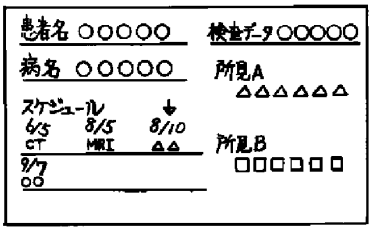
【図9】



【図10】

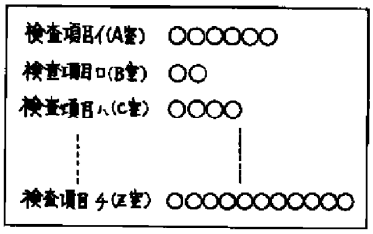


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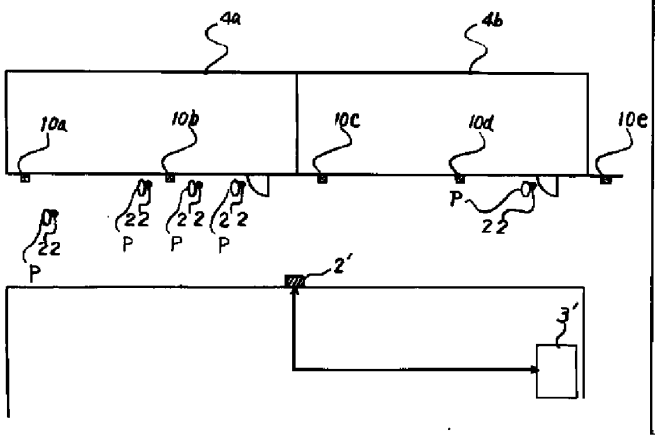


b

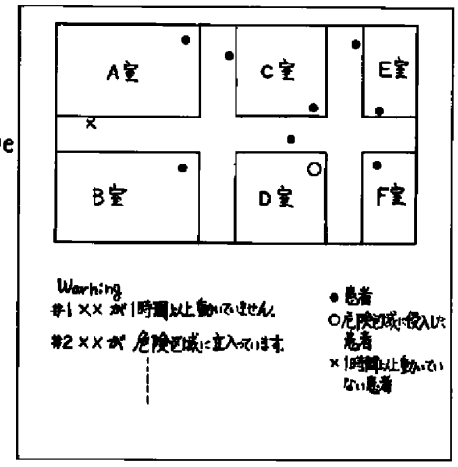
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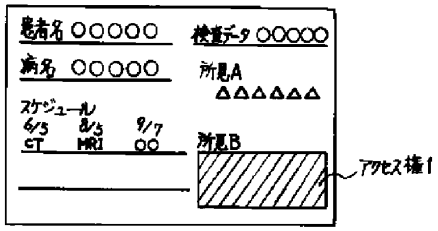
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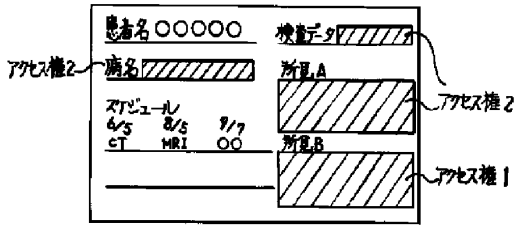
【図18】



【図１１】


患者名 ○○○○○
検査データ ○○○○○
病名 ○○○○○
所見A
△△△△△△
スケジュール
6/5 8/5 9/7
CT MRI ○○
所見B
アクセス権1

a


患者名 ○○○○○
検査データ
アクセス権2
病名
所見A
アクセス権2
スケジュール
6/5 8/5 9/7
CT MRI ○○
所見B
アクセス権1

b

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DESCRIPTION JPH1049604

[0001]
BACKGROUND OF THE INVENTION 1. Field of the Invention The present invention relates to a medical support system for supporting a medical worker s medical information management work in a hospital.

【発明の属する技術分野】本発明は、病院内における医療従事者の医療情報等の管理業務を支援する医療支援システムに関する。

[0002]
2. Description of the Related Art When a doctor, a nurse or the like makes a diagnosis or the like of a patient, various kinds of information on the patient such as examination data and past aspect of the patient are referred to. In such a case, patient information is provided to medical staff such as doctors and nurses based on the medical record managed at hospital all at once, but in recent years, along with the development and advancement of medical devices and diagnostic techniques, Medical information accumulated per patient in a hospital is enormous, and management of these medical information is complicated.

【従来の技術】医師、看護婦などによる患者の診断等がなされる場合、検査データや患者の過去の様態などその患者に対する種々の情報が参照される。 かかる場合、病院で一括管理されているカルテに基づき、医師、看護婦などの医療従事者に患者情報が提供されるが、近年、医療機器や診断技術の発展及び高度化に伴い、患者数や病院内での患者一人当たりに蓄積される医療情報が膨大となっており、これらの医療情報の管理が複雑化している。

[0003]
For this reason, in order to organize enormous medical information and provide it to medical

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staff quickly, computerized management of patient information is advanced at each hospital, and instead of a conventional medical record, medical staffs use computers to collect Systems for accessing and reading managed patient information and the like have been widely developed.

このため、膨大化した医療情報を整理し迅速に医療従事者に提供すべく、患者情報のコンピュータ管理化が各病院で進んでおり、従来のカルテに換え、医療従事者がコンピュータを用いて一括管理された患者情報にアクセスし、読み出すシステム等が広く開発されている。

[0004]

However, when a medical staff member accesses patient information, patient recognition information such as the name of a patient must be read from a name tag or the like of the patient and inputted, the input operation thereof is complicated It was.

【発明が解決しようとする課題】しかしながら、医療従事者が患者情報をアクセスする場合、患者名などの患者認識情報を患者の名札等から読みとり入力しなければ成らず、その入力作業が煩雑であった。

[0005]

Also, when a medical staff consults or inspects a patient and inputs a consultation result, an examination content, a result, and the like, the work is complicated, and it takes time to input and input errors and the like are likely to occur.

また、医療従事者が患者を診察或いは検査し、診察結果や検査内容及び結果等を入力する場合も、作業が煩雑で入力に時間がかかると共に入力誤り等も生じやすいという問題があった。

[0006]

In particular, when a medical staff visits a hospitalized patient or the like, it is necessary to write the patient s body temperature, pulse, and manner etc. in a notebook for a house visit and input it for each patient from a predetermined terminal, Management required a lot of time and labor.

特に、医療従事者が入院患者などを往診などする場合、往診用のノートに患者の体温、脈拍や様態等を書き込み、それを所定の端末より患者毎に入力することが必要となり、患者情報の管理には多大な時間と労力を要していた。

[0007]

In such a case, it is conceivable to display and input patient information using a portable terminal, or carry a magnetic card or an IC card to a patient, but there is a limit to memory

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capacity, and sufficient patient information It can not be memorized.

かかる場合、携帯用端末を用いて、患者情報の表示及び入力を行うことや、患者に磁気カードやＩＣカードを携帯させることも考えられるが、メモリ容量には限界があり、十分な患者情報を記憶させることはできない。

[0008]

It is also conceivable to store assumed patient information in a fixed disk or the like and take it out to the patient s ward where the patient is located, but its carrying becomes complicated.

また、想定される患者情報を固定ディスクなどに格納して患者のいる病棟部へ持ち出すことも考えられるが、その持ち運びが煩雑となる。

[0009]

Furthermore, since there are a lot of patient information requiring confidentiality, a system for accessing patient information with the above-mentioned terminal or the like, in particular, a system for copying patient information from a host computer to another portable terminal or a magnetic card or the like Confidential management becomes very complicated, the risk of the theft of patient data and the risk of unread information being read to the patient are increased.

さらに、機密性を要求される患者情報も多数存在することから、上述した端末機などで患者情報をアクセスするシステム、特に、患者情報をホストコンピュータより他の携帯端末や磁気カードなどにコピーするシステムでは、機密管理が大変煩雑となり、患者データの盗難の危険性や患者に未告知の情報が読み出される等の危険性が高まる。

[0010]

On the other hand, in the conventional system, since only patient information collected in the past is stored and managed, it is difficult to grasp the behavior state of the patient and to grasp the waiting state of each inspection item in group checkup etc. met.

一方、従来のシステムでは、過去に収集された患者情報を記憶し管理するのみであるから、患者の行動状態を把握することや、集団検診などにおいて各検査項目の待ち状態を把握することは困難であった。

[0011]

The present invention has been made to solve the above problems, and it is an object of the present invention to provide a medical support system capable of promptly managing medical

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information for each patient and capable of grasping the behavior state of a patient .

本発明は、上記課題を解決するために創案されたもので、患者毎の医療情報の管理を迅速になし得ると共に、患者の行動状態などの把握が可能な医療支援システムの提供を目的とする。

[0012]

In order to achieve the above object, a medical support system according to the present invention comprises a patient ID transmitting means for carrying a patient to a patient and sending recognition information of the patient, and data transmission and reception A terminal unit having a transmitting and receiving unit, a display unit for displaying patient information received from the transmitting and receiving unit, and a reading unit for reading the recognition information, a terminal unit having a patient information memory for storing the recognition information and patient information corresponding thereto, And a host computer that reads patient information corresponding to the recognition information transmitted from the transmitting and receiving unit of the terminal unit from the patient information storage unit and transmits the patient information to the transmitting and receiving unit of the terminal unit .

【課題を解決するための手段】上記目的を達成するために、本発明にかかる医療支援システムは、患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、データの送受信を行う送受信部と、この送受信部より受信される患者情報を表示する表示部と、前記認識情報を読みとる読取部と、を有する端末手段と、前記認識情報とそれに対応する患者情報を記憶する患者情報記憶手段と、前記端末手段の送受信部から送信される前記認識情報に対応する患者情報を前記患者情報記憶手段から読み出し、前記端末手段の送受信部に送信するホストコンピュータと、を備えたことを特徴とする。

[0013]

In addition, the present invention provides medical care worker ID transmitting means for carrying medical care workers and transmitting recognition information of the medical staff, transmitting and receiving means for transmitting and receiving data, medical information received from the transmitting and receiving means A terminal unit having a display unit for displaying the identification information and a reading unit for reading the recognition information, an access right storage unit for storing a relationship between the recognition information and the corresponding access right, medical information according to the access right A medical information storage unit that stores medical information corresponding to the access right from the access right storage unit based on the recognition information transmitted from the transmission and reception unit of the terminal unit, And a host computer that reads the medical information from the medical information storage unit and transmits it to the transmitting and receiving unit of the terminal unit.

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また、本発明は、医療従事者に携帯させると共に当該医療従事者の認識情報を発信する医療従事者ＩＤ発信手段と、データの送受信を行う送受信部と、この送受信部から受信される医療情報を表示する表示部と、前記認識情報を読みとる読取部と、を有する端末手段と、前記認識情報とそれに対応するアクセス権との関係を記憶するアクセス権記憶手段と、前記アクセス権に応じた医療情報を記憶する医療情報記憶手段と、前記端末手段の送受信部から送信される前記認識情報に基づいて前記アクセス権記憶手段より対応するアクセス権を認識し、当該アクセス権の範囲内で医療情報を前記医療情報記憶手段から読み出し、前記端末手段の送受信部に送信するホストコンピュータと、を備えたことを特徴とする。

[0014]

The terminal unit is a portable terminal carried by a medical staff member, and when the ID of the medical staff member is not read from the reading unit, the medical information displayed on the display unit is temporarily erased As shown in FIG.

前記端末手段は、医療従事者が携帯する携帯用端末であって、前記読取部から医療従事者のＩＤが読みとられていないとき、前記表示部に表示されている医療情報を一時的に消去することを特徴とする。

[0015]

In addition, the present invention provides a medical examination apparatus including a patient ID transmission means for carrying the patient to a patient and transmitting recognition information of the patient, an input section for inputting patient information, a reading section for reading the recognition information, A patient information storage unit having a storage area for storing the recognition information and patient information corresponding to the recognition information; and a recognition unit that analyzes the recognition information transmitted from the transmission unit of the terminal unit And a host computer which receives the patient information and writes the received patient information in a storage area of the patient information storage unit corresponding to the received recognition information.

また、本発明は、患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、患者情報を入力する入力部と、前記認識情報を読みとる読取部と、読みとった認識情報及び入力した患者情報を送信する送信部と、を有する端末手段と、前記認識情報とそれに対応する患者情報を記憶する記憶領域を有する患者情報記憶手段と、前記端末手段の送信部から送信される前記認識情報及び患者情報を受信し、受信した認識情報に対応する前記患者情報記憶手段の記憶領域に当該受信した患者情報を書き込むホストコンピュータとを備えたことを特徴とする。

[0016]

Furthermore, the present invention provides a medical personnel ID transmitting means for

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carrying medical information to medical staff and transmitting recognition information of the medical staff, an inputting section for inputting medical information, a reading section for reading the recognition information, A terminal unit having a recognition unit for recognizing the medical information stored in the storage unit and transmitting the recognition information and the inputted medical information, an access right storage unit for storing a relationship between the recognition information and an access right corresponding thereto, a medical information storage Means for receiving the recognition information and the medical information transmitted from the transmitting section of the terminal means, recognizing the corresponding access right from the access right storing means on the basis of the received recognition information, And a host computer that writes the transmitted medical information in the medical information storage unit.

さらに、本発明は、医療従事者に携帯させると共に当該医療従事者の認識情報を発信する医療従事者ＩＤ発信手段と、医療情報を入力する入力部と、前記認識情報を読みとる読取部と、読みとった認識情報及び入力した医療情報を送信する送信部と、を有する端末手段と、前記認識情報とそれに対応するアクセス権との関係を記憶するアクセス権記憶手段と、医療情報を記憶する医療情報記憶手段と、前記端末手段の送信部から送信される認識情報と医療情報を受信し、受信した認識情報にに基づき前記アクセス権記憶手段より対応するアクセス権を認識し、当該アクセス権の範囲内で前記送信された医療情報を前記医療情報記憶手段に書き込むホストコンピュータと、を備えたことを特徴とする。

[0017]

The terminal means is a portable terminal carried by a medical staff member and temporarily prohibits entry of medical information from the input unit when an ID of a medical staff member is not read from the reading unit 6. The medical support system according to claim 5, wherein:

前記端末手段は、医療従事者が携帯する携帯用端末であって、前記読取部から医療従事者のＩＤが読みとられていないとき、前記入力部からの医療情報の入力を一時的に禁止することを特徴とする請求項５記載の医療支援システム。

[0018]

Meanwhile, the present invention provides a medical examination apparatus comprising a patient ID transmission means for carrying the patient to a patient and transmitting recognition information of the patient, an input section for inputting examination data in the medical examination apparatus, a reading section for reading the recognition information, An examination data storage unit having a storage area for storing the recognition information and inspection data corresponding to the recognition information, and a storage unit for storing identification information transmitted from the transmission unit of the terminal unit And a host computer which receives the inspection data and writes the received inspection data in a storage

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area of the inspection data storage unit corresponding to the received recognition information.

一方、本発明は、患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、医療検査装置における検査データを入力する入力部と、前記認識情報を読みとる読取部と、前記認識情報及び前記検査データを送信する送信部とを有する端末手段と、前記認識情報とそれに対応する検査データを記憶する記憶領域を有する検査データ記憶手段と、前記端末手段の送信部から送信される認識情報及び検査データを受信し、受信した認識情報に対応する前記検査データ記憶手段の記憶領域に当該受信した検査データを書き込むホストコンピュータと、を備えたことを特徴とする。

[0019]

Further, the present invention provides a patient identification system including a patient ID transmission unit that carries the information to a patient and transmits identification information of the patient, a reading unit that reads the recognition information, and a transmission unit that transmits the identification information, And a host computer which receives the recognition information transmitted from the plurality of terminal means and identifies the transmitting terminal means of the recognition information, characterized in that the terminal means Is a portable terminal carried by a medical personnel, and the transmitting / receiving unit or the transmitting unit performs transmission / reception with the host computer by wireless communication.

また、本発明は、患者に携帯させると共に当該患者の認識情報を発信する患者ＩＤ発信手段と、前記認識情報を読みとる読取部と、前記識別情報を送信する送信部とを有し、病院内各所に取り付けられる複数の端末手段と、前記複数の端末手段から送信される前記認識情報を受信すると共に当該認識情報の発信端末手段を識別するホストコンピュータと、を備えたことを特徴とする前記端末手段は、医療従事者が携帯する携帯用端末であって、前記送受信部或いは送信部は、ホストコンピュータとの送受信を無線通信で行うことを特徴とする。

[0020]

In addition, the patient ID transmission means or the medical personnel ID transmission means is composed of an ID tag.

また、前記患者ＩＤ発信手段または前記医療従事者ＩＤ発信手段は、ＩＤタグにより構成されていることを特徴とする。

[0021]

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS An embodiment of the present invention will be described with reference to FIGS. 1 to 18. FIG. 1 is a schematic diagram of a

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medical support system as an embodiment of the present invention, which is largely constituted by a portable terminal 1, a reference station 2, a host computer 3, an ID tag 11 for a medical staff member, and a patient ID tag 22 .

【発明の実施の形態】本発明の一実施例を図１～図１８に基づいて説明する。図１は、本発明の一実施例である医療支援システムの概略図であり、大きく携帯用端末１、基準局２、ホストコンピュータ３、医療従事者用ＩＤタグ１１、及び患者用ＩＤタグ２２により構成される。

[0022]

The portable terminal 1 is carried by the medical staff N, reads the patient ID, exchanges with the host computer 3 via the reference station 2, inputs and displays patient information, and the like.

携帯用端末１は、医療従事者Ｎに携帯され、患者ＩＤの読み込み、基準局２を介したホストコンピュータ３との送受信、及び患者情報の入力及び表示などを行う。

[0023]

2 shows an external view of the portable terminal 1. The ID reader 1c reads an ID signal of a medical staff or a patient transmitted from the medical worker s ID tag 11 or the patient ID tag 22. The PHS 1a acquires, The display means 1b composed of a liquid crystal display and the like displays patient information and the like without transmitting and receiving patient information and ID signal with the reference station 2. The input means 1 d is composed of a panel-like input section arranged on the display section 1 b and an input pen, and is configured so that characters and the like can be directly input on the display section 1 b with this input pen.

図２は、携帯用端末１の外観図を示し、ＩＤリーダ１ｃは、医療従事者用ＩＤタグ１１或いは患者用ＩＤタグ２２から発信される医療従事者或いは患者のＩＤ信号を読み込み、ＰＨＳ１ａは、基準局２との間で患者情報やＩＤ信号の送受信い、液晶ディスプレイ等で構成される表示手段１ｂは患者情報などを表示する。入力手段１ｄは表示手段１ｂ上に配設されたパネル状入力部と入力ペンで構成され、この入力ペンで直接文字などを表示手段１ｂ上で入力できるよう構成されている。

[0024]

FIG. 3 is a block diagram of the portable terminal 1, which operates by turning on the power supply 1 e, and all of the PHS 1 a to the input means 1 d described above operate on the basis of instructions from the control means 1 z. In addition, when the medical information and the like are displayed on the display means 1 b, the control means 1 z erases the temporarily displayed medical information when the ID read one by one from the ID reader 1 c is not that of the

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medical staff As well.

図３は携帯用端末１のブロック図であり、電源１ｅ投入により動作し、上述したＰＨＳ１ａ～入力手段１ｄはすべて制御手段１ｚの指示の基に動作する。また、制御手段１ｚは、表示手段１ｂに医療情報などが表示されているとき、ＩＤリーダ１ｃから逐一読み込まれるＩＤが医療従事者のものでない場合に、一時的に表示されている医療情報を消去する機能も備えている。

[0025]

In FIG. 1, the medical worker s ID tag 11 is attached to the medical staff N, transmits an ID signal indicating recognition information of the medical staff N in a range of about 1 m radius with a small electric power, and transmits the ID signal to the portable terminal 1 Is approaching about 20 to 40 cm, its ID signal is read by the ID reader 1 c.

図１において、医療従事者用ＩＤタグ１１は、医療従事者Ｎに取り付けられ、小電力で半径１ｍ程度の範囲に医療従事者Ｎの認識情報を示すＩＤ信号を発信し、携帯用端末１との距離が２０～４０ｃｍ程度に近づくとＩＤリーダ１ｃによりそのＩＤ信号が読みとられる。

[0026]

Like the medical worker s ID tag 11, the patient ID tag 22 transmits an ID signal of the patient P in a range of about 1 m radius with a small electric power, and the distance to the portable terminal 1 is 20 When it approaches about 40 cm, its ID signal is read by the ID reader 1 c.

患者用ＩＤタグ２２は、患者Ｐに取り付けられ、医療従事者用ＩＤタグ１１と同様、小電力で半径１ｍ程度の範囲に患者ＰのＩＤ信号を発信し、携帯用端末１との距離が２０～４０ｃｍ程度に近づくとＩＤリーダ１ｃによりそのＩＤ信号が読みとられる。

[0027]

At this time, the ID to be read is read from the side closer to the ID reader 1 c.

なお、このとき、読み込まれるＩＤは、ＩＤリーダ１ｃに近い方から読み込まれる。

[0028]

The ID signal, patient information and the like transmitted from the transceiver 1 a of the portable terminal 1 are detected as reference points arranged at various places in the hospital as relay points and are transmitted to the host computer 3 via the premise line . The host computer 3 is disposed in the hospital and collectively manages medical information in general.

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携帯用端末１の送受信部１ａから送信されたＩＤ信号や患者情報等は病院内の種々の場所に配置された基準局２を中継点として検知され、構内回線を介してホストコンピュータ３に送信される。ホストコンピュータ３は病院内に配設され、医療情報全般を一括管理する。

[0029]
4 is a block diagram of the host computer 3. The transceiver 3a transmits and receives data to and from the PHS 1a of the portable terminal 1 via the reference station 2 of FIG. Data received from the PHS 1 a of the portable terminal 1 or transmitted to the PHS 1 a of the portable terminal 1 is stored in the magnetic disk 3 c or transmitted to the magnetic disk 3 c .

図４は、ホストコンピュータ３のブロック図であり、送受信部３ａは、図１の基準局２を介して携帯用端末１のＰＨＳ１ａとの間でデータの送受信を行う。携帯用端末１のＰＨＳ１ａから受信され、或いは携帯用端末１のＰＨＳ１ａに対して送信するデータは、制御手段３ｚの制御のもと、送受信部３ａを介して、磁気ディスク３ｃに記憶或いは磁気ディスク３ｃから読み出される。

[0030]
The operation unit 3 b has a function for giving an operation instruction and the like to the control unit 3 z, and the display unit 3 d displays the operation state etc. of the system, which are mainly used for maintenance is there.

操作部３ｂは、制御手段３ｚに対して動作指示などを与えるための機能を有し、表示手段３ｄは、システムの動作状態等を表示するが、これらは主にメインテナンス用に使用されるものである。

[0031]
Next, the operation of the present invention will be described with reference to flow charts of FIGS. 5 and 6 which respectively show the operations of the control means 1 z of the portable terminal 1 and the control means 3 z of the host computer 3.

次に、本発明の作用を携帯用端末１の制御手段１ｚ及びホストコンピュータ３の制御手段３ｚの動作をそれぞれ示す図５及び図６のフローチャートに沿って説明する。

[0032]
5, first, the medical staff N in FIG. 1 brings the portable terminal 1 close to the self medical worker s ID tag 11 and the patient P s ID tag 22, so that the employee ID and the patient 2 from the ID reader 1 c of FIG. 2 (S 1).

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図５において、まず、図１の医療従事者Ｎは、携帯用端末１を自己の医療従事者用ＩＤタグ１１及び患者Ｐの患者用ＩＤタグ２２に近づけることで、当該従業者用ＩＤ及び患者用ＩＤを図２のＩＤリーダ１ｃより読み込む（Ｓ１）。

[0033]
The control means 1 z judges whether or not both the read IDs are those of the employee ID and the patient ID, and if they do not match, reads the incomplete reading and registers the ID for the employee himself and the patient s Returning to the read standby state of ID (S2, S1).

制御手段１ｚは、読み込まれた両ＩＤが従業者用ＩＤ及び患者用ＩＤのものであるか否かを判断し、適合しない場合は、読み込み未完了として、再度自己の従業者用ＩＤ及び患者用ＩＤの読み込み待機状態に戻る（Ｓ２、Ｓ１）。

[0034]
This prevents access to patient information in the hospital by a person other than the medical staff, for example, a patient or an outside person, and the confidentiality of the patient information is maintained. For example, as shown in FIG. 7, the judgment as to whether both the read IDs are for the employee ID and the patient ID can be performed by using the medical worker s ID tag 11 and the patient ID tag 22 And the format of the ID signal transmitted from the header portion of the ID signal is determined. That is, in FIG. 7, the ID is determined so that the most significant bit of the header part of the medical staff is set to 1 and that of the patient is set to 0, and in the read ID signals, the most significant bit of the header is stored in the portable terminal 1 It is possible to determine by judging whether or not each of the object and the object of 0 are included.

これにより、医療従事者以外の者、例えば患者や外部の者によって病院内の患者情報にアクセスすることが阻止され、患者情報の機密性が保持される。なお、読み込まれた両ＩＤが従業者用ＩＤ及び患者用ＩＤのものであるか否かの判断は、例えば、図７に示されるように、医療従事者用ＩＤタグ１１及び患者用ＩＤタグ２２から発信されるＩＤ信号のフォーマットを設定し、そのヘッダ部分で判断するようにすればよい。すなわち、図７では、医療従事者のヘッダ部最上位ビットを１、患者のそれを０とするようにＩＤを決定し、読み込んだ両ＩＤ信号において、ヘッダの最上位ビットが携帯用端末１のものと０のものがそれぞれ含まれているか否かを判断することで、判別可能となる。

[0035]
In FIG. 5, when reading of the medical staff member ID and the patient ID is completed, these ID signals are transferred from the PHS 1 a to the host computer 3 via the reference station 2 (S 3).

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図５において、医療従事者用ＩＤ及び患者用ＩＤの読み込みが終了すると、それらのＩＤ信号をＰＨＳ１ａから基準局２を介してホストコンピュータ３に転送する（Ｓ３）。

[0036]
In FIG. 6, the host computer 3 receives the employee ID and the patient ID signal transferred from the portable terminal 1 (S 11), and determines whether the employee ID has an access right (S12).

図６において、ホストコンピュータ３は、携帯用端末１より転送された従業者用ＩＤ及び患者用ＩＤ信号を受信し（Ｓ１１）、従業者用ＩＤがアクセス権のあるものか否かを判断する（Ｓ１２）。

[0037]
Here, the judgment of the presence or absence of the access right can be made based on the table shown in FIG. 8 in which the relationship between the rank of the access right given to the employee and the employee ID is stored in the magnetic disk 3 c .

ここで、アクセス権有無の判断は、図８に示された、従業者に与えられているアクセス権のランクとその従業者ＩＤとの関係を磁気ディスク３ｃに記憶したテーブルに基づき行うことが可能となる。

[0038]
For example, the access right indicates a range of rights for accessing medical information given to a medical staff such as a doctor, a nurse, a medical clerk, and the like. For example, a right to access a doctor 1 and an access right 2 , The medical clerk is made to correspond to the rank with the access right 3 so that each medical staff member can read or store the information corresponding to each given access right as shown in FIG. 9 Become.

アクセス権とは、例えば、医師、看護婦、医療事務員など医療従事者に与えられた医療情報をアクセスための権利範囲を示すもので、例えば、医師をアクセス権１、看護婦をアクセス権２、医療事務員をアクセス権３としてそれらのランクを対応づけ、それぞれの医療従事者は、図９に示されるように、それぞれ与えられたアクセス権に応じた情報を読み出し或いは記憶することが可能となる。

[0039]
When it is determined that the transferred medical staff has no access right, the host computer 3 transmits a transfer impossible notice to the portable terminal 1 to notify that it can not be

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accessed (S13).

ホストコンピュータ３は、転送された医療従事者にアクセス権が無いと判断した場合、携帯用端末１に対して転送不可通知を送信して、アクセスできないことを知らせる（Ｓ１３）。

[0040]

In this case, in FIG. 5, the portable terminal 1 receives the transfer disapproval notice as patient information (S4), and returns to the read standby state of the employee ID and the patient ID (S5, S1) with no access right.

かかる場合、図５において、携帯用端末１は、患者情報として転送不可通知を受信し（Ｓ４）、アクセス権なしとして従業者用ＩＤ及び患者用ＩＤの読み込み待機状態に戻る（Ｓ５、Ｓ１）。

[0041]

As a result, even when a person other than a medical staff tries to access patient information by using the medical worker s ID tag 11 and the patient ID tag 22 because the medical staff ID tag 11 is lost or stolen, By prohibiting the access right to the ID, that is, by rewriting the rank of the access right written in the magnetic disk 3 c shown in FIG. 8 to one having no access right, for example, -1, Can be prevented.

これにより、医療従事者用ＩＤタグ１１が紛失或いは盗難等に遭い、医療従事者以外の者が医療従事者用ＩＤタグ１１及び患者用ＩＤタグ２２を用いて患者情報をアクセスしようとしても、事前に当該ＩＤに対するアクセス権を禁止し、すなわち、磁気ディスク３ｃに書き込まれた図８に示すアクセス権のランクをアクセス権のないもの、例えば－１等に書き換えておくことで、他者による医療情報のアクセスを阻止できる。

[0042]

In FIG. 6, when there is an access right to the transferred employee ID, the patient information stored in the magnetic disk 3 c within the range of the access right is read and transferred to the portable terminal 1 (S 12, S 14) .

図６において、転送された従業員ＩＤにアクセス権がある場合、そのアクセス権の範囲内で磁気ディスク３ｃに記憶された患者情報を読み込み、携帯用端末１に対して転送する（Ｓ１２、Ｓ１４）。

[0043]

For example, as shown in FIG. 9, the patient information stored in the magnetic disk 3 c is stored

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separately for each access right on a patient-by-patient basis. For example, the doctor of the access right 1 accesses the access rights 1 to 3 It is possible to read all information, and if it is a medical clerk of access right 3, only information of access right 3 can be read.

磁気ディスク３ｃに記憶された患者情報は、例えば図９に示されるように、患者単位でアクセス権毎に分けて記憶されており、例えばアクセス権１の医師は、アクセス権１～アクセス権３の全情報への読み込み可能であり、アクセス権３の医療事務員であれば、アクセス権３の情報のみ読み込み可能となる。

[0044]

5, the portable terminal 1 receives the patient information and the access right transferred from the host computer 3 (S4), judges that the access right is present (S5), displays the display means 1b The patient information transferred to S6 is displayed (S6).

図５において、携帯用端末１は、ホストコンピュータ３より転送された患者情報及びアクセス権を受信し（Ｓ４）、アクセス権が存在することを判断したうえで（Ｓ５）、図２の表示手段１ｂに転送された患者情報を表示する（Ｓ６）。

[0045]

At this time, the ID reader 1 c of the portable terminal 1 is always in the ID read state, and the control means 1 z of the portable terminal 1 only displays the patient information on the display means 1 b. When the read ID is other than the medical staff member, the patient information is temporarily erased on the display means 1 b.

このとき、携帯用端末１のＩＤリーダ１ｃは、常にＩＤ読み込み状態にあり、携帯用端末１の制御手段１ｚは、逐一読み込んだＩＤが医療従事者のものである場合のみ、患者情報を表示手段１ｂに表示し、読み込んだＩＤが医療従事者以外のものとなった場合は、一時的に患者情報を表示手段１ｂ上で消去する。

[0046]

10 and 11 show display examples of medical information for each access right in the display means 1b of FIG. 2. FIG. 10a shows a case where a doctor having an access right 1 requests access right 2 And FIG. 1 b shows an example in the case where a medical clerk having access right 3 accesses medical information, respectively.

ここで、図１０及び図１１は、図２の表示手段１ｂにおけるアクセス権毎の医療情報の表示例を示しており、図１０ａは、アクセス権１を有する医師が、図１ａは、アクセス権２を有する看護婦が、さらに、図１ｂは、アクセス権３を有する医療事務員が、それぞれ医療情報をアクセスし

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た場合の例を示している。

[0047]
In FIG. 10 a, all the data are displayed, whereas in FIG. 11 a, the finding portion B belonging to the access right 1 is not displayed, in FIG. 11 b, the finding portion B belonging to the access right 1, and The part A, the examination data, and the disease name belonging to the access right 2 are not displayed.

図１０ａでは、すべてのデータが表示されているのに対して、図１１ａでは、アクセス権１に属する所見Ｂ部が表示されておらず、図１１ｂでは、アクセス権１に属する所見Ｂ部、及びアクセス権２に属する所見Ａ部、検査データ、病名が表示されていないことがわかる。

[0048]
In FIG. 5, after displaying the patient information, the control means 1 z enters an input standby state for writing information (S 7).

図５において、制御手段１ｚは、患者情報表示後、書き込み情報の入力待機状態に入る（Ｓ７）。

[0049]
At this time, the ID reader 1 c of the portable terminal 1 is always in the ID reading state, and the control means 1 z of the portable terminal 1 only displays the patient information on the display means 1 b. When the read ID is other than the medical staff member, the patient information is temporarily erased on the display means 1 b and the write enabled state is canceled.

このとき、携帯用端末１のＩＤリーダ１ｃは、常にＩＤ読み込み状態にあり、携帯用端末１の制御手段１ｚは、逐一読み込んだＩＤが医療従事者のものである場合のみ、患者情報を表示手段１ｂに表示し、読み込んだＩＤが医療従事者以外のものとなった場合は、一時的に患者情報を表示手段１ｂ上で消去し、書き込み可能状態を解除する。

[0050]
As a result, the medical information is displayed or written only when the portable terminal 1 is in the hands of the medical staff, so medical information by unspecified persons other than medical staff such as patients, confidential information such as notifying information Can be reliably prevented from being viewed and written.

これにより、携帯用端末１が医療従事者の手元にあるときのみ、医療情報が表示され或いは書き

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込まれるため、患者など医療従事者以外の不特定の者による医療情報、例えば告知情報などの機密情報の閲覧及び書き込みを確実に阻止することができる。

[0051]

In this state, for example, when the doctor inputs "8/10 Δ Δ" on the display screen of the patient diagnosis schedule as shown in FIG. 10 b by the input pen or the like of the input means 1 d of FIG. 2 on the display screen of FIG. The control means 1z displays the written information at the writing position of the display means 1b in a mode different from the normal state such as blink display and transfers the input information from the PHS 1a to the host computer 3 (S7) , After confirming that the written information is not an end instruction (S 8), it enters a standby state for receiving transfer information from the host computer 3 (S 9).

この状態で、例えば、医師が、図１０ａの表示画面において、患者の診断スケジュールの表示部に図２の入力手段１ｄの入力ペンなどによって図１０ｂに示されるように、「８／１０△△」なる診断予定を書き込んだとすると、制御手段１ｚは、書き込まれた情報をブリンク表示等通常と異なる態様で表示手段１ｂの書き込み位置に表示すると共にＰＨＳ１ａからの入力情報をホストコンピュータ３に転送し（Ｓ７）、書き込まれた情報が終了指示でないことを確認した後（Ｓ８）、ホストコンピュータ３からの転送情報の受信待機状態に入る（Ｓ９）。

[0052]

In FIG. 6, the control means 3 z receives the transferred write information (S 15), confirms that it is not the end notification (S 16), then writes the patient information entered within the range of the access right to the figure 9 to the table stored in the magnetic disk 3 c shown in FIG. 9 and transfers the information indicating that it has been written to the portable terminal 1 (S 17), and enters the reception standby state for writing information again (S 15).

図６において、制御手段３ｚは、転送された書き込み情報を受信し（Ｓ１５）、それが終了通知でないことを確認した後（Ｓ１６）、アクセス権の範囲内で入力された患者情報の書き込みを図９に示される磁気ディスク３ｃに記憶されたテーブルに対して行うと共に書き込んだことを示す情報を携帯用端末１に転送し（Ｓ１７）、再び書き込み情報の受信待機状態に入る（Ｓ１５）。

[0053]

In FIG. 5, after receiving the transferred write information (S 9), when the information indicating that the information has been written has been transferred, the control means 1 z corrects the information written in S 7 to the normal display mode.

図５において、制御手段１ｚは、転送された書き込み情報を受信した後（Ｓ９）、書き込んだことを示す情報が転送された場合には、Ｓ７で書き込んだ情報を通常の表示態様に修正する。

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[0054]

Here, the access right for writing and the access right for reading do not necessarily coincide, and in the case shown in FIG. 10, the rank of the access right for reading is 3 in the diagnostic schedule information , But the rank of the access right for writing is 1. Therefore, as described above, if the doctor having the rank 1 of the access right inputs the schedule information, if the nurse or the medical clerk who can correctly write but the access right is rank 2 or 3 performs the same operation , The writing is blocked by the control means 3 z in S 7 of FIG. 6, and information indicating that writing is not possible is transferred to the portable terminal 1.

なお、ここで、書き込みのためのアクセス権と読み込みのためのアクセス権は必ずしも一致するものではなく、図１０に示した場合、診断スケジュール情報は、読み込みのためのアクセス権のランクは３であるが、書き込みのためのアクセス権のランクは１となる。 このため、上述したように、アクセス権がランク１である医師がスケジュール情報を入力した場合、正しく書き込めるが、アクセス権がランク２或いは３の看護婦或いは医療事務員が同様の動作を行ったとすると、図６のＳ７で、制御手段３ｚによってその書き込みが阻止され、書き込み不可を示す情報が携帯用端末１に転送される。

[0055]

The access right to the write information in the host computer 3 can be recognized, for example, by specifying in advance the access right in the case of writing for each display column of the display means 1 b of the portable terminal 1 shown in FIGS. 10 and 11, The control means 1z may recognize the access right from the part where the information is written and add the access right in the predetermined format to the write information and transmit it to the host computer 3. FIG.

また、ホストコンピュータ３における書き込み情報に対するアクセス権の認識は、例えば、図１０及び図１１で示した携帯用端末１の表示手段１ｂの表示欄毎に書き込み場合のアクセス権を予め特定しておき、制御手段１ｚが情報が書き込まれた部位からアクセス権を認識して、書き込み情報に当該アクセス権を所定フォーマットで付加してホストコンピュータ３に送信するようにすればよい。

[0056]

In this case, the control means 1z deletes the information written in S7 in S10 in FIG. 5, corrects it to the state before writing and enters the write standby state again (S7). Also in this case, the ID reader 1 c of the portable terminal 1 is always in the ID read state, and the control means 1 z of the portable terminal 1 displays the patient information on the display means only when the read ID is from the medical staff 1 b. When the read ID is other than the medical staff member,

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the patient information is temporarily erased on the display means 1 b and the write enabled state is canceled.

かかる場合、制御手段１ｚは、図５において、Ｓ７で書き込んだ情報をＳ１０で消去し、書き込み前の状態に修正して再び書き込み待機状態に入ることとなる（Ｓ７）。この場合も、携帯用端末１のＩＤリーダ１ｃは、常にＩＤ読み込み状態にあり、携帯用端末１の制御手段１ｚは、読み込んだＩＤが医療従事者のものである場合のみ、患者情報を表示手段１ｂに表示し、読み込んだＩＤが医療従事者以外のものとなった場合は、一時的に患者情報を表示手段１ｂ上で消去し、書き込み可能状態を解除する。

[0057]

Here, in the case of terminating the input operation, by pressing an end instruction unit (not shown) of the display unit 1 b using the input pen of the input unit 1 d in FIG. 2, the end instruction signal is transferred to the host computer 3 (S 7), the control means 1 z shifts to the ID read standby state of the employee and the patient (S 8, S 1).

ここで、入力動作を終了する場合は、図２の入力手段１ｄの入力ペンを用いて表示手段１ｂの終了指示部（不図示）を押圧などすることで、終了指示信号がホストコンピュータ３へ転送され（Ｓ７）、制御手段１ｚは、従業員及び患者のＩＤ読み込み待機状態に移行する（Ｓ８、Ｓ１）。

[0058]

On the other hand, in FIG. 6, the control means 3z also recognizes that the transfer information is the end notification (S15, S16), and enters the reception standby state of employee and patient ID (S11).

一方、図６において、制御手段３ｚも転送情報が終了通知であることを認識して（Ｓ１５、Ｓ１６）、従業員及び患者のＩＤの受信待機状態に入る（Ｓ１１）。

[0059]

By repeating the above operation, the medical staff N in FIG. 1 can easily display the patient information corresponding to the access right of himself / herself in the portable terminal 1, and also can diagnose the patient P It is possible to store information, examination information, and the like in the magnetic disk 3 c of the host computer 3 which is managed within the range of its own access right.

以上の動作を繰り返し行うことで、図１の医療従事者Ｎは、携帯用端末１に自己のアクセス権に応じた患者情報を容易に表示させることができると共に、患者Ｐに対して行った診断情報や検査

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情報などを自己のアクセス権の範囲内で一括管理されたホストコンピュータ３の磁気ディスク３ｃに対して記憶させることができる。

[0060]
FIG. 12 shows another embodiment of the present invention, in which an arrangement terminal means 10 for reading an ID signal from a patient ID tag 22 attached to a patient P and transferring it to the host computer 3 is arranged in the medical examination apparatus M It is installed.

図１２は、本発明の他の実施例を示しており、患者Ｐに取り付けた患者用ＩＤタグ２２からのＩＤ信号を読み取りホストコンピュータ３に転送する配設端末手段１０が医療検査装置Mに配設されている。

[0061]
FIG. 13 is a block diagram of the terminal means 10, and the control means 10 z controls reading of inspection data from the ID reader 1 c and the medical examination apparatus M, processes the information into the format shown in FIG. 14 To the host computer 3 from the transmitting / receiving means 1 f.

図１３は、端末手段１０のブロック図であり、制御手段１０ｚは、ＩＤリーダ１ｃ及び医療検査装置Mからの検査データの読み込み制御を行うと共に、これらの情報を図１４に示すフォーマットに加工して送受信手段１ｆよりホストコンピュータ３に送信する。

[0062]
The medical examination apparatus M is a diagnostic apparatus such as an MRI, an X-ray CT apparatus, an ultrasonic diagnostic apparatus or the like, and is configured to output the diagnostic information obtained here as digital data to the control section 10 z.

なお、医療検査装置Mは、ＭＲＩ、Ｘ線ＣＴ装置、超音波診断装置等の診断装置であり、ここで得られた診断情報をディジタルデータとして制御手段１０ｚに出力するよう構成されている。

[0063]
FIG. 15 is a flowchart showing the operation of the control means 10 z. In the figure, the control means 10 z first receives the patient ID, but as the patient approaches the terminal means 10 by a predetermined distance, the ID signal transmitted from the patient ID tag 22 attached to the patient Through the ID reader 1 c (S 21). Since a patient who approaches the diagnostic apparatus is usually a person to be examined, input of such an ID is input just before the patient

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performs an examination.

図１５は、制御手段１０ｚの動作を示したフローチャートである。 同図において、制御手段１０ｚは、まず、患者ＩＤの受信状態となるが、患者が端末手段１０に対して所定距離に近づくことで、患者に取り付けた患者用ＩＤタグ２２から発信されるＩＤ信号をＩＤリーダ１ｃを介して読みとる（Ｓ２１）。 なお、通常、診断装置に近づく患者は、検査を受ける者であることから、かかるＩＤの入力は、その患者が検査を行う直前に入力されることとなる。

[0064]

When the inspection is actually carried out, the inspection data is read from the medical examination apparatus M (S23) and transferred to the host computer 3 in a state processed into the format shown in FIG. 14 (S24).

そして、実際に検査が行われると、その検査データを医療検査装置Mより読み込み（Ｓ２３）、図１４に示されるフォーマットに加工した状態でホストコンピュータ３に転送する（Ｓ２４）。

[0065]

With the above operation, the examination data of the patient is automatically stored in the host computer 3 as a database, and it becomes extremely easy to manage patient information which is increased one by one.

以上の動作により、患者の検査データがホストコンピュータ３に自動的にデータベースとして蓄積させることとなり、逐一増大する患者情報の管理が極めて容易となる。

[0066]

FIG. 16 shows an embodiment of a system for grasping the behavior state of a patient P in a hospital. The reading terminals 10 a to 10 e are arranged at predetermined intervals on the wall surface partitioning the examination rooms 4 a and 4 b in the hospital It is installed. The reading terminals 10 a to 10 e have the functions of the PHS 1 a and the ID reader 1 c of the portable terminal 1 shown in FIG. 2, and the ID signals transmitted from the patient ID tag 22 carried by the patient P existing in the vicinity And transfers it to the host computer 3 via the reference station 2 existing in the vicinity of the reading terminals 10a to 10e.

図１６は、病院内での患者Ｐの行動状態を把握するシステムの実施例を示しており、病院内での検査室４ａ、４ｂを区画する壁面に読取端末１０ａ～１０ｅが所定間隔毎に配設されている。 読取端末１０ａ～１０ｅは、図２で示した携帯用端末１のＰＨＳ１ａとＩＤリーダ１ｃの機能を備えており、それぞれ近傍に存在する患者Ｐに携帯された患者用ＩＤタグ２２から発信するＩＤ信号を読みとり、読取端末１０ａ～１０ｅの近傍に存在する基準局２’を介してホストコンピュー

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タ３’に転送する。

[0067]
By recognizing which reading terminal the received ID signal was read by the host computer 3 , it becomes possible for the host computer 3 to recognize the existence position of each patient P in the hospital.

ホストコンピュータ３’は、受信したＩＤ信号がどの読取端末で読みとられたものかを把握することで各患者Ｐの病院内での存在位置を認識することが可能となる。

[0068]
Various usage purposes exist in the existence position information of each recognized patient P in the hospital. For example, in the case of mass screening or the like performing each examination item, display means such as a CRT is installed at various places in the hospital, and as shown in FIG. 17, waiting for the patient P for each examination item By displaying the matrix, each patient P can receive each examination efficiently.

認識された各患者Ｐの病院内での存在位置情報には、種々の利用用途が存在する。例えば、各検査項目イ～チを行う集団検診等の場合、病院内の各所にＣＲＴ等の表示手段を設置し、図１７に示されるように、各検査項目イ～チ毎の患者Ｐの待ち行列を表示することで、各患者Ｐは効率よく各検査を受けることが可能となる。

[0069]
In addition, for example, as shown in FIG. 18, a planning sketch inside the hospital and the position where the patient exists are displayed on the display means of the waiting room of the medical staff such as a nurse center, so that entry and exit management of hospitalized patients and the like, Management of presence or absence of invasion of a patient into an area such as a ward, administration of a patient who is in a dangerous state without moving for more than a certain period of time, and the like.

又、例えば、ナースセンタなど医療従事者の待機室の表示手段に図１８に示されるように病院内の平面見取図と患者の存在位置を示すことで、入院患者等の入退室管理、感染症の病棟部などの領域への患者の侵入有無の管理、一定時間以上動かず危険な状態にある患者の管理等を行うことができる。

[0070]
In such a case, as shown in FIG. 18, by monitoring whether or not each patient has moved to the

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host computer 3 and monitoring the intrusion state of the patient in the danger zone, as shown in FIG. 18, it is possible to move to a patient or a danger zone When there is an intruding patient, a warning message can be displayed, or it can be displayed in another display mode.

かかる場合、ホストコンピュータ３’に各患者が動いたか否かや、危険区域への患者の侵入状態をモニターさせることで、図１８に示されるように、一定時間以上動いていない患者や危険区域に侵入した患者がいる場合に、警告メッセージを表示させたり、別の表示態様で表示することも可能である。

[0071]

According to the present invention, when diagnosing a patient, it is possible to quickly and accurately recognize the patient, and it is possible to rapidly obtain diagnostic information and the like of the unified patient .

【発明の効果】本発明によれば、患者の診断を行う際、その患者認識を迅速かつ正確に行うことが可能になると共に、一元管理された患者の診断情報等を迅速に得ることができる。

[0072]

In addition, when obtaining medical information such as diagnostic information of a patient, there is no need to copy it to another medium, so the possibility of leakage of medical information to the outside is reduced.

また、患者の診断情報等の医療情報を得る場合、別媒体にコピーすることがないため、医療情報が外部に漏れる可能性が低くなる。

[0073]

Furthermore, the rank of the access right is set for each of the medical staff, and each medical staff can write and read medical information only within the range of rank given to him and thus the confidentiality of the medical information is further enhanced .

さらに、医療従事者にそれぞれアクセス権のランクを設定し、各医療従事者は自己に与えられたランクの範囲内でのみ医療情報の書き込み及び読み込みをなし得るため、医療情報の機密性がより高まる。

[0074]

In addition, since medical information is displayed or written only when the portable terminal is located in the vicinity of the medical staff, medical information such as patients, unspecified

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persons other than medical staff, for example, browsing confidential information such as notice information And writing can be reliably prevented.

また、携帯用端末が医療従事者の手元にあるときのみ、医療情報が表示され或いは書き込まれるため、患者など医療従事者以外の不特定の者による医療情報、例えば告知情報などの機密情報の閲覧及び書き込みを確実に阻止することができる。

[0075]

On the other hand, when a patient undergoes an examination or the like, the examination information and the patient s recognition information are automatically created in a database, so that medical information can be managed very quickly.

一方、患者が検査などを受けた場合、その検査情報と患者の認識情報が自動的にデータベース化されるため、医療情報の管理を極めて迅速になし得る。

[0076]

In addition, it is possible to grasp the state of behavior of a patient in a hospital which was impossible in the past in real time.

また、従来不可能であった病院内での患者の行動状態の把握をリアルタイムで行うことが可能となる。

[0077]

Brief Description of the Drawings

図面の簡単な説明

[0078]

BRIEF DESCRIPTION OF THE DRAWINGS FIG. 1 is a schematic diagram showing an example of a medical support system according to the present invention.

図1本発明にかかる医療支援システムの一例を示す概略図である。

[0079]

FIG. 2 is an external view of a portable information terminal according to the present invention.

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図２本発明にかかる携帯用情報端末の外観図である。

[0080]
FIG. 3 is a block diagram of a portable information terminal according to the present invention.

図３本発明にかかる携帯用情報端末のブロック図である。

[0081]
FIG. 4 is a block diagram of a host computer according to the present invention.

図４本発明にかかるホストコンピュータのブロック図である。

[0082]
FIG. 5 is a flowchart showing the operation of the portable information terminal according to the present invention.

図５本発明にかかる携帯用情報端末の動作を示すフローチャートである。

[0083]
FIG. 6 is a flowchart showing the operation of the host computer according to the present invention.

図６本発明にかかるホストコンピュータの動作を示すフローチャートである。

[0084]
FIG. 7 is a diagram showing a format of an ID number given to a doctor.

図７医に付与されるＩＤ番号のフォーマットを示す図である。

[0085]
FIG. 8 is a correspondence table between medical personnel and the rank of access rights granted.

図８医療従事者と付与されたアクセス権のランクとの対応表である。

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[0086]
FIG. 9 shows patient information for each rank of access right to be stored for each patient.

図９患者毎に記憶させるアクセス権のランク毎の患者情報を示す図である。

[0087]
FIG. 10 is a diagram showing a display example of patient information in a portable information terminal according to the present invention.

図１０本発明にかかる携帯用情報端末における患者情報の表示例を示す図である。

[0088]
FIG. 11 is a diagram showing a display example of patient information in the portable information terminal according to the present invention.

図１１本発明にかかる携帯用情報端末における患者情報の表示例を示す図である。

[0089]
FIG. 12 is a diagram showing an embodiment in the case where an information terminal is attached to a medical examination apparatus.

図１２医療検査装置に情報端末を取り付けた場合の実施例を示す図である。

[0090]
FIG. 13 is a block diagram of an information terminal attached to a medical examination apparatus.

図１３医療検査装置に取り付けた情報端末のブロック図である。

[0091]
FIG. 14 is a diagram showing a format of information transferred from an information terminal attached to a medical examination apparatus to a host computer.

図１４医療検査装置に取り付けた情報端末からホストコンピュータへ転送される情報のフォーマットを示す図である。

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[0092]
15 is a flowchart showing the operation of the information terminal attached to the medical examination apparatus.

図１５医療検査装置に取り付けた情報端末の動作を示すフローチャートである。

[0093]
FIG. 16 is a diagram showing an embodiment in the case where an information terminal is attached to various parts of a hospital.

図１６病院各所に情報端末を取り付けた場合のの実施例を示す図である。

[0094]
FIG. 17 is a display example in the case of showing a queue of each examination item by using the existence position information of a patient at various places of a hospital.

図１７病院各所の患者の存在位置情報を利用して各検査項目の待ち行列を示す場合の表示例である。

[0095]
FIG. 18 is a display example in the case where the presence position of a patient in a hospital is indicated using the position information on the existence of a patient at various locations in a hospital.

図１８病院各所の患者の存在位置情報を利用して病院内の患者の存在位置を示す場合の表示例である。

[0096]
Explanation of sign

符号の説明

[0097]
1 portable terminal 2 reference station 3 host computer 11 ID tag for medical personnel 22 ID

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tag for patient P patient N medical staff

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１ 携帯用端末２ 基準局３ ホストコンピュータ１１ 医療従事者用ＩＤタグ２２ 患者用ＩＤタグ Ｐ 患者Ｎ 医療従事者

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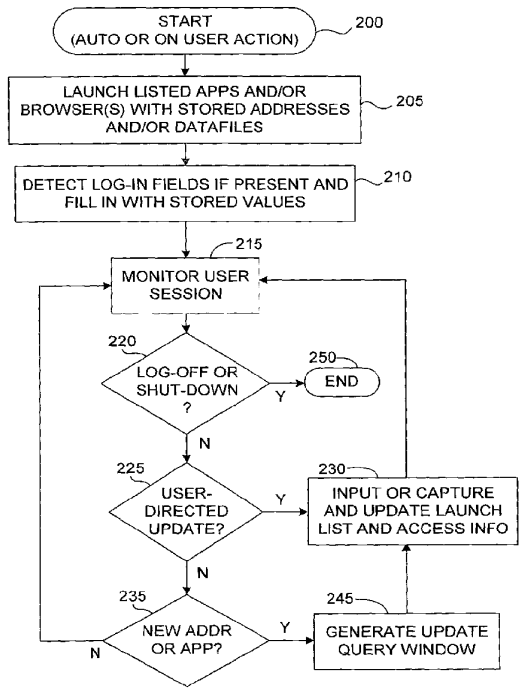
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(54) Title: SYSTEM AND METHOD FOR AUTOMATICALLY LAUNCHING AND ACCESSING NETWORK ADDRESSES AND APPLICATIONS



(57) Abstract: A system and method are provided for automatically launching one or more computer-executable processes (such as network browsers and other applications) simultaneously while requiring minimal input from or actions by the user. The system and method operate securely and privately, and provide the capability to automatically initiate the processes such that they access specific user data files or web addresses associated with each respective process, even when such access requires input of authorization or access information such as passwords.

WO 2004/038563 A2

System and Method for Automatically Launching and Accessing Network Addresses and Applications

PRIORITY

This is an International Patent Application submitted under the Patent Cooperation Treaty (PCT). This International Application claims priority of United States Provisional Patent Application No. 60/421,622, filed 25 October 2002, which is incorporated herein by reference.

TECHNICAL FIELD

The invention relates to the automatic launching of network addresses and applications. More particularly, the invention relates to a system and method for automatically launching one or more application programs and/or one or more network addresses and automatically logging in to websites that require user authentication data prior to gaining access to certain data or web pages.

BACKGROUND OF THE INVENTION

The use of computing devices, the Internet and the World Wide Web has increased dramatically in recent years. As a consequence, users often have accounts with and otherwise access many network addresses, e.g., websites, that require certain user authentication information to be entered prior to gaining access to the website or to certain privileged data. The user authentication information typically includes, for example, user identification, such as a username, a password and optionally an answer to a particular question that the user has previously answered and that other users would be unlikely to know. Users commonly access many different network addresses with many different usernames and passwords, and it can be very difficult to remember which user authentication information is used to access each of the various network addresses.

Additionally, users of computing devices often initiate many applications programs for accessing data files and browsers for accessing many network addresses. Users typically manually initiate applications for each of the potentially many data files they wish to open, as well as manually initiating multiple browsers for each of the network addresses they wish to access. The process of manually

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initiating each file, network address and login can be a very cumbersome and time-consuming process, and often leads to frustration of the user.

Most modern operating systems include some ability to automatically launch selected user-level applications upon start-up, that is, when the operating system has booted, loaded necessary drivers, etc. However, such auto-launching at start-up works only with applications that do not require user action such as input of special access information such as the user's log-in name, passwords, etc.

Currently, several products and services are available that are related to various aspects of the above-mentioned problems. For example, one such service is "Yodlee" that is available at the website http://www.yodlee.com. However, Yodlee requires the user to manually initiate access to the Yodlee website, then select each website the user wants to access one at a time from a list of Yodlee supported sites, as well as requiring the user to enter confidential and personal information and storing that information on remote computer servers separate from the user's computer. Many users object to this as invading their privacy and have serious concerns regarding the sharing of their personal information with third parties for marketing and other purposes. Another such product is "Gator" that is available at http://www.gator.com. However, Gator requires the user to manually process more access and login steps than Yodlee, is subject to many of the same privacy concerns, and also may install certain "spyware," for example, on the user's computing device to track the user's activities and report them to third parties over the network. In the Internet paradigm, spyware is essentially a program that is installed on one's computer to gather information about the user and her activities and relay it to advertisers or other interested third parties without the user's knowledge.

Additionally, U.S. Pat. No. 5,995,965, which is hereby incorporated by reference in its entirety, is related to the above-discussed technology, except that it includes automatic access being initiated by insertion of a smart portable device, such as a smart card.

What is needed is therefore a system and method for automatically initiating access to one or more user-selected network addresses and/or computing application programs simultaneously while requiring minimal input from or actions by the user. This invention provides such a system and method.

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SUMMARY OF THE INVENTION

In one embodiment of the invention, the user need only enter a password or personal identification number (PIN) or biometric information before the automatic launch is commenced. The system and method operate in a secure and private way, and store the user's personal and confidential information only on the user's own computing device, not on a remote server. In addition, the system and method provide the capability to automatically initiate the application programs such that they access specific data files generated by the particular application program. For example, the Microsoft Excel application program can be automatically initiated to open one or more specific Excel data files, and the system and method enable the user to automatically login to one or more personal online accounts (e.g., e-mail accounts, a stock brokerage account) using the same system. Still further, the system and method automatically provide certain network addresses with user authentication data (if necessary), e.g., a username and password, and communicate over a computer network.

One aspect of the invention includes a computerized system for automatically launching one or more application programs comprising a retrieval module for retrieving one or more stored network addresses, an application launch module for launching the one or more application programs to access the one or more stored network addresses, and a login module for automatically logging a user in to a network address by providing user authentication data in the login entry fields without user input. This additionally comprises the system wherein the application launch module further launches one or more application programs to access one or more user data files. This additionally comprises the system wherein the user-selected network address or addresses comprises one or more website Uniform Resource Locators (URLs).

An additional aspect of the invention includes a method of automatically launching one or more application programs comprising retrieving one or more stored network addresses, launching the one or more application programs to access the one or more stored network addresses, and automatically logging a user in to a network address, including providing user authentication data if needed in the login entry fields, without user input. This additionally comprises the method wherein the application launch module further launches one or more application

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programs to access one or more user data files. This additionally comprises the method wherein the user-selected network address(es) comprises one or more website URLs. This additionally comprises the method wherein the method is executed at system startup. This additionally comprises the method further comprising inputting user authentication information of a user before retrieving the one or more stored network addresses.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a system diagram of one example of a network and computer device configuration in which the automatic launch and login system according to the invention may operate.

Figure 2 is a flowchart of the main steps of a preferred operation of the invention.

Figure 3 illustrates a launch control window.

DETAILED DESCRIPTION

In broadest terms, this invention involves computer-executable software modules in a user's computer that automatically start (launch) a set of processes, including entry of any required access data such as user names, passwords, etc., and optionally activate data files related to the processes as needed. The processes may be web browsers, application programs, etc. The invention allows for a large range of variation in the type and number of processes that are automatically and (from the perspective of the user, simultaneously) launched; in effect, any process or group of processes that the user could launch manually using conventional input (such as keyboard or voice entries, mouse or touchpad movements, etc.) can be designated for automatic launch using the invention.

In the preferred embodiment of the invention, the system automatically initiates access to one or more user-selected network addresses and/or computing application programs simultaneously while requiring minimal input from or actions by the user. The system and method operate in a secure and private way: The user's personal and confidential information is preferably stored, not on a remote server, but rather only on the user's own computing device, e.g., a personal computer (PC),

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personal digital assistant (PDA), web-enabled cell phone, set-top box, embedded system, or other wired or wireless computing device.

In addition, the system and method provide the capability to automatically initiate the application program(s) such that they optionally access specific data files generated by the particular application program and optionally provide authentication information to the application program. For example, the Microsoft Excel application program can be automatically initiated to open one or more specific Excel user data files, including any authentication data such as a password if required to access the file(s). Still further, the system and method automatically provide certain network addresses with user authentication data (if required), e.g., username and password, and operate over a computer network, e.g., local area network (LAN), wide area network (WAN), dial-up connection, intranet, the Internet, public or private network, Virtual Private Network (VPN), or any of the multitude of other types of computer networks.

In one embodiment, the system and method provide a client-based solution in which the user's data (including network addresses, e.g., website Uniform Resource Locators, that is, URLs, any access and authentication data required, etc.) are stored with or on the local computing device. In this embodiment, the automatic login feature may be performed by field detection, matching (or downloading of login information from a remote server or even from a locally stored file) and filling of data in the fields, and by automatically sending user entry events, e.g., the "Enter" keystroke or a computer mouse click.

The above embodiments provide many advantageous features and capabilities. For example, one such feature involves greatly enhanced consumer privacy, as personal and confidential data is not stored on a remote server but is instead stored on the user's computing device. An additional advantageous feature involves user control of the user's data, in that the user maintains and controls her own data instead of allowing a third-party organization access to this data.

In an alternative embodiment, the system and method provide a server-based solution in which the user's data (including network addresses, e.g., website URLs and, if required, user login authentication data, if required, such as username and password) are stored on a remote server. This embodiment, while still providing the advantages of automatic initiation and login of one or more network addresses while

requiring a minimum of user input, does not provide the privacy advantage of storing the user's personal and confidential information on the user's computing device.

The user authentication data required to access a certain network address will typically comprise a username and password. The authentication data might, however, also include any combination of a digital certificate, digital signature, biometric information, e.g., fingerprint, retinal or other eye scan, voice recognition, or other measurable physical characteristics that can be checked and verified.

In another embodiment, the one or multiple network addresses, which may require user authentication information, may be accessed simultaneously, and the URL(s) and the user's authentication information (again, if required), previously stored either locally on the computing device they are using, or on a remote server, is automatically entered and submitted to the network address(es). Once the login procedure is complete, the user gains access to the network address. The user does not have to manually input any required authentication information for each individual network address, and does not have to manually submit any required authentication information to a server to gain access to the network address. Nor does the user need to provide any manual input such as a keystroke or mouse click to launch and open one or more network addresses.

The system and method according to the invention provide the user with the convenience of being able to access multiple network addresses and other applications simultaneously (that is, without requiring intermediate user action), saving the user the time and effort of having to remember and manually input the specific network addresses, and when required the necessary authentication information to access the network addresses, avoiding the effort of having to manually submit the information for authentication.

Figure 1 illustrates the main hardware and software components used to implement the preferred embodiment of the invention. As with most computers, the user's computer includes both system hardware 100 and system software 110. System hardware will include one or more processors 101, some form of non-volatile storage such as one or more disks 102, and one or more devices, such as a network interface card (NIC) 103, to connect the computer to a network 160. Standard input devices such as a keyboard 105 and mouse 106 will normally also be connected in the conventional manner to the system hardware. Where the computer is a device

such as a PDA or cellular telephone, the non-volatile storage devices and input devices will of course be those standard in such systems.

Depending on the requirements of any given use of the invention, a reader 107 for a portable data-storage device 108 may also be connected to the user's computer. The portable data-storage device 108 may be completely passive, such as a simple floppy disk, magnetic strip card, etc., or it may be at least partially active, such as a smart card that can include computer-executable code. A display (either visual, audible, or a combination of both) 109 will also be connected to the system hardware; again, this is of course well known.

Memory 120, typically high-speed RAM, is also included in the user's computer. Although normally considered part of the system hardware 100, the memory 120 is shown separately in Figure 1 to make it easier to understand the function of the invention's software components.

System software 110 will include some form of operating system 112 whose operation and functions are well known. Note that almost all devices that include a processor that executes code will also include some form of system-level kernel that serves as an interface between user-level applications and physical system resources, including the processor itself. For example, even web-enabled cellular phones include a program that accepts user-specified addresses or file names and submits them according to the appropriate protocol to its wireless network. As used in this application, the term "operating system" is to encompass all such system-level, resource-allocating software layers.

The invention is illustrated as being implemented in a single, standard personal computer because this is anticipated to be the most common configuration in which the invention will be included. Any type of computer system may benefit from the invention, however. In this context, a "computer" includes portable devices such as "personal digital assistants" and even modern cellular phones, many of which allow for functions such as web browsing, games, etc.; larger systems such as servers, mainframe computers, etc.; and other systems such as television set-top boxes.

Furthermore, many of the hardware and/or software components shown in Figure 1 may be distributed or separated. For example, the memory 120 could be

remote, in a server contacted via the Internet, or it could be a removable storage medium such as a flash card, a "memory stick," a smart card, etc.

Any of the thousands of different types and titles of applications 120 may be loaded into the user's computer. Usually, the code and data defining each such application is stored in non-volatile storage (such as the disk 102) until the operating system 112 loads it in whole or in part into memory 120 for execution. For accessing and viewing content via the network 165, one or more browsers 132 will typically be included in the user's computer.

The operating system 112 usually treats a browser like any other application. Nonetheless, the browser 132 is shown separately in Figure 1 to highlight the invention's unique ability to automatically launch and "log into" both general applications and sites on one or more remote servers 160, which may host not only web content (such as net sites and pages 162), databases, etc., as well as combinations such as customer and member account portals.

The invention comprises an auto-launch (including, as needed, auto-login) utility or application 150, which in turn includes various modules 151-158, some of which are optional, which implement different features of the invention and are described below. All or any of the modules 151-158 may be implemented simply as sub-routines within the larger body of executable code that makes up the auto-launch application 150 as a whole. Skilled programmers will be able to create the modules 151-158 given the description of the functions of each of these modules below. The auto-launch application can be installed in the user's computer in any normal manner such as by loading a CD-ROM disc, through downloading, etc.

During operation of the invention, various types of information will be loaded into the memory 120, either by loading the information from disk or as a result of direct entry by the user. Three memory structures 122, 124, 126 are illustrated in Figure 1: a launch list 122, which includes information identifying which processes are to be automatically launched using the invention; a list 124 of network addresses, for example URLs, that a browser or other network access software can use to access remotely stored content (stored, for example, in one of the servers 160); and a set 126 of access and authorization data, for example, user names, passwords, digital keys, etc. Each of the illustrated memory structures 122, 124, 126 will normally be stored as one or more files on disk, or on some other non-

volatile storage medium, and then loaded into memory when the auto-launch application itself is initiated. All of the structures 122, 124, 126 (as well as any other parameters used by the invention) may be stored as a single file as long as this file is structured in a manner known to the module 152 that is to retrieve the stored information.

The type of information used for auto-launch and access will of course depend on what types of applications are to be launched. For example, if no web sites are to be automatically accessed, then there will be no need to retrieve network addresses.

Fig 2 is a flowchart that shows the main actions of the system according to the invention. The main procedural steps of the invention are:

Step 200: The invention is itself started. This may be done either automatically or manually. For automatic launch, the auto-launch module 150 can be included in the standard start-up list used by the operating system. It would also be possible to include the auto-launch module according to the invention as part of system software itself so that it would load along with other system-level processes during booting. Assuming connection of suitable hardware, auto-launch could also be activated by some other means such as by insertion of a key or smart card, by successful fingerprint or retinal scanning, by voice recognition, etc.

For manual start, an icon could be generated on the user's desktop or system tray, or on a toolbar, or in some list; when the operating system senses user selection of this icon (or program name), then it will start the auto-launch application 150 as it would any other program. Entry of the user's name and/or password (or successful authentication using biometric input, etc.) could also be required to activate the auto-launch application according to the invention. A startup module 151 is therefore preferably included as an interface to the operating system 112 and to interpret the user's manual input to activate the auto-launch program.

Step 205: Once initiated, the auto-launch program needs to know what it is that is to be launched, and how to launch it. The invention may be used to auto-launch any number (including none) of browsers or browser instances, as well as any type and number (again, including none) of other applications. Note that not all

auto-launched applications need to be "visible" to the user; rather, applications such as anti-virus or performance-monitoring software that run in the background may also be auto-launched using the invention.

Users will often want to auto-launch one or more non-browser applications, such as a word-processing program, a spreadsheet, etc. Although each such application may be opened "blank," it will usually be more helpful to the user for the applications to start with some associated data file(s) loaded and "ready." For example, the user might want his last-opened files to be opened along with the applications. The locators (file names and/or addresses) for any desired data files are therefore preferably maintained along with the respective applications in the launch list 122. Note that the data files to be opened may be remotely stored; in this case, the locators will include the required network address(es).

Similarly, although it would be possible to launch browsers without any automatic web access, the invention is most useful when one or more net sites or web pages are also accessed automatically. The launch list 122 therefore includes the information (usually the entry address) allowing the operating system to initiate the browser(s) to be auto-launched. A set 124 of addresses (such as URLs) is therefore also preferably stored in memory, with any standard data structure used to associate these addresses with the browser. Some browsers, such as Microsoft Internet Explorer have only one remote address "active" at any given time, so that multiple browser instances must be opened if one wants to have multiple web pages available on-screen. Other browsers such as Opera allow multiple web pages (URLs) to be accessed and open within a single browser instance. Both types of browsers may be auto-launched using the invention.

The invention may also be used to auto-launch applications – including browsers – with addresses or other locators to records in a remote data base. Accessing such database records may be done in a manner analogous to accessing specific web pages. The concept of "database" here includes such sites/structures as customer account information and the like, whose associated launch information will typically include both a network address and descriptors identifying at least one remotely stored data file.

In summary, an application that does not presuppose a network connection (such as a word processor) will usually have associated with it one or more data files

(such as documents) to be opened; accessing a web site presupposes not only some form of browser or analogous interface software, but also some identifier (for example URL) to the site; access to database records presupposes some form of record or file identifier; etc. In short, each type of process that may be auto-launched using the invention will usually (but not necessarily) also have some other secondary information associated with it in order to recreate the user's preferred work environment. Collectively, the information used to identify the document(s), network address(es), record(s), etc., is referred to as "associated launch data."

Step 210: In many cases, applications or data files or web pages cannot be launched or opened or accessed without entry of user-specific or other security information. Typically such information will include a user name, a password or other authorization code, a digital signature, or even biometric information such as a fingerprint. For each application, file, page, etc. to be auto-accessed using the invention, the corresponding access/authentication data is preferably stored in memory in ay suitable data structure 126.

Before anything can be accessed via the network 160, there must of course be an open connection to the network. There are two common types of connections, namely, those that require specific user action, such as dial-up modems, and those that are "always on" (automatically initiated by the operating system at the time of system boot) such as DSL, cable connections, etc. Before launching any network-directed application such as a browser, a network connection module 153 within the auto-launch program preferably determines whether the user's computer has an active connection, and what type of connection is involved. This may be done using known software techniques. If user action is required to establish the network connection, the network connection module 153 preferably instructs the user interface 157 (see below) to call up appropriate log-in windows, which are typically generated by the operating system.

Observe that opening a network connection usually involves running a user-level program like any other. For example, most modern operating systems allow a user to define and configure any number of network connections. An icon or at least a name is then associated with each configured connection. Connection configuration may (but need not) include storing access information such as the

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user's name and password. To initiate the connection, the user clicks on the corresponding icon, chooses the connection from a list, etc., whereupon the operating system initiates the connecting program like any other. Known operating system signals are also available to user-level programs to let them know that there is an active and available network connection, be it manually opened or always on.

When a protected application, web page, etc., is initiated or accessed, it will typically generate (either on its own or through a utility in the operating system) at least one window or screen with log-in data entry fields that the user is to fill in and submit. The programs for establishing network connections generally generate such windows as well in order to first establish the network connection. Of course, always requiring a user to fill in such information would defeat the concept of auto-launch; accordingly, a field detection module 157 is preferably included to detect the presentation of such entry fields (or simply the requirement to enter data) and "auto-fill" module 154 is preferably included to enter and submit the required data automatically. Note that many protected programs (including those that control network connections) already enable users to check a box or otherwise indicate that an entered user name and password should be remembered for future use. The invention takes this one step further – not only is the information automatically "filled in" and submitted, but the application that requires it is also launched without specific user action.

Once all the applications (including browsers) to be opened are identified from the launch list 122, all needed file identifiers (and/or network address(es)) have been retrieved, and all access information (if any) has been properly entered (a step that may be delayed until needed), a launch module 155 is activated, which submits the launch information to the operating system, which in turn loads the selected applications and files, as well as browsers and locators (such as URLs). In other words, all of the steps and all data entry that a user would need to perform to open the desired browsers and other applications are performed automatically by the launch module, which submits the corresponding entries to the operating system through its standard application program interface.

Following whatever protocol it includes for the purpose, the operating system then accesses the network 160 with any associated network address(es) retrieved from memory region 124. Some of the selected web sites (or database or account

sites, etc.) may require log-in information. This requirement is expressed to the browser in the form of downloaded html (or other, such as Java) code, and as such is detectable by user-level processes such as a field-detection module 156. The auto-fill module 154 then detects which log-in information is required in each field and submits to the operating system the key (or other input) sequences required to fill in the fields with the correct authentication and/or access data, which is available in memory region 126. Once all such information is submitted for each network location, the state of the user's computer will be as if he had manually activated all desired applications and files, browsers and network sites.

Step 215: At this point, the user may begin a work session, using whatever files and sites have been automatically opened for her. The auto-launch program 150 according to the invention may then simply monitor the user's actions or remain idle until invoked by the user (for example, by clicking on an icon designed for the purpose) in order to change the auto-launch information stored in memory in regions 122, 124, 126.

Step 220: The user may of course choose to end her session with the computer altogether, or to deactivate the invention while continuing other work. Since the auto-launch program is a user-level process, the operating system will halt and unload it like any other process if the user chooses to shut down the computer. Alternatively, the user could specifically close the auto-launch program in any common manner, for example by selecting the program and either clicking on the standard "close" button (usually shown as an "X" at the top right of active windows) or an icon or button displayed specifically for the purpose by the auto-launch program itself. If closed, the program will reach the end 250 of its operation for the current session.

Step 225: Assume that the user wants to update his auto-launch list or parameters. Using any conventional method, such as clicking on an icon, the user may then open the user interface 157 to display a control window. One example of such a control window 300 is illustrated in Figure 3. As shown, in addition to standard window icons such as those for minimization, closing and calling a help

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routine, the interface 157 displays a list 305 of all applications, network addresses, etc., that are currently selected for potential auto-launching.

Various icons, buttons, etc., are included to remind the user of the status of each listed process. For example, a symbol 306 such as a small rocket is shown next to each process to indicate that the process is set to be auto-launched using the invention. A lock icon 307 may be included to indicate that the site is also set for auto-login (with, for example, user name and password). Standard radio buttons 308 or similar graphical devices are preferably included next to the listed processes to indicate which is currently selected for editing or other updating. Note that a process may be listed in the control window 300 but not marked for auto-launch; one such process is shown as "Budget File" in Figure 3. For example, a process previously selected for auto-launch might have been de-selected. If the user wants it removed entirely, he may select it and click on "Delete."

Updating the auto-launch profile may be done in either (or both) of two ways: manually or through automatic detection:

Assume that the user wants to edit the information, for example, for accessing a web site or for designating which files are to be opened along with a word-processing program. The user edits a process (such as a website or application) record by selecting the name of the process from the list 305, for example, by checking the adjacent radio button or clicking on it with a mouse or similar cursor-control device. In Figure 3, the user has selected to update information relating to his e-mail account. The user interface 157 may then generate, and cause to be displayed, a typical dialog box, into which the user can make changes to such authorization and access data as the title, URL, username, password, and auto-launch/auto-login status of the selected website.

A listed process may be deleted from the auto-launch list 305 by selecting the process and clicking on a button such as "Delete." Later confirmation of this decision causes the corresponding entry to be deleted from the launch list 122 as well.

The "Move" button illustrated in Figure 3 controls a preferred feature in which the user can change the order in which processes are listed and auto-launched. The "Go" button is preferably included to manually open the currently selected

process. These two features are found in other contexts and may be implemented using known techniques.

Buttons such as "My Web," and "My Apps," are preferably included to make it easier for the user to access features of the invention, although they are optional; buttons for other features may of course also be included depending on the needs of a given application of the invention. Clicking on "My Web" and "My Apps" buttons causes only network sites or non-network based applications, respectively, to be shown in the currently displayed list 305.

Step 230: An advantageous feature included in the preferred embodiment of the invention is its convenience and flexibility when it comes to adding new processes to the auto-launch list. Adding processes may be wholly automated, performed manually, or both.

The preferred embodiment of the invention for adding processes to the auto-launch list 122 uses automatic capture via the module 158. Assume that the user has opened an application (with any desired data files) and/or a web page and assume that the user wants this process environment (program plus any associated open data files and/or network addresses) added to the launch list 122. In other words, assume that a running process is the currently active, displayed process, along with whatever data file(s) are also currently being worked on. For example, the user may currently be working with a word-processing program with three open documents. The program will then be the active process and the documents will be the associated launch information.

Note that the data defining the environment will be accessible to user-level applications using known commands and queries to the operating system. According to the invention, the user may add the process and its associated launch information to the auto-launch list this simply by clicking on the "Add" button (or some analogous icon). The invention thus provides (but does not require) a "one-click" process-addition feature; it would be possible, however, to require the user to confirm desired addition via an additional window. The capture module then extracts all parameters needed to open the process (usually, executable file name and location) and currently associated data files (usually by file name) from the current status of the running process. If available, the module may also capture whatever

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log-in information was required to open the process. If not readily available, the capture module could extract this information if other modules, such as the field detection module 156, are programmed to track user input to identify manual input of log-in information.

The process currently in active use is then preferably added to the currently displayed list 305 so that the user will have an opportunity to change her mind before the extracted parameters are entered into the data structures 122, 124, 126 for use the next time the auto-launch program according to the invention is activated. Alternatively, or in addition, the user interface 157 could display for the user a confirmation window that asks the user to confirm whether the current process should be listed in the control window 300 and whether it should be auto-launched when the auto-launch program 150 itself is next launched. Once accepted, the capture module 158 enters the captured data into the appropriate data structures 122, 124, 126 in memory.

The user may leave the information extracted by auto-capture unchanged, or he may edit it. For example, the user might want to change the name of a current website record in a "Title" field and assign a name that allows him to distinguish it more easily from the others in the event of multiple accounts.

It would also be possible to implement manual process addition. In this case, when the user clicks on the Add button, a conventional window could be opened to allow the user to manually select programs for inclusion in the auto-launch list 122. Standard operating systems, for example, maintain up-to-date lists of user-selectable programs (for example, the Microsoft Windows "All Programs" selection on the "Start" menu). The user could then select programs, and data files of an appropriate type, using conventional file browsing and "attach" commands. Note that the preferred automatic capture feature described above (in which the current environment is captured) avoids the inconvenience and much higher probability of error of manual selection: For example, open data files in a spreadsheet program are guaranteed to have a compatible file type.

Of course, at any time the user may discard entered changes by clicking on a "Cancel" button. Clicking on "Save," however, directs the capture module to enter the changes into memory. By clicking on "Close," the user can close the displayed auto-launch control window and continue working with the currently active process.

APPLE EX1002
000242

Steps 235 and 240: The preferred embodiment of the invention does not require specific user action – such as opening the control window 300 – to initiate auto-launch process capture. Assume, for example, that the user logs in to a password-protected web site (or application) for the first time (tracked in any known manner), or to a site not currently included in the launch list 122. This may be detected in any known manner.

If the newly activated process is new to the auto-launch application 150 according to the invention, the application (via the interface 157) can then generate a window giving the user the opportunity, by clicking on appropriate buttons or checking conventional boxes, to add this new process to the process list 305 and/or the launch list 122. Parameter input and capture may be done as before (see Step 230).

The flowchart shown in Figure 2 is not exhaustive; rather, other steps may be included in the operation of the auto-launch utility according to the invention. For example, the utility preferably includes certain error-handling mechanisms. For example, assume that the auto-launch application 150 is itself launched by insertion of a smart card. It is possible that a file path stored on the card is no longer valid, or, indeed, that a listed application is no longer resident on the computer in which the card is inserted. Any known mechanism is therefore included within the auto-launch application 150 to notify the user whenever a process that is listed for auto-launch cannot be launched. For example, in addition to, or instead of, a warning window, the auto-launch application 150 could give a special indication, such as distinctive shading in the control window 300, to any un-launchable process, along with some message indicating the problem.

As mentioned above, not all modules and data structures used in the auto-launch procedure according to the invention need to reside on the same computer. For example, it would be possible to maintain the launch list 122, as well as the sets 124 and 126 of network addresses and access and authorization data on a secure, remote server such as one under the control of a company's system administrator, or a service the user subscribes to.

APPLE EX1002
000243

CLAIMS

1. A method for launching processes in a computer that has an operating system, comprising:

storing a launch list of initiation data for at least one process to be launched;

for each process, storing any access and authentication information required to initiate the process, as well as associated launch data identifying secondary information associated with any of the processes to be launched;

upon sensing a launch event:

automatically retrieving initiation data for each process in the launch list, as well as the associated launch data for each process; and

automatically initiating execution of each process in the launch list and automatically retrieving and associating with each initiated process the corresponding secondary information.

2. A method as in claim 1, in which at least one process to be launched involves access to at least one remote site, further comprising automatically accessing the remote site over a network, a network address for each remote site comprising the secondary information of the process.

3. A method as in claims 1 or 2, further comprising:

automatically detecting identifying information of a currently active process and its current secondary information; and

upon user confirmation, automatically storing access information and the current secondary information for subsequent automatic launch upon sensing the launch event.

4. A method as in any of claims 1-3, further comprising:

automatically detecting identifying information of a process currently being launched manually by a user;

upon user confirmation, automatically storing the identifying information of the process currently being launched manually by a user as access information for subsequent automatic launch upon sensing the launch event.

APPLE EX1002
000244

5. A method as in any of the claims 1-4, in which:

the secondary information includes access and authentication information such as a password; and

the step of automatically initiating execution of each process includes automatically submitting the secondary information.

6. A method as in claim 1, comprising automatically launching two or more processes simultaneously, that is, without requiring intermediate user action.

7. A method as in claim 6, comprising automatically and simultaneously launching both processes that access network content and processes that access only locally stored files.

8. A system for launching processes in a computer that has system hardware (100), system software (110), and a memory (120), comprising:

a launch list (122) of initiation data for at least one process (130; 132) to be launched;

a stored set (126) of any access and authentication information required to initiate the process, as well as associated launch data set identifying secondary information associated with any of the processes to be launched;

an auto-launch software module (150) comprising computer-executable code that, upon sensing a launch event:

automatically retrieves initiation data for each process in the launch list, as well as the associated launch data for each process; and

automatically initiates execution of each process in the launch list (122) and automatically retrieves and associates with each initiated process the corresponding secondary information.

9. A system as in claim 8, in which:

at least one process to be launched involves access to at least one remote site (162);

the system hardware includes a network-connection device (103) that forms an interface between the computer and a network (160);

APPLE EX1002
000245

the memory (120) includes a list (124) of network addresses;

the auto-launch software module (150) includes computer-executable code for automatically accessing the remote site over the network (160), a network address for each remote site comprising the secondary information of the process.

10. A system as in claims 8 or 9, in which the auto-launch software module (150) includes further computer-executable:

for automatically detecting identifying information of a currently active process and its current secondary information; and

upon user confirmation, for automatically storing in the memory (120) access information and the current secondary information for subsequent automatic launch upon sensing the launch event.

11. A system as in any of claims 8-10, further comprising:

at least one input device (105, 106, 107, 108) connected to the system hardware (100) for manual input by a user;

the auto-launch software module (150) includes further computer-executable code

that automatically detects identifying information of a process currently being launched manually by a user, and

upon user confirmation, that automatically stores in the memory (120) the identifying information of the process currently being launched manually by the user as access information for subsequent automatic launch upon sensing the launch event.

12. A system as in claim 8, in which the auto-launch software module (150) automatically launches two or more processes simultaneously, that is, without requiring intermediate user action.

13. A system as in claim 8, in which the auto-launch software module (150) automatically launches both processes that access content over a network (160) and processes that access only locally stored files.

APPLE EX1002
000246

FIG. 1

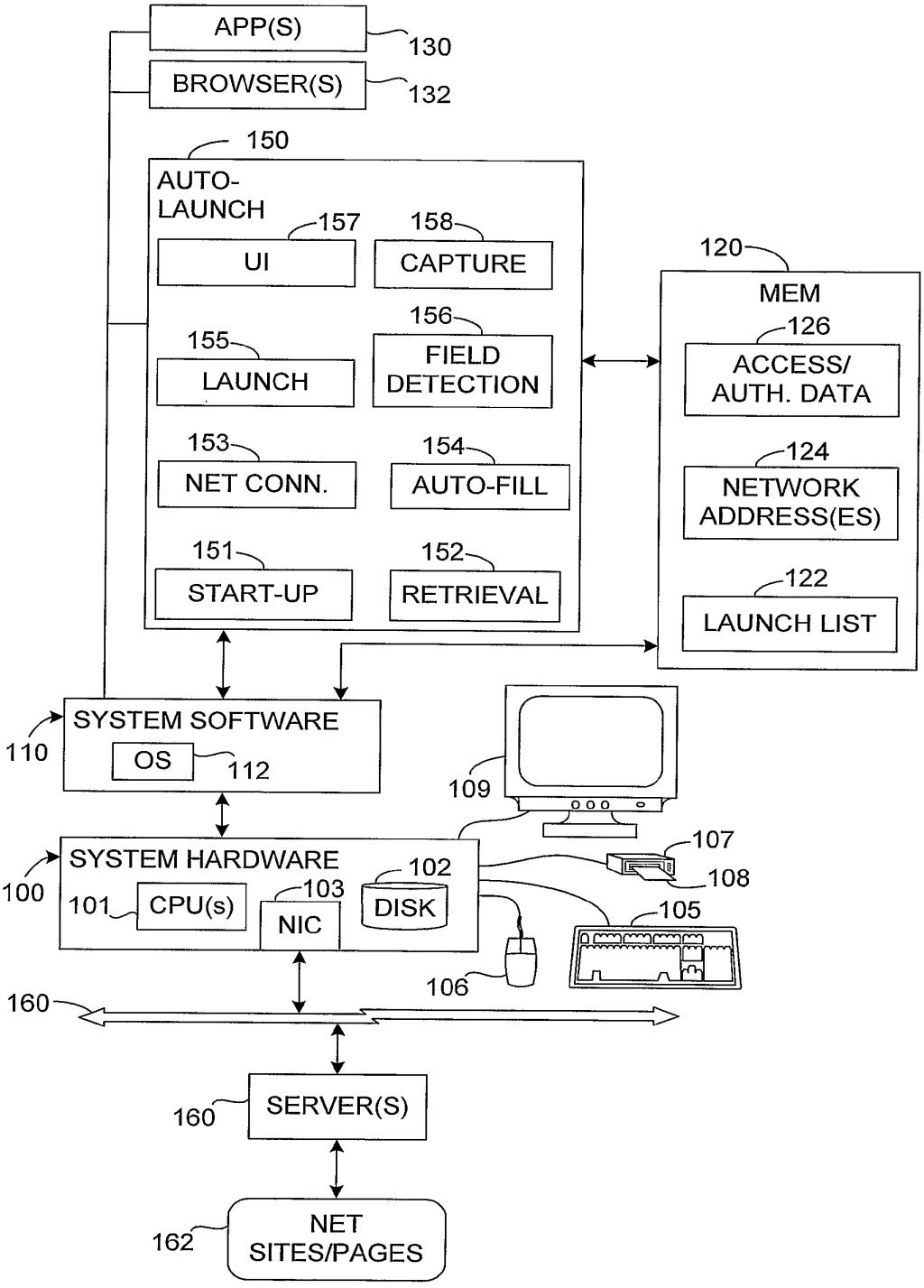

APP(S)
130
BROWSER(S)
132
150
AUTO-LAUNCH
157
UI
158
CAPTURE
120
MEM
126
ACCESS/ AUTH. DATA
156
FIELD DETECTION
155
LAUNCH
153
NET CONN.
154
AUTO-FILL
124
NETWORK ADDRESS(ES)
151
START-UP
152
RETRIEVAL
122
LAUNCH LIST
110
SYSTEM SOFTWARE
OS
112
109
107
108
SYSTEM HARDWARE
100
101
CPU(s)
103
NIC
102
DISK
105
106
160
160
SERVER(S)
162
NET SITES/PAGES

FIG. 2

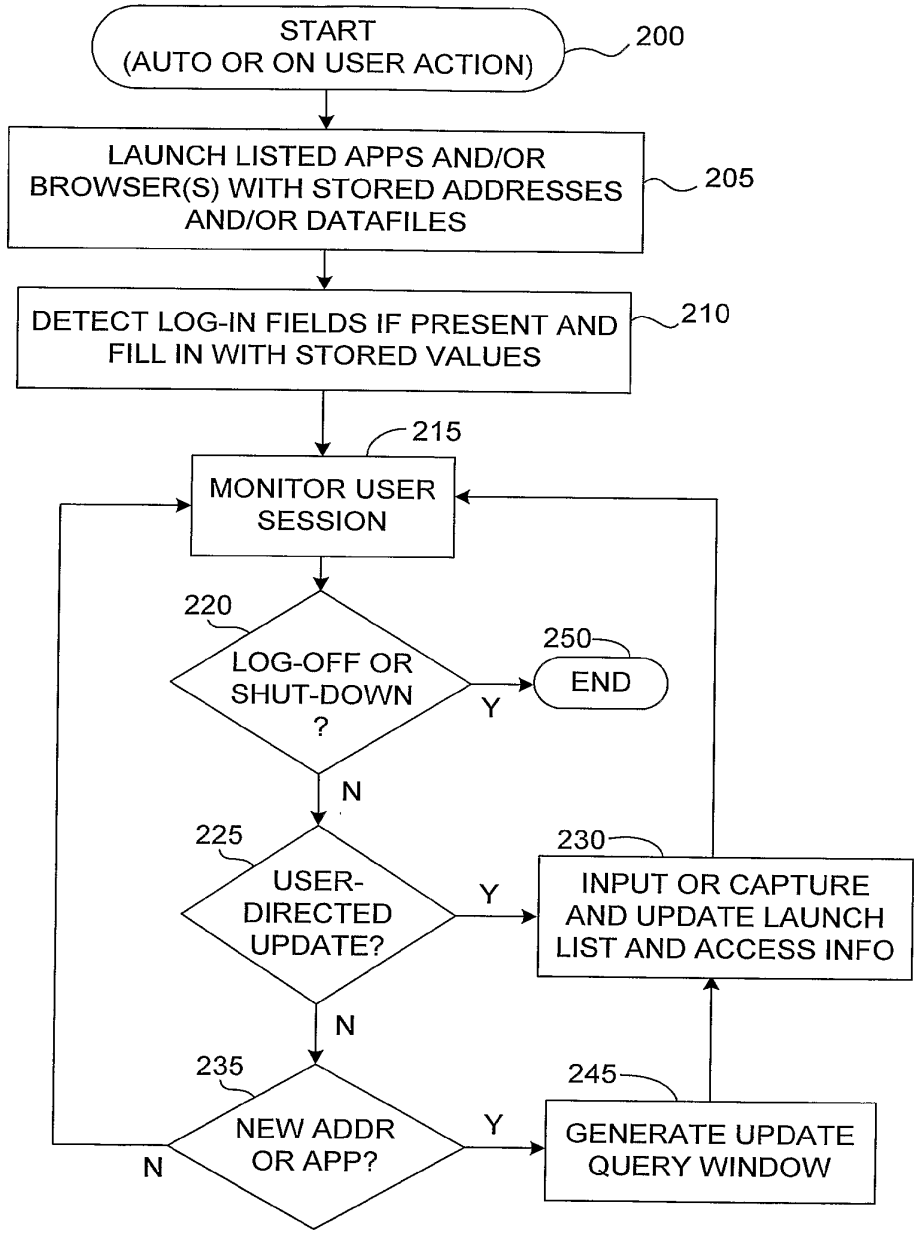
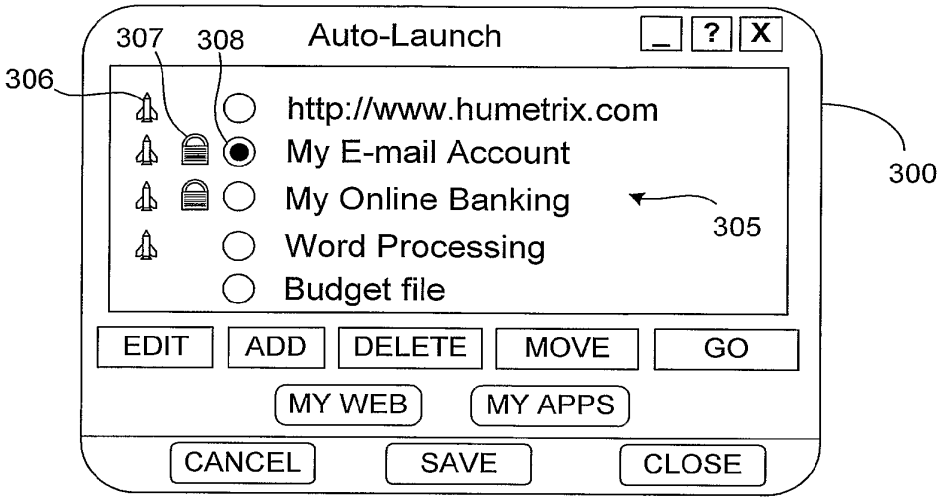

START
(AUTO OR ON USER ACTION)
200
LAUNCH LISTED APPS AND/OR BROWSER(S) WITH STORED ADDRESSES AND/OR DATAFILES
205
DETECT LOG-IN FIELDS IF PRESENT AND FILL IN WITH STORED VALUES
210
215
MONITOR USER SESSION
220
LOG-OFF OR SHUT-DOWN ?
Y
250
END
N
225
USER-DIRECTED UPDATE?
Y
230
INPUT OR CAPTURE AND UPDATE LAUNCH LIST AND ACCESS INFO
N
235
NEW ADDR OR APP?
Y
245
GENERATE UPDATE QUERY WINDOW
N

FIG. 3


307
308
Auto-Launch
306
http://www.humetrix.com
My E-mail Account
My Online Banking
Word Processing
Budget file
305
300
EDIT
ADD
DELETE
MOVE
GO
MY WEB
MY APPS
CANCEL
SAVE
CLOSE

Fenwick & West LLP

MAR 21 2008

PCT RECEIVED

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
Greg T. Sueoka
FENWICK & WEST LLP
Silicon Valley Center
801 California Street
Mountain View, CA 94041

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference 12194PCT	Date of mailing *(day/month/year)* **FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US07/00349	International filing date *(day/month/year)* 08 January 2007
Applicant PROXENSE, LLC	

25000-

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 1435

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver Telephone No. 571-272-7774

Form PCT/ISA/220 (January 2004) *(See notes on accompanying sheet)*

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To:
Greg T. Sueoka
FENWICK & WEST LLP
Silicon Valley Center
801 California Street
Mountain View, CA 94041

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 19 MAR 2008
Applicant's or agent's file reference 12194PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US07/00349	International filing date *(day/month/year)* 08 January 2007
Applicant PROXENSE, LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 1435

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver Telephone No. 571-272-7774

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 12194PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US07/00349	International filing date *(day/month/year)* 08 January 2007	(Earliest) Priority Date *(day/month/year)* 06 January 2006
Applicant PROXENSE, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☒ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title,**

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings,**

   a. the figure of the **drawings** to be published with the abstract is Figure No. 4

   ☒ as suggested by the applicant.

   ☐ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/00349

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Extra Sheet (page 10)

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-16 and 31

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/00349

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H04Q 7/20 (2008.01)
USPC - 455/41.2
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(8) - H04Q 7/20 (2008.01)
USPC - 455/41.2, 455/502

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2005/0090200 A1 (KARAOGUZ et al) 28 April 2005 (28.04.2005) entire document	1-6,8-9,12-16,31 --- 7, 10, 11
Y	US 6,879,567 B2 (CALLAWAY et al) 12 April 2005 (12.04.2005) entire document	7, 10, 11
A	US 6,957,086 B2 (BAHL et al) 18 October 2005 (18.10.2005) entire document	1-16, 31

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"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	Date of mailing of the international search report
01 February 2008	19 MAR 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US07/00349

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-16 and 31, drawn to a system and apparatus configured for communication in a wireless coverage area.
Group II, claims 17-30, 32, 33 and 102-108, drawn to a gaming system, apparatus and method for facilitating data exchange.
Group III, claims 34-59, drawn to a method, apparatus and system facilitating data exchange.
Group IV, claims 60-81, drawn to an apparatus, method and system facilitating wireless data exchange.
Group V, claims 82-101, drawn to a system, method and apparatus facilitating wireless data exchange.

The inventions listed as Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention is a wireless device configured to broadcast synchronization information in a wireless coverage area of a network device to coordinate a data exchange between a first wireless device and a second wireless device located in the wireless coverage area as claimed therein is not present in the invention of Groups II-V; the special technical feature of the Group II invention is arranging to wirelessly detect a presence of a portable wireless user device in proximity to a system as claimed therein is not present in the invention of Groups I and III-V; the special technical feature of the Group III invention is assigning a time slot during which a client device can receive data as claimed therein is not present in the invention of Groups I, II, IV and V; and the special technical feature of the Group IV invention is activating a wireless transceiver from a sleep mode at a beginning of a time slot as claimed therein is not present in the invention of Groups I-III and V; and the special technical feature of the Group V invention is adjusting a wireless coverage range in response to an initiation of a wireless transaction between a reader device and a client device as claimed therein is not present in the invention of Groups I-IV.

Since none of the special technical features of the Group I, II, III, IV and V inventions is found in more than one of the inventions, unity of invention is lacking.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
Greg T. Sueoka
FENWICK & WEST LLP
Silicon Valley Center
801 California Street
Mountain View, CA 94041

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)* 19 MAR 2008

Applicant's or agent's file reference
12194PCT

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US07/00349	08 January 2007	06 January 2006

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - H04Q 7/20 (2008.01)
USPC - 455/41.2

Applicant PROXENSE, LLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	01 February 2008	Blaine Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US07/00349

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the appicable time limit:

   ☐ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

   ☐ complied with

   ☒ not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-16 and 31, drawn to a system and apparatus configured for communication in a wireless coverage area.
Group II, claims 17-30, 32, 33 and 102-108, drawn to a gaming system, apparatus and method for facilitating data exchange.
Group III, claims 34-59, drawn to a method, apparatus and system facilitating data exchange.
Group IV, claims 60-81, drawn to an apparatus, method and system facilitating wireless data exchange.
Group V, claims 82-101, drawn to a system, method and apparatus facilitating wireless data exchange.

The inventions listed as Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention is a wireless device configured to broadcast synchronization information in a wireless coverage area of a network device to coordinate a data exchange between a first wireless device and a second wireless device located in the wireless coverage area as claimed therein is not present in the invention of Groups II-V; the special technical feature of the Group II invention is arranging to wirelessly detect a presence of a portable wireless user device in proximity to a system as claimed therein is not present in the invention of Groups I and III-V; the special technical feature of the Group III invention is assigning a time slot during which a client device can receive data as claimed therein is not present in the invention of Groups I, II, IV and V; and the special technical feature of the Group IV invention is activating a wireless transceiver from a sleep mode at a beginning of a time slot as claimed therein is not present in the invention of Groups I-III and V; and the special technical feature of the Group V invention is adjusting a wireless coverage range in response to an initiation of a wireless transaction between a reader device and a client device as claimed therein is not present in the invention of Groups I-IV.

Since none of the special technical features of the Group I, II, III, IV and V inventions is found in more than one of the inventions, unity of invention is lacking.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

   ☐ all parts

   ☒ the parts relating to claims Nos. 1-16 and 31

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US07/00349

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	7, 10, 11	YES
	Claims	1-6,8-9,12-16,31	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-16,31	NO
Industrial applicability (IA)	Claims	1-16,31	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-6,8-9,12-16 and 31 lack novelty under PCT Article 33(2) as being anticipated by Karaoguz et al. (US 2005/0090200; hereinafter Karaoguz).

Referring to claim 1, Karaoguz discloses a system, comprising: a first wireless device having a first range of wireless coverage (see par. 0015, note the piconet and devices); a second wireless device having a second range of wireless coverage (see par. 0016, note the second plurality of devices); and a synchronization device having a third range of wireless coverage and configured for communication with the first wireless device and the second wireless device, wherein an operation of the first fixed wireless device (see par. 0015, note the piconet coordinator) and an operation of the second fixed wireless device are coordinated based on synchronization information wirelessly broadcast by the synchronization device (see par. 0060, note the synchronized message).

Referring to claim 2, Karaoguz (as discussed in the lack of novelty of claim 1 above) discloses wherein the first range and the second range of wireless coverage at least partially overlap (see fig. 9, also see par. 0075, note the proximity).

Referring to claim 3, Karaoguz discloses wherein an operation of a portable wireless device located in at least one of the first range and the second range is coordinated using the synchronization information (see par. 0075, note the proximity, also see par. 0076, note the piconet devices).

Referring to claim 4, Karaoguz discloses wherein one of the first fixed wireless device and the second fixed wireless device is arranged to communicate with another of the first fixed wireless device and the second fixed wireless device (see par. 0092, note the devices and the arrangement).

Referring to claim 5, Karaoguz discloses wherein at least one of the first fixed wireless device and the second fixed wireless device (see par. 0015, note the piconet and devices) comprises: a first wireless transceiver arranged to continuously monitor broadcasts by the synchronization device (see par. 0015, note the piconet coordinator); and a second wireless transceiver arranged to wirelessly communicate with a portable wireless user device in proximity to the at least one of the first fixed wireless device and the second fixed wireless device (see par. 0075, note the proximity).

Referring to claim 6, Karaoguz discloses wherein at least one of the first fixed wireless device and the second fixed wireless device (see par. 0015, note the piconet and devices) comprises: a single transceiver arranged to periodically monitor broadcasts by the synchronization device (see par. 0015, note the piconet coordinator, also see par. 0060, note the synchronized message) and further arranged to wirelessly communicate with a portable wireless user device in proximity to the at least one of the first fixed wireless device and the second fixed wireless device (see par. 0075, note the proximity).

Referring to claim 8, Karaoguz discloses a central server configured to gather information from the first fixed wireless device and the second fixed wireless device (see par. 0044, note the piconet coordinator).

Referring to claim 9, Karaoguz (as discussed in the lack of novelty of claim 8 above) discloses wherein the central server is operatively connected to at least one of the first fixed wireless device and the second fixed wireless device via a wired connection (see par. 0016, note the second plurality of devices, also see par. 0084, note the wired connection).

Referring to claim 12, Karaoguz discloses wherein at least one of the first fixed wireless device and the second fixed wireless device is arranged to simultaneously detect presence of a plurality of portable wireless user devices in proximity to the at least one of the first fixed wireless device and the second fixed wireless device (see par. 0016, note the second plurality of devices , also see par. 0075, note the proximity).

(Cont. in Supplemental Box)

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box No. V
2. Citations and explanations:

Referring to claim 13, Karaoguz (as discussed in the lack of novelty of claim 12 above) discloses wherein the at least one of the first fixed wireless device and the second fixed wireless device is further arranged to differentiate among the plurality of simultaneously detected portable wireless user devices (see par. 0087, note the grouping).

Referring to claim 14, Karaoguz wherein the at least one of the first fixed wireless device and the second fixed wireless device is further arranged to coordinate a plurality of data exchanges with the plurality of simultaneously detected portable wireless user devices (see par. 0016, note the second plurality of devices , also see par. 0075, note the proximity).

Referring to claim 15, Karaoguz (as discussed in the lack of novelty of claim 14 above) discloses discloses wherein the plurality of data exchanges is coordinated based on the synchronization information (see par. 0060, note the synchronized message).

Referring to claim 16, Karaoguz discloses wherein the synchronization device is a standalone device (see par. 0092, note the device).

Referring to claim 31, Karaoguz discloses an apparatus, comprising: a predetermined network device, wherein the network device (see par. 0015, note the piconet and devices) comprises: a wireless transmitter configured to broadcast synchronization information in a wireless coverage area of the network device to coordinate a data exchange between a first wireless device and a second wireless device located in the wireless coverage area (see par. 0015, note the piconet coordinator, also see par. 0075, note the proximity).

Claims 7, 10 and 11 lack an inventive step under PCT Article 33(3) as being obvious over Karaoguz in view of Callaway et al. (US 6,879,567 B2; hereinafter Callaway).

Referring to claim 7, Karaoguz (as discussed in the lack of novelty of claim 1 above) is silent on wherein the synchronization device is arranged to broadcast a security update. However, in disclosing nodes within a communication system, Callaway teaches wherein the synchronization device is arranged to broadcast a security update (see col. 4 lines 32-40, note the security). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include wherein the synchronization device is arranged to broadcast a security update in the invention of Karaoguz as taught by Callaway in order to have message encryption and integrity of the communication (see col. 4 lines 32-40).

Referring to claim 10, Karaoguz (as discussed in the lack of novelty of claim 1 above) is silent on wherein a wireless communication in the system is dependent on an IEEE 802.15.4 protocol. However, in disclosing nodes within a communication system, Callaway teaches a wireless communication in the system is dependent on an IEEE 802.15.4 protocol (see col. 4 lines 14-23, note the IEEE 802.15.4 protocol). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a wireless communication in the system is dependent on an IEEE 802.15.4 protocol in the invention of Karaoguz as taught by Callaway in order to support low power wireless personal area network.

Referring to claim 11, Karaoguz (as discussed in the lack of novelty of claim 1 above) is silent on wherein use of a service provided by the system is accessible with a portable wireless device, wherein successful access depends at least partially on a security mechanism provided in at least one of the first fixed wireless device and the second fixed wireless device. However, in disclosing nodes within a communication system, Callaway teaches wherein use of a service provided by the system is accessible with a portable wireless device, wherein successful access depends at least partially on a security mechanism provided in at least one of the first fixed wireless device and the second fixed wireless device (see col. 4 lines 32-40, note the security). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include wherein use of a service provided by the system is accessible with a portable wireless device, wherein successful access depends at least partially on a security mechanism provided in at least one of the first fixed wireless device and the second fixed wireless device in the invention of Karaoguz as taught by Callaway in order to have message encryption and integrity of the communication (see col. 4 lines 32-40).

Claims 1-16 and 31 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

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PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:
MICHAEL W. FARN
FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 29DEC 2008
Applicant's or agent's file reference 14788 PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 08/83060	International filing date *(day/month/year)* 10 November 2008 (10.11.2008)
Applicant PROXENSE, LLC	

25000-

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 14788 PCT	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 08/83060	International filing date *(day/month/year)* 10 November 2008 (10.11.2008)	(Earliest) Priority Date *(day/month/year)* 09 November 2007 (09.11.2007)
Applicant PROXENSE, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 7

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/83060

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 7/00 (2008.04)
USPC - 340/5.6
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(8): G06F 7/00 (2008.04)
USPC: 340/5.6

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
IPC(8): G06F 7/00 (2008.04)
USPC: 340/5.1, 340/5.61, 340/5.64, 340/5.8, 340/5.81, 340/5.82, 340/572.1, 340/686.6, 340/825.36, 700/90, 700/302, 324/699

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWest (USPB, USPT, USOC, EPAB, JPAB), DialogPro, GoogleScholar; personal digital key memory service blocks access PDK detect sensors position location tracking path application network microcell wireless SMM building human messaging remote layer message bus coordinator module cell broadcast beacon synchronize biometric API

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2007/0159994 A1 (Brown et al.), 12 July 2007 (12.07.2007), Figs. 1-4,6; para [0057]-[0061]; [0068]-[0071]; [0073]-[0077]; [0079]-[0086]; [0089]-[0097]; [0105]; [0107]-[0110]; [0112]-[0118]; [0124]-[0133]; [0135]; [0154]; [0157]; [0164]; [0184]; [0197]-[0200]; [0205]; [0209]	1-29
Y	US 2005/0200453 A1 (Turner et al.), 15 September 2005 (15.09.2005), para [0021]-[0024]; [0034]; [0036]-[0038]	1-29
A	US 2007/0245158 A1 (Giobbi et al.), 18 October 2007 (18.10.2007), entire document	1-29
A	US 2007/0205861 A1 (Nair et al.), 06 September 2007 (06.09.2007), entire document	1-29
A	US 2007/0205860 A1 (Jones et al.), 06 September 2007 (06.09.2007), entire document	1-29
A	US 2007/0159301 A1 (Hirt et al.), 12 July 2007 (12.07.2007), entire document	1-29
A	US 2006/0136742 A1 (Giobbi), 22 June 2006 (22.06.2006), entire document	1-29

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"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	Date of mailing of the international search report
10 December 2008 (10.12.2008)	29DEC 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
MICHAEL W. FARN
FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	29DEC 2008
Applicant's or agent's file reference 14788 PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 08/83060	10 November 2008 (10.11.2008)	09 November 2007 (09.11.2007)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G06F 7/00 (2008.04)
USPC - 340/5.6

Applicant PROXENSE, LLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	12 December 2008 (12.12.2008)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/83060

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing

      ☐ contained in the international application as filed

      ☐ filed together with the international application in electronic form

      ☐ furnished subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/83060

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-29	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-29	NO
Industrial applicability (IA)	Claims	1-29	YES
	Claims	None	NO

2. Citations and explanations:
Claims 1-29 lack an inventive step under PCT Article 33(3) as being obvious over US 2007/0159994 A1 to Brown et al. (hereinafter 'Brown') in view of US 2005/0200453 A1 to Turner et al. (hereinafter 'Turner').

Regarding claim 1, Brown teaches a sensor network system comprising: a plurality of sensors at known locations (see para [0057]-[0060]), each sensor having a microcell and capable of communicating wirelessly with a personal digital key (PDK) in its microcell (see Figs. 1-4; para [0061]; [0068]-[0070]); and gathering position data about such PDK (see para [0080]), the PDK containing a memory having service blocks, each service block accessible by a corresponding service block access key (see Fig. 6; para [0074]-[0077]); a sensor management module (SMM) communicatively coupled to the plurality of sensors and configured to facilitate communication with one or more applications (see para [0070]; [0079]-[0081]; [0091]-[0093]); wherein the SMM and the sensor provide a data path between a service block on the PDK and an application that has access to the corresponding service block access key (see para [0089]-[0092]); and the SMM receives the position data gathered by the sensors about a PDK, generates location tracking data for the PDK based on the position data (see para [0132]; [0205]), but does not specifically teach making the location tracking data available to applications. Turner teaches a system for detection and tracking of objects within a defined area comprising a system which makes the location tracking data available to applications (see para [0021]-[0024]). It would have been obvious to one of ordinary skill in the art to utilize the system which makes the location tracking data available to applications of Turner and to combine it with the system of Brown because it would provide a system with expanded location tracking applications, thereby increasing the robustness and cost-effectiveness of the sensor network system.

Regarding claim 2, Brown in view of Turner teaches the system of claim 1. Turner further teaches wherein the plurality of sensors are located inside a structure, and the SMM tracks location of the PDK within the structure (see para [0022]; [0034]; [0036]-[0038]).

Regarding claim 3, Brown in view of Turner teaches the system of claim 1. Turner further teaches wherein the plurality of sensors are located inside a building, the PDK is sized to be carried by a human, and the SMM tracks location of the PDK within the building (see para [0022]; [0034]; [0036]-[0038]).

Regarding claim 4, Brown in view of Turner teaches the system of of claim 1. Brown further teaches wherein the application is a location tracking application (see para [0205]).

Regarding claim 5, Brown in view of Turner teaches the system of of claim 1. Brown further teaches wherein the application is a messaging application (see para [0127]).

Regarding claim 6, Brown in view of Turner teaches the system of of claim 1. Brown further teaches wherein the application is an application controlled by an entity different from the entity that controls the SMM (see para [0131]-[0132]; [0157]).

Regarding claim 7, Brown in view of Turner teaches the system of of claim 1. Brown further teaches wherein the application is a remote application that communicates with the SMM via a network (see para [0157]).

Regarding claim 8, Brown in view of Turner teaches the system of claim 1. Brown further teaches a system further comprising: an application layer message bus that communicatively couples the SMM with the application (see para [0073]; [0081]-[0084]; [0130]-[0132]).

Regarding claim 9, Brown in view of Turner teaches the system of claim 1. Brown further teaches a system further comprising: a coordinator module communicatively coupled to the SMM (see para [0113]-[0116]), the coordinator module having a coordinator cell, the coordinator module broadcasting a beacon to sensors and PDKs in its coordinator cell, the sensors and PDKs synchronizing to the beacon (see para [0131]-[0133]; [0135]).

Regarding claim 10, Brown in view of Turner teaches the system of claim 9. Brown further teaches wherein the PDK broadcasts a response to receipt of the beacon, those sensors in range of the PDK receiving the response and transmitting the response to the SMM (see para [0132]; [0154]).

Regarding claim 11, Brown in view of Turner teaches the system of claim 1. Brown further teaches wherein the sensor includes a biometric input (see para [0059]; [0071]; [0209]).

--- continued in Supplemental Box ---

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/83060

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
Claims 25-29 contain typographic errors.

Claims 25-29 each reads: "The system of claim 18 wherein ...." Claim 18 is directed to a method. However, claim 24 is directed to a system. For the purposes of this International Search Report, claims 24-29 are interpreted as directed to a system and as depending from claim 24.

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:

Box No. V

2. Citations and explanations:

Regarding claim 12, Brown in view of Turner teaches the system of claim 1. Brown further teaches wherein the sensor includes an input for non-biometric authentication data (see para [0059]; [0071]; [0209]).

Regarding claim 13, Brown in view of Turner teaches the system of claim 1. Brown further teaches wherein different applications can have access to different service block access keys and the sensor and SMM provide a data path between each application and the corresponding service block(s) on the PDK (see para [0073]; [0077]; [0083]-[0086]; [0091]).

Regarding claim 14, Brown in view of Turner teaches the system of claim 1. Brown further teaches wherein the sensor contains a service block access key and accesses the corresponding service block on the PDK (see para [0073]; [0077]).

Regarding claim 15, Brown teaches a method for supporting applications for a personal digital key (PDK) located in a sensor network having a plurality of sensors at known locations and a sensor management module (SMM) communicatively coupled to the plurality of sensors, the method comprising: establishing a wireless communication channel between a sensor and a PDK in the sensor's microcell (see para [0061]; [0068]-[0070]); the sensor gathering position data about the PDK via the wireless communication channel (see para [0080]); the SMM receiving the position data gathered by the sensors about a PDK (see para [0132]; [0205]), generating location tracking data for the PDK based on the position data (see para [0132]; [0205]); and providing a data path between a service block on the PDK and an application that has access to the corresponding service block access key, the data path including the SMM and the sensor (see para [0079]-[0081]; [0089]-[0092]), but does not specifically teach making the location tracking data available to applications. Turner teaches a method for detection and tracking of objects within a defined area comprising making the location tracking data available to applications (see para [0021]-[0024]). It would have been obvious to one of ordinary skill in the art to utilize the method comprising making the location tracking data available to applications of Turner and to combine it with the method of Brown because it would provide a method with expanded location tracking capabilities, thereby increasing the robustness and cost-effectiveness of the method for supporting applications for a personal digital key (PDK) located in a sensor network.

Regarding claim 16, Brown in view of Turner teaches the method of claim 15. Turner further teaches wherein the plurality of sensors are located inside a building, the PDK is sized to be carried by a human, and the SMM tracks location of the PDK within the building (see para [0022]; [0034]; [0036]-[0038]).

Regarding claim 17, Brown in view of Turner teaches the method of claim 15. Brown further teaches a method further comprising: a coordinator broadcasting a beacon to the sensors and the PDK (see para [0113]-[0116]; [0131]-[0133]; [0135]); the sensors and the PDK synchronizing to the beacon (see para [0131]-[0133]; [0135]); the PDK broadcasting a response to receipt of the beacon (see para [0132]; [0154]); and the sensors receiving the response and transmitting the response to the SMM (see para [0132]; [0154]).

Regarding claim 18, Brown in view of Turner teaches the method of claim 17. Brown further teaches a method further comprising: the beacon broadcast by the coordinator containing a command from an application, the command to be executed by the PDK (see para [0107]; [0113]-[0114]; [0124]-[0127]); the PDK executing the command (see para [0108]-[0110]); and a response from the PDK containing an acknowledgement of the command (see para [0108]-[0110]).

Regarding claim 19, Brown in view of Turner teaches the method of claim 17. Brown further teaches wherein the beacon broadcast by the coordinator contains auxiliary information from an application, the auxiliary information for the PDK (see para [0116]-[0118]).

Regarding claim 20, Brown in view of Turner teaches the method of claim 19. Brown further teaches a method further comprising: a redundant coordinator broadcasting a beacon containing the auxiliary information to the sensors and the PDK (see para [0105]; [0112]-[0114]).

Regarding claim 21, Brown in view of Turner teaches the method of claim 17. Brown further teaches wherein the response from the PDK contains auxiliary information from the PDK, the auxiliary information for the application (see para [0126]-[0129]; [0197]-[0200]).

Regarding claim 22, Brown in view of Turner teaches the method of claim 17. Brown further teaches a method further comprising: more than one sensor receiving the response and transmitting the response to the SMM (see para [0132]; [0164]; [0184]).

Regarding claim 23, Brown in view of Turner teaches the method of claim 17. Brown further teaches a method further comprising: at least one of the sensor transmitting auxiliary information from an application to the PDK (see para [0126]-[0129]; [0197]-[0200]).

Regarding claim 24, Brown teaches a sensor system comprising a sensor (see para [0057]-[0060]); the sensor capable of communicating wirelessly with a personal digital key (PDK) when the PDK is located within the sensor's microcell (see Figs. 1-4; para [0061]; [0068]-[0070]; [0090]-[0091]); the PDK containing a memory having service blocks, each service block accessible by a corresponding service block access key (see Fig. 6; para [0074]-[0077]); the sensor providing a data path between a service block on the PDK and an application that has access to the corresponding service block access key (see para [0089]-[0092]), but does not specifically teach a sensor communicatively coupled to an application. Turner teaches a system for detection and tracking of objects within a defined area comprising a sensor communicatively coupled to an application (see para [0021]-[0024]; [0037]-[0038]). It would have been obvious to one of ordinary skill in the art to utilize the system comprising a sensor communicatively coupled to an application of Turner and to combine it with the system of Brown because it would provide application specific detection and tracking capabilities, thereby increasing the configurability and adaptability of the sensor system.

--- continued in Supplemental Box ---

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/83060

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:

Box No. V

2. Citations and explanations:

Regarding claim 25, Brown in view of Turner teaches the system of claim 24. Brown further teaches wherein the sensor can be communicatively coupled to multiple applications over a network (see para [0090]-[0091]; [0094]-[0097]).

Regarding claim 26, Brown in view of Turner teaches the system of claim 24. Brown further teaches wherein different applications can have access to different service block access keys and the sensor provides a data path between each application and the corresponding service block(s) on the PDK (see para [0073]; [0077]; [0083]-[0086]; [0091]).

Regarding claim 27, Brown in view of Turner teaches the system of claim 24. Brown further teaches wherein the sensor includes a biometric input (see para [0059]; [0071]; [0209]).

Regarding claim 28, Brown in view of Turner teaches the system of claim 24. Brown further teaches wherein the sensor communicates with the applications via a standardized API (see para [0073]; [0088]-[0090]).

Regarding claim 29, Brown in view of Turner teaches the system of claim 24. Brown further teaches wherein the sensor contains a service block access key and accesses the corresponding service block on the PDK (see Fig. 6; para [0074]-[0077]).

Claims 1-29 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.

PATENT COOPERATION TREATY

RECEIVED
PATENT DOCKETING
FEB 17 2009
Fenwick & West

From the INTERNATIONAL SEARCHING AUTHORITY

To:
GREG T. SUEOKA
FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 11 FEB 2009
Applicant's or agent's file reference 15076 PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 08/87835	International filing date *(day/month/year)* 19 December 2008 (19.12.2008)
Applicant PROXENSE, LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/220 (January 2004) *(See notes on accompanying sheet)*

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 15076 PCT	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 08/87835	International filing date *(day/month/year)* 19 December 2008 (19.12.2008)	(Earliest) Priority Date *(day/month/year)* 19 December 2007 (19.12.2007)
Applicant PROXENSE, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 7 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

   b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

   a. the figure of the **drawings** to be published with the abstract is Figure No. 7

   ☒ as suggested by the applicant.

   ☐ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

APPLE EX1002
000270

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/87835

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - H04L 9/00 (2009.01)
USPC - 713/182
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)
USPC - 713/182

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 713/182-186 | 726/18-19

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Electronic Databases Searched: DialogWEB; Google
Search Terms Used: computer, secur, authentic, system, personal, digital, key, password, PIN, login, transceiver, decoder, decrypter, reader, backup, back-up, user, key, memory, wireless, USB, allow, prevent, deactivate, disable, disengage, range, proximity, event, action, vau

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---- Y	US 6,633,981 B1 (DAVIS) 14 October 2003 (14.10.2003), Fig 1, Col 2 lns 40-42, lns 55-64 and lns 66-67, Col 3 lns 1-4, lns 49-53 and lns 63-67, Col 4 lns 4-8, lns 22-24 and lns 30-34, Col 5 lns 1-14 and lns 59-63, Col 6 lns 7-15	1-6 and 8-18 ---------- 7 and 19-24
Y	US 2006/0136742 A1 (GIOBBI) 22 June 2006 (22.06.2006), Para [0042], Para [0043], Para [0045], Para [0053], Para [0056], Para [0066]	7 and 19-24

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"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	Date of mailing of the international search report
02 February 2009 (02.02.2009)	11 FEB 2009
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
GREG T. SUEOKA
FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	11 FEB 2009
Applicant's or agent's file reference 15076 PCT	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US 08/87835	19 December 2008 (19.12.2008)	19 December 2007 (19.12.2007)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - H04L 9/00 (2009.01)
USPC - 713/182

Applicant PROXENSE, LLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	02 February 2009 (02.02.2009)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/87835

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing

      ☐ contained in the international application as filed

      ☐ filed together with the international application in electronic form

      ☐ furnished subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/87835

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	7 and 19-24	YES
	Claims	1-6 and 8-18	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-24	NO
Industrial applicability (IA)	Claims	1-24	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-6 and 8-18 lack novelty under PCT Article 33(2) as being anticipated by US 6,633,981 B1 (Davis).

As per claim 1, Davis discloses a system for securing computing resources, the system comprising: a personal digital key adapted for wireless communication (Col 2 lns 66-67 and Col 3 lns 1-4) within a predefined range to establish a link and send and receive data (Col 3 lns 64-65); a reader for automatically detecting the present of the personal digital key and establishing a link with the personal digital key, the reader having an input and an output and adapted for wireless communication with the personal digital key when the reader and the personal digital key are within the predefined range of each other, the reader automatically signally when it is linked to the personal digital key (Col 3 lns 64-65); a computing device having computing resources, the computing device coupled to the input and the output of the reader for sending and receiving data (Col 3 lns 49-53); the computing device including a security system for controlling access to the computing resources of the computing device, the security system controlled by a signal from the reader indicating whether the reader is linked to the personal digital key (Col 2 lns 40-42).

As per claim 2, Davis further discloses the system of claim 1 wherein the personal digital key includes a memory for storing security information (Col 4 lns 4-8).

As per claim 3, Davis further discloses the system of claim 1 wherein the security information includes sign-on information, set up information, user names and passwords (Col 4 lns 22-24).

As per claim 4, Davis further discloses the system of claim 1 wherein the reader includes a set up module for storing set up information utilized by the computing device to install the security system (Col 5 lns 3-14).

As per claim 5, Davis further discloses the system of claim 1 wherein the reader sends the security system to the computing device during an initialization stage (Col 5 lns 3-14).

As per claim 6, Davis further discloses the system of claim 1 wherein the reader includes a transceiver for wirelessly communicating with the personal digital key and a USB connector for coupling to the computing device (Col 2 lns 66-67 and Col 3 lns 1-4, Col 3 lns 63-67).

As per claim 8, Davis further discloses the system for method of claim 1 wherein the security system includes a detection engine for detecting when a computing resource is accessed and controlling whether access will be permitted, the detection engine coupled to control the computing device (Col 6 lns 7-15).

As per claim 9, Davis further discloses the system for method of claim 1 wherein the security system includes vault storage for storing security set up data that specifies at least one security action for one of the computing resources, the vault storage accessible by a processor of the computing device (Col 6 lns 7-15).

As per claim 10, Davis further discloses the system for method of claim 1 wherein the security system includes a set up module for initializing and installing a detection engine and vault storage on the computing device, the set up module adapted for cooperation with the computing device (Col 5 lns 3-14).

As per claim 11, Davis further discloses a security system for controlling access to computing resources on a computing device, the security system comprising: detection engine for detecting when one of the computing resources is accessed and controlling whether access will be permitted, the detection engine coupled to the computing device and the computing resources (Col 5 lns 3-14); and vault storage for storing security set up data that specifies at least one security action for one of the computing resources, the vault storage coupled to and accessible by the detection engine (Col 6 lns 7-15).

As per claim 12, Davis further discloses the security system of claim 11 comprising a set up module for initializing and installing the detection engine and the vault storage on the computing device, the set up module adapted for cooperation with the computing device (Col 5 lns 3-14).

-- Please See Supplemental Sheet --

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/87835

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:
Box V.2 Citations and Explanations

As per claim 13, Davis further discloses a method for controlling access to a computing device having computing resources, the method comprising: monitoring for an event (Col 5 lns 1-3); detecting the event (Col 5 lns 3-6); determining whether a personal digital key is within a predefined range of the computing device (Fig 1 -- e.g. connection between chipset 115, bus 130, token reader 140 and token 145 requires devices to be within range); allowing access to one of the computing resources if the personal digital key is within a predefined range of the computing device (Col 6 lns 10-12); and preventing access to the one of the computing resources if the personal digital key is not within a predefined range of the computing device (Col 6 lns 12-15).

As per claim 14, Davis further discloses the method of claim 13 wherein the event is one from the group of any attempt by the computing device to access a storage device, to access a directory, to access a file, any time a login screen is displayed or any time based trigger (Col 2 lns 40-42 and Col 2 lns 55-64, Col 4 lns 30-34).

As per claim 15, Davis further discloses the method of claim 13 wherein determining whether a personal digital key is within a predefined range of the computing device includes receive a control signal from a reader (Col 4 lns 4-8).

As per claim 16, Davis further discloses the method of claim 15 wherein determining whether a personal digital key is within a predefined range of the computing device includes determining whether the personal digital key is wirelessly linked to a reader coupled to the computing device (Col 2 lns 66-67 and Col 3 lns 1-4, and Fig 1 -- e.g. connection between chipset 115, bus 130, token reader 140 and token 145 requires devices to be within range).

As per claim 17, Davis further discloses the method of claim 13 wherein allowing access to one of the computing resources includes: determining an item accessed (Col 5 lns 59-63); retrieving an item set up record corresponding to the determined item (Col 6 lns 7-10); and performing an action specified in the set up record (Col 6 lns 10-15).

As per claim 18, Davis further discloses the method of claim 17 wherein the action includes one from a group of clearing a screensaver, starting a screen saver, launching a window, closing a window, encrypting information, decrypting information, retrieving a password, storing a password or retrieving, entering and submitting login data (Col 5 lns 59-63).

Claims 7 and 19-24 lack an inventive step under PCT Article 33(3) as being obvious over Davis in view of US 2006/0136742 A1 (Giobbi).

As per claim 7, Davis does not disclose the system of claim 1 wherein the reader includes secure storage for storing back-up passwords used to allow access to the computing device when the personal digital key is not in range. However, Giobbi does disclose a system wherein the reader includes secure storage for storing back-up passwords used to allow access to the computing device when the personal digital key is not in range (Para [0053]). It would have been obvious to one of ordinary skill in the art to modify the system of Davis so as to include the back-up passwords as taught by Giobbi, since such would allow the user to access the system when needed under emergency situations.

As per claim 19, Davis does not disclose the method of claim 13 wherein allowing access to one of the computing resources includes: determining that an item accessed; retrieving an item set up record corresponding to the determined item, the item set up record including a user name and password; and automatically completing a sign-on screen by filling in fields using the user name and password. However, Giobbi does disclose a method wherein allowing access to one of the computing resources includes: determining that an item accessed (Para [0042]); retrieving an item set up record corresponding to the determined item, the item set up record including a user name and password (Para [0042]); and automatically completing a sign-on screen by filling in fields using the user name and password (Para [0042] and [0056]). It would have been obvious to one of ordinary skill in the art to modify the method of Davis so as to include the automatic sign-on as taught by Giobbi, since such would optimize use between the personal digital key, the reader, and the computer resource.

As per claim 20, Davis does not disclose the method of claim 19 wherein retrieving an item set up record includes communicating with a personal digital key to retrieve the user name and password from the personal digital key. However, Giobbi does disclose the method wherein retrieving an item set up record includes communicating with a personal digital key to retrieve the user name and password from the personal digital key (Para [0042]). It would have been obvious to one of ordinary skill in the art to modify the method of Davis so as to include the retrieval from the personal digital key as taught by Giobbi, since such would optimize use between the personal digital key, the reader, and the computer resource.

As per claim 21, Davis does not disclose the method of claim 13 wherein allowing access to one of the computing resources includes: determining whether a set up record exists for the one of the computing resources; identifying a personal digital key; receiving parameters for a set up record; and creating a set up record including an identifier of the personal digital key and the received parameters. However, Giobbi does disclose the method wherein allowing access to one of the computing resources includes: determining whether a set up record exists for the one of the computing resources (Para [0043]); identifying a personal digital key (Para [0043]); receiving parameters for a set up record (Para [0043]); and creating a set up record including an identifier of the personal digital key and the received parameters (Para [0042] and [0043]). It would have been obvious to one of ordinary skill in the art modify the method of Davis so as to include determining existence of a set up record as taught by Giobbi, since such would optimize use between the personal digital key, the reader, and the computer resource, and allow for automatic authentication.

-- Please See Continuation Sheet --

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/87835

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**

Continuation of:
Box V.2 Citations and Explanations

As per claim 22, Davis does not disclose the method of claim 13 comprising determining that a personal digital key has moved within the predefined range of the computing device; deactivating a duration timer; retrieving entry rules associated with the PDK; and executing the retrieved rules. However, Giobbi does disclose a method comprising determining that a personal digital key has moved within the predefined range of the computing device (Para [0043]); deactivating a duration timer (Para [0066] and [0067] -- e.g. by having a "read duration" feature, the method is able to keep the feature on or off); retrieving entry rules associated with the PDK (Para [0045]); and executing the retrieved rules (Para [0045]). It would have been obvious to one of ordinary skill in the art modify the method of Davis so as to include a proximity check as taught by Giobbi, since such would optimize use between the personal digital key, the reader, and the computer resource, and allow for automatic authentication when user is within the predefined range.

As per claim 23, Davis does not disclose the method of claim 13 comprising: determining that a personal digital key has moved outside the predefined range of the computing device; retrieving exit rules associated with the PDK; executing the retrieved exit rules. However, Giobbi does disclose a method comprising: determining that a personal digital key has moved outside the predefined range of the computing device (Para [0066]); retrieving exit rules associated with the PDK (Para [0066]); executing the retrieved exit rules (Para [0066]). It would have been obvious to one of ordinary skill in the art modify the method of Davis so as to include an out of range sequence as taught by Giobbi, since such would optimize use between the personal digital key, the reader, and the computer resource by exiting the user and preventing unauthorized access to the computer resources.

As per claim 24, Davis does not disclose the method of claim 23 comprising: determining time-based rules from the retrieved exit rules; initializing a duration timer with the time based rules; and wherein executing the retrieved exit rules delays until the duration timer has lapsed before executing the time-based rules. However, Giobbi does disclose a method of claim 23 comprising: determining time-based rules from the retrieved exit rules (Para [0066]); initializing a duration timer with the time based rules (Para [0066]); and wherein executing the retrieved exit rules delays until the duration timer has lapsed before executing the time-based rules (Para [0066]). It would have been obvious to one of ordinary skill in the art modify the method of Davis so as to include time-based rules as taught by Giobbi, since such would optimize use between the personal digital key, the reader, and the computer resource by exiting the user and preventing unauthorized access to the computer resources.

Claims 1-24 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used by industry.

PATENT COOPERATION TREATY

RECEIVED
PATENT DOCKETING
MAR 30 2009
Fenwick & West

From the INTERNATIONAL SEARCHING AUTHORITY

To:
KANDA V. ISHIHARA
FENWICK & WEST LLP
Silicon Valley Center
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 25 MAR 2009
Applicant's or agent's file reference 15179 PCT 2500	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US 09/34095	International filing date *(day/month/year)* 13 February 2009 (13.02.2009)
Applicant Proxense, LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/220 (January 2004) *(See notes on accompanying sheet)*

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 15179 PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US 09/34095	International filing date *(day/month/year)* 13 February 2009 (13.02.2009)	(Earliest) Priority Date *(day/month/year)* 14 February 2008 (14.02.2008)
Applicant Proxense, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 0 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed.

☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☒ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 09/34095

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06Q 10/00 (2009.01)
USPC - 705/2
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(8): G06Q 10/00 (2009.01)
USPC: 705/2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 705/1, 2, 3, 8, 50, 51, 500; 713/150, 168, 170, 182, 186 (keyword limited - see terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST(PGPB, USPT, EPAB, JPAB); Google Scholar
Search Terms Used: healthcare management, healthcare, management, wireless, access, information, personal device or hub or key, reader, communicate, configure, interface, provider, profile, patient database, patient, database, server, login server etc.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002/0010679 A1 (FELSHER) 24 January 2002 (24.01.2002), entire document, especially para. [0010], [0019], [0034]-[0035], [0042]-[0043], [0056]-[0058], [0060]-[0061], [0063]-[0064], [0068], [0073], [0080], [0086]-[0087], [0089], [0098], [0101], [0105], [0120], [0129], [0139], [0143], [0147], [0158]-[0160], [0163], [0172], [0181], [0192], [0197], [0200], [0250], [0262], [0285]-[0286], [0305], [0323], [0329], and [0337].	1-17
A	US 2005/0055244 A1 (MULLAN et al.) 10 March 2005 (10.03.2005), entire document	1-17
A	US 2004/0167465 A1 (MIHAI et al.) 26 August 2004 (26.08.2004), entire document	1-17
A	US 2005/0055242 A1 (BELLO et al.) 10 March 2005 (10.03.2005), entire document	1-17
A	US 2007/0204076 A1 (BOCCON-GIBOD et al.) 30 August 2007 (30.08.2007), entire document	1-17

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"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	Date of mailing of the international search report
17 March 2009 (17.03.2009)	25 MAR 2009
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2007)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

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MAR 30 2009
Fenwick & West

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

To:
KANDA V. ISHIHARA
FENWICK & WEST LLP
Silicon Valley Center
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

Date of mailing *(day/month/year)*: 25 MAR 2009

FOR FURTHER ACTION
See paragraph 2 below

Applicant's or agent's file reference	International application No	International filing date *(day/month/year)*	Priority date *(day/month/year)*
15179 PCT 25000	PCT/US 09/34095	13 February 2009 (13.02.2009)	14 February 2008 (14.02.2008)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G06Q 10/00 (2009.01)
USPC - 705/2

Applicant: Proxense, LLC

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [ ] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	18 March 2009 (18.03.2009)	Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/34095

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing

      ☐ contained in the international application as filed

      ☐ filed together with the international application in electronic form

      ☐ furnished subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 08/34095

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	None	YES
	Claims	1-17	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-17	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-17 lack novelty under PCT Article 33(2) as being anticipated by US 2002/0010679 A1 (Felsher).

Regarding claim 1, Felsher teaches a healthcare management system with automatic access to information, comprising: a personal digital key (PDK) configured to wirelessly communicate with a reader, wherein the PDK includes a profile uniquely associated with an individual (personal data assistant, para [0058]; a personal identification device, para [0120]; a personal storage device for receipt, storage, and transfer of digital information to other electronic devices has a pocket sized crush resistant casing with a volume of less than about ten cubic centimeters. A processor is positioned within the casing cavity and attached to the crush resistant casing, while a memory module also positioned within the casing cavity is configured to store received executable applications and data. An infrared transceiver is mounted on the crush resistant casing and in electronic communication with the processor and memory module to provide for receipt and storage of executable applications, and receipt, storage, and transfer of digital information to other electronic devices. The digital information stored by the personal storage device can be intermittently synchronized with other electronic devices, para [0139]; the management of personal information, such as preferences, profiles, and medical information, para [0200]); a provider interface coupled to the reader, wherein the reader is further configured to receive profile information from the PDK (receive patient information, para [0019]; received electronically from the patient and/or was developed as a consequence of an electronic messaging interaction that occurred between the patient and the physician, para [0061]; public internetworked access interface, para [0285]; secure interface between internal and public networks, para [0286]; a user with an interface to fully review the information in the database, para [0063]; authorized healthcare providers can access, para [0064]; A user interface enables the users to update their stored personal and medical information, para [0080]; to receive and process classified data, para [0105]); and an auto login server configured to communicate with the provider interface to allow access to information in a patient database (a login service which receives the first password, accesses the storage device, para [0160]; a server password, as a part of the login and authorization process, para [0197]; this is provided as a server password, as a part of the login and authorization process. However, according to a preferred embodiment, the information relating to a patient is encrypted with a public key for that patient at a point of origin, and stored in encrypted format within a database, para [0250]; during each access of the index server 5 and/or entrusted medical information database 6, an entry is made with the audit log server 7 in the trustee system, para [0329]; each user is allowed access only to management information in the set of database tables that the user would be allowed by the access control database to access, para [0086]).

Regarding claim 2, Felsher further teaches the system wherein the auto login server further comprises: a biometric authentication module to perform biometric authentication based on the received profile information (Biometric authentication schemes, ... A biometric identification system accepts unique biometric information from a user and identifies the user by matching the information against information belonging to registered users of the system, para [0042]; Though biometric authentication is a secure means of identifying a user, it is difficult to derive encryption keys from the information. In the first place, the information is different each time it is presented to a biometric information input device, para [0043]).

Regarding claim 3, Felsher further teaches the system wherein the reader further comprises: a biometric reader obtain a representation of physical or behavioral characteristics derived from the individual (a file reader to read the data on the personal data files and to transmit the patient related data to the telecommunications unit at the facility, para [0096]; card readers. A user of the secured network system inserts a microchip embedded card into one of the card readers, para [0105]; a smart card reader, para [0129]; a dual module reader for reading data and permissions instructions contained on the secure data modules, para [0143]; card reader 13, as well as a biometric identification, para [0330]; user profiles for a system, para [0181]; personal information (such as user preferences and profiles), para [0192]; personal information, such as preferences, profiles, and medical information, para [0200]).

(See Supplemental Box)

Form PCT/ISA/237 (Box No. V) (April 2007)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/34095

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:
Box No. V — Reasoned Statement
2. Citations and explanations:

Regarding claim 4, Felsher further teaches the system wherein the biometric reader is at least one of a fingerprint scanner, a retinal scanner, an iris scanner, a face scanner, a palm scanner, a DNA analyzer, a signature analyzer, and a voice analyzer (Biometric authentication schemes, for example fingerprint, voice, iris, retina, hand, face, or other personal characteristics, may be used to identify a user. These either do not require a password or access code, or are used in conjunction with such passwords or codes, and may provide substantial system security. A biometric identification system accepts unique biometric information from a user and identifies the user by matching the information against information, para [0042]; a print scanner for reading the print information from a patient or provider, para [0159]; signature data, para [0163]; can access, analyze, para [0064]).

Regarding claim 5, Felsher further teaches the system wherein the PDK further comprises: a biometric reader obtain a representation of physical or behavioral characteristics derived from the individual (in order to ensure authorization for the intended recipient, a key representative of the patient identity is employed, para [0197]; FIG. 3 illustrates a representation of a linked medical information records, para [0323]; representations of clinical information, para [0010]; data items representing an object, each data item carrying only the amount of information that is relevant for its purpose, para [0089]; personal characteristics, para [0042]; characteristics such as fingerprint, para [0163]).

Regarding claim 6, Felsher further teaches the system wherein the biometric reader is at least one of a fingerprint scanner, a retinal scanner, an iris scanner, a face scanner, a palm scanner, a DNA analyzer, a signature analyzer, and a voice analyzer (Biometric authentication schemes, for example fingerprint, voice, iris, retina, hand, face, or other personal characteristics, may be used to identify a user. These either do not require a password or access code, or are used in conjunction with such passwords or codes, and may provide substantial system security. A biometric identification system accepts unique biometric information from a user and identifies the user by matching the information against information, para [0042]; a print scanner for reading the print information from a patient or provider, para [0159]; signature data, para [0163]; can access, analyze, para [0064]).

Regarding claim 7, Felsher further teaches the system wherein the auto login server further comprises an access module for comparing the received data with data stored in a credentials database (a login service which receives the first password, accesses the storage device to transform the first password into a second password, and authenticates the second password using an operating system for the processor. The storage device includes encrypted information regarding the second password which can be relatively easily determined in response to the first password, but which cannot be relatively easily determined without the first password. The system or the storage device may also store information for biometric authentication of the user, para [0160]; management interface with unified login and logout and multiple user authentication services, para [0163]; a server password, as a part of the login and authorization process, para [0197]; a server password, as a part of the login and authorization process, para [0290]; -defined information at various security levels is stored in a secure server apparatus, para [0172]).

Regarding claim 8, Felsher further teaches the system wherein the reader is further adapted to detect a PDK in response to the PDK entering a proximity zone of the reader, and request the PDK to transmit the profile (each of the health care facilities has a telecommunications unit and a file reader to read the data on the personal data files and to transmit the patient related data to the telecommunications unit at the facility, para [0096]; a patient's individual electronic patient care station (PCS) interconnected to a master library (ML) which stores data in digital compressed format, through a local medical information network. The patient/medical personnel interact with this medical information network through the unique PCS and receive the requested service or data from the master library. The data is then displayed either on the associated television set or video monitor or through wireless/IR communications to a peripheral personal data assistant, para [0058]; many different electronic commerce systems have access to, and indeed maintain profiles and other information on customers, para [0034]; Such aggregated information is then synthesized, customized, personalized and localized to meet the information resource requests specified by the user via the network interface device, para [0066]; detecting unauthorized decryption of encrypted data transmitted over the data network . . . If the calculated public key is unique, then a portion of the public key (e.g. a subset of its bits) is stored in a data provider database as an electronic identifier for use in detecting unauthorized decryption of data by the interface unit, para [0101]; The system includes means for detecting various types, para [0060]).

Regarding claim 9, Felsher further teaches the system wherein the auto login server further comprises a data retrieval module for retrieving data from a second PDK (A first data value for a record is entered at a first workstation and a second data value for the record is entered at a second workstation without locking either workstation during data entry. The new data values are stored in the medical database after completion of data entry at each workstation, para [0056]; for adding new medical data about the individual to the device and for communicating with other computers to retrieve large data records about the individual; and for enabling a second computer to collate and sort data relating to selected medical fields from the data of such individual and from the data about other individuals transferred to the second computer, para [0057]; to transmit the first file to a second computer system via a communications channel. The second storage medium stores computer readable instructions permitting the second computer system to receive the first file via the communications channel, to display the corresponding digitized attachment on a second screen of the second computer system, para [0073]).

(See Next Supplemental Box)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/34095

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:
Preceding Supplemental Box
Box No. V --- Reasoned Statement
2. Citations and explanations:

Regarding claim 10, Felsher teaches a method for automatic access to information in a healthcare management system, the method comprising: establishing a connection between Reader and personal digital key (PDK), wherein the PDK includes a profile uniquely associated with an individual (The call feature uses the network connection to establish a conversation between the user and a person at a help site specified by the type of medical information they are currently referencing. Once a connection is established, para [0063]; establishing such "outside in" connections, para [0147]; personal data assistant, para [0058]; a personal identification device, para [0120]; a personal storage device for receipt, storage, and transfer of digital information to other electronic devices has a pocket sized crush resistant casing with a volume of less than about ten cubic centimeters. A processor is positioned within the casing cavity and attached to the crush resistant casing, while a memory module also positioned within the casing cavity is configured to store received executable applications and data. An infrared transceiver is mounted on the crush resistant casing and in electronic communication with the processor and memory module to provide for receipt and storage of executable applications, and receipt, storage, and transfer of digital information to other electronic devices. The digital information stored by the personal storage device can be intermittently synchronized with other electronic devices, para [0139]; the management of personal information, such as preferences, profiles, and medical information, para [0200]); receiving profile information from the PDK (receiving and transmitting information, para [0305]; personal information (such as user preferences and profiles), para [0192]; receive patient information, para [0019]; received electronically from the patient and/or was developed as a consequence of an electronic messaging interaction that occurred between the patient and the physician, para [0061]; public internetworked access interface, para [0285]; secure interface between internal and public networks, para [0286]; a user with an interface to fully review the information in the database, para [0063]; authorized healthcare providers can access, para [0064]; A user interface enables the users to update their stored personal and medical information, para [0080]; to receive and process classified data, para [0105]); allowing access to a patient database based on the received profile information from the PDK (allowing access to the digital information, para [0087]; allowing access to secured computer resources by utilizing a password and an external encryption algorithm. A method for permitting access to secured computer resources, para [0130]; a login service which receives the first password, accesses the storage device, para [0160]; a server password, as a part of the login and authorization process, para [0197]; this is provided as a server password, as a part of the login and authorization process. However, according to a preferred embodiment, the information relating to a patient is encrypted with a public key for that patient at a point of origin, and stored in encrypted format within a database, para [0250]; during each access of the index server 5 and/or entrusted medical information database 6, an entry is made with the audit log server 7 in the trustee system, para [0329]; each user is allowed access only to management information in the set of database tables that the user would be allowed by the access control database to access, para [0086]).

Regarding claim 11, Felsher further teaches the method further comprising: performing biometric authentication based on the received profile information from the PDK (performing the authentication and optionally rule-based access implementation, para [0262]; Biometric authentication schemes, . . . A biometric identification system accepts unique biometric information from a user and identifies the user by matching the information against information belonging to registered users of the system, para [0042]; Though biometric authentication is a secure means of identifying a user, it is difficult to derive encryption keys from the information. In the first place, the information is different each time it is presented to a biometric information input device, para [0043]).

Regarding claim 12, Felsher further teaches the method further comprising: obtaining a representation of physical or behavioral characteristics derived from the individual (a file reader to read the data on the personal data files and to transmit the patient related data to the telecommunications unit at the facility, para [0068]; card readers. A user of the secured network system inserts a microchip embedded card into one of the card readers, para [0105]; a smart card reader, para [0129]; a dual module reader for reading data and permissions instructions contained on the secure data modules, para [0143]; card reader 13, as well as a biometric identification, para [0330]; user profiles for a system, para [0181]; personal information (such as user preferences and profiles), para [0192]; personal information, such as preferences, profiles, and medical information, para [0200]).

Regarding claim 13, Felsher further teaches the method wherein the physical or behavioral characteristics is received from at least one of a fingerprint scanner, a retinal scanner, an iris scanner, a face scanner, a palm scanner, a DNA analyzer, a signature analyzer, and a voice analyzer (Biometric authentication schemes, for example fingerprint, voice, iris, retina, hand, face, or other personal characteristics, may be used to identify a user. These either do not require a password or access code, or are used in conjunction with such passwords or codes, and may provide substantial system security. A biometric identification system accepts unique biometric information from a user and identifies the user by matching the information against information, para [0042]; a print scanner for reading the print information from a patient or provider, para [0159]; signature data, para [0163]; can access, analyze, para [0064]).

Regarding claim 14, Felsher further teaches the method wherein the auto login server further comprises an access module for comparing the received data with data stored in a credentials database (a login service which receives the first password, accesses the storage device to transform the first password into a second password, and authenticates the second password using an operating system for the processor. The storage device includes encrypted information regarding the second password which can be relatively easily determined in response to the first password, but which cannot be relatively easily determined without the first password. The system or the storage device may also store information for biometric authentication of the user, para [0160]; management interface with unified login and logout and multiple user authentication services, para [0163]; a server password, as a part of the login and authorization process, para [0197]; a server password, as a part of the login and authorization process, para [0250]; -defined information at various security levels is stored in a secure server apparatus, para [0172]).

(See Next Supplemental Box)

APPLE EX1002
000284

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US 09/34095

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:
Preceding Supplemental Box
Box No. V — Reasoned Statement
2. Citations and explanations:

Regarding claim 15, Felsher further teaches the method further comprising: detecting a PDK in response to the PDK entering a proximity zone of the reader, and request the PDK to transmit the profile (each of the health care facilities has a telecommunications unit and a file reader to read the data on the personal data files and to transmit the patient related data to the telecommunications unit at the facility, para [0098]; a patient's individual electronic patient care station (PCS) interconnected to a master library (ML) which stores data in digital compressed format, through a local medical information network. The patient/medical personnel interact with this medical information network through the unique PCS and receive the requested service or data from the master library. The data is then displayed either on the associated television set or video monitor or through wireless/IR communications to a peripheral personal data assistant, para [0058]; many different electronic commerce systems have access to, and indeed maintain profiles and other information on customers, para [0034]; Such aggregated information is then synthesized, customized, personalized and localized to meet the information resource requests specified by the user via the network interface device, para [0068]; detecting unauthorized decryption of encrypted data transmitted over the data network . . . If the calculated public key is unique, then a portion of the public key (e.g. a subset of its bits) is stored in a data provider database as an electronic identifier for use in detecting unauthorized decryption of data by the interface unit, para [0101]; The system includes means for detecting various types, para [0060]).

Regarding claim 16, Felsher further teaches the method further comprising receiving data from a second PDK (A first data value for a record is entered at a first workstation and a second data value for the record is entered at a second workstation without locking either workstation during data entry. The new data values are stored in the medical database after completion of data entry at each workstation, para [0056]; for adding new medical data about the individual to the device and for communicating with other computers to retrieve large data records about the individual; and for enabling a second computer to collate and sort data relating to selected medical fields from the data of such individual and from the data about other individuals transferred to the second computer, para [0057]; to transmit the first file to a second computer system via a communications channel. The second storage medium stores computer readable instructions permitting the second computer system to receive the first file via the communications channel, to display the corresponding digitized attachment on a second screen of the second computer system, para [0073]).

Regarding claim 17, Felsher further teaches the method wherein the data received from the second PDK is associated with the first PDK (it is retrieved 110, and specifically associated with the identified patient, para [0337]; user profiling must be associated with the same user, para [0035]; (AIC) system formed by a combination of first, second and third storage media. The first storage medium stores computer readable instructions for permitting a first computer system to receive textual data as field data, where each of the field data is displayed on a predetermined portion of a first screen of the first computer system, to assemble the field data and a corresponding digitized image into a first file having an integrated file format and to transmit the first file to a second computer system via a communications channel. The second storage medium stores computer readable instructions permitting the second computer system to receive the first file via the communications channel . . . An AIC system including several computers connected via a communications channel, an electronic file, and an operating method therefore are also described, para [0073]; A second computer system transmits requested digital information to a requesting first computing system in wrapped form, which includes digital instructions that must be successfully executed, or unwrapped, before access to the digital information is allowed, para [0067]).

Claims 1-17 have industrial applicability as defined by PCT Article 33(4) because the subject matter claimed can be made or used in industry.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

(i) the claim is unchanged;
(ii) the claim is cancelled;
(iii) the claim is new;
(iv) the claim replaces one or more claims as filed;
(v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1*bis*(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43*bis*.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.

APPLE EX1002
000286

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

What parts of the international application may be amended ?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When ? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments ?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How ? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments ?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

APPLE EX1002
000287

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

RECEIVED
PATENT DOCKETING

To:

KANDA V. ISHIHARA
FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STR
MOUNTAIN VIEW, CA 94041

JUN 03 2009
Fenwick & West

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 01 JUN 2009
Applicant's or agent's file reference 15381 PCT JSOU-	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US2009/039943	International filing date *(day/month/year)* 08 April 2009
Applicant PROXENSE, LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

   For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver Telephone No. 571-272-7774

Form PCT/ISA/220 (January 2004) *(See notes on accompanying sheet)*

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 15381 PCT	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US2009/039943	International filing date *(day/month/year)* 08 April 2009	(Earliest) Priority Date *(day/month/year)* 08 April 2008
Applicant PROXENSE, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 7 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II)

3. ☐ **Unity of invention is lacking** (see Box No. III)

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☒ as suggested by the applicant

☐ as selected by this Authority, because the applicant failed to suggest a figure

☐ as selected by this Authority, because this figure better characterizes the invention

b. ☐ none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/039943

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 21/00 (2009.01)
USPC - 713/186
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(8) - G06F 21/00 (2009.01)
USPC - 713/186

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2007/0245157 A1 (GIOBBI et al) 18 October 2007 (18.10.2007) entire document	1, 2, 5, 6, 11-17
Y		3, 4, 7-10, 18-26
Y	US 2006/0237528 A1 (BISHOP et al) 26 October 2006 (26.10.2006) entire document	3, 7, 8, 23
Y	US 2006/0190348 A1 (Ofer et al) 24 August 2006 (24.08.2006) entire document	4, 9, 10
Y	US 7,119,659 B2 (BONALLE et al) 10 October 2006 (10.10.2006) entire document	18-26
A, P	US 7,401,731 B1 (PLETZ et al) 22 July 2008 (22.07.2008) entire document	1-26
A	US 2007/0260883 A1 (GIOBBI et al) 08 November 2007 (08.11.2007) entire document	1-26
A	US 6,607,136 B1 (ATSMON et al) 19 August 2003 (19.08.2003) entire document	1-26

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"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	Date of mailing of the international search report
22 May 2009	01 JUN 2009
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (April 2005)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
KANDA V. ISHIHARA
FENWICK & WEST LLP
SILICON VALLEY CENTER
801 CALIFORNIA STREET
MOUNTAIN VIEW, CA 94041

RECEIVED
PATENT DOCKETING
JUN 03 2009
Fenwick & West

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	01 JUN 2009
Applicant's or agent's file reference 15381 PCT 25000 -	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2009/039943	08 April 2009	08 April 2008

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G06F 21/00 (2009.01)
USPC - 713/186

Applicant PROXENSE, LLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	22 May 2009	Blaine Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (April 2007)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/039943

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing

      ☐ contained in the international application as filed

      ☐ filed together with the international application in electronic form

      ☐ furnished subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

APPLE EX1002
000292

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/039943

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	3, 4, 7-10, 18-26	YES
	Claims	1, 2, 5, 6, 11-17	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-26	NO
Industrial applicability (IA)	Claims	1-26	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1, 2, 5, 6, 11-17 lack novelty under PCT Article 33(2) as being anticipated by Giobbi et al. (hereinafter Giobbi).

As to claim 1, Giobbi teaches a computer-implemented method for electronic order processing (paragraph 11, transaction processing), comprising: automatically initiating an order by wirelessly receiving data from a personal digital key (PDK) (paragraph 12, wirelessly receives profile from the PDK; paragraph 42, communication is automatically established with PDK); receiving order information (paragraphs 26 and 27, transaction processing; paragraph 66, reader configured to trigger when items are scanned at a checkout counter) and in response to receiving the order information, processing the order (paragraph 11, authorizing and completing a transaction).

As to claim 2, Giobbi teaches the method of claim 1, comprising completing the order (paragraph 11, authorizing and completing a transaction).

As to claim 5, Giobbi teaches a computer-implemented method for electronic order processing (paragraph 11, transaction processing), comprising: automatically initiating an order by wirelessly receiving data from a personal digital key (PDK) (paragraph 12; wirelessly receives profile from the PDK, paragraph 42; communication is automatically established with PDK); receiving a biometric input and order information (paragraph 11, PDK stores one or more profiles, for example a biometric profile; paragraph 66, reader configured to trigger when items are scanned at a checkout counter); confirming the initiation by authenticating the biometric input (paragraph 11, authentication process for biometric profile, paragraph 30, reader receives information from PDK and initiates authentication); and in response to authenticating the biometric input, processing the order (paragraph 11, authorizing and completing a transaction).

As to claim 6, Giobbi teaches the method of claim 1, further comprising: automatically initiating an order completion by wirelessly receiving data from a PDK (paragraph 12, wirelessly receives profile from the PDK; paragraph 42, communication is automatically established with PDK); receiving a second biometric input for the order completion (paragraph 48, alongside the biometric profile stored in the PDK, a biometric input is used as a second input); confirming the order completion by authenticating the second biometric input (paragraph 46, user is authenticated based off the biometric iput), and in response to authenticating the second biometric input, completing the order (paragraph 48, once the user is authenticated, transmission of addition information can be provided to complete a transaction).

As to claim 11, Giobbi teaches the method of claim 5, wherein processing the order includes receiving payment information (paragraphs 11, 33, 63 and claim 10, receiving purchasing information such as credit card information. Additionally, the PDK can store other information such as credit/debit card information, bank information, or personal information in a memory for use in authorizing or completing a transaction).

As to claim 12, Giobbi teaches the method of claim 5, comprising storing the data from the PDK, including customer information in a customer database (paragraph 11, the PDK can store other information such as credit/debit card information, bank information, or personal information in a memory for use in authorizing or completing a transaction; paragraph 34, all PDKs are registered with the central registry and may be optionally registered with one or more selected private registries).

As to claim 13, Giobbi teaches the method of claim 12, further comprising replicating the customer information from the customer database to additional databases (paragraph 11, the PDK can store other information such as credit/debit card information, bank information, or personal information in a memory for use in authorizing or completing a transaction; paragraphs 34 and 41, all PDKs are registered with the central registry (database) and may be optionally registered with one or more selected private registries (databases)).

As to claim 14, Giobbi teaches the method of claim 5, wherein receiving the biometric input comprises performing at least one of a fingerprint scan, a retinal scan, an iris scan, a facial scan, a palm scan, a DNA analysis, a signature analysis, and a voice analysis (paragraph 51, fingerprint, retinal and facial scanners are listed as biometric inputs).

As to claim 15, Giobbi teaches the method of claim 5, comprising establishing a secure communication channel between the PDK and a reader (paragraph 11 and 12, PDK can wireless transmit information and biometric profiles over a secure wireless channel and reader received profiles from the PDK), and wherein a profile is sent from the PDK to the reader (paragraphs 11 and 12, profile is wirelessly received at the reader from the PDK).

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:

As to claim 16, Giobbi teaches the method of claim 6, wherein receiving the biometric input comprises performing at least one of a fingerprint scan, a retinal scan, an iris scan, a facial scan, a palm scan, a DNA analysis, a signature analysis, and a voice analysis (paragraph 51, fingerprint, retinal and facial scanners are listed as biometric inputs).

As to claim 17, Giobbi teaches the method of claim 6, wherein comprising establishing a secure communication channel between the PDK and a reader, and wherein a profile is sent from the PDK to the reader (paragraph 11 and 12, PDK can wireless transmit information and biometric profiles over a secure wireless channel and reader received profiles from the PDK).

Claims 3, 7, 8 lack an inventive step under PCT Article 33(3) as being obvious over Giobbi et al. (hereinafter Giobbi) in view of Bishop et al (hereinafter Bishop).

As to claim 3, Giobbi teaches the method of claim 1, comprising processing received order information (paragraph 11, transaction processing). Giobbi does not teach processing rewards based on the received order information. Bishop teaches processing rewards based on the received order information (paragraph 63 shows a transaction device can be a biometric device, paragraphs 65 and 66, shows that the financial transaction device can be used to pay for acquisitions or pay an amount and to redeem points instead of paying with money). It would have been obvious to one of ordinary skill in the art at the time of the invention to include processing rewards based on the received order information in Giobbi as taught in Bishop in order to use gifted loyalty points instead of paying the monetary value (Bishop: paragraph 66).

As to claim 7, Giobbi teaches the method of claim 5 further comprising: processing received order information (paragraph 11, transaction processing). Giobbi does not teach processing rewards based on the received order information. Bishop teaches processing rewards based on the received order information (paragraph 63 shows a transaction device can be a biometric device, paragraphs 65 and 66, shows that the financial transaction device can be used to pay for acquisitions or pay an amount and to redeem points instead of paying with money). It would have been obvious to one of ordinary skill in the art at the time of the invention to include processing rewards based on the received order information in Giobbi as taught in Bishop in order to use gifted loyalty points instead of paying the monetary value (Bishop: paragraph 66).

As to claim 8, Giobbi in view of Bishop teaches the method of claim 7. Giobbi does not teach wherein processing the rewards further maintaining a rewards count. Bishop teaches wherein maintaining a rewards count (paragraph 63 shows membership data and credit card data associated with an account or card may be transmitted using any conventional protocol for transmission and/or retrieval of information from an account or associated transaction card such as credit, debit, loyalty, etc; paragraph 65 and 66, the financial transaction device may be associated with various loyalty programs, which can include frequent flyer miles, on-line pints earned from viewing or purchasing products or websites online and programs associated with diner's cards, credit cards, debit cards, hotel cards, calling cards, and/or the like and that the financial transaction device can be used to pay for acquisitions or pay an amount and to redeem points instead of paying with money). It would have been obvious to one of ordinary skill in the art at the time of the invention to include wherein maintaining a rewards count in Giobbi as taught in Bishop in order to accurately track rewards points for redemption (Bishop: paragraphs 63, 65, 66).

Claims 4, 9, 10 lack an inventive step under PCT Article 33(3) as being obvious over Giobbi et al. (hereinafter Giobbi) in view of Ofer et al. (hereinafter Ofer).

As to claim 4, Giobbi teaches the method of claim 1. Giobbi does not teach comprising presenting an order selection based on the received order information. Ofer teaches presenting an order selection based on the received order information (paragraphs 65, a computerized interface allowing a user to provide at least one of the following: select (specify) products the user intends to purchase, review the selected products, make necessary modifications or additions, and order the products in accordance with a selection; paragraph 93 and 94, selection of products and/or product groups are facilitated and contains a specification of products being offered for ordering in accordance with a trolley's specification). It would have been obvious to one of ordinary skill in the art at the time of the invention to include order selection includes a favorite selection in Giobbi as taught in Ofer in order to specify products the user intends to purchase (Ofer: paragraph 65).

As to claim 9, Giobbi teaches the method of claim 5. Giobbi does not teach comprising presenting an order selection based on the received order information. Ofer teaches presenting an order selection based on the received order information (paragraphs 65, a computerized interface allowing a user to provide at least one of the following: select (specify) products the user intends to purchase, review the selected products, make necessary modifications or additions, and order the products in accordance with a selection; paragraph 93 and 94, selection of products and/or product groups are facilitated and contains a specification of products being offered for ordering in accordance with a trolley's specification). It would have been obvious to one of ordinary skill in the art at the time of the invention to include order selection includes a favorite selection in Giobbi as taught in Ofer in order to specify products the user intends to purchase (Ofer: paragraph 65).

As to claim 10, Giobbi in view of Ofer teaches the method of claim 9. Giobbi does not teach order selection includes a favorite selection. Ofer teaches order selection includes a favorite selection (paragraph 94, the presentation of the specification may be personalized, e.g. based on the personal catalogue. In order to simplify the process of repetitive ordering, the personalized specification may contain separately presented frequent orders and/or last orders and/or favorite products of the user). It would have been obvious to one of ordinary skill in the art at the time of the invention to include order selection includes a favorite selection in Giobbi as taught in Ofer in order to simplify repetitive ordering (Ofer: paragraph 94).

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/039943

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:

Claims 18-22, 24-26 lack an inventive step under PCT Article 33(3) as being obvious over Giobbi et al. (hereinafter Giobbi) in view of Bonalle et al. (hereinafter Bonalle)

As to claim 18, Giobbi teaches a system for electronic order processing (paragraph 11, transaction processing), comprising: a personal digital key (PDK) and wirelessly receiving the data from the PDK and processing the order (paragraph 11, authorizing and completing a transaction. paragraph 12, wirelessly receives profile from the PDK). Giobbi does not teach a customer interface device for wirelessly receiving data from a personal digital key (PDK) and a transactions server adapted for communication with the customer interface device for initiating an order in response to wirelessly receiving the data from the PDK and processing the order. Bonalle teaches a customer interface device for wirelessly receiving data from a device (column 8 lines 1-14, the financial transaction device can be a biometric device; figure 2, column 16 lines 55-67, column 17 lines 1-7, merchant system 220, user computer 250 and/or kiosk 270 are configured to communicate with RF transaction device 240), a transactions server (figure 2, column 22 lines 10-23, merchant server) adapted for communication with the customer interface device for initiating an order in response to wirelessly receiving the data from a device and processing the order (figure 2, column 26 lines 5-21, a transaction may be performed under any business as usual standard employed by the merchant and/or issuer system For example, the merchant server may be configured to communicate transaction data to the appropriate issuer system). It would have been obvious to one of ordinary skill in the art at the time of the invention to include a customer interface device for wirelessly receiving data from a personal digital key (PDK) and a transactions server adapted for communication with the customer interface device for initiating an order in response to wirelessly receiving the data from the PDK and processing the order in Giobbi as taught in Bonalle in order to perform the completion of a transaction (Bonalle: column 26 lines 5-8).

As to claim 19, Giobbi in view of Bonalle teaches the system of claim 18. Giobbi teaches wirelessly receiving data from a personal digital key (PDK) (paragraph 12, wirelessly receives profile from the PDK). Giobbi does not teach further comprising:a merchant interface device, adapted to communicate with the transactions server, for wirelessly receiving data from a personal digital key (PDK); and wherein the transactions server is adapted for communication with the merchant interface device and for initiating an order completion. Bonalle teaches a merchant interface device, adapted to communicate with the transactions server, for wirelessly receiving data from a device (column 8 lines 1-14, the financial transaction device can be a biometric device; figure 2, column 16 lines 55-67, column 17 lines 1-7, merchant system 220, user computer 250 and/or kiosk 270 are configured to communicate with RF transaction device 240) and wherein the transactions server 2, column 22 lines 10-23, merchant server) is adapted for communication with the merchant interface device and for initiating an order completion. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a merchant interface device, adapted to communicate with the transactions server, for wirelessly receiving data from a personal digital key (PDK); and wherein the transactions server is adapted for communication with the merchant interface device and for initiating an order completion in Giobbi as taught in Bonalle in order to perform the completion of a transaction (Bonalle: column 26 lines 5-8).

As to claim 20, Giobbi in view of Bonalle teaches the system of claim 18. Giobbi teaches a reader, for automatically uploading data from the PDK and receiving biometric input from a user (figure 3 and paragraph 49, the reader includes one or more biometric readers, a receiver-decoder circuit (RDC), a processor, a network interface, an I/O port and optionally a credit card terminal I/O). Giobbi does not teach a reader adapted to communicate with the transaction server. Bonalle teaches a reader adapted to communicate with the transaction server (column 8 lines 1-14, the financial transaction device can be a biometric device; column 17 lines 58-65 issuer systems may also be configured to interact with RF transaction device, directly or indirectly via stand-alone interaction device). It would have been obvious to one of ordinary skill in the art at the time of the invention to include reader adapted to communicate with the transaction server in Giobbi as taught in Bonalle in order to perform the completion of a transaction (Bonalle: column 26 lines 5-8).

As to claim 21, Giobbi in view of Bonalle teaches the system of claim 18. Giobbi does not teach wherein the transactions server further comprises an order processing module, adapted to communicate with the customer interface device, for receiving order information and processing the order. Bonalle teaches the transactions server (figure 2, column 22 lines 10-23, merchant server) further comprises an order processing module, adapted to communicate with the customer interface device, for receiving order information and processing the order. (figure 2, column 26 lines 5-21, The issuer system may receive the transaction information and process the transaction under issuer defined protocol independent of any other protocol used by other issuers to process a transaction). It would have been obvious to one of ordinary skill in the art at the time of the invention to include wherein the transactions server further comprises an order processing module, adapted to communicate with the customer interface device, for receiving order information and processing the order in Giobbi as taught in Bonalle in order to perform the completion of a transaction (column 26 lines 5-8).

As to claim 22, Giobbi in view of Bonalle teaches the system of claim 19. Giobbi does not teach wherein the transactions server further comprises an order completion module, adapted to communicate with the merchant interface device, for receiving order completion confirmation and completing the order. Bonalle teaches the transactions server (figure 2, column 22 lines 10-23, merchant server)further comprises an order completion module, adapted to communicate with the merchant interface device, for receiving order completion confirmation and completing the order (figure 2, column 26 lines 5-21, the issuer system may receive the transaction data then provide the merchant with the appropriate satisfaction for the transaction.) It would have been obvious to one of ordinary skill in the art at the time of the invention to include wherein the transactions server further comprises an order completion module, adapted to communicate with the merchant interface device, for receiving order completion confirmation and completing the order in Giobbi as taught in Bonalle in order to perform the completion of a transaction (Bonalle: column 26 lines 5-8).

As to claim 24, Giobbi in view of Bonalle teaches the system of claim 19. Giobbi teaches further comprising a customer database for storing data including customer information (paragraph 11, the PDK can store other information such as credit/debit card information, bank information, or personal information in a memory for use in authorizing or completing a transaction; paragraph 34, all PDKs are registered with the central registry and may be optionally registered with one or more selected private registries).

APPLE EX1002
000295

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2009/039943

Supplemental Box

In case **the space in any of the preceding boxes is not sufficient.**
Continuation of:

As to claim 25, Giobbi in view of Bonalle teaches the system of claim 24. Giobbi teaches wherein the data from the customer database is replicated to additional databases (paragraph 11, the PDK can store other information such as credit/debit card information, bank information, or personal information in a memory for use in authorizing or completing a transaction; paragraphs 34 and 41, all PDKs are registered with the central registry (database) and may be optionally registered with one or more selected private registries (databases)).

As to claim 26. Giobbi in view of Bonalle teaches the system of claim 25. Giobbi teaches wherein the additional databases include a validation database, a central registry and a private registry (paragraph 26).

Claim 23 lacks an inventive step under PCT Article 33(3) as being obvious over Giobbi et al. (hereinafter Giobbi) in view of Bonalle et al. (hereinafter Bonalle) in further view of Bishop et al. (hereinafter Bishop).

As to claim 23, Giobbi in view of Bonalle teaches the system of claim 21. Giobbi does not specifically teach a transaction server server and order processing module. Bonalle teaches a transaction server server (figure 2, column 22 lines 10-23, merchant server) and order processing module (figure 2, column 26 lines 5-21, The issuer system may receive the transaction information and process the transaction under issuer defined protocol independent of any other protocol used by other issuers to process a transaction). It would have been obvious to one of ordinary skill in the art at the time of the invention to include a transaction server server and order processing module in Giobbi as taught in Bonalle in order to perform the completion of a transaction (Bonalle: column 26 lines 5-8). Giobbi in view of Bonalle does not teach wherein the transactions server further comprises a rewards processing module, adapted to communicate with the order processing module, for processing rewards based on the order. Bishop teaches the transactions server further comprises a rewards processing module, adapted to communicate with the order processing module, for processing rewards based on the order (paragraph 63 shows a transaction device can be a biometric device, paragraphs 65 and 66, shows that the financial transaction device can be used to pay for acquisitions or pay an amount and to redeem points instead of paying with money). It would have been obvious to one of ordinary skill in the art at the time of the invention to include wherein maintaining a rewards count in Giobbi in view of Bonalle as taught in Bishop in order to accurately track rewards points for redemption (Bishop: paragraphs 63, 65, 66).

Claims 1-26 the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: KANDA V. ISHIHARA
PATENT LAW WORKS LLP
201 S. MAIN STREET, SUITE 250
SALT LAKE CITY, UT 84111

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

	Date of mailing *(day/month/year)* 09 DEC 2014
Applicant's or agent's file reference 10001-03972 PCT	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US2014/037609	International filing date *(day/month/year)* 10 May 2014
Applicant PROXENSE, LLC	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

   How? Directly to the International Bureau of WIPO preferably through ePCT or on paper to, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

   For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
   - ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
   - ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

   Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

   Within **19 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45*bis*.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 Telephone No. PCT OSP: 571-272-7774

Form PCT/ISA/220 (July 2014)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 10001-03972 PCT	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US2014/037609	International filing date *(day/month/year)* 10 May 2014	(Earliest) Priority Date *(day/month/year)* 10 May 2013
Applicant PROXENSE, LLC		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the language, the international search was carried out on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

   b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

   c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☒ **Unity of invention is lacking** (see Box No. III).

4. With regard to the title,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

   ☒ the text is approved as submitted by the applicant.

   ☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

   a. the figure of the drawings to be published with the abstract is Figure No. 1

   ☐ as suggested by the applicant.

   ☒ as selected by this Authority, because the applicant failed to suggest a figure.

   ☐ as selected by this Authority, because this figure better characterizes the invention.

   b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/037609

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Extra Sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-7

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/037609

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 3/00 (2014.01)
CPC - G06F 21/79 (2014.09)
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(8) - G06F 3/00, G06F 12/14, G06F 21/85 (2014.01)
USPC - 710/8, 713/193, 711/164, 711/103

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
CPC - G06F 21/79, G06K 19/07732, G06K 19/07, G06K 7/10237, G06K 19/0723 (2014.09) (Keyword Delimited)

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

Orbit, Google Patents, Google.
Search Terms Used: USB, authentication, proximity, host device, biometric sensors.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/0069814 A1 (ABRAHAM et al) 30 March 2006 (30.03.2006) entire document	1-7
A	US 2011/0246790 A1 (KOH et al) 6 October 2011 (6.10.2011) entire document	1-7
A	US 2008/0209571 A1 (BHASKAR et al) 28 August 2008 (28.08.2008) entire document	1-7
A	US 7272723 B1 (ABBOTT et al) 18 September 2007 (18.09.2007) entire document	1-7
A	US 2013/0019323 A1 (ARVIDSSON et al) 17 January 2013 (17.01.2013) entire document	1-7

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"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	Date of mailing of the international search report
26 November 2014	09 DEC 2014
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/037609

Continuation of Box No. III:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-7, drawn to a system comprising a secure element.
Group II, claims 8-20, drawn to a method comprising: presenting, to a secure element.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: a secure element configured to wirelessly communicate directly with an associated host device, the secure element including a memory storing data and a wireless storage module executable by a processor of the secure element as claimed therein is not present in the invention of Group II. The special technical feature of the Group II invention: mapping the one or more virtual resources to one or more available physical resources based on a model architecture for the secure element and to provide hardware abstraction, the available physical resources varying based on the model architecture and an associated host device as claimed therein is not present in the invention of Groups I.

Groups I and II lack unity of invention because even though the inventions of these groups require the technical feature of a secure element and an associated host device, this technical feature is not a special technical feature as it does not make a contribution over the prior art.

Specifically, US 2013/0019323 A1 (ARVIDSSON et al) 17 January 2013 (17.01.2013) teaches a secure element and an associated host device (In the send absent user application message step 68, a message is sent to the service provider associated with the user application which is absent in the secure element, Para. 73; hosting the secure element 10, Para. 44).

Since none of the special technical features of the Group I or II inventions are found in more than one of the inventions, unity of invention is lacking.

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: KANDA V. ISHIHARA
PATENT LAW WORKS LLP
201 S. MAIN STREET, SUITE 250
SALT LAKE CITY, UT 84111

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	09 DEC 2014
Applicant's or agent's file reference 10001-03972 PCT	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2014/037609	10 May 2014	10 May 2013

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - G06F 3/00 (2014.01)
CPC - G06F 21/79 (2014.09)

Applicant PROXENSE, LLC

1. This opinion contains indications relating to the following items:

- [x] Box No. I Basis of the opinion
- [ ] Box No. II Priority
- [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- [x] Box No. IV Lack of unity of invention
- [x] Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- [ ] Box No. VI Certain documents cited
- [ ] Box No. VII Certain defects in the international application
- [ ] Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 *bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to th IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Fom PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer:
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	26 November 2014	Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (July 2011)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/037609

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed.

   ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:

   a. (means)

      ☐ on paper

      ☐ in electronic form

   b. (time)

      ☐ in the international application as filed

      ☐ together with the international application in electronic form

      ☐ subsequently to this Authority for the purposes of search

4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/037609

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has, within the appicable time limit:

   ☐ paid additional fees

   ☐ paid additional fees under protest and, where applicable, the protest fee

   ☐ paid additional fees under protest but the applicable protest fee was not paid

   ☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

   ☐ complied with

   ☒ not complied with for the following reasons:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-7, drawn to a system comprising a secure element.
Group II, claims 8-20, drawn to a method comprising: presenting, to a secure element.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: a secure element configured to wirelessly communicate directly with an associated host device, the secure element including a memory storing data and a wireless storage module executable by a processor of the secure element as claimed therein is not present in the invention of Group II. The special technical feature of the Group II invention: mapping the one or more virtual resources to one or more available physical resources based on a model architecture for the secure element and to provide hardware abstraction, the available physical resources varying based on the model architecture and an associated host device as claimed therein is not present in the invention of Groups I.

Groups I and II lack unity of invention because even though the inventions of these groups require the technical feature of a secure element and an associated host device, this technical feature is not a special technical feature as it does not make a contribution over the prior art.

Specifically, US 2013/0019323 A1 (ARVIDSSON et al) 17 January 2013 (17.01.2013) teaches a secure element and an associated host device (In the send absent user application message step 68, a message is sent to the service provider associated with the user application which is absent in the secure element, Para. 73; hosting the secure element 10, Para. 44).

Since none of the special technical features of the Group I or II inventions are found in more than one of the inventions, unity of invention is lacking.

4. Consequently, this opinion has been established in respect of the following parts of the international application:

   ☐ all parts

   ☒ the parts relating to claims Nos. 1-7

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/037609

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	None	YES
	Claims	1-7	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-7	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-7 lack novelty under PCT Article 33(2) as being anticipated by Abraham et al (hereinafter referred to as Abraham).

Regarding claim 1, Abraham teaches a system comprising (Abstract): a secure element configured to wirelessly communicate directly with an associated host device (a USB flash drive may include a near field communication transmitter capable of wirelessly communicating data from the USB fish drive to the external NFC device, [0006]; The host computer 102 may detect the presence of a memory device at block 412, either by presence of a memory device coupled to the USB port 104 or via proximity to the host computer 102, if the host computer 102 include wireless near field communication capabilities. If a memory device is not present, the user may be prompted for a memory device, such as the memory device 10 of FIG. 2, at block 414, [0046]), the secure element including a memory storing data and a wireless storage module executable by a processor of the secure element (However, in one example, the near field communication tag 24 may include a near field communication controller including a processor, a special purpose state device, or any other appropriate controller, [0029]; also see FIGS. 1A and 1B, [0023], [0024]);
and the associated host device including a link module executable by a processor (For example, the device having the USB connector connected to the USB port [link module, see figure 2, USB port 104] of another device may be considered the 'transmitter' of data, and the device having the USB port connected to the USB connector may be considered the 'receiver' of data, [0033]), the link module of the associated host device cooperating with the wireless storage module of the secure element to wirelessly mount at least a portion of the memory as a storage drive of the associated storage drive (The host computer 102 may detect the presence of a memory device at block 412, either by presence of a memory device coupled to the USB port 104 or via proximity to the host computer 102, if the host computer 102 include wireless near field communication capabilities. If a memory device is not present, the user may be prompted for a memory device, such as the memory device 10 of FIG. 2 [mounts a portion of memory to the host device], at block 414, [0046]; The controller 110 and/or transponder 124 may encode the data portion onto a modulated data signal at block 224. The user may then initiate transmission of the selected data portion at block 226, such as through a transmission initiation selector 134 of the memory device 10. The near field communication transponder 124 may transmit the data portion at block 228, and the external device 150 may receive the data portion, [0042]).

Regarding claim 2, Abraham teaches, the system comprising: a biometric sensor configured to obtain physical or behavioral characteristics from a user (the private partition may be accessed only through authentication of a credential provided by the user, [0008]; The biometric reader 24 may include any appropriate biometric reader such as a fingerprint scanner, an optical scanner, a voice recognition system, etc. As explained further below, the biometric reader 26 may provide restricted access to all or part of the data stored in the memory device 10, wherein access is restricted only to a user(s) with appropriate biometric credentials, [0024]; also see [0052], [0055]);
and an identification module executable by the processor of the secure element to authenticate the user as an owner of the secure element based on the obtained physical or behavioral characteristic (The biometric reader 24 may include any appropriate biometric reader such as a fingerprint scanner, an optical scanner, a voice recognition system, etc [the biometric reader is a biometric sensor that is also the identification module that authenticates fingerprinting and identifies biometrics, see applicant spec [0064]]. As explained further below, the biometric reader 26 may provide restricted access to all or part of the data stored in the memory device 10, wherein access is restricted only to a user(s) with appropriate biometric credentials, [0024]; also see [0052], [0055]).

Regarding claim 3, Abraham teaches, wherein one or more of the mounting of the portion of the memory and a user accessing the mounted portion of the memory is responsive successful authentication of the user as the owner of the secure element based on the obtained physical or behavioral characteristic (The host computer 102 may detect the presence of a memory device at block 412, either by presence of a memory device coupled to the USB port 104 or via proximity to the host computer 102, if the host computer 102 include wireless near field communication capabilities. If a memory device is not present, the user may be prompted for a memory device, such as the memory device 10 of FIG. 2 [mounts a portion of memory to the host device], at block 414, [0046]; As explained further below, the biometric reader 26 may provide restricted access to all or part of the data stored in the memory device 10, wherein access is restricted only to a user(s) with appropriate biometric credentials, [0024]; also see [0008], [0052], [0055]).

Regarding claim 4, Abraham teaches, wherein the biometric sensor is included in the secure element (As shown in FIG. 1B, the memory device 10 also includes a near field communication tag 24, such as a Radio Frequency Identification (RFID) tag, and a biometric reader 26, [0024]).

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2014/037609

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Regarding claim 5, Abraham teaches, wherein the biometric sensor is included in the associated host device (In one example, the key selector 140 may include a biometric reader 26 such as a fingerprint sensor detecting a fingerprint of a finger placed proximate the biometric device [most computers (interpreted as host devices) have biometric sensors such as fingerprinting or a camera] or a retina sensor detecting a retina, [0054]; A single USB port may connect multiple peripheral devices, including speakers . . . scanners, memory drives, and cameras [biometric sensors], such as through daisy chaining the peripheral devices into one port of the computer system, [0002]), but available to the secure element as a virtual biometric sensor via an abstraction layer (The biometric reader 24 may include any appropriate biometric reader such as a fingerprint scanner, an optical scanner, a voice recognition system, etc [it is axiomatic that the biometric reader is associated with the mapping of the virtual biometric sensor such as fingerprint scanner to the appropriate sensor, see applicant spec about abstraction layer, [0048]]), [0024]; The host computer 102 may detect the presence of a memory device at block 412, either by presence of a memory device coupled to the USB port 104 or via proximity to the host computer 102, if the host computer 102 include wireless near field communication capabilities. If a memory device is not present, the user may be prompted for a memory device, such as the memory device 10 of FIG. 2 [mounts a portion of memory to the host device and appears to the host device as a storage drive, aka virtual biometric sensor, see applicant spec [0005]], at block 414, [0046]).

Regarding claim 6, Abraham teaches, wherein the wirelessly mounted portion of the memory appears to the host device as a storage drive physically connected to the host device (The host computer 102 may detect the presence of a memory device at block 412, either by presence of a memory device coupled to the USB port 104 or via proximity to the host computer 102, if the host computer 102 include wireless near field communication capabilities. If a memory device is not present, the user may be prompted [indication of appearance of storage device] for a memory device, such as the memory device 10 of FIG. 2 [mounts a portion of memory to the host device and appears to the host device as a storage drive], at block 414, [0046]).

Regarding claim 7, Abraham teaches, wherein the mounting of the portion of the memory is based on one or more of a user configurable proximity and a user configurable duration of time for the secure element to be in proximity to the associated host device (The host computer 102 may detect the presence of a memory device at block 412, either by presence of a memory device coupled to the USB port 104 or via proximity [dependent upon the proximity, the user may have the secure element with them at a certain distance, establishing a user configurable proximity and duration of time] to the host computer 102, if the host computer 102 include wireless near field communication capabilities. If a memory device is not present, the user may be prompted [indication of appearance of storage device] for a memory device, such as the memory device 10 of FIG. 2 [mounts a portion of memory to the host device and appears to the host device as a storage drive], at block 414, [0046]).

Claims 1-7 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

Search History:

Limited Classification Search

The Patent Analyst performed a limited classification search within the following US, IPC, CPC, ECLA, or F-Term classification areas:

U.S. Class/Subclass(es): 710/8, 713/193, 711/164, 711/103

IPC (8) Class/Subclass(es): G06F 3/00, G06F 12/14, G06F 21/85 (2014.01)

CPC Class/Subclass(es): G06F 21/79, G06K 19/07732, G06K 19/07, G06K 7/10237, G06K 19/0723 (2014.09)

See Global Search Results.

Global Patent Literature Text Search

The Patent Analyst performed the following global text search, which was not limited by classification but may or may not have been limited by other criteria:

ORBIT
SS Results

18	6	1 AND 16
17	3115	(G06K-019/0723)/CPC
16	253	(G06K-007/10237)/CPC
15	5631	(G06K-019/07)/CPC
14	744	(G06K-019/07732)/CPC
13	1345	(G06F-021/79)/CPC
12	5704	(711103)/PCL
11	701	(711164)/PCL
10	3975	(713193)/PCL
9	2903	(710008)/PCL
8	362	(G06F-021/85)/IPC
7	28148	(G06F-012/14)/IPC
6	73941	(G06F-003/00)/IPC
5	17	4 AND 1
4	67	((USB 5D PROXIM+ 5D (DEVICE? OR COMPUTER OR PHONE OR MOBILE)))/TI/AB/IW/TX
3	24	2 AND (WIRELESS??)
2	212	((USB 2D DEVICE?) AND (AUTHENT+))/TI/AB/IW
1	9438	((USB 2D DEVICE?) AND (AUTHENT+))/TI/AB/IW/CLMS/DESC/ODES/ICLM

GOOGLE PATENT http://www.google.com/advanced_patent_search

No. of Hits	Text String
891,000	host device activates when usb is in proximity
613,000	integrated sensors in usb sensing a proximity to a smartphone
3,650,000	integrated sensors in usb sensing a proximity to a computer
228,000	secure usb senses when proximate to host device
32,700	secure usb senses when proximate to host device AND authentication AND biometric sensor AND virtual biometric sensor
233,000	secure usb senses proximity to host device AND authentication AND biometric sensor AND virtual biometric sensor
8,500	wireless usb proximity to host device for authentication AND biometric sensor AND virtual biometric sensor
131	wireless usb "proximity" to "host device" for authentication AND biometric sensor AND virtual biometric sensor
174	wireless usb "proximity" to "host device" AND biometric sensor AND virtual biometric sensor
9,520	wireless usb "proximity" to host device AND biometric sensor AND virtual biometric sensor
14,200	wireless usb proximity to host device AND biometric sensor AND virtual biometric sensor
24,700	wireless usb proximity to host device and biometric sensor
7,830	wireless usb proximity lock and biometric sensor
401,000	wireless proximity sensor

Computer Accessed Text Databases Searched

The Patent Analyst searched the following computer accessed text databases:

Google: http://www.google.com

No. of Hits	Text String
12,900,000	host device activates when usb is in proximity
133,000,000	integrated sensors in usb sensing a proximity to a smartphone
75,900,000	integrated sensors in usb sensing a proximity to a computer
1,920,000	secure usb senses when proximate to host device
208,000	secure usb senses when proximate to host device AND authentication AND biometric sensor AND virtual biometric sensor
1,660,000	secure usb senses proximity to host device AND authentication AND biometric sensor AND virtual biometric sensor
149,000	wireless usb proximity to host device for authentication AND biometric sensor AND virtual biometric sensor
3,440	wireless usb "proximity" to "host device" for authentication AND biometric sensor AND virtual biometric sensor
94,100	wireless usb "proximity" to "host device" AND biometric sensor AND virtual biometric sensor
2,610,000	wireless usb "proximity" to host device AND biometric sensor AND virtual biometric sensor

2,870,000	wireless usb proximity to host device AND biometric sensor AND virtual biometric sensor
3,020,000	wireless usb proximity to host device and biometric sensor
317,000	wireless usb proximity lock and biometric sensor
1,160,000	wireless proximity sensor

Date search was completed: 26 November 2014
PD/JG

Electronic Patent Application Fee Transmittal

Application Number:	15049060
Filing Date:	20-Feb-2016
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Filer:	Paige McDede Alsbury/Kristi LaMont
Attorney Docket Number:	10001-05488 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
		Total in USD ($)		**120**

Electronic Acknowledgement Receipt

EFS ID:	38376133
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Paige McDede Alsbury
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	23-JAN-2020
Filing Date:	20-FEB-2016
Time Stamp:	16:57:17
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$120
RAM confirmation Number	E20201MG58595647
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	05488US_20200123_IDS1.pdf	1044662 d394d394407bb55703f81e85d0345c0d313249c7	no	34
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	05488US_20200123_IDS2.pdf	1039224 b303930930747ad387c10baf4b4914459f84e127	no	21
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Information:					
3	Foreign Reference	05488US_JPH1049604.pdf	1676729 9ba316a4be26504936f9357407f4eb5780bb68dc	no	39
Warnings:					
Information:					
4	Foreign Reference	05488US_WO2004038563.pdf	1282584 16a29604c3a669b11c20766734abb1cc16336807	no	24
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Information:					
5	Foreign Reference	05488US_WO2007087558.pdf	6546080 912ed58e6d5706fab67308f282f255faaf859bdc	no	734
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Information:					
6	Non Patent Literature	05488US_NPL1_ApplyingBiometricstoDoorAccess.PDF	346303 4493394720007f0eb913507854b612d04079c9e3	no	5
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7	Non Patent Literature	05488US_NPL2_IEEE082_15_4.pdf	158515 cf618a693c156c63e23b922d2564fc50b8611e34	no	6
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8	Non Patent Literature	05488US_NPL3_SmartCardSetupGuide.pdf	443680 e452ca8346c5972d4a664eeb81a3a2b4a8c71ae3	no	16
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9	Non Patent Literature	05488US_NPL4_AntennaTheory.pdf	1274236 85e9797f193082f6c5020cc5c55955d8420e392c	no	17
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10	Non Patent Literature	05488US_NPL5_PersonalServersAsDigitalKeys.pdf	2768280 b85815dd29403b5cd9c94bab07f735b5c03fc9a2	no	10
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11	Non Patent Literature	05488US_NPL6_BlueProximityLeaveItItsLocked.pdf	89462 e03e67359b1083bde8ea4a7cc7f108bf17057568	no	1
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12	Non Patent Literature	05488US_NPL7_AutomaticallyUnlockPCWhenEnteringProximity.pdf	99514 593056b78d97cd9461b71395f426ecafdb67945c	no	5
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13	Non Patent Literature	05488US_NPL8_TechniquesForPrivacy.pdf	442801 3fcaad51ca9a729bda05ae388e909b29cbe5be78	no	5
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Information:					

14	Non Patent Literature	05488US_NPL9_AntennaPatternsandTheirMeaning.pdf	1033530 ffc60e6ae19806b91b9870f2de3903bbb0e33f80	no	17
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15	Non Patent Literature	05488US_NPL10_ImationUSB20MicroHardDrive.pdf	92881 a543f5822ab9ae1139ce8a48570637ccf83aa696	no	2
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Information:					
18	Non Patent Literature	05488US_NPL13_SpecificationofUSProvisionalApplication60824758.pdf	20276527 053c9ffffb42b398cca292af3ecfccfcc5907c93	no	33
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19	Non Patent Literature	05488US_NPL14_HowtheInternetWorks.pdf	3126645 05209f55325d8f353e8bd40744a038eb540a5c54	no	36
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20	Non Patent Literature	05488US_NPL15_FileSecurityKeyChainsEncryptionandMore.pdf	2861227 e815c456bdf0a67e6d217c5c65ab2fa3dd47e9d9	no	30
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21	Non Patent Literature	05488US_NPL16_ISRandWOPCTUS0700349.pdf	607919 007289be537e381b03ec060ba89e798bc625f6a9	no	10
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23	Non Patent Literature	05488US_NPL18_ISRandWOPCTUS0887835.pdf	501967 fcb062a7d396786f3082b32b4dff9d7e4769d4a6	no	8
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27	Non Patent Literature	05488US_NPL22_EffectsofDielectricSuperstratesonaTwoLayer.pdf	92271 2633e6f1aade00e441dec6f61cba10261ba3ca2e	no	4
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Information:					

28	Non Patent Literature	05488US_NPL23_DesktopEncyclopediaoftheInternet.pdf	2394370 8425b41a81ed161ab0e38608ed3c89ef0f4fbeb4	no	51
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29	Non Patent Literature	05488US_NPL24_AntennaTypes.pdf	28115 8d62adbef49ac62582ca20f57488074975a119cf	no	1
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30	Non Patent Literature	05488US_NPL25_GenerationofKeysforUsewiththeDigital.pdf	910233 6ef2478106cb24c4d4a95340bfd44244fca2056a	no	6
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33	Non Patent Literature	05488US_NPL28_AutomateProximityandLocationBasedComputerActions.pdf	232835 dda14c54c52ed9808ceec9366a874ec1bd47f547	no	3
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34	Non Patent Literature	05488US_NPL29_SecurePasswordManagerforPDAs.pdf	281290 497974142791c14a5a800807d061c5167f15bfc5	no	3
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Information:					

35	Non Patent Literature	05488US_NPL30_Isinternetsecurityamajorissue.pdf	983845 13beb1b2d39e5cfc895be16e06a0367328bc4f8e	no	13
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Information:					
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Information:					
37	Fee Worksheet (SB06)	fee-info.pdf	30538 206b770687eb8c227dfc1e954e4d85fb2bb5c0fe	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	79185898		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

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	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	H10-49604	JP		1998-02-20	Shimadzu Corp.		

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	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

	2	2004/038563	WO		2004-05-06	Experton			
	3	2007/087558	WO		2007-08-02	Citrix Systems, Inc.			

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T5
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	Attorney Docket Number	10001-05488 US

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	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

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	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

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SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2020-01-23
Name/Print	Paige M. Alsbury	Registration Number	72,965

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/049,060	Filing Date 02/20/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	01/17/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 11	Minus	** 20	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	Examiner
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/LASHAWN D MARKS/
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Electronic Acknowledgement Receipt

EFS ID:	38328017
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Greg T. Sueoka
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	17-JAN-2020
Filing Date:	20-FEB-2016
Time Stamp:	13:31:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	05488_US_2020-01-17_-_Amendment_Hv6.pdf	100836 e9420ce2877715d4b9260bac25f106e834c88f1c	no	6

Warnings:

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

FIRST INVENTOR:	John J. Giobbi
APPLICATION NO:	15/049,060
FILING DATE:	February 20, 2016
TITLE:	Biometric Personal Data Key (PDK) Authentication
EXAMINER:	Phy Anh Tran Vu
GROUP ART UNIT:	2438
ATTY. DKT. NO:	10001-05488 US
CONFIRMATION NO:	2423

CERTIFICATE OF EFS-WEB TRANSMISSION UNDER 37 CFR § 1.8

I hereby certify that this correspondence is being transmitted via the U.S. Patent and Trademark Office electronic filing system (EFS-Web) to the USPTO on the date below.

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AMENDMENT H

Responsive to the Non-Final Office Action mailed on October 17, 2019, which sets a shortened statutory period for response that expires on January 17, 2020, please enter the following amendment and consider the following remarks.

IN THE CLAIMS

All pending claims are reproduced below.

1. (Currently Amended) A method comprising:

receiving, at a mobile phone ~~device~~, an ID code from a third-party trusted authority, the ID code uniquely identifying the mobile phone ~~device~~ among a plurality of mobile phones ~~devices~~;

persistently storing biometric data including facial recognition of a legitimate user and the ID code on the mobile phone ~~device~~;

receiving, at the mobile phone ~~from a biometric sensor~~, scan data from a biometric scan ~~performed using the biometric sensor, the device including the biometric sensor~~ using the mobile phone;

comparing, using the mobile phone ~~one or more processors~~, the scan data to the biometric data;

determining whether the scan data matches the biometric data; and

responsive to a determination that the scan data matches the biometric data, wirelessly sending, from the mobile phone, the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code.

2. (Cancelled).

3. (Currently Amended) The method of claim 1, further comprising:

receiving a request for biometric verification; and

responsive to a determination that the scan data does not match the biometric data indicating the mobile phone ~~when the device~~ cannot verify the scan data as being from the legitimate user, the mobile phone ~~device~~ does not send the ID code.

4. (Cancelled).

5. (Cancelled).

6. (Cancelled).

7. (Previously Presented) The method of claim 1, wherein completing the transaction includes accessing an application.

8. (Previously Presented) The method of claim 1, wherein completing the transaction includes accessing one or more of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account.

9. (Currently Amended) A mobile phone ~~device~~ comprising:

a persistent storage ~~media~~ having an input that receives ~~persistently stores biometric data of a legitimate user and~~ an ID code ~~that is received~~ from a ~~trusted~~ third-party trusted authority, and biometric data including facial recognition of a legitimate user, the ID code uniquely identifying the mobile phone ~~device~~ among a plurality of mobile phone ~~devices~~, the persistent storage storing the biometric data and the ID code, the persistent storage having an output configured to provide the first set of biometric data and the ID code for use on the mobile phone;

~~a biometric sensor;~~

a validation module, coupled to communicate with the persistent storage media to receive the biometric data from the persistent storage, ~~that causes a visual indication, at the device, that a biometric authentication is requested, that receives~~ the validation module having a scan pad to capture scan data from a biometric scan~~performed using the biometric sensor for comparison against biometric data, that compares~~, the validation module comparing the scan data to the biometric data~~,~~ ~~and~~ to determine[[s]] whether the scan data matches the biometric data; and

a wireless transceiver ~~communication module~~ that, responsive to a determination that the scan data matches the biometric data, sends the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code.

10. (Currently Amended) The mobile phone ~~device~~ of claim 9, wherein the ID code is transmitted to the third-party trusted authority over a network.

11. (Cancelled).

12. (Cancelled).

13. (Cancelled).

14. (Currently Amended) A system, comprising:

a ~~device~~ smartphone that persistently stores biometric data including facial recognition data of a legitimate user and an ID code in the device from a third-party trusted authority, the ID code uniquely identifying the device among a plurality of devices, the ~~device~~ smartphone configured to indicate ~~cause a visual indication, at the device,~~ that a biometric authentication is requested, [[that]]the smartphone configured to wirelessly send[[s]] the ID code to the third-party trusted authority for authentication responsive to determining that scan data from a biometric scan performed using ~~a biometric sensor~~ the smartphone matches the biometric data including facial recognition of the legitimate user, wherein a transaction is completed responsive to authentication of the ID code by the third-party trusted authority; and

the third-party trusted authority operated by a third party, the third-party trusted authority storing a plurality of legitimate ID codes and authenticating the ID code received based on a comparison of the ID code received and the legitimate ID codes included in the plurality of the legitimate ID codes.

15. (Currently Amended) The system of claim 14, wherein the smartphone ~~device~~ receives an authentication request, and in response, requests the biometric scan from a user to generate the scan data and, when the smartphone ~~device~~ cannot verify the scan data as being from the legitimate user, the smartphone ~~device~~ does not send the ID code.

16. (Cancelled).

17. (Cancelled).

18. (Cancelled).

19. (Previously Presented) The system of claim 14, wherein completing the transaction includes accessing one or more of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account.

20. (Previously Presented) The system of claim 14, wherein completing the transaction includes accessing an application.

21. (Previously Presented) The method of claim 1, wherein the transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code includes the third-party trusted authority sending an indication that the third-party trusted authority authenticated the ID code to another party.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7167987		2007-01-23	Angelo	
	2	7361919		2008-04-22	Setlak	
	3	7447911		2008-11-04	Chou et al.	
	4	7711152		2010-05-04	Davida et al.	
	5	7813822		2010-10-12	Hoffberg	
	6	10110385		2018-10-23	Rush et al.	

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	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

	1	20030120934	A1	2003-06-26	Ortiz	
	2	20060078176	A1	2006-04-13	Abiko et al.	

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	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

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A certification statement is not submitted herewith.

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Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2019-12-13
Name/Print	Paige M. Alsbury	Registration Number	72,965

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3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

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Electronic Acknowledgement Receipt

EFS ID:	38025470
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Paige McDede Alsbury
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	13-DEC-2019
Filing Date:	20-FEB-2016
Time Stamp:	15:23:36
Application Type:	Utility under 35 USC 111(a)

Payment information:

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	05488US_20191213_IDS.pdf	1034343 4046a36f898c538cb343df6f7091b81c0d52e579	no	4

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Doc description: Information Disclosure Statement (IDS) Filed

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(Not for submission under 37 CFR 1.99)

Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	Phy Anh Tran Vu
Attorney Docket Number	10001-05488 US

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	1	0135334	WO	A1	2001-05-17	LI, KENNETH		

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	Art Unit	2438
	Examiner Name	Phy Anh Tran Vu
	Attorney Docket Number	10001-05488 US

	1	CHEN, et al. "On Enhancing Biometric Authentication with Data Protection." KES2000. Fourth International Conference on Knowledge-Based Intelligent Engineering Systems and Allied Technologies. Proceedings (Cat. No.00TH8516), vol. 1, 2000, pp. 249-252 vol.1.	
	2	NOORE, A. "Highly Robust Biometric Smart Card Design." IEEE Transactions on Consumer Electronics, vol. 46, no. 4, 2000, pp. 1059–1063.	

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Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2019-11-18
Name/Print	Paige M. Alsbury	Registration Number	72,965

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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 May 2001 (17.05.2001)

PCT

(10) International Publication Number
WO 01/35334 A1

(51) International Patent Classification[7]: G06K 19/06, 5/00

(21) International Application Number: PCT/US00/31425

(22) International Filing Date:
13 November 2000 (13.11.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/164,969 11 November 1999 (11.11.1999) US

(71) Applicant and
(72) Inventor: LI, Kenneth [US/US]; 217 Laurel Avenue, Arcadia, CA 91006 (US).

(74) Agent: MONROE, Wesley, W.; Christie, Parker & Hale, LLP, 350 West Colorado Boulevard, P.O. Box 7068, Pasadena, CA 91109-7068 (US).

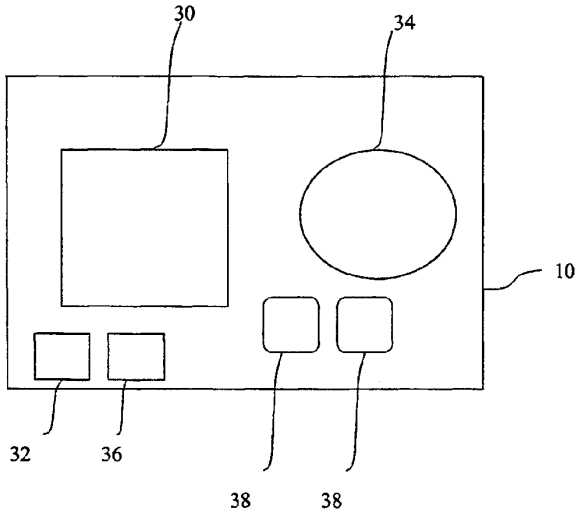
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(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *With international search report.*

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(54) Title: CREDIT CARD WITH FINGERPRINT AUTHENTICATION SYSTEM



(57) Abstract: A credit card (10) having a processor (36), a memory (32) connected to the processor (36) that stores credit card identification information for at least one credit account, a scanner (34) connected to the processor (36), and a transmitter (12) connected to the processor (36); the processor (36) is programmed to receive reference fingerprint data from the scanner (34), store reference data based on the reference fingerprint data into the memory (32), receive test fingerprint data from the scanner (34) at a time after the reference data is stored in memory (32), compare the reference data with test data based on the test fingerprint data and only if the comparison is within predefined limits, send the credit card identification information to the transmitter (12).

WO 01/35334 A1

CREDIT CARD WITH FINGERPRINT AUTHENTICATION SYSTEM

BACKGROUND OF THE INVENTION

Most credit card authorization systems consist of a scanner which electronically scans a magnetic strip on a credit card using a mechanically contacting magnetic head. An example of a credit card with a magnetic strip is shown in FIG. 1. With repeated use, the mechanical contact often fails. Therefore, it is desirable to have a credit card that is electronic and has a non-contact means of transmitting information. Thus, it has been the goal of many applications to change from the current system to a non-contact system. A system for non-contact data transfer was disclosed by Kenneth Li, disclosure document No. 401597, the entire contents of which are incorporated herein by reference.

Common methods of non-contact information transfer are found in remote controls of TV's and VCR's, etc. Common methods employ infra-red light, induction, or radio frequency. However, the common methods discussed above tend to consume a lot of power and therefore, are not suitable for a credit card with a small size.

Further, the current system of using a credit card with a magnetic strip for electronic transfer of funds or point of sale transactions is subject to fraud. Thus, there is a need for security so that stolen or misplaced cards are not used by people other than the owner.

SUMMARY OF THE INVENTION

The present invention overcomes the problems of the prior art by using a passive optical shutter to provide an optical signal for a card reader. The optical shutter may be a liquid crystal shutter. The controlling of a liquid crystal shutter requires very little power thus allowing for information transfer using a small amount of power, and for an increased range of

applications. Additionally, the present invention provides a fingerprint authentication system.

In one embodiment a credit card is manufactured with a processor. A memory for storing credit card identification information for at least one credit account is connected to the processor. A scanner and a transmitter are also connected to the processor. The transmitter may be a transmissive shutter, a reflective shutter, an induction coil, an infrared transmitter, a radio transmitter and smart card electrical contacts.

The processor is programmed to receive reference fingerprint data from the scanner and to store reference data based on the reference fingerprint data into the memory. The processor receives test fingerprint data from the scanner at a time after the reference data is stored in memory, and compares the reference data with test data based on the test fingerprint data. The processor sends the credit card identification information to the transmitter only if the comparison is within predefined limits.

In an embodiment of the present invention, the reference data is an identification code derived from the reference fingerprint data and the test data is a test code derived from the test fingerprint data. In an alternative embodiment, the reference data is derived from the reference fingerprint data using one of several algorithms. An identifier of the selected algorithm is stored in the memory. Test data is obtained from the test fingerprint data based on the identification of the selected algorithm. In another alternative embodiment, the reference data is a subset of the reference fingerprint data and the test data is a subset of the test fingerprint data.

The card may also have a solar cell for power connected to the processor, memory and scanner. Additionally, the card may have a receiver for receiving information from an external machine or another card.

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In one embodiment of the present invention, the memory only accepts reference data once. The memory may be configured to store identification information for more than one credit account. If the memory is configured to store identification information for more than one credit account, then an input for selecting between credit accounts is provided. The memory may be a flash memory. In an additional embodiment, the memory is integrated with the processor or the scanner so that the connections with the memory are not accessible for probing.

In an alternative embodiment, the credit card is integrated into a wrist watch.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top view of a traditional credit card with a magnetic strip;

FIG. 2 is a top view of a credit card according to a first embodiment of the present invention;

FIG. 3 is a side view of a credit card according to a first embodiment of the present invention;

FIG. 4 is a top view of a credit card according to a second embodiment of the present invention;

FIG. 5 is a side view of a credit card according to a second embodiment of the present invention;

FIG. 6 is a top view of a credit card according to a third embodiment of the present invention;

FIG. 7 is a top view of a credit card according to a fourth embodiment of the present invention;

FIG. 8 is a perspective view of a wrist watch according to an embodiment of the present invention.

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DETAILED DESCRIPTION OF THE INVENTION

A first embodiment of the present invention is shown in FIG. 2. As shown in FIG. 2, a credit card 10 is manufactured with a transmissive optical shutter 12. As shown in FIG. 3, the transmissive optical shutter allows light from a light source 14 to pass through the optical shutter 16 to a detector. As the light passes through the transmissive optical shutter 12, the optical shutter alters the light to convey information to the detector 16. In one embodiment of the present invention, the transmissive optical shutter 12 includes a liquid crystal display.

A second embodiment of the present invention is shown in FIG. 4. As shown in FIG. 4, a credit card 10 is manufactured with a retro-reflective optical shutter 20. As shown in FIG. 5, the retro-reflective optical shutter 20 reflects light from a light source 22 back toward a detector 24. When the light from the light source 22 is reflected to the detector 24, the light is altered by the optical shutter to convey information to the detector 24. In one embodiment of the present invention, the light is altered by a liquid crystal display. A card constructed in accordance with the second embodiment may be placed under a combination light source and detector system, thus providing convenience to the user.

A third embodiment of the present invention is shown in FIG. 6. As shown in FIG. 6, a credit card 10 is manufactured with an optical shutter 30, such as a transmissive optical shutter, or a retro-reflective optical shutter. In addition to the optical shutter, the credit card has a security system using fingerprint recognition. As explained below, data derived from a fingerprint of at least one particular finger of the card owner is stored in a non-erasable memory 32 located on the card.

At the time the card is used, the user places their fingers on the card so that at least a particular one of the user's

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fingers is positioned over a scanner 34. A scan of the user's fingerprint is then made. A processor 36 compares data derived from a scan with data stored in the memory 32. If the fingerprint data stored in memory matches the data derived from the scan of the user's fingerprint, then a signal is sent to the optical shutter for transmission. If there is not a match, then no signal is sent to the optical shutter, and the card is unusable. In an additional embodiment, the card has function keys 38 for controlling functions of the card, such as beginning the scan of the user's finger. In another embodiment, the memory 32 of the card may store multiple account numbers and authorization codes, and the function keys 38 may be used to select among the different account numbers and authorization codes.

A fourth embodiment of the present invention is shown in FIG. 7. As shown in FIG. 7, a card is manufactured having an optical shutter 30 such as a transmissive optical shutter or a retro-reflective optical shutter. In addition to the optical shutter, the credit card has a security system using fingerprint recognition. An exemplary security system using fingerprint recognition is described above in reference to the third embodiment and includes a scanner, a non-volatile memory, and a processor. The non-volatile memory contains information including fingerprint information, an account number and security related codes. A card according to the fourth embodiment also has a solar cell which supplies power to the card. In an embodiment of the present invention, the memory of the card is written only once and cannot be reprogrammed or read.

The initialization of a card occurs, for example, as follows. A new card is given to the user and the initialization is completed inside of a bank or similar organization. An initializing machine is used to initialize the card. The initializing machine issues an account number for the user and

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an optional security code. In an embodiment, the security code is a special number together with a checksum calculated by a special algorithm known only to the bank. The account number and the optional security code are transmitted from the initialization machine to the card through an input sensor, such as a photo sensor, on the card (Not shown).

If the card is equipped with a security system using fingerprint recognition, including a scanner, a non-volatile memory, and a processor, such as that described for the third and fourth embodiments described above, then the user holds the card so that the user's thumb is placed on the scanner of the card. The processing unit in the card takes an image signal of the fingerprint, goes through an algorithm, and converts the image signal into a set of numbers. The set of numbers which represents the fingerprint are then stored in the memory. In additional embodiments, for added security, the fingerprint can be transformed into numbers by several algorithms. The particular algorithm may be chosen during the initialization process and an identifier for the chosen algorithm stored in memory.

Once all of the necessary information has been placed in the memory, the card is ready for use. The card is programmed so that the input sensor cannot be used again, in order to prevent tampering with the stored information.

If the card is equipped with a security system using fingerprint recognition, including a scanner, a non-volatile memory, and a processor such as that described for the third and fourth embodiments described above, a transaction occurs as follows. During a transaction, a user holds the card so that the user's thumb is on the scanner. When the card is placed in proximity of the transaction machine, e.g. an ATM, the card will be powered up by a solar cell or battery if present, or through

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electrical contacts on the surface of the card that interface with the transaction machine.

The processor reads the fingerprint and converts the fingerprint to a set of numbers based on the same algorithm used in initializing the card as determined by reference to an algorithm identifier stored on the card. If the set of numbers matches with the set of numbers stored in the memory that correspond to the user's fingerprint, then the card transmits a signal corresponding to the stored account number and the optional security code, if applicable, to the transaction machine. Thus, authenticity is checked and the user is allowed to continue with the transaction. If the fingerprint scan does not produce a set of numbers that match the set of numbers contained in the memory, then no action will be taken. Because the memory of the card cannot be read without the owner's fingerprint being correctly scanned, a lost card cannot be used by anyone. The advantage of using fingerprints this way is that the fingerprint information is retained in the card itself and is not transmitted anywhere else, thus making the user more comfortable in using it. Furthermore, if a flash memory is used, there is no way a user can reverse engineer the chip and find out the code, especially if the memory is integrated with the processing unit or the fingerprint scanner so that the interconnection of the memory circuit is inaccessible for probing.

For a more versatile card, the card can be programmed more generally so that two way communication may be established between a card and a transaction machine. This is desirable for smart card applications in which pertinent information is stored locally in the smart card itself rather than in the central database, as in the case of credit cards.

In an alternative embodiment of the present invention, initialization of a card equipped with a security system using

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fingerprint recognition, proceeds as follows. The user is given a new card. The user holds the card so that the user's thumb is placed on the scanner of the card and places the card in an initialization machine. The processor in the card takes an image signal of the fingerprint, goes through an algorithm, and converts the image signal into a set of numbers. The set of numbers which represents the fingerprint is used as the bank account number.

The bank account number is communicated to the initialization machine by a transmitter on the card, such as an optical shutter. In another alternative embodiment, the set of numbers may be processed using an additional algorithm to arrive at a bank account number. The use of an additional algorithm prevents mischief by further preventing reconstruction of a user's identification information by others. By having the card transmit the account number to the bank, an input device, such as a photo-sensor is not necessary, and bank employees may be kept from a user's account information.

In yet another alternative embodiment, initialization of a card equipped with a security system using fingerprint recognition, proceeds as follows. A user is given a new card and allowed to take multiple fingerprint scans. The processor in the card takes each fingerprint image signal, goes through an algorithm, and converts the image signal into a set of numbers. The memory stores all of the sets of numbers from all of the individual scans. Later, when comparing a user's fingerprint, the processor compares the scan information to all of the sets of numbers stored in the memory. This lowers the rejection rate that a user encounters, and allows greater flexibility as to how the user places their finger on the scanner. In an additional embodiment, the user may scan multiple different fingers. In yet another embodiment, multiple users may scan their fingers on a single card, so that a family, for example, may all use the same

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card. In an additional embodiment, each set of numbers formed by a scan is used as a bank account number so that one card is associated with multiple accounts which may or may not be linked together.

In another embodiment, the fingerprint authorization equipped credit card may be integrated with a time function and take the form of a wrist watch 60, as shown in FIG. 8. The watch 60 has a retro-reflective optical shutter 62 and a scanner 64. The retro-reflective optical shutter 62 also displays the time. Additionally, the watch 60 may have function keys 66 to complete traditional time-piece, credit card, and smart card functions.

Because the transaction is non-contact, there is no need for the user to take the watch off the wrist during the transaction. The user simply places their selected finger over the fingerprint sensor and place the watch under the active region of the transaction machine. The fingerprint will be read, checked against the memory, and the transaction will be initiated. For a smart card application where a two-way communication is needed, a photo sensor (not shown) can be added to the wrist watch for receiving data from the transaction machine. By integrating credit or smart card functionality with fingerprint authorization in a wrist watch, a user gains convenience, especially because the wrist watch is always ready to be used, and will not be lost easily.

In another embodiment, the fingerprint credit card can communicate with a transaction machine by using standard electrical contacts commonly used in smart cards. The use of standard electrical contacts commonly used in smart cards eliminates the added components of non-contact communication and power supply making it a simple card to use. The use of standard electrical contacts commonly used in smart cards also makes the card backward compatible with current systems. In yet another embodiment, the fingerprint credit card has a hybrid

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communication scheme with the transaction machine in which both the electrical contacts and non-contact communication means are present at the same time, making the card compatible with both new and old transaction machines.

The preceding description has been presented with reference to the presently preferred embodiments of the invention shown in the drawings. Workers skilled in the art and technology to which this invention pertains will appreciate that alteration and changes in the described processes and structures can be practiced without departing from the spirit, principles and scope of this invention.

Accordingly, the present invention provides for a credit card with a fingerprint authorization system. Although this invention has been described in certain specific embodiments, many additional modifications and variations would be apparent to those skilled in the art. It is therefore to be understood that this invention may be practiced otherwise than as specifically described. Thus, the present embodiments of the invention should be considered in all respects as illustrative and not restrictive, the scope of the invention to be determined by the claims supported by this application and their equivalents rather than the foregoing description.

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WHAT IS CLAIMED IS:

1. A credit card comprising:

a processor,

a memory, connected to the processor, storing credit card identification information for at least one credit account,

a scanner connected to the processor

a transmitter connected to the processor,

wherein the processor is programmed to a) receive reference fingerprint data from the scanner, b) store reference data based on the reference fingerprint data into the memory, c) receive test fingerprint data from the scanner at a time after the reference data is stored in memory, d) compare the reference data with test data based on the test fingerprint data and e) only if the comparison is within predefined limits, send the credit card identification information to the transmitter.

2. The credit card of claim 1, wherein the reference data is an identification code derived from the reference fingerprint data and wherein the test data is a test code derived from the test fingerprint data.

3. The credit card of claim 1, wherein the reference data is derived from the reference fingerprint data using a selected one of a plurality of algorithms, wherein an identification of the selected one of the plurality of algorithms is stored in the memory and wherein the test data is derived from the test fingerprint data based on the identification of the selected one of the plurality of algorithms.

4. The credit card of claim 1, wherein the reference data is a proper subset of the reference fingerprint data and the test data is a proper subset of the test fingerprint area.

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5. The credit card of claim 1 wherein the memory only accepts the storing of the identification information once.

6. The credit card of claim 1 wherein the transmitter is one of the group of a transmissive shutter, a reflective shutter, an induction coil, an infrared transmitter, a radio transmitter and smart card electrical contacts.

7. The credit card of claim 1 further comprising a solar cell connected to the processor, memory and scanner.

8. The credit card of claim 1 wherein the memory stores credit card identification information for more than one credit account, the credit card further comprising an input for selecting between credit accounts.

9. The credit card of claim 1 further comprising a receiver.

10. The credit card of claim 9 wherein the receiver is one of the group consisting of an induction coil, an infrared receiver, a radio receiver and smart card electrical contacts.

11. The credit card of claim 1 wherein the memory is a flash memory.

12. The credit card of claim 1 wherein the memory is integrated with the processor or the scanner such that the connections with the memory are not accessible for probing.

13. The credit card of claim 1 wherein the reference data is used as an account number and is transmitted by the transmitter to a bank to assign an account number to the card.

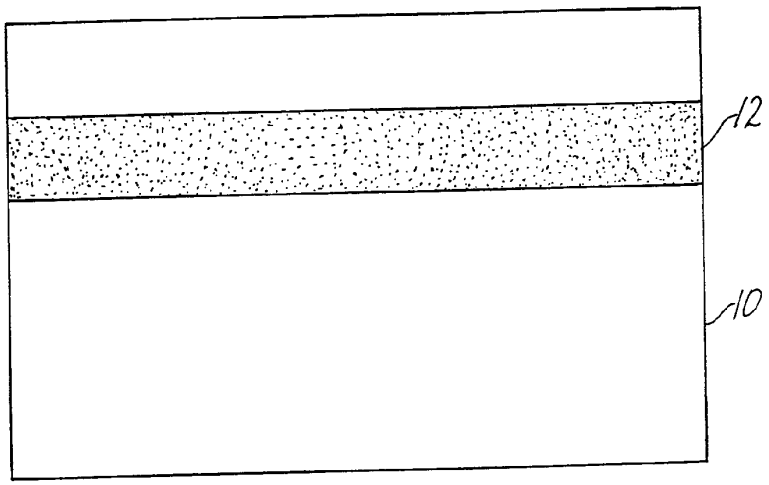
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14. The credit card of claim 1 wherein the processor is programmed to receive reference fingerprint data from the scanner a plurality of times, each time storing additional reference data based on the reference fingerprint data into the memory; and wherein test data is compared to all of the reference data stored in memory.

15. The credit card of claim 1 wherein the credit card is integrated into a wrist watch.

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Fig. 1



(PRIOR ART)

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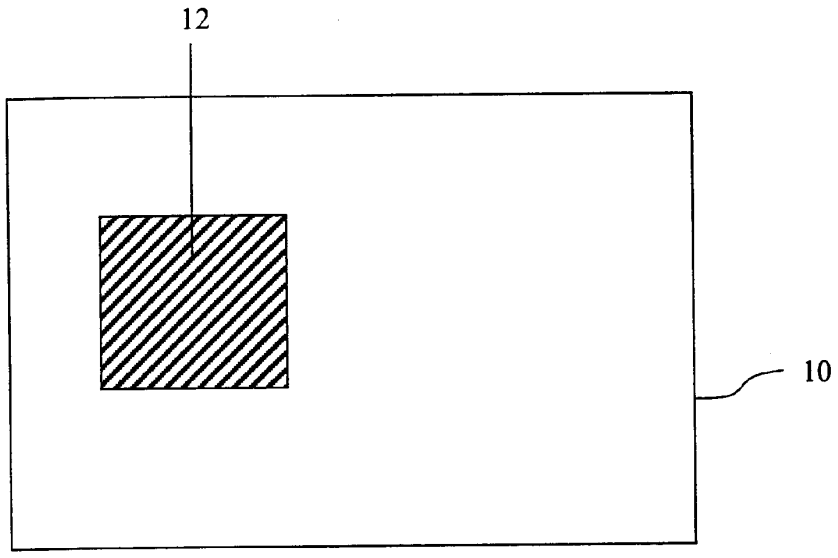


FIG. 2

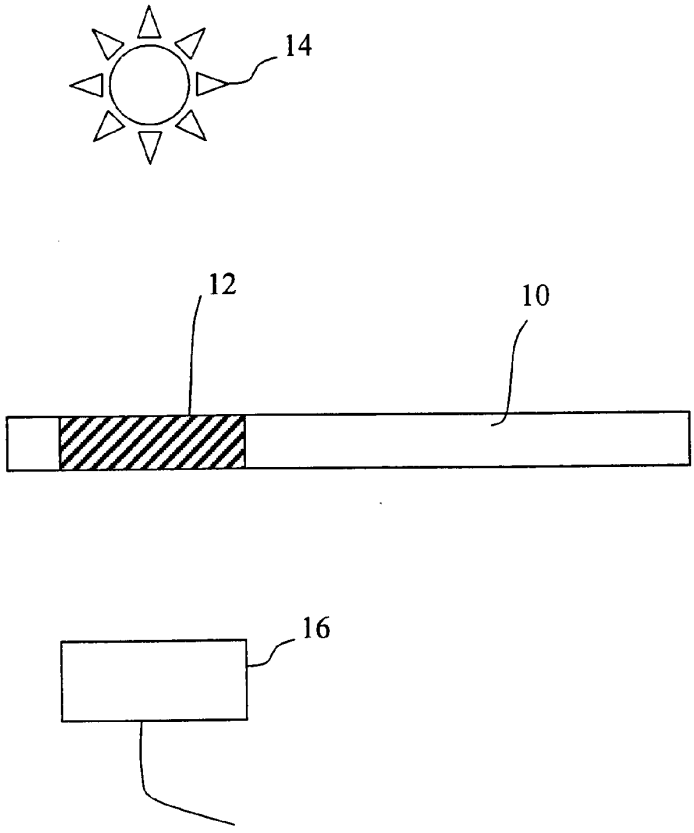


FIG. 3

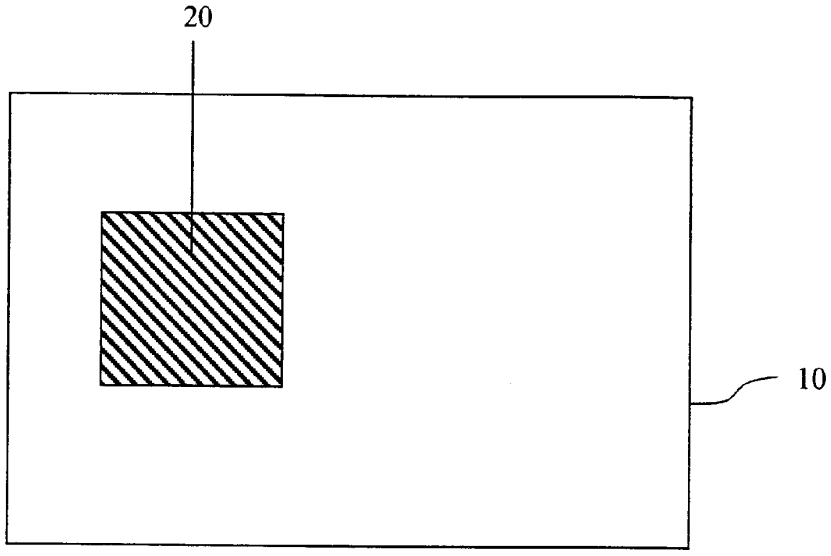


FIG. 4

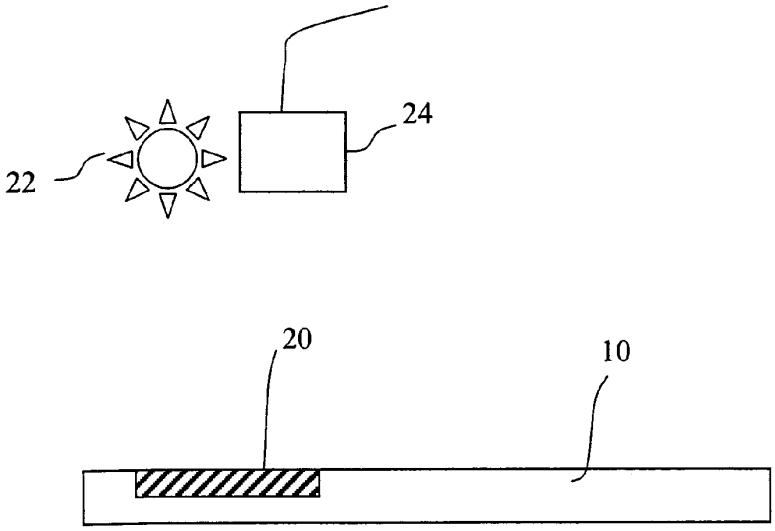


FIG. 5

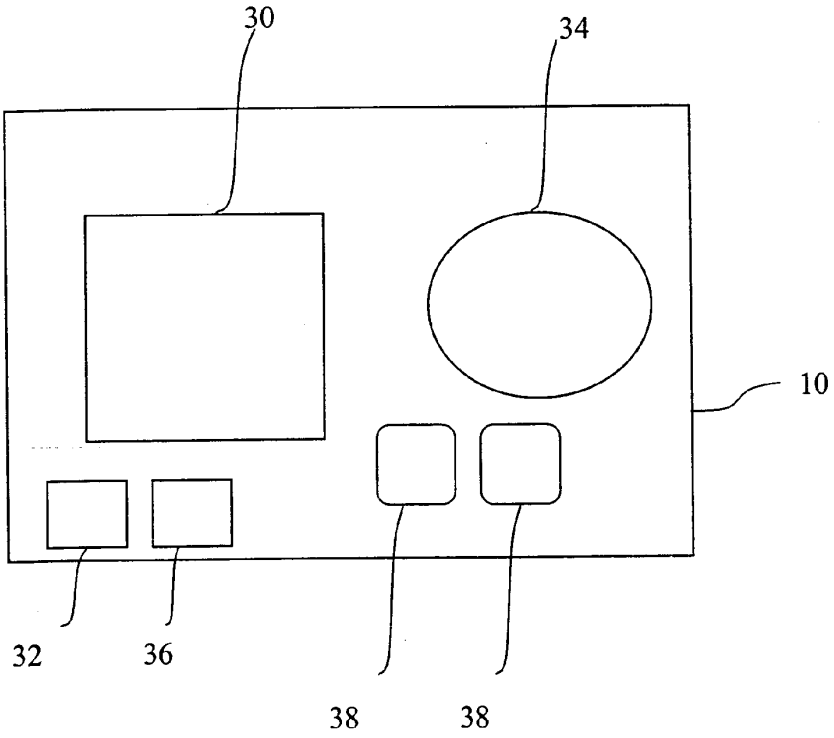


FIG. 6

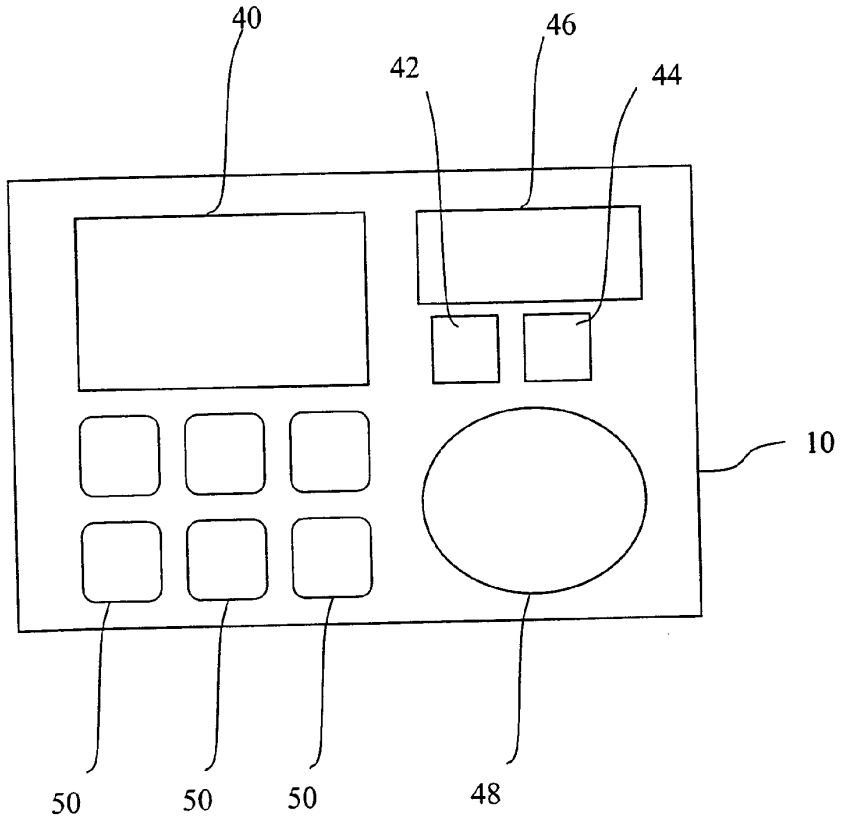
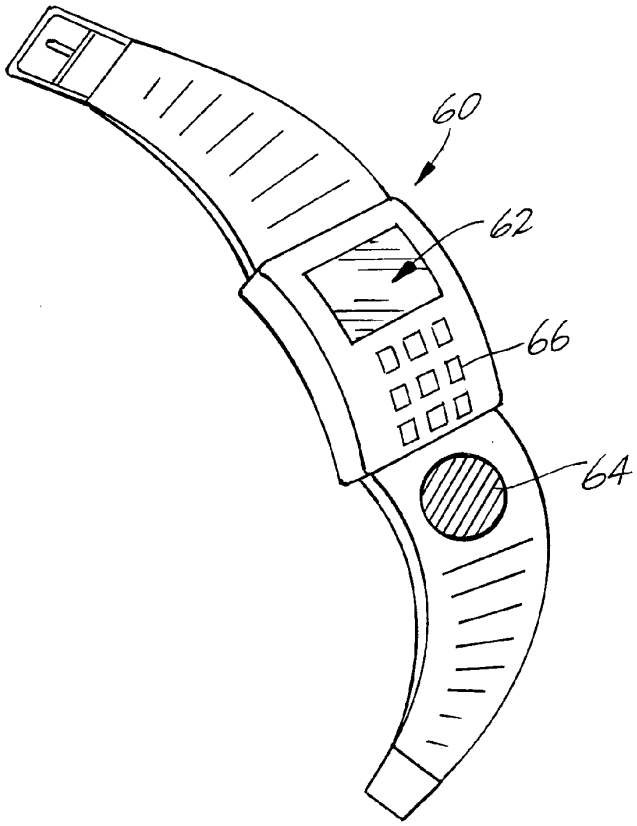


FIG. 7

Fig. 8



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/31425

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G06K 19/06;G06K 5/00
US CL : 235/492, 380, 375, 379, 382

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)
U.S. : 235/492, 380, 375, 379, 382; 902/3, 4, 5, 26

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
None

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,623,552 A (LANE et al) 22 April 1997 (22.04.1997), see entire document.	1-5
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Y		6-7, 9-15
X	US 4,582,985 A (LOFBERG) 15 April 1986 (15.04.86), see entire document.	1-5
---		---
Y		7, 9-15
Y	US 4,746,787 A (SUTO et al) 24 May 1988 (24.5.88), see entire document.	6-7 and 12
Y	US 5,239,166 A (GRAVES) 24 August 1993 (24.08.93), see entire document.	8
Y	4,766,293 A (BOSTON) 23 August 1988 (23.08.88), see entire document.	8

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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
29 January 2001 (29.01.2001)	02 MAR 2001
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Diane I. Lee Telephone No. 703-306-3427

Form PCT/ISA/210 (second sheet) (July 1998)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/31425

Continuation of B. FIELDS SEARCHED Item 3: EAST database
search terms: (ic or credit or smart or chip or electronic) near3 card$2 same fingerprint$2 and (memory or storag) and (compar$4 same fingerprint) and ((receiv$4 or transmit$4 or antenna$2) same fingerprint same compar$4)

Electronic Acknowledgement Receipt

EFS ID:	37782930
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Paige McDede Alsbury
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	18-NOV-2019
Filing Date:	20-FEB-2016
Time Stamp:	16:38:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	05488US_20191118_IDS.pdf	1034463 347e31073b9dda1fa353628a416f0b745c12582d	no	4

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2	Foreign Reference	WO0135334_LI.pdf	627133 e80ad93ea734212cf8096d05f2bff1b56548c1e3	no	24
Warnings:					
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3	Non Patent Literature	Chen_OnEnhancingBiometricAuthenticationwithData.pdf	711602 8d66107d521c7f8a2a0fb1e5eb4272c4a4011a92	no	9
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4	Non Patent Literature	Noore_HighlyRobustBiometricSmartCardDesign.pdf	397533 15271add3857f8ced6f02723030929da3f0f86a1	no	5
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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

89194 7590 10/17/2019

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	

ART UNIT	PAPER NUMBER
2438	

NOTIFICATION DATE	DELIVERY MODE
10/17/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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patents@patentlawworks.net

Office Action Summary	**Application No.** 15/049,060	**Applicant(s)** Giobbi, John J.	
	Examiner PHY ANH T VU	**Art Unit** 2438	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 8/30/2019.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1 and 3-21 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1 and 3-21 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 02/20/2016 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 7/10/2019.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/30/2019 has been entered.

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Terminal Disclaimer

The terminal disclaimer filed on 08/08/2019 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Patents 9,298,905, 8,886,954, 8,352,730 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Due to the filing of this TD, the Double Patenting Rejection made in the Final Office Action dated 06/10/2019 is here by withdrawn.

Response to Arguments

Applicant's arguments with respect to claims 1, 9 and 14 have been considered but are moot in view of the new ground(s) of rejection.

CLAIM INTERPRETATION

The following is a quotation of 35 U.S.C. 112(f):

(f) ELEMENT IN CLAIM FOR A COMBINATION.—An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Broadest Reasonable Interpretation under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, Sixth Paragraph: Use of "Means" (or "Step") in Claim Drafting and Rebuttable Presumptions Raised.

The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

(A) the claim limitation uses the term “means” or “step” or a term used as a substitute for “means” that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;

(B) the term “means” or “step” or the generic placeholder is modified by functional language, typically, but not always linked by the transition word “for” (e.g., “means for”) or another linking word or phrase, such as "configured to" or "so that"; and

(C) the term “means” or “step” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word “means” (or “step”) in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word “means” (or “step”) in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth

paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations in this application that use the word "means" (or "step") are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this application that do not use the word "means" (or "step") are not being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, Sixth Paragraph, Invoked Despite Absence of "Means"

This application includes one or more claim limitations that do not use the word "means," but are nonetheless being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because the claim limitation(s) uses a generic placeholder that is coupled with functional language without reciting sufficient structure to perform the recited function and the generic placeholder is not preceded by a structural modifier. Such claim limitations are: **"a validation module..," "wireless communication module.." and "a device that ." in claims 9-20**. Because these claim limitations are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, they are being interpreted to cover the corresponding structure described in the specification as performing the claimed function, and equivalents thereof. If applicant does not intend to have this/these limitation(s) interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, applicant may: (1) amend the claim limitation(s) to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth

paragraph (e.g., by reciting sufficient structure to perform the claimed function); or (2) present a sufficient showing that the claim limitation(s) recite(s) sufficient structure to perform the claimed function so as to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-13 and 21 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over WO 01/35334 A1-hereinafter Kenneth) and in view of Wheeler et al. (US 2002/0023217 A1-hereinafter Wheeler.)

Regarding claim 1, Kenneth discloses a method comprising:

receiving, at a device, an ID code from a third-party trusted authority *(page 5, line 31-page 6, line 8, i.e.: account number is received from initialization machine)*;

persistently storing biometric data of a legitimate user and the ID code on the device *(page 4, lines 26-33, page 5, lines 17-30, fingerprint information and account number are stored)*;

receiving, from a biometric sensor, scan data from a biometric scan performed using the biometric sensor, the device including the biometric sensor *(page 6, line 27-page 7, line 8, fingerprint is received from scanner)*;

comparing, using one or more processors, the scan data to the biometric data *(page 7, lines 5-10, fingerprint received from scanner is compared to fingerprint information stored)*;

determining whether the scan data matches the biometric data *(page 7, lines 8-10, a match is determined based on the comparison of the fingerprint received from the scanner and the fingerprint information stored)*; and

responsive to a determination that the scan data matches the biometric data, wirelessly sending the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code *(page 5, line 34-page 6, line 8, page 7, lines 8-14, the account number is transmitted to the transaction machine. It is obvious that the account number is then verified for authenticity by the initialization machine to determine whether the account number is valid.)*

Kenneth does not explicitly disclose that the ID code uniquely identifying the device among a plurality of devices.

However, Wheeler discloses an account number that uniquely identifies a device *([0125])*.

One of ordinary skill in the art at the time the invention was made would have been motivated to modify the method of Kenneth to include the account number discloses by Wheeler to add another layer of security level to the method.

Regarding claim 3, Kenneth and Wheeler disclose the method of claim 1. Kenneth also discloses receiving a request for biometric verification *(page 6, line 31-page 7, line 8, a fingerprint is received at the scanner)*; and

when the device cannot verify the scan data as being from the legitimate user, the device does not send the ID code *(page 7, lines 5-19, if fingerprint received from scanner does not match with fingerprint information stored, then account number is not sent.)*

Regarding claim 4, Kenneth and Wheeler disclose the method of claim 1. Kenneth also discloses the biometric data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice *(page 4, lines 29-33, fingerprint.)*

Regarding claim 5, Kenneth and Wheeler disclose the method of claim 1. Kenneth also discloses the scan data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice *(page 4, line 34-page 5, line 4, fingerprint.)*

Regarding claim 6, Kenneth and Wheeler disclose the method of claim 1. Kenneth also discloses the device comprises one or more of a mobile phone, tablet, laptop, mp3 player, mobile gaming device, watch and a key fob *(page 9, line 7-9, wrist watch.)*

Regarding claim 7, Kenneth and Wheeler disclose the method of claim 1. Kenneth does not explicitly disclose completing the transaction includes accessing an application.

However, it is obvious that at least an application for initializing the scanning of fingerprint is used, so that the user can be verified before additional information is provided in order to carry out the transaction.

Regarding claim 8, Kenneth and Wheeler disclose the method of claim 1. Kenneth also discloses completing the financial transaction includes accessing one or more of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account *(page 5, line 31-page 6, line 8, bank account number.)*

Claim 9 is rejected for the same rationale as claim 1 above.

Regarding claim 10, Kenneth and Wheeler disclose the device of claim 9. Kenneth also discloses the ID code is transmitted to the third-party trusted authority over a network *(page 5, line 34-page 6, line 8, page 7, lines 8-14, the account number is transmitted to the transaction machine. It is obvious that the account number is then verified for authenticity by the initialization machine to determine whether the account number is valid.*)

Claim 11 is rejected for the same rationale as claim 4 above.

Claim 12 is rejected for the same rationale as claim 5 above.

Claim 13 is rejected for the same rationale as claim 6 above.

Regarding claim 21, Kenneth and Wheeler disclose the method of claim 1. Kenneth does not explicitly disclose the transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code includes the third-party trusted authority sending an indication that the third-party trusted authority authenticated the ID code to another party.

However, it is obvious that when the authenticity is checked in Kenneth *(page 7, lines 5-14)*, this involves the transaction machine communicates the account number received to the initialization machine to verify. Then after the verification, the initialization machine sends back either an approval or a denial message to the transaction machine to inform whether or not the transaction can be completed in order to clearly communicate the status of the transaction to parties involved.

Claims 14-20 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kenneth, Wheeler and further in view of Flores et al. (US 2004/0022384 A1-hereinafter Flores.)

Regarding claim 14, Kenneth discloses a system, comprising:

a device that persistently stores biometric data of a legitimate user and an ID code in the device *(page 4, lines 26-33, page 5, lines 17-30, fingerprint information and account number are stored)*, wherein the ID code is unique to the device and received from a third-party trusted authority *(page 5, line 31-page 6, line 8, i.e.: account number is received from initialization machine)*, that wirelessly sends the ID code to the third-

party trusted authority for authentication responsive to determining that scan data from a biometric scan performed using a biometric sensor matches the biometric data of the legitimate user, wherein a financial transaction is completed responsive to authentication of the ID code by the third-party trusted authority *(page 5, line 34-page 6, line 8, page 7, lines 8-14, the account number is transmitted to the transaction machine. It is obvious if not inherent that the account number is then verified for authenticity by the initialization machine to determine whether the account number is valid)*; and

the third-party trusted authority operated by a third party, the third-party trusted authority storing a plurality of legitimate ID codes and authenticating the ID code received based on a comparison of the ID code received and the legitimate ID codes included in the plurality of the legitimate ID codes *(page 5, line 31-page 6, line 8, page 7, lines 5-14, page 8, line 32-page 9, line 6, the initialization machine verifies the account number received from the transaction machine from among a plurality of account numbers.)*

Kenneth does not explicitly disclose the ID code uniquely identifying the device among a plurality of devices and the device configured to cause a visual indication, at the device, that a biometric authentication is requested.

However, Wheeler discloses an account number that uniquely identifies a device *([0125])*.

One of ordinary skill in the art at the time the invention was made would have been motivated to modify the method of Kenneth to include the account number discloses by Wheeler to add another layer of security level to the method.

Kenneth and Wheeler do not disclose the device configured to cause a visual indication, at the device, that a biometric authentication is requested.

However, Flores discloses causing at a device a visual indication that biometric verification of a user is requested *([0025], PDE telephone 110 can provide an audio, visual and/or a text prompt instructing user that biometric information is required.)*

One of ordinary skill in the art at the time the invention was made would have been motivated to modify the method of Kenneth to include features disclose by Flores to provide clear indication of the information needed.

Claim 15 is rejected for the same rationale as claim 3 above.

Claim 16 is rejected for the same rationale as claims 6 & 13 above.

Claim 17 is rejected for the same rationale as claims 4 & 11 above.

Claim 18 is rejected for the same rationale as claims 5 & 12 above.

Claim 19 is rejected for the same rationale as claim 8 above.

Claim 20 is rejected for the same rationale as claim 10 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHY ANH TRAN VU whose telephone number is (571)270-7317. The examiner can normally be reached on Monday-Friday 7 am-1 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi T Arani can be reached on (571) 272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PHY ANH T VU/
Primary Examiner, Art Unit 2438

Notice of References Cited	Application/Control No. 15/049,060	Applicant(s)/Patent Under Reexamination Giobbi, John J.	
	Examiner PHY ANH T VU	Art Unit 2438	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20020023217-A1	02-2002	Wheeler, Lynn Henry	G06F21/32	713/171
*	B	US-20040129787-A1	07-2004	Saito, Tamio	G06K19/07	235/492
*	C	US-20050212657-A1	09-2005	Simon, Rudy	G06F21/32	340/5.74
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	"Rajendran Jeyaprakash, Jin Lee, Subir Biswas, Jae Mook Kim, Secured Smart Card Using Palm Vein Biometric On-card-Process, Aug. 28-30, 2008, IEEE Xplore, INSPEC #10205191" (Year: 2008)
	V	"Geetha Govindan, Suresh Kumar Bakakrishnan, Rejith Lalitha Ratheendran, Saji Koyippurathu Sivadasan, Real time security management using RFID, Biometric and Smart Messages, Aug. 20-22, 2009, IEEE Xplore, INSPEC # 10906130" (Year: 2009)
	W	"Sweta Singh, Akhilesh Singh, Rakesh Kumar, A constraint-based biometric scheme on ATM and swiping machine, March 11-13, 2016, IEEE Xplore, INSPEC $ 16156324" (Year: 2016)
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

CPC - Searched*		
Symbol	**Date**	**Examiner**

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**
G06F 21/32	03/21/2016; 11/08/2018; 6/4/2019; 10/11/2019	PVU
H04L 63/0861	03/21/2016; 10/11/2019	PVU
H04L 9/321	12/22/2016; 10/11/2019	PVU
G06F 21/35	11/08/2018 ; 10/11/2019	PVU

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor names search	03/21/2016	PVU
Keywords search	03/21/2016; 12/22/2016; 7/22/2017; 01/04/2018; 11/08/2018; 6/4/2019; 10/11/2019	PVU
IEEE Xplore for NPL	10/11/2019	PVU

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**

/PHY ANH T VU/ Primary Examiner, Art Unit 2438	

APPLE EX1002
000413

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

/PHY ANH T VU/ Primary Examiner, Art Unit 2438	

APPLE EX1002
000414

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	03/21/2016	12/23/2016	07/22/2017	01/04/2018	11/09/2018	06/04/2019	10/11/2019		
	1	✓	✓	✓	✓	✓	✓	✓		
	2		✓	-	-	-	-	-		
	3		✓	✓	✓	✓	✓	✓		
	4		✓	✓	✓	✓	✓	✓		
	5		✓	✓	✓	✓	✓	✓		
	6		✓	✓	✓	✓	✓	✓		
	7		✓	✓	✓	✓	✓	✓		
	8		✓	✓	✓	✓	✓	✓		
	9		✓	✓	✓	✓	✓	✓		
	10		✓	✓	✓	✓	✓	✓		
	11		✓	✓	✓	✓	✓	✓		
	12		✓	✓	✓	✓	✓	✓		
	13		✓	✓	✓	✓	✓	✓		
	14		✓	✓	✓	✓	✓	✓		
	15		✓	✓	✓	✓	✓	✓		
	16		✓	✓	✓	✓	✓	✓		
	17		✓	✓	✓	✓	✓	✓		
	18		✓	✓	✓	✓	✓	✓		
	19		✓	✓	✓	✓	✓	✓		
	20		✓	✓	✓	✓	✓	✓		
	21			✓	✓	✓	✓	✓		

APPLE EX1002
000415

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
		(security adj card) with (public adj key))	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:28
		(ID code) with same (unique$4 near5 identify$4 near10 device)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:55
		(ID code) with same (unique$4 near5 identify$4 device)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:55
		"20040129787.pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:04
		(indicat$4 with flash$4) with (biometri9298905	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:38
		(indicat$4 near10 flash$4) with (biometric)	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:31
		(indicat$4 with flash$4) with (biometric)	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:29
L1	78	h04l63/0861.cpc. and (security near2 card) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/11 09:47
L2	34	h04l9/321.cpc. and (security near2 card) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:01
L3	12	L2 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:01
L4	112	G06F21/32.cpc. and (security near2 card) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:02
L5	20	L4 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:02
L6	15	G06F21/35.cpc. and (security near2 card) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/11 10:08
S1	1	"13710109"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:38
S2	0	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:49
S3	0	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:49
S4	0	"15049060".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:31
S5	3	"11314199"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:32
S6	12	"8352730"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:33
S7	1	"8352730".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:34
S8	1	"8886954".pn.	US-PGPUB;	OR	OFF	2016/03/21

			USPAT			08:43
S9	2764	g06f21/32.cpc. and (biometric with authenticat$3)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:52
S10	1896	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:53
S11	603	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device) and (trusted or third$party)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:53
S12	365	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:54
S13	81	S12 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:54
S14	0	h04/63/0861cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:00
S15	0	h04l63/0861cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:00
S16	237	h04l63/0861.cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:00
S17	38	S16 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:01
S18	82	(giobbi).in.	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:03
S19	5	"11292330"	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:04
S20	1	"6041410".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:54
S21	311	"6041410"	US-PGPUB; USPAT	OR	OFF	2016/12/19 16:05
S22	1	"6041410".pn.	US-PGPUB; USPAT	OR	OFF	2016/12/19 16:05
S23	1	"15049060"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:17
S24	4	h04l9/321.cpc. and (transmit$4 send$3) near10 (wireless$3) same ((number ID SSN PIN)) same (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:23
S25	1905	(transmit$4 send$3) near10 (wireless$3) same ((number ID SSN PIN)) same (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:24
S26	233	(transmit$4 send$3) near10 (wireless$3) with ((number ID SSN PIN)) with (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:24
S27	39	S26 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:25
S28	604	(stor$3 with (code ID account identifier) with fob)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:39
S29	0	(stor$3 with (code ID account identifier) with fob) and (trasmit$4	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:40

		near10 (code id account identifier))				
S30	401	(stor$3 with (code ID account identifier) with fob) and (transmit$4 near10 (code id account identifier))	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:41
S31	107	S30 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:41
S32	1	"6041410".pn. and fob	US-PGPUB; USPAT	OR	OFF	2016/12/22 12:57
S33	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 08:50
S34	1	"8352730".pn..pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 08:58
S35	2	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:00
S36	16	("6018739" "6025780" "6237848" "7137008" "20010026619" "20020023032" "20020071559" "20020091646" "20020116615" "20020174348" "20030115474" "20030149744" "20030172037" "20040123127" "20050006452" "20120226907").pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:37
S37	12	("6237848" "6325285" "7155416" "7278025" "7314164" "7341181" "7424134" "2020104006" "20020104019" "20040098597" "20050001028" "20050105734" "20070084523").pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:39
S38	7	("5623552" "6728397" "6879966" "7231068" "7349557" "7565329" "8678273").pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:40
S39	1	"20040128162".pn.	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:37
S40	563	(biometric near3 prompt)	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:49
S41	1	(biometric near3 prompt) with (light)	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:49
S42	63	S40 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:50
S43	1	"8856539".pn.	US-PGPUB; USPAT	OR	OFF	2018/01/04 12:29
S44	1	"20090016573".pn.	US-PGPUB; USPAT	OR	OFF	2018/01/04 12:33
S45	1	"9298905".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:38
S46	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:40
S47	1	"5317639".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 11:27
S48	1	"6185304".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 11:29
S49	1955	(security near3 card) same biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:20
S50	589	(security adj card) same biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:21
S51	394	(security adj card) same biometric	US-PGPUB;	OR	OFF	2018/09/17

		and financial	USPAT			08:21
S52	134	(security adj card) same biometric and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:21
S53	28	S52 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:22
S54	1	"6068184".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:27
S55	1	"20050103837".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:29
S56	1830	(security adj card) and (biometric) and (authenticat$4)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:45
S57	516	(security adj card) and (biometric) and (POS retailer) and bank	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S58	516	(security adj card) and (biometric) and (POS retailer) and bank and (number code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S59	390	(security adj card) and (biometric) and (POS retailer) and bank and (transmit$4 send$4) with (number code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S60	165	(security adj card) and (biometric) and (POS retailer) and bank same (transmit$4 send$4) with (number code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:47
S61	14	S60 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:47
S62	1098	(security adj card) and biometric and (merchant retailer)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:52
S63	22	"7389269"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:54
S64	1	"7389269".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:54
S65	1	"6325285".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:07
S66	513	(security adj card) and (authorization near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S67	231	(security adj card) and biometric and (authorization near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S68	46	S67 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S69	2157	(security adj card) and biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:27
S70	385	S69 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:27
S71	1709	(security adj card) and biometric and transaction	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:28
S72	308	S71 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:28
S73	579	(security near3 card) same biometric and (account near3 number)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38
S74	119426	(security near3 card) same biometric and (transmitt$4 send$4) wotj (account near3 number)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38
S75	78	(security near3 card) same biometric and (transmitt$4 send$4) with	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38

		(account near3 number)				
S76	45659	"l3" and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:39
S77	14	S75 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:39
S78	102	(security near3 card) same biometric and (transmitt$4 send$4) with (security near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:46
S79	8	S78 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:46
S80	1	"15029884"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:47
S81	117	stor$4 with (security adj card) same (code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:49
S82	15	stor$4 with (security adj card) same (code same biometric)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:49
S83	247	"6012049"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:50
S84	1	"6012049".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:50
S85	533	(security near3 card) same biometric and (financial near5 transaction)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:52
S86	36	(security near3 card) same biometric same(financial near5 transaction)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:52
S87	4949	(security near3 card) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:14
S88	730	(security near3 card) and (biometric) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:14
S89	621	(security near3 card) and (biometric) and code and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:15
S90	111	(security near3 card) and (biometric) and (print with code) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:15
S91	136	(security near3 card) and (biometric) and (pos) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:21
S92	121	S91 not S90	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:22
S93	4146569	(security near3 card) and (third$party) @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:27
S94	268	(security near3 card) and (third$party) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:27
S95	1	"6325285".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:21
S96	800	(security adj card) and (third$party) and (transaction and financial$)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:38
S97	146	(security adj card) and (third$party same bank) and (transaction and financial$)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:39
S98	16	S97 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:39
S99	29	(security adj card) and (transmit$4 send$4) same (third$party same bank)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:43
S100	2214	(security adj card) and (transmit$4	US-PGPUB;	OR	OFF	2018/09/17

		send$4) same (third$party bank provider)	USPAT			11:44
S101	1805	(security adj card) and (transmit$4 send$4) same (third$party bank provider) and (purchase)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:45
S102	1989	(security adj card) and (transmit$4 send$4) same (third$party bank provider) and (credit near3 card)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:46
S103	393	(security adj card) and (transmit$4 send$4) same (authorization) same (third$party bank provider) and (credit near3 card)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:47
S104	65	S103 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:50
S105	197	(security adj card) and (transmit$4 send$4) same (authorization) same (third$party bank provider) and biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:53
S106	44	S105 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:55
S107	1	"15029884"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:22
S108	2	"20040022384"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:23
S109	1	"20050103837"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:31
S110	96	(security adj card) and (biometric) and (credit adj card near3 provider)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:38
S111	891	(security adj card) and (biometric) and (point near3 sale)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:40
S112	0	(security adj card) and (biometric) and (point near3 of near3 sale)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:41
S113	1	g06f21/32.cpc. and (fob with security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:41
S114	845	g06f21/32.cpc. and (security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S115	748	g06f21/32.cpc. and (security near3 card) and biometric	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S116	378	g06f21/32.cpc. and (security near3 card) and biometric and (third near3 party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S117	318	S116 and (biometric with authenticat$3)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S118	98	S116 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:43
S119	198	g06f21/32.cpc. and (authenticat$4 with user with biometric) and (security adj card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:07
S120	43	S119 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:07
S121	19972	(transmit$4 wit credit near5 number) same (verif$7) and (biometric)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:12
S122	27016	(authenticat$4 with biometric) and (transmit$4 wit credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:12

S123	410	(authenticat$4 with biometric) and (transmit$4 with credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S124	157	(authenticat$4 with biometric) and (transmit$4 with credit near5 number) and (smart near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S125	15	S124 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S126	216	(authenticat$4 with biometric same card) and (transmit$4 with credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:16
S127	24	S126 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:16
S128	1256	(smart adj card) and ((authenticat$4 verif$) with (biometric)) and (transmit$4 with (ID (credit near3 card near3 number)))	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:06
S129	162	(smart adj card) and ((authenticat$4 verif$) with (biometric)) same (transmit$4 with (ID (credit near3 card near3 number)))	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:06
S130	26	S129 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:07
S131	82	g06f21/32.cpc. and (fob with smart near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:09
S132	9	S131 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:09
S133	94	(authenticat$4 with biometric same card) and (transmit$4 with credit near5 number) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:15
S134	13	S133 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:15
S135	461	(smart adj card) with (biometric) and (authenticat$4 with biometric) and financial near3 transaction	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:24
S136	1148	(smart adj card) with (biometric) and (authenticat$4 with biometric) and (financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:25
S137	0	(security adj card with biometric) and (transmit$4 send$4) same (authorization) same (third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:26
S138	47	(security adj card with biometric) and (transmit$4 send$4) same (financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:27
S139	11	(security adj card with biometric) and (register$4 with financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:28
S140	5	"10861864"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:30
S141	1	"20040091136".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:32
S142	1	"20040148526".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:33
S143	1	"20030061172".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:34
S144	1	"20060016875".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:36

S145	1	"20040232224".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:37
S146	4	(hong$sik near3 koo).in.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:39
S147	2	"20070136211"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:40
S148	1	"20040258281".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:45
S149	142	(fob with biometric) and (financial near3 transaction) and (third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:46
S150	51	S149 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:46
S151	8	(fob with biometric) and (security adj card) and (ID (account adj number)) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:50
S152	15	g06f21/35.cpc. and (fob with biometric) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:58
S153	1	"20040199469".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:00
S154	1	"20040139008".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:01
S155	1	"20040129787".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:04
S156	1	"20060000891".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:08
S157	405	g06f21/35.cpc. and (security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S158	145	g06f21/35.cpc. and (security near3 card) and (authenticat$4 with biometric)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S159	13	S158 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S160	1	"20040236701".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:15
S161	1276	(authenticat$4 with biometric) and (transmit$4 send$4) with (account near3 (ID number))	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S162	107	(authenticat$4 with biometric) with fob and (transmit$4 send$4) with (account near3 (ID number))	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S163	44	S162 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S164	0	(fob with biometric) with (financial with third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S165	83	(fob with biometric) same (financial with third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S166	33	S165 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S167	1	"20040129787".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:20
S168	1	"20060253710".pn. and (credit adj card near3 authentication near3 results)	US-PGPUB; USPAT	OR	ON	2018/11/09 07:01
S169	9	"2001035334"	US-PGPUB;	OR	ON	2018/11/09

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			08:43
S170	14821343	wo "2001035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S171	0	wo2001035334	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S172	19	"20010035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S173	0	wo2001035334	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:44
S174	9	"2001035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:44
S175	715	"5623552"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:24
S176	4	"5623552".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:24
S177	2	"20020112177".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2018/11/09 10:29

			IBM_TDB			
S178	2	(fob with biometric) same (account near3 number) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:31
S179	2	(fob with biometric) same (account near3 (number ID)) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:32
S180	193	(fob with biometric) and (account near3 (number ID)) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:32
S181	57	S180 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/09 10:32
S182	0	(fob with biometric) and (thid$party) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:40
S183	182	(fob with biometric) and (third$party) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:40
S184	54	S183 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/09 10:40
S185	1	"20030225703".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/09 12:23
S186	59	g06f21/32.cpc. and (security adj card) with (biometric fingerprint)	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:19
S187	5	S186 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:19
S188	8	("4759060" "4993068" "5187352" "5296641" "5325285" "5392433" "5416780" "5422632").pn.	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:27
S189	237	("20010027439" | "20010044337" | "20020004783" | "20020007456" | "20020013772" | "20020014954" | "20020015494" | "20020026424" | "20020056043" | "20020073042" | "20020083318" | "20020098888" | "20020103027" | "20020108049" | "20020111919" | "20020124251" | "20020138767" | "20020140542" | "20020141586" | "20020144117" | "20020150282" | "20020152391" |	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:32

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S192	1	"20160171200".pn. and (ID adj code)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:28
S193	7660	(ID code) with (unique$4 near5 identify$4 near10 device)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:56
S194	459	(ID code) with (unique$4 near5 identify$4 near10 device) and (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:56
S195	21	(ID code) with (unique$4 near5 identify$4 near10 device) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 18:57
S196	2	(public adj key) with (unique$4 near5 identify$4 near10 device) same (biometric with authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:03
S197	4357	(transmit$4 send$4) same (code id) same (after or (in adj response adj to)) and (biometric) with (match$4 authenticat$4)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:09
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S201	34	(security adj card) with (public adj key)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:28
S202	663	(account adj number) with (unique$3) with (identif$5 near5 device)	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:31
S203	38	S202 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2019/10/10 19:32

APPLE EX1002
000427

EAST Search History (Interference)

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10/ 11/ 2019 10:08:45 AM
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APPLE EX1002
000428

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BIB DATA SHEET

CONFIRMATION NO. 2423

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
15/049,060	02/20/2016 RULE	713	2438	10001-05488 US

APPLICANTS
Proxense, LLC, Bend, OR;

INVENTORS
John J. Giobbi, Bend, OR;

**** CONTINUING DATA ***************************
This application is a CON of 14/521,982 10/23/2014 PAT 9298905
which is a CON of 13/710,109 12/10/2012 PAT 8886954
which is a CON of 11/314,199 12/20/2005 PAT 8352730
which claims benefit of 60/652,765 02/14/2005
and claims benefit of 60/637,538 12/20/2004

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
03/07/2016

Foreign Priority claimed ❑ Yes ☑ No 35 USC 119(a-d) conditions met ❑ Yes ☑ No Verified and Acknowledged /PHY ANH TRAN VU/ Examiner's Signature	❑ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		OR	6	1	1

ADDRESS
Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107
UNITED STATES

TITLE
Biometric Personal Data Key (PDK) Authentication

FILING FEE RECEIVED		
730	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	❑ All Fees ❑ 1.16 Fees (Filing) ❑ 1.17 Fees (Processing Ext. of time) ❑ 1.18 Fees (Issue) ❑ Other _____ ❑ Credit

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	VU, PHY ANH TRAN
Attorney Docket Number	10001-05488 US

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7310042		2007-12-18	Seifert	

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U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060286969	A1	2006-12-21	Talmor et al.	
	2	20070192601	A1	2007-08-16	Spain et al.	

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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1							

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	VU, PHY ANH TRAN
	Attorney Docket Number	10001-05488 US

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature	/PHY ANH T VU/	Date Considered	10/11/2019

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /P.T.V/

Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (02-18)
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	15/049,060	Filing Date	2016-02-20	Docket Number (if applicable)	10001-05488 US	Art Unit	2438
First Named Inventor	John J. Giobbi			Examiner Name	Phy Anh Tran Vu		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☒ Other Amendment G filed August 8, 2019

☐ Enclosed

☐ Amendment/Reply

☐ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☐ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

PTO/SB/30EFS (02-18)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/Matthew M. Holmes/	Date (YYYY-MM-DD)	2019-08-30
Name	Matthew M. Holmes	Registration Number	65160

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

APPLE EX1002
000434

Electronic Patent Application Fee Transmittal

Application Number:	15049060
Filing Date:	20-Feb-2016
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Filer:	Matthew M. Holmes/Kristin Takahashi
Attorney Docket Number:	10001-05488 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
RCE- 2ND AND SUBSEQUENT REQUEST	2820	1	950	950
		Total in USD ($)		**950**

Electronic Acknowledgement Receipt

EFS ID:	37035900
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	30-AUG-2019
Filing Date:	20-FEB-2016
Time Stamp:	16:16:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$950
RAM confirmation Number	E20198TG17321510
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	05488US_2019-08-30_RCE.pdf	1349958 7b8059ce3ee5d9b8ccfdbaa335a8956c9d955bd0	no	3
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30636 010410c5d4d63378fe3204652163 6a9d664c005b	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1380594		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/049,060	Filing Date 02/20/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	08/30/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 21	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/JACQUELYN L WILLIAMS/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

89194 7590 08/22/2019

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	

ART UNIT	PAPER NUMBER
2438	

NOTIFICATION DATE	DELIVERY MODE
08/22/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@patentlawworks.net
patents@patentlawworks.net

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 15/049,060	**Applicant(s)** Giobbi, John J.	
	Examiner PHY ANH T VU	**Art Unit** 2438	**AIA (FITF) Status** No

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 08 August 2019 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☑ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires ____ months from the mailing date of the final rejection.
   b) ☑ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection.The current period for reply expires ____ months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANTS FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37CFR 41.37(a).

AMENDMENTS

3. ☑ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☑ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: See Continuation Sheet (See 37CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicants reply has overcome the following rejection(s): _____
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☑ For purposes of appeal, the proposed amendment(s):(a) ☑ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☐ Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
    Claim(s) allowed:_____.
    Claim(s) objected to:_____.
    Claim(s) rejected:1 and 3-21.
    Claim(s) withdrawn from consideration:_____.

/PHY ANH T VU/ Primary Examiner, Art Unit 2438	

Continuation of 3. NOTE: See attached The amendments made to claims 1, 9 and 14 require further search and/or consideration.

DO NOT ENTER: /P.T.V/

08/19/2019

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

FIRST INVENTOR:	John J. Giobbi
APPLICATION NO:	15/049,060
FILING DATE:	February 20, 2016
TITLE:	Biometric Personal Data Key (PDK) Authentication
EXAMINER:	Phy Anh Tran Vu
GROUP ART UNIT:	2438
ATTY. DKT. NO:	10001-05488 US
CONFIRMATION NO:	2423

CERTIFICATE OF EFS-WEB TRANSMISSION UNDER 37 CFR § 1.8

I hereby certify that this correspondence is being transmitted via the U.S. Patent and Trademark Office electronic filing system (EFS-Web) to the USPTO on the date below.

Date: August 8, 2019 By: /Matthew M. Holmes/
Matthew M. Holmes, Reg. No. 65,160

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

AMENDMENT G

Responsive to the Final Office Action mailed on June 10, 2019, which sets a shortened statutory period for response that expires on September 10, 2019, please enter the following amendment and consider the following remarks.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /P.T.V/

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

89194 7590 08/13/2019

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	

ART UNIT	PAPER NUMBER
2438	

NOTIFICATION DATE	DELIVERY MODE
08/13/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@patentlawworks.net
patents@patentlawworks.net

Applicant-Initiated Interview Summary	**Application No.** 15/049,060	**Applicant(s)** Giobbi, John J.	
	Examiner PHY ANH T VU	**Art Unit** 2438	**AIA (FITF) Status** No

All participants (applicant, applicants representative, PTO personnel):

(1) PHY ANH TRAN. VU.

(3) Matthew Holmes.

(2) David Duncan.

(4) _____.

Date of Interview: 31 July 2019.

Type: ☑ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☑ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☑102 ☑103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: 1.

Identification of prior art discussed: N/A.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant's representatives, Mr. David Duncan & Mr. Matthew Holmes explained the inventive concept of the application. The limitation "an ID code unique to the device" from claim 1 was discussed. It was suggested by the Examiner to clarify this limitation in order to overcome the cited arts..

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☑ Attachment

	/PHY ANH T VU/ Primary Examiner, Art Unit 2438

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiners responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicants correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,-
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicants record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiners version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, Interview Record OK on the paper recording the substance of the interview along with the date and the examiners initials.

For Discussion Purposes Only; Not for Entry on the Record

INTERVIEW AGENDA

FIRST INVENTOR:	John J. Giobbi
APPLICATION NO:	15/049,060
FILING DATE:	February 20, 2016
TITLE:	Biometric Personal Data Key (PDK) Authentication
EXAMINER:	Phy Vu
GROUP ART UNIT:	2438
ATTY. DKT. NO:	10001-05488 US
CONFIRMATION NO:	2423

Time: Wednesday, July 31, 2019; 11:00 AM EST

Participants: Matt Holmes, Reg. No. 65,160; phone: (385) 232-7853

Applicant's Representative would like to discuss the rejections under section 103 including including the Response to Arguments.

In the Response to Arguments, the Office Action states:

> Regarding claim 1, on pages 8-9, Applicant argues that "an account number **for the user"** is not "an ID code **unique to the device"** as recited in claim 1. Therefore Applicant believes Kenneth does not teach the limitation argue above.

The Office Action characterizes Kenneth as follows:

> Kenneth discloses that at initialization, an account number is issued and transmitted to the card through an input sensor (page 5, line 31-page 6, line 8.) Kenneth also discloses that the memory of the card is written only once and cannot be reprogrammed or read (page 5, lines 17-30.), and the input sensor cannot be used again in order to prevent tampering with the stored information (page 6, lines 23-26.)

For Discussion Purposes Only; Not for Entry on the Record

The Office Action further alleges that, "In other words, **only one account number is stored in the card, thus making the account number unique to the card**. Therefore , contrasting to the Applicant's argument, Kenneth discloses the limitation argue above." (Emphasis added.)

APPLE EX1002
000448

Doc Code: DIST.E.FILE **Document Description: Electronic Terminal Disclaimer - Filed**	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	15049060
Filing Date	20-Feb-2016
First Named Inventor	John Giobbi
Attorney Docket Number	10001-05488 US
Title of Invention	Biometric Personal Data Key (PDK) Authentication

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
Proxense, LLC	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

9298905

8886954

8352730

as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

(●) Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request. ( ) I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status: (●) Small Entity ( ) Micro Entity ( ) Regular Undiscounted I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: (●) An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number 65160 ( ) A sole inventor ( ) A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ( ) A joint inventor; all of whom are signing this request	
Signature	/Matthew M. Holmes/
Name	Matthew M. Holmes

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	15049060
Filing Date:	20-Feb-2016
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Filer:	Matthew M. Holmes
Attorney Docket Number:	10001-05488 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**160**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 15049060

Filing Date: 20-Feb-2016

Applicant/Patent under Reexamination: Giobbi

Electronic Terminal Disclaimer filed on August 8, 2019

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	36820405
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	08-AUG-2019
Filing Date:	20-FEB-2016
Time Stamp:	15:39:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$160
RAM confirmation Number	E201988F39523993
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33801 4e86f219f8f178cc54ee9da230d65fd79ad17a98	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30612 325888f3d7fbcb957ec8bf797d32f43692bfd951	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	64413		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

FIRST INVENTOR:	John J. Giobbi
APPLICATION NO:	15/049,060
FILING DATE:	February 20, 2016
TITLE:	Biometric Personal Data Key (PDK) Authentication
EXAMINER:	Phy Anh Tran Vu
GROUP ART UNIT:	2438
ATTY. DKT. NO:	10001-05488 US
CONFIRMATION NO:	2423

CERTIFICATE OF EFS-WEB TRANSMISSION UNDER 37 CFR § 1.8

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Date: August 8, 2019 By: /Matthew M. Holmes/
Matthew M. Holmes, Reg. No. 65,160

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

AMENDMENT G

Responsive to the Final Office Action mailed on June 10, 2019, which sets a shortened statutory period for response that expires on September 10, 2019, please enter the following amendment and consider the following remarks.

IN THE CLAIMS

All pending claims are reproduced below.

1. (Currently Amended) A method comprising:

receiving, at a device, an ID code ~~unique to the device~~ from a third-party trusted authority, the ID code uniquely identifying the device among a plurality of devices;

persistently storing biometric data of a legitimate user and the ID code on the device;

receiving, from a biometric sensor, scan data from a biometric scan performed using the biometric sensor, the device including the biometric sensor;

comparing, using one or more processors, the scan data to the biometric data;

determining whether the scan data matches the biometric data; and

responsive to a determination that the scan data matches the biometric data, wirelessly sending the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code.

2. (Cancelled).

3. (Previously Presented) The method of claim 1 comprising:

receiving a request for biometric verification; and

when the device cannot verify the scan data as being from the legitimate user, the device does not send the ID code.

4. (Previously Presented) The method of claim 1, wherein the biometric data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

5. (Previously Presented) The method of claim 1, wherein the scan data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

6. (Previously Presented) The method of claim 1, wherein the device comprises one or more of a mobile phone, tablet, laptop, mp3 player, mobile gaming device, watch and a key fob.

7. (Previously Presented) The method of claim 1, wherein completing the transaction includes accessing an application.

8. (Previously Presented) The method of claim 1, wherein completing the transaction includes accessing one or more of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account.

9. (Currently Amended) A device comprising:

a persistent storage media that persistently stores biometric data of a legitimate user and an ID code that is ~~unique to the device and~~ received from a trusted third-party authority, the ID code uniquely identifying the device among a plurality of devices;

a biometric sensor;

a validation module, coupled to communicate with the persistent storage media, that causes a visual indication, at the device, that a biometric authentication is requested, that receives scan data from a biometric scan performed using the biometric sensor for comparison against the biometric data, that compares the scan data to the biometric data, and determines whether the scan data matches the biometric data; and

a wireless communication module that, responsive to a determination that the scan data matches the biometric data, sends the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code.

10. (Previously Presented) The device of claim 9, wherein the ID code is transmitted to the third-party trusted authority over a network.

11. (Previously Presented) The device of claim 9, wherein the biometric data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

12. (Previously Presented) The device of claim 9, wherein the scan data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

13. (Previously Presented) The device of claim 9, wherein the device comprises one or more of a mobile phone, tablet, laptop, mp3 player, mobile gaming device, watch and a key fob.

14. (Currently Amended) A system, comprising:

a device that persistently stores biometric data of a legitimate user and an ID code in the device, wherein the ID code ~~is unique to the device and~~ received from a third-party trusted authority, the ID code uniquely identifying the device among a plurality of devices, ~~that causes~~ the device configured to cause a visual indication, at the device, that a biometric authentication is requested, that wirelessly sends the ID code to the third-party trusted authority for authentication responsive to determining that scan data from a biometric scan performed using a biometric sensor matches the biometric data of the legitimate user, wherein a transaction is completed responsive to authentication of the ID code by the third-party trusted authority; and

the third-party trusted authority operated by a third party, the third-party trusted authority storing a plurality of legitimate ID codes and authenticating the ID code received based on a comparison of the ID code received and the legitimate ID codes included in the plurality of the legitimate ID codes.

15. (Previously Presented) The system of claim 14, wherein the device receives an authentication request, and in response, requests the biometric scan from a user to generate the scan data and, when the device cannot verify the scan data as being from the legitimate user, the device does not send the ID code.

16. (Previously Presented) The system of claim 14, wherein the device comprises one or more of a mobile phone, tablet, laptop, mp3 player, mobile gaming device, watch and a key fob.

17. (Previously Presented) The system of claim 14, wherein the biometric data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

18. (Previously Presented) The system of claim 14, wherein the scan data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

19. (Previously Presented) The system of claim 14, wherein completing the transaction includes accessing one or more of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account.

20. (Previously Presented) The system of claim 14, wherein completing the transaction includes accessing an application.

21. (Previously Presented) The method of claim 1, wherein the transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code includes the third-party trusted authority sending an indication that the third-party trusted authority authenticated the ID code to another party.

REMARKS

Claims 1 and 3-21 were presented for examination. Claims 1 and 3-21 stand rejected in the Office Action dated June 10, 2019 (herein, "OA"). Claims 1, 9, and 14 are amended. Support for the amendments may be found throughout the Applicant's specification, e.g., at paragraphs 10 and 36. No new matter is added. Claims 1 and 3-21 are pending upon entry of this amendment.

Interview Summary

Applicant wishes to thank Examiner Vu for the July 31, 2019, telephonic interview with Applicant's Representatives Matthew Holmes and Dave Duncan. In the interview, Applicant's Representatives discussed the rejections citing Kenneth under 35. U.S.C. § 103 with Examiner Vu and discussed amendments that would likely overcome the current rejection. The amendments herein are consistent with those discussed in the interview and indicated to overcome the present rejection.

Summary of Office Action

1. Claims 1, 4-7, 9, and 14-17 are rejected on the ground of non-statutory double patenting as allegedly being unpatentable over claims 1, 5, 6, 9, 12, and 24-26 of U.S. Patent No. 8,886,954, claim 1 of the application over claim 1 of U.S. Patent No. 8,352,730, and claims 1, 4, 6-10, 13-17, and 19-20 of the instant application over claims 1, 4-7, 9, 10, and 12-18 of U.S. Patent No. 9,298,905.

2. Claims 1, 3-13, and 21 stand rejected under pre-AIA 35 U.S.C. § 103(a) as allegedly being unpatentable over Kenneth (WO 01/35334, hereinafter "Kenneth").

3. Claims 14-20 stand rejected under pre-AIA 35 U.S.C. § 103(a) as allegedly being unpatentable over Kenneth and in view of Flores et al. (U.S. 2004/0022384, hereinafter "Flores").

Response to Double Patenting Rejection

A terminal disclaimer is submitted with this amendment. Accordingly, the Examiner is requested to withdraw the double patenting rejection.

Response to Rejections under 35 U.S.C. §§ 102 and 103

Amended claim 1 recites, in part,

> receiving, at a device, an ID code from a third-party trusted authority, the ID code uniquely identifying the device among a plurality of devices;
> persistently storing … the ID code on the device; … and
> wirelessly sending the ID code for comparison by the third-party trusted authority

On page 11, the Office Action rejects claim 1 "under pre-AIA 35 U.S.C. 102(b) as being anticipated by … Kenneth, or, in the alternative, under pre-AIA 35 U.S.C. 103(a) as obvious over Kenneth" and alleges,

> wherein the ID code is unique to the device and received from a third-party trusted authority *(page 5, line 31-page 6, line 8, i.e.: account number is received from initialization machine)*

Further, on page 2, the Office Action alleges,

> Regarding claim 1, on pages 8-9, Applicant argues that "an account number **for the user"** is not "an ID code **unique to the device"** as recited in claim 1. Therefore, Applicant believes Kenneth does not teach the limitation argued above.
> In response, Examiner respectfully disagrees. In one embodiment, Kenneth discloses that at initialization, an account number is issued and transmitted to the card through an input sensor (page 5, line 31-page 6, line 8.) Kenneth also discloses that the memory of the card is written only once and cannot be reprogrammed or read (page 5, lines 17-30.), and the input sensor cannot be used again in order to prevent tampering with the stored information (page 6, lines 23-26.) In other word, only one account number is stored in the card, thus making the account number

unique to the card. Therefore, contrasting to the Applicant's argument, Kenneth discloses the limitation argue above

Applicant respectfully disagrees. The most relevant cited portion of Kenneth describes a card with "non-volatile memory [that] contains information including … an account number" and that "the memory of the card is written only once and cannot be reprogrammed or read." This is different than the element of amended claim 1 that recites an "ID code uniquely identifying the device among a plurality of devices." In the cited portion of Kenneth, the account number is alleged to only be written once to a card, but nothing in Kenneth prevents the account from being written to other cards. By contrast, amended claim 1 recites an "ID code uniquely identifying the device among a plurality of devices." Therefore, Kenneth does not render each and every element of amended claim 1 obvious and amended claim 1 is allowable over the cited reference.

Furthermore, MPEP § 2143.03(VI) states that "[a] prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." Accordingly, where cited art teaches away from a claimed feature, the cited art is not available for the purposes of an obviousness rejection. In the instant case, Kenneth not only fails to teach or suggest "the ID code uniquely identifying the device among a plurality of devices" and "wirelessly sending the ID code for comparison." but further teaches away from the use thereof. More specifically, Kenneth describes that "the memory of the card is written only once and cannot be reprogrammed or read." Therefore, Kenneth teaches away from a sending of any information stored in the memory, as the memory cannot be read and, therefore, cannot be retrieved and sent. Accordingly, Kenneth teaches away from "the ID code uniquely identifying the device among a plurality of devices" and "wirelessly sending the ID code for comparison."

Therefore, Kenneth does not render each and every element of amended claim 1 obvious and amended claim 1 is allowable over the cited reference.

Flores does not correct the above deficiency of Kenneth and the Office does not argue that it does. Therefore, either Kenneth nor Flores, alone or in combination, render each and every element of amended claim 1 obvious, and claim 1 is allowable over the cited references.

Amended claims 9 and 14 recite elements analogous to claim 1. Accordingly, the cited portions of the references set forth in the Office Action fail to describe or render obvious each and every limitation of claims 9 and 14, and claims 9 and 14 are therefore patentable over the cited portions of the references for at least reasons analogous to those discussed above with reference to claim 1. Therefore, withdrawal of the rejection of claims 9 and 14 under § 102 and § 103 is respectfully requested.

The dependent claims are patentable over the proposed combination of the identified portions of the cited references by virtue of the features they recite and their dependency from underlying base claims. Accordingly, withdrawal of the § 103 rejection to the dependent claims is also respectfully requested.

CONCLUSION

Allowance of all claims is requested. If the Examiner believes that direct contact with Applicants' attorney will advance the prosecution of this case, the Examiner is encouraged to contact the undersigned as indicated below.

Respectfully submitted,
GIOBBI, JOHN J.

Dated: August 8, 2019 By: /Matthew M. Holmes/

Matthew M. Holmes, Reg. No. 65,160
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MMH:DAD:kkt

Electronic Acknowledgement Receipt

EFS ID:	36820340
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	08-AUG-2019
Filing Date:	20-FEB-2016
Time Stamp:	15:35:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		05488US_20190808_AmendmentG.pdf	121353 1f842b7f43240c454f30e85f66a61ba017ca52df	yes	11

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Response After Final Action	1	1
	Claims	2	6
	Applicant Arguments/Remarks Made in an Amendment	7	11
Warnings:			
Information:			
	Total Files Size (in bytes):	121353	

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)
Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	VU, PHY ANH TRAN
Attorney Docket Number	10001-05488 US

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	7310042		2007-12-18	Seifert	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20060286969	A1	2006-12-21	Talmor et al.	
	2	20070192601	A1	2007-08-16	Spain et al.	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	VU, PHY ANH TRAN
	Attorney Docket Number	10001-05488 US

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1		

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	VU, PHY ANH TRAN
	Attorney Docket Number	10001-05488 US

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☒ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

☒ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Paige Alsbury/	Date (YYYY-MM-DD)	2019-07-10
Name/Print	Paige M. Alsbury	Registration Number	72,965

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	15049060
Filing Date:	20-Feb-2016
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Filer:	Paige McDede Alsbury/Kristin Takahashi
Attorney Docket Number:	10001-05488 US

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
		Total in USD ($)		**120**

Electronic Acknowledgement Receipt

EFS ID:	36548871
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Paige McDede Alsbury
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	10-JUL-2019
Filing Date:	20-FEB-2016
Time Stamp:	18:49:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$120
RAM confirmation Number	071119INTEFSW18500200
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	05488US_20190710_IDS.pdf	1034231 c92e0fc03e1083e433c9e8a0b1d6da9e2d903d4e	no	4
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30589 6e52b347d96216fd9c0ab7181c40ce6a0b049853	no	2
Warnings:					
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New Applications Under 35 U.S.C. 111
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National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

USPTO Automated Interview Request (AIR)

Jun 12 2019

This paper requesting to schedule and/or conduct an interview is appropriate because:

This submission is requested to be accepted as an authorization for this interview to communicate via the internet. Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned concerning scheduling of the interview via video conference, instant messaging, or electronic mail, and to conduct the interview in accordance with office practice including video conferencing.

Name(s):
Matthew Holmes and Dave Duncan

S-signature:
/David A Duncan/

Registration Number:

U.S. Application Number:
15049060

Confirmation Number:
2423

E-mail Address:
dduncan@patentlawworks.net

Phone Number:
+1 8013601683

Proposed Time of Interview:
6-19-2019 1:00 PM ET

Alternative Proposed Time(s) of Interview:
6-19-2019 1:30 PM ET

Alternative Proposed Time(s) of Interview:
6-18-2019 3:30 PM ET

Prefered Interview Type:
Telephonic

I am the applicant or applicant's representative for this application.

Topic for Discussion:
The section 103 rejection of claim 1. (Will send agenda before interview)

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/049,060	02/20/2016	John J. Giobbi	10001-05488 US	2423

89194 7590 06/10/2019

Patent Law Works/Proxense
Greg Sueoka
310 East 4500 South, Suite 400
Salt Lake City, UT 84107

EXAMINER	
VU, PHY ANH TRAN	

ART UNIT	PAPER NUMBER
2438	

NOTIFICATION DATE	DELIVERY MODE
06/10/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@patentlawworks.net
patents@patentlawworks.net

Office Action Summary	**Application No.** 15/049,060	**Applicant(s)** Giobbi, John J.	
	Examiner PHY ANH T VU	**Art Unit** 2438	**AIA (FITF) Status** No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 02/11/2019.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☑ This action is **FINAL.** 2b) ☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1 and 3-21 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1 and 3-21 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 2/20/2016 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 04/03/2019; 1/30/2019.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to the Argument filed 02/11/2019.

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Response to Arguments

Regarding claim 1, on pages 8-9, Applicant argues that "an account number **for the user**" is not "an ID code **unique to the device**" as recited in claim 1. Therefore, Applicant believes Kenneth does not teach the limitation argue above.

In response, Examiner respectfully disagrees. In one embodiment, Kenneth discloses that at initialization, an account number is issued and transmitted to the card through an input sensor (page 5, line 31-page 6, line 8.) Kenneth also discloses that the memory of the card is written only once and cannot be reprogrammed or read (page 5, lines 17-30.), and the input sensor cannot be used again in order to prevent tampering with the stored information (page 6, lines 23-26.) In other word, only one account number is stored in the card, thus making the account number unique to the card. Therefore, contrasting to the Applicant's argument, Kenneth discloses the limitation argue above.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

Claims 1, 4-7, 9, and 14-17 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1, 5-6, 9, 12 and 24-26 of U.S. Patent No. 8,886,954, claim 1 of the application over claim 1 of US Patent No. 8,352,730, and claims 1, 4, 6-10, 13-17 and 19-20 of the instant application over claims 1, 4-7, 9-10, and 12-18 of Patent No. 9,298,905 (which was application 14,521,982). Although the claims at issue are not identical, they are not patentably distinct from each other because the scopes of the claims are the same as exemplified below.

Instant Application	US Patent 8,886,954
Claim 1: **A method comprising:** **receiving, at a device, an ID code unique to the device from a third-party trusted authority;** **persistently storing biometric data of a legitimate user and an ID code on a device;**	**Claim 1:** **A method comprising:** **persistently storing biometric data of a user and a plurality of codes and other data values comprising:** **a device ID code uniquely identifying an integrated device and a secret decryption value in a**

	tamper proof format written to a storage element on the integrated device that is not capable of being subsequently altered;
receiving from a biometric sensor, scan data from a biometric scan performed using the biometric sensor, the device including the biometric sensor;	**responsive to receiving a request for a biometric verification of the user, receiving scan data from a biometric scan;**
comparing, using one or more processors, the scan data to the biometric data to determine whether the scan data matches the biometric data;	**comparing the scan data to the biometric data to determine whether the scan data matches the biometric data;**
responsive to a determination that the scan data matches the biometric data, wirelessly sending the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a financial transaction being completed responsive to an indication that the third-party trusted authority successfully authenticated the ID code.	**responsive to a determination that the scan data matches the biometric data, wirelessly sending one or more codes and other values from the plurality of codes and other data values for authentication to a third party that operates a trusted authority, wherein the one or more codes and other data values includes the device ID code; and** **receiving,** at an application, **an access message** from the trusted authority **indicating that the trusted authority successfully authenticated the one or more codes and other data values sent to the third party and allowing the user access to the application.**

Instant Application	US Patent 8,352,730
Claim 1: **A method comprising:**	**Claim 1:** A method for verifying a user during authentication of an integrated device, comprising the steps of:

receiving, at a device, an ID code unique to the device from a third-party trusted authority; **persistently storing biometric data of a legitimate user and an ID code on a device;**	**persistently storing biometric data of the user and a plurality of codes and other data values comprising a device ID code uniquely identifying the integrated device and a secret decryption value in a tamper proof format written to a storage element on the integrated device that is unable to be subsequently altered;** wherein the biometric data is selected from a group consisting of a palm print, a retinal scan, an iris scan, a hand geometry, a facial recognition, a signature recognition and a voice recognition;
receiving from a biometric sensor, scan data from a biometric scan performed using the biometric sensor;	**responsive to receiving a request for a biometric verification of the user, receiving scan data from a biometric scan;**
comparing, using one or more processors, the scan data to the biometric data to determine whether the scan data matches the biometric data; **responsive to a determination that the scan data matches the biometric data, wirelessly sending the ID code for comparison by a third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a financial transaction being completed responsive to an indication that the third-party trusted authority successfully authenticated the ID code.**	**comparing the scan data to the biometric data to determine whether the scan data matches the biometric data;** **responsive to a determination that the scan data matches the biometric data, wirelessly sending one or more codes from the plurality of codes and the other data values for authentication by an agent that is a third-party trusted authority possessing a list of device ID codes uniquely identifying legitimate integrated devices, wherein the one or more codes and other data values includes the device ID code;** and responsive to authentication of the one or more codes and the other data values by the agent, **receiving an access message from the agent allowing the user access to an application,** wherein

	the application is selected from a group consisting of a casino machine, a keyless lock, a garage door opener, an ATM machine, a hard drive, computer software, a web site and a file.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-13 and 21 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by WO 01/35334 A1-hereinafter Kenneth, or, in the alternative, under pre-AIA 35 U.S.C. 103(a) as obvious over Kenneth.

Regarding claim 1, Kenneth discloses a method comprising:

receiving, at a device, an ID code unique to the device from a third-party trusted authority *(page 5, line 31-page 6, line 8, i.e.: account number is received from initialization machine)*;

persistently storing biometric data of a legitimate user and the ID code on the device *(page 4, lines 26-33, page 5, lines 17-30, fingerprint information and account number are stored)*;

receiving, from a biometric sensor, scan data from a biometric scan performed using the biometric sensor, the device including the biometric sensor *(page 6, line 27-page 7, line 8, fingerprint is received from scanner)*;

comparing, using one or more processors, the scan data to the biometric data *(page 7, lines 5-10, fingerprint received from scanner is compared to fingerprint information stored)*;

determining whether the scan data matches the biometric data *(page 7, lines 8-10, a match is determined based on the comparison of the fingerprint received from the scanner and the fingerprint information stored)*; and

responsive to a determination that the scan data matches the biometric data, wirelessly sending the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code *(page 5, line 34-page 6, line 8, page 7, lines 8-14, the account number is transmitted to the transaction machine. It is obviously if not inherently that the account number is then verified for authenticity by the initialization machine to determine whether the account number is valid.)*

Regarding claim 3, Kenneth discloses the method of claim 1. Kenneth also discloses receiving a request for biometric verification *(page 6, line 31-page 7, line 8, a fingerprint is received at the scanner)*; and

when the device cannot verify the scan data as being from the legitimate user, the device does not send the ID code *(page 7, lines 5-19, if fingerprint received from scanner does not match with fingerprint information stored, then account number is not sent.)*

Regarding claim 4, Kenneth discloses the method of claim 1. Kenneth also discloses the biometric data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice *(page 4, lines 29-33, fingerprint.)*

Regarding claim 5, Kenneth discloses the method of claim 1. Kenneth also discloses the scan data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice *(page 4, line 34-page 5, line 4, fingerprint.)*

Regarding claim 6, Kenneth discloses the method of claim 1. Kenneth also discloses the device comprises one or more of a mobile phone, tablet, laptop, mp3 player, mobile gaming device, watch and a key fob *(page 9, line 7-9, wrist watch.)*

Regarding claim 7, Kenneth discloses the method of claim 1. Kenneth does not explicitly disclose completing the transaction includes accessing an application.

However, it is obviously if not inherently that at least an application for initializing the scanning of fingerprint is used, so that the user can be verified before additional information is provided in order to carry out the transaction.

Regarding claim 8, Kenneth discloses the method of claim 1. Kenneth also discloses completing the financial transaction includes accessing one or more of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account *(page 5, line 31-page 6, line 8, bank account number.)*

Claim 9 is rejected for the same rationale as claim 1 above.

Regarding claim 10, Kenneth discloses the device of claim 9. Kenneth also obviously or inherently discloses the ID code is transmitted to the third-party trusted authority over a network *(page 5, line 34-page 6, line 8, page 7, lines 8-14, the account number is transmitted to the transaction machine. It is obvious if not inherent that the account number is then verified for authenticity by the initialization machine to determine whether the account number is valid*.)

Claim 11 is rejected for the same rationale as claim 4 above.

Claim 12 is rejected for the same rationale as claim 5 above.

Claim 13 is rejected for the same rationale as claim 6 above.

Regarding claim 21, Kenneth discloses the method of claim 1. Kenneth does not explicitly disclose the transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code includes the third-party trusted authority sending an indication that the third-party trusted authority authenticated the ID code to another party.

However, it is obvious if not inherent that when the authenticity is checked in Kenneth *(page 7, lines 5-14)*, this involves the transaction machine communicates the account number received to the initialization machine to verify. Then after the verification, the initialization machine sends back either an approval or a denial message to the transaction machine to inform whether or not the transaction can be completed in order to clearly communicate the status of the transaction to parties involved.

Claims 14-20 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kenneth and in view of Flores et al. (US 2004/0022384 A1- hereinafter Flores.)

Regarding claim 14, Kenneth discloses a system, comprising:

a device that persistently stores biometric data of a legitimate user and an ID code in the device *(page 4, lines 26-33, page 5, lines 17-30, fingerprint information and account number are stored)*, wherein the ID code is unique to the device and received from a third-party trusted authority *(page 5, line 31-page 6, line 8, i.e.: account number is received from initialization machine)*, that wirelessly sends the ID code to the third-

party trusted authority for authentication responsive to determining that scan data from a biometric scan performed using a biometric sensor matches the biometric data of the legitimate user, wherein a financial transaction is completed responsive to authentication of the ID code by the third-party trusted authority *(page 5, line 34-page 6, line 8, page 7, lines 8-14, the account number is transmitted to the transaction machine. It is obvious if not inherent that the account number is then verified for authenticity by the initialization machine to determine whether the account number is valid)*; and

the third-party trusted authority operated by a third party, the third-party trusted authority storing a plurality of legitimate ID codes and authenticating the ID code received based on a comparison of the ID code received and the legitimate ID codes included in the plurality of the legitimate ID codes *(page 5, line 31-page 6, line 8, page 7, lines 5-14, page 8, line 32-page 9, line 6, the initialization machine verifies the account number received from the transaction machine from among a plurality of account numbers.)*

Kenneth does not explicitly disclose causes a visual indication, at the device, that a biometric authentication is requested.

However, Flores discloses causing at a device a visual indication that biometric verification of a user is requested *([0025], PDE telephone 110 can provide an audio, visual and/or a text prompt instructing user that biometric information is required.)*

One of ordinary skill in the art at the time the invention was made would have been motivated to modify the method of Kenneth to include features disclose by Flores to provide clear indication of the information needed.

Claim 15 is rejected for the same rationale as claim 3 above.

Claim 16 is rejected for the same rationale as claims 6 & 13 above.

Claim 17 is rejected for the same rationale as claims 4 & 11 above.

Claim 18 is rejected for the same rationale as claims 5 & 12 above.

Claim 19 is rejected for the same rationale as claim 8 above.

Claim 20 is rejected for the same rationale as claim 10 above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHY ANH TRAN VU whose telephone number is (571)270-7317. The examiner can normally be reached on Monday-Friday 7 am-1 pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Taghi T Arani can be reached on (571) 272-3787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PHY ANH T VU/
Primary Examiner, Art Unit 2438

Notice of References Cited	Application/Control No. 15/049,060	Applicant(s)/Patent Under Reexamination Giobbi, John J.	
	Examiner PHY ANH T VU	Art Unit 2438	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-6270011-B1	08-2001	Gottfried; Ofer	G06F21/32	235/379
*	B	US-5598474-A	01-1997	Johnson; Neldon P.	G06F21/32	713/186
*	C	US-20020196963-A1	12-2002	Bardwell, William E.	G06F21/32	382/124
*	D	US-20020148892-A1	10-2002	Bardwell, William E.	G06F21/32	235/380
*	E	US-20020138438-A1	09-2002	Bardwell, William E.	G06F21/32	705/51
	F					
	G					
	H					
	I					
	J					
	K					
	L					
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	Art Unit
	PHY ANH T VU	2438

CPC - Searched*		
Symbol	Date	Examiner

CPC Combination Sets - Searched*		
Symbol	Date	Examiner
G06F 21/32	03/21/2016; 11/08/2018; 6/4/2019	PVU
H04L 63/0861	03/21/2016	PVU
H04L 9/321	12/22/2016	PVU
G06F 21/35	11/08/2018	

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Inventor names search	03/21/2016	PVU
Keywords search	03/21/2016; 12/22/2016; 7/22/2017; 01/04/2018; 11/08/2018; 6/4/2019	PVU

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/PHY ANH T VU/ Primary Examiner, Art Unit 2438	

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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/049,060	Giobbi, John J.
	Examiner	**Art Unit**
	PHY ANH T VU	2438

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	03/21/2016	12/23/2016	07/22/2017	01/04/2018	11/09/2018	06/04/2019			
	1	✓	✓	✓	✓	✓	✓			
	2		✓	-	-	-	-			
	3		✓	✓	✓	✓	✓			
	4		✓	✓	✓	✓	✓			
	5		✓	✓	✓	✓	✓			
	6		✓	✓	✓	✓	✓			
	7		✓	✓	✓	✓	✓			
	8		✓	✓	✓	✓	✓			
	9		✓	✓	✓	✓	✓			
	10		✓	✓	✓	✓	✓			
	11		✓	✓	✓	✓	✓			
	12		✓	✓	✓	✓	✓			
	13		✓	✓	✓	✓	✓			
	14		✓	✓	✓	✓	✓			
	15		✓	✓	✓	✓	✓			
	16		✓	✓	✓	✓	✓			
	17		✓	✓	✓	✓	✓			
	18		✓	✓	✓	✓	✓			
	19		✓	✓	✓	✓	✓			
	20		✓	✓	✓	✓	✓			
	21			✓	✓	✓	✓			

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
		"20040129787.pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:04
		(indicat$4 with flash$4) with (biometri9298905	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:38
		(indicat$4 near10 flash$4) with (biometric)	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:31
		(indicat$4 with flash$4) with (biometric)	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:29
S1	1	"13710109"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:38
S2	0	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:49
S3	0	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/03/21 07:49
S4	0	"15049060".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:31
S5	3	"11314199"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:32
S6	12	"8352730"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:33
S7	1	"8352730".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:34
S8	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:43
S9	2764	g06f21/32.cpc. and (biometric with authenticat$3)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:52
S10	1896	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:53
S11	603	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device) and (trusted or third$party)	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:53
S12	365	g06f21/32.cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:54
S13	81	S12 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2016/03/21 08:54
S14	0	h04/63/0861cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:00
S15	0	h04l63/0861cpc. and (biometric with authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:00
S16	237	h04l63/0861.cpc. and (biometric with	US-PGPUB;	OR	OFF	2016/03/21

		authenticat$3) same (fob device) and ((trusted or third$party) with (approv$3 or authenticat$3))	USPAT			09:00
S17	38	S16 and @ad<"20051220"	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:01
S18	82	(giobbi).in.	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:03
S19	5	"11292330"	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:04
S20	1	"6041410".pn.	US-PGPUB; USPAT	OR	OFF	2016/03/21 09:54
S21	311	"6041410"	US-PGPUB; USPAT	OR	OFF	2016/12/19 16:05
S22	1	"6041410".pn.	US-PGPUB; USPAT	OR	OFF	2016/12/19 16:05
S23	1	"15049060"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:17
S24	4	h04l9/321.cpc. and (transmit$4 send$3) near10 (wireless$3) same ((number ID SSN PIN)) same (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:23
S25	1905	(transmit$4 send$3) near10 (wireless$3) same ((number ID SSN PIN)) same (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:24
S26	233	(transmit$4 send$3) near10 (wireless$3) with ((number ID SSN PIN)) with (financial bank)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:24
S27	39	S26 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:25
S28	604	(stor$3 with (code ID account identifier) with fob)	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:39
S29	0	(stor$3 with (code ID account identifier) with fob) and (trasmit$4 near10 (code id account identifier))	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:40
S30	401	(stor$3 with (code ID account identifier) with fob) and (transmit$4 near10 (code id account identifier))	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:41
S31	107	S30 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2016/12/22 11:41
S32	1	"6041410".pn. and fob	US-PGPUB; USPAT	OR	OFF	2016/12/22 12:57
S33	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 08:50
S34	1	"8352730".pn..pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 08:58
S35	2	"14521982"	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:00
S36	16	("6018739" "6025780" "6237848" "7137008" "20010026619" "20020023032" "20020071559" "20020091646" "20020116615" "20020174348" "20030115474" "20030149744" "20030172037" "20040123127" "20050006452" "20120226907").pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:37
S37	12	("6237848" "6325285" "7155416"	US-PGPUB;	OR	OFF	2016/12/23

		"7278025" "7314164" "7341181" "7424134" "2020104006" "20020104019" "20040098597" "20050001028" "20050105734" "20070084523").pn.	USPAT			09:39
S38	7	("5623552" "6728397" "6879966" "7231068" "7349557" "7565329" "8678273").pn.	US-PGPUB; USPAT	OR	OFF	2016/12/23 09:40
S39	1	"20040128162".pn.	US-PGPUB; USPAT	OR	OFF	2017/07/22 11:37
S40	563	(biometric near3 prompt)	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:49
S41	1	(biometric near3 prompt) with (light)	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:49
S42	63	S40 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2017/07/22 12:50
S43	1	"8856539".pn.	US-PGPUB; USPAT	OR	OFF	2018/01/04 12:29
S44	1	"20090016573".pn.	US-PGPUB; USPAT	OR	OFF	2018/01/04 12:33
S45	1	"9298905".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:38
S46	1	"8886954".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 08:40
S47	1	"5317639".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 11:27
S48	1	"6185304".pn.	US-PGPUB; USPAT	OR	OFF	2018/04/04 11:29
S49	1955	(security near3 card) same biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:20
S50	589	(security adj card) same biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:21
S51	394	(security adj card) same biometric and financial	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:21
S52	134	(security adj card) same biometric and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:21
S53	28	S52 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:22
S54	1	"6068184".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:27
S55	1	"20050103837".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:29
S56	1830	(security adj card) and (biometric) and (authenticat$4)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:45
S57	516	(security adj card) and (biometric) and (POS retailer) and bank	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S58	516	(security adj card) and (biometric) and (POS retailer) and bank and (number code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S59	390	(security adj card) and (biometric) and (POS retailer) and bank and (transmit$4 send$4) with (number code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:46
S60	165	(security adj card) and (biometric) and (POS retailer) and bank same	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:47

		(transmit$4 send$4) with (number code)				
S61	14	S60 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:47
S62	1098	(security adj card) and biometric and (merchant retailer)	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:52
S63	22	"7389269"	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:54
S64	1	"7389269".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 08:54
S65	1	"6325285".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:07
S66	513	(security adj card) and (authorization near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S67	231	(security adj card) and biometric and (authorization near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S68	46	S67 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:15
S69	2157	(security adj card) and biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:27
S70	385	S69 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:27
S71	1709	(security adj card) and biometric and transaction	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:28
S72	308	S71 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:28
S73	579	(security near3 card) same biometric and (account near3 number)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38
S74	119426	(security near3 card) same biometric and (transmitt$4 send$4) wotj (account near3 number)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38
S75	78	(security near3 card) same biometric and (transmitt$4 send$4) with (account near3 number)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:38
S76	45659	"l3" and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:39
S77	14	S75 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:39
S78	102	(security near3 card) same biometric and (transmitt$4 send$4) with (security near3 code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:46
S79	8	S78 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:46
S80	1	"15029884"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:47
S81	117	stor$4 with (security adj card) same (code)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:49
S82	15	stor$4 with (security adj card) same (code same biometric)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:49
S83	247	"6012049"	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:50
S84	1	"6012049".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:50
S85	533	(security near3 card) same biometric	US-PGPUB;	OR	OFF	2018/09/17

		and (financial near5 transaction)	USPAT			09:52
S86	36	(security near3 card) same biometric same(financial near5 transaction)	US-PGPUB; USPAT	OR	OFF	2018/09/17 09:52
S87	4949	(security near3 card) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:14
S88	730	(security near3 card) and (biometric) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:14
S89	621	(security near3 card) and (biometric) and code and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:15
S90	111	(security near3 card) and (biometric) and (print with code) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:15
S91	136	(security near3 card) and (biometric) and (pos) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:21
S92	121	S91 not S90	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:22
S93	4146569	(security near3 card) and (third$party) @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:27
S94	268	(security near3 card) and (third$party) and @ad<"20030101"	US-PGPUB; USPAT	OR	OFF	2018/09/17 10:27
S95	1	"6325285".pn.	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:21
S96	800	(security adj card) and (third$party) and (transaction and financial$)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:38
S97	146	(security adj card) and (third$party same bank) and (transaction and financial$)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:39
S98	16	S97 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:39
S99	29	(security adj card) and (transmit$4 send$4) same (third$party same bank)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:43
S100	2214	(security adj card) and (transmit$4 send$4) same (third$party bank provider)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:44
S101	1805	(security adj card) and (transmit$4 send$4) same (third$party bank provider) and (purchase)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:45
S102	1989	(security adj card) and (transmit$4 send$4) same (third$party bank provider) and (credit near3 card)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:46
S103	393	(security adj card) and (transmit$4 send$4) same (authorization) same (third$party bank provider) and (credit near3 card)	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:47
S104	65	S103 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:50
S105	197	(security adj card) and (transmit$4 send$4) same (authorization) same (third$party bank provider) and biometric	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:53
S106	44	S105 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/09/17 11:55
S107	1	"15029884"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:22

S108	2	"20040022384"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:23
S109	1	"20050103837"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:31
S110	96	(security adj card) and (biometric) and (credit adj card near3 provider)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:38
S111	891	(security adj card) and (biometric) and (point near3 sale)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:40
S112	0	(security adj card) and (biometric) and (point near3 of near3 sale)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:41
S113	1	g06f21/32.cpc. and (fob with security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:41
S114	845	g06f21/32.cpc. and (security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S115	748	g06f21/32.cpc. and (security near3 card) and biometric	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S116	378	g06f21/32.cpc. and (security near3 card) and biometric and (third near3 party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S117	318	S116 and (biometric with authenticat$3)	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:42
S118	98	S116 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 09:43
S119	198	g06f21/32.cpc. and (authenticat$4 with user with biometric) and (security adj card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:07
S120	43	S119 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:07
S121	19972	(transmit$4 wit credit near5 number) same (verif$7) and (biometric)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:12
S122	27016	(authenticat$4 with biometric) and (transmit$4 wit credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:12
S123	410	(authenticat$4 with biometric) and (transmit$4 with credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S124	157	(authenticat$4 with biometric) and (transmit$4 with credit near5 number) and (smart near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S125	15	S124 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:13
S126	216	(authenticat$4 with biometric same card) and (transmit$4 with credit near5 number)	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:16
S127	24	S126 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 10:16
S128	1256	(smart adj card) and ((authenticat$4 verif$) with (biometric)) and (transmit$4 with (ID (credit near3 card near3 number)))	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:06
S129	162	(smart adj card) and ((authenticat$4 verif$) with (biometric)) same (transmit$4 with (ID (credit near3 card near3 number)))	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:06
S130	26	S129 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:07

S131	82	g06f21/32.cpc. and (fob with smart near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:09
S132	9	S131 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:09
S133	94	(authenticat$4 with biometric same card) and (transmit$4 with credit near5 number) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:15
S134	13	S133 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:15
S135	461	(smart adj card) with (biometric) and (authenticat$4 with biometric) and financial near3 transaction	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:24
S136	1148	(smart adj card) with (biometric) and (authenticat$4 with biometric) and (financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:25
S137	0	(security adj card with biometric) and (transmit$4 send$4) same (authorization) same (third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:26
S138	47	(security adj card with biometric) and (transmit$4 send$4) same (financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:27
S139	11	(security adj card with biometric) and (register$4 with financial)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:28
S140	5	"10861864"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:30
S141	1	"20040091136".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:32
S142	1	"20040148526".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:33
S143	1	"20030061172".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:34
S144	1	"20060016875".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:36
S145	1	"20040232224".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:37
S146	4	(hong$sik near3 koo).in.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:39
S147	2	"20070136211"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:40
S148	1	"20040258281".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:45
S149	142	(fob with biometric) and (financial near3 transaction) and (third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:46
S150	51	S149 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:46
S151	8	(fob with biometric) and (security adj card) and (ID (account adj number)) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:50
S152	15	g06f21/35.cpc. and (fob with biometric) and (financial near3 transaction)	US-PGPUB; USPAT	OR	OFF	2018/11/08 11:58
S153	1	"20040199469".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:00
S154	1	"20040139008".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:01

S155	1	"20040129787".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:04
S156	1	"20060000891".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:08
S157	405	g06f21/35.cpc. and (security near3 card)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S158	145	g06f21/35.cpc. and (security near3 card) and (authenticat$4 with biometric)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S159	13	S158 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:11
S160	1	"20040236701".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:15
S161	1276	(authenticat$4 with biometric) and (transmit$4 send$4) with (account near3 (ID number))	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S162	107	(authenticat$4 with biometric) with fob and (transmit$4 send$4) with (account near3 (ID number))	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S163	44	S162 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:17
S164	0	(fob with biometric) with (financial with third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S165	83	(fob with biometric) same (financial with third$party)	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S166	33	S165 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:19
S167	1	"20040129787".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/08 12:20
S168	1	"20060253710".pn. and (credit adj card near3 authentication near3 results)	US-PGPUB; USPAT	OR	ON	2018/11/09 07:01
S169	9	"2001035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S170	14821343	wo "2001035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S171	0	wo2001035334	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:43
S172	19	"20010035334"	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2018/11/09 08:43

			EPO; JPO; DERWENT; IBM_TDB			
S173	0	wo2001035334	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:44
S174	9	"2001035334"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 08:44
S175	715	"5623552"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:24
S176	4	"5623552".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:24
S177	2	"20020112177".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:29
S178	2	(fob with biometric) same (account near3 number) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:31
S179	2	(fob with biometric) same (account near3 (number ID)) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:32
S180	193	(fob with biometric) and (account near3 (number ID)) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:32
S181	57	S180 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/09 10:32

S182	0	(fob with biometric) and (thid$party) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:40
S183	182	(fob with biometric) and (third$party) and (authorization near3 code)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2018/11/09 10:40
S184	54	S183 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2018/11/09 10:40
S185	1	"20030225703".pn.	US-PGPUB; USPAT	OR	OFF	2018/11/09 12:23
S186	59	g06f21/32.cpc. and (security adj card) with (biometric fingerprint)	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:19
S187	5	S186 and @ad<"20041220"	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:19
S188	8	("4759060" "4993068" "5187352" "5296641" "5325285" "5392433" "5416780" "5422632").pn.	US-PGPUB; USPAT	OR	OFF	2019/06/04 10:27
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Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	Phy Anh Tran
Attorney Docket Number	10001-05488 US

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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	35618061
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Paige McDede Alsbury
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	03-APR-2019
Filing Date:	20-FEB-2016
Time Stamp:	16:23:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	05488US_20190403_IDS.pdf	1034379 b8c456a5f85df88c6e2c61eb92c39b0572a09f0e	no	4

Warnings:

Information:					
A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.					
2	Non Patent Literature	Dai_TowardBlockchainBasedAccounting.pdf	2437455 0a77466dc8af10a88c4b59538223f3e67c968f79	no	18
Warnings:					
Information:					
			Total Files Size (in bytes):	3471834	

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

FIRST INVENTOR:	John J. Giobbi
APPLICATION NO:	15/049,060
FILING DATE:	February 20, 2016
TITLE:	Biometric Personal Data Key (PDK) Authentication
EXAMINER:	Phy Anh Tran Vu
GROUP ART UNIT:	2438
ATTY. DKT. NO:	10001-05488 US
CONFIRMATION NO:	2423

CERTIFICATE OF EFS-WEB TRANSMISSION UNDER 37 CFR § 1.8

I hereby certify that this correspondence is being transmitted via the U.S. Patent and Trademark Office electronic filing system (EFS-Web) to the USPTO on the date below.

Date: February 11, 2019 By: /Matthew M. Holmes/
Matthew M. Holmes, Reg. No. 65,160

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AMENDMENT F

Responsive to the Non-Final Office Action mailed on November 15, 2018, which sets a shortened statutory period for response that expires on February 15, 2019, please enter the following amendment and consider the following remarks.

Electronic Acknowledgement Receipt

EFS ID:	35108618
Application Number:	15049060
International Application Number:	
Confirmation Number:	2423
Title of Invention:	Biometric Personal Data Key (PDK) Authentication
First Named Inventor/Applicant Name:	John J. Giobbi
Customer Number:	89194
Filer:	Matthew M. Holmes
Filer Authorized By:	
Attorney Docket Number:	10001-05488 US
Receipt Date:	11-FEB-2019
Filing Date:	20-FEB-2016
Time Stamp:	15:46:24
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		05488US_2019-02-11_AmendmentF.pdf	100113 1da5d71dbff47eba2fe5c3741e3a0849ac83d596	yes	10

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Applicant Arguments/Remarks Made in an Amendment	7	10
	Claims	2	6
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	100113	

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REMARKS

Claims 1 and 3-21 were presented for examination. Claims 1 and 3-21 stand rejected in the Office Action dated November 15, 2018 (herein, "OA"). Claims 1 and 21 are amended. Claims 1 and 3-21 are pending upon entry of this amendment.

Summary of Office Action

1. Claim 21 is objected because of informalities.

2. Claims 1, 4-7, 9, and 14-17 are rejected on the ground of non-statutory double patenting as allegedly being unpatentable over claims 1, 5, 6, 9, 12, and 24-26 of U.S. Patent No. 8,886,954.

3. Claim 1 is rejected on the ground of non-statutory double patenting as allegedly being unpatentable over claim 1 of U.S. Patent No. 8,352,730.

4. Claims 1, 4, 6-10, 13-17, 19, and 20 are rejected on the ground of non-statutory double patenting as allegedly being unpatentable over claims 1, 4-7, 9, 10, and 12-18 of U.S. Patent No. 9,298,905

5. Claims 1, 3-13, and 21 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Kenneth (WO 01/35334, hereinafter "Kenneth"), or, in the alternative, under pre-AIA 35 U.S.C. § 103(a) as obvious over Kenneth.

6. Claims 14-20 stand rejected under pre-AIA 35 U.S.C. § 103(a) as allegedly being unpatentable over Kenneth in view of Flores et al. (U.S. 2004/0022384, hereinafter "Flores").

Response to Claim Objection

Claim 21 now recites, in part, "The method of claim 1, wherein the transaction being completed responsive to the third-party trusted authority …"

On page 2, the Office Action alleged, "Claim 21 recites the limitation 'a transaction being completed' which should be '[[a]] the transaction being completed'."

The amendment addresses the issue raised in the Office Action. Therefore, applicant respectfully requests that the objection be withdrawn.

Response to Double Patenting Rejection

Applicant respectfully requests that the double patenting rejection be held in abeyance until it is determined that the pending independent claims are indicated to be allowable subject matter by the Examiner, at which time Applicant will respond to the rejection or file a terminal disclaimer.

Response to Rejections under 35 U.S.C. §§ 102 and 103

Claims 1, 3-13, and 21 stand rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Kenneth, or, in the alternative, under pre-AIA 35 U.S.C. § 103(a) as obvious over Kenneth.

Amended claim 1 recites, in part, "receiving, at a device, an ID code unique to the device from a third-party trusted authority."

On page 8, the Office Action alleges,

> Regarding claim 1, Kenneth discloses a method comprising:
> receiving, at a device, an ID code unique to the device from a third-party trusted authority (page 5, line 31-page 6, line 8, i.e.: account number is received from initialization machine);

Applicant disagrees. At most, the cited portion of Kenneth describes,

> A new card is given to the user and the initialization is completed inside of a bank or similar organization. An initializing machine is used to initialize the card. … The initializing machine issues an account number for the user and an optional security code.

The reference describes "an account number for the user." Amended claim 1 recites, in part, "an ID code unique to the device." "An account number **for the user**" is not "an ID code **unique to the device**," as recited in claim 1. Therefore, the cited reference does not describe each and every element of amended claim 1, and amended claim 1 is patentable over the reference. The other cited reference, Flores, does not cure this deficiency. Applicant therefore requests that the §102 and §103 rejections be withdrawn.

The other independent claims, 9 and 14, contain analogous language, and are thus patentable for at least analogous reasons. Accordingly, Applicant requests that the §102 and §103 rejections to claims 9 and 14 be withdrawn.

The dependent claims are patentable over the proposed combination of the identified portions of the cited references by virtue of the features they recite and their dependency from underlying base claims. Accordingly, withdrawal of the §102 and §103 rejections to the dependent claims is also respectfully requested.

APPLE EX1002
000548

CONCLUSION

Allowance of all claims is requested. If the Examiner believes that direct contact with Applicant's attorney will advance the prosecution of this case, the Examiner is encouraged to contact the undersigned as indicated below.

Respectfully submitted,
GIOBBI, JOHN J.

Dated: February 11, 2019 By: /Matthew M. Holmes/

Matthew M. Holmes, Reg. No. 65,160
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MMH:DAD

APPLE EX1002
000549

IN THE CLAIMS

All pending claims are reproduced below.

1. (Currently Amended) A method comprising:

receiving, at a device, an ID code unique to the device from a third-party trusted authority;

persistently storing biometric data of a legitimate user and the ID code on the device;

receiving, from a biometric sensor, scan data from a biometric scan performed using the biometric sensor, the device including the biometric sensor;

comparing, using one or more processors, the scan data to the biometric data;

determining whether the scan data matches the biometric data; and

responsive to a determination that the scan data matches the biometric data, wirelessly sending the ID code for comparison by [[a]] the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code.

2. (Cancelled).

3. (Previously Presented) The method of claim 1 comprising:

receiving a request for biometric verification; and

when the device cannot verify the scan data as being from the legitimate user, the device does not send the ID code.

4. (Previously Presented) The method of claim 1, wherein the biometric data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

5. (Previously Presented) The method of claim 1, wherein the scan data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

6. (Previously Presented) The method of claim 1, wherein the device comprises one or more of a mobile phone, tablet, laptop, mp3 player, mobile gaming device, watch and a key fob.

7. (Previously Presented) The method of claim 1, wherein completing the transaction includes accessing an application.

8. (Previously Presented) The method of claim 1, wherein completing the transaction includes accessing one or more of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account.

9. (Previously Presented) A device comprising:

a persistent storage media that persistently stores biometric data of a legitimate user and an ID code that is unique to the device and received from a trusted third-party authority;

a biometric sensor;

a validation module, coupled to communicate with the persistent storage media, that causes a visual indication, at the device, that a biometric authentication is

requested, that receives scan data from a biometric scan performed using the biometric sensor for comparison against the biometric data, that compares the scan data to the biometric data, and determines whether the scan data matches the biometric data; and

a wireless communication module that, responsive to a determination that the scan data matches the biometric data, sends the ID code for comparison by the third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority, a transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code.

10. (Previously Presented) The device of claim 9, wherein the ID code is transmitted to the third-party trusted authority over a network.

11. (Previously Presented) The device of claim 9, wherein the biometric data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

12. (Previously Presented) The device of claim 9, wherein the scan data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

13. (Previously Presented) The device of claim 9, wherein the device comprises one or more of a mobile phone, tablet, laptop, mp3 player, mobile gaming device, watch and a key fob.

14. (Previously Presented) A system, comprising:

a device that persistently stores biometric data of a legitimate user and an ID code in the device, wherein the ID code is unique to the device and received from a third-party trusted authority, that causes a visual indication, at the device, that a biometric authentication is requested, that wirelessly sends the ID code to the third-party trusted authority for authentication responsive to determining that scan data from a biometric scan performed using a biometric sensor matches the biometric data of the legitimate user, wherein a transaction is completed responsive to authentication of the ID code by the third-party trusted authority; and

the third-party trusted authority operated by a third party, the third-party trusted authority storing a plurality of legitimate ID codes and authenticating the ID code received based on a comparison of the ID code received and the legitimate ID codes included in the plurality of the legitimate ID codes.

15. (Previously Presented) The system of claim 14, wherein the device receives an authentication request, and in response, requests the biometric scan from a user to generate the scan data and, when the device cannot verify the scan data as being from the legitimate user, the device does not send the ID code.

16. (Previously Presented) The system of claim 14, wherein the device comprises one or more of a mobile phone, tablet, laptop, mp3 player, mobile gaming device, watch and a key fob.

17. (Previously Presented) The system of claim 14, wherein the biometric data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

18. (Previously Presented) The system of claim 14, wherein the scan data includes data generated from one or more of a finger, palm, a retina, an iris, a hand geometry, a face, a signature and a voice.

19. (Previously Presented) The system of claim 14, wherein completing the transaction includes accessing one or more of a casino machine, a keyless lock, an ATM machine, a web site, a file and a financial account.

20. (Previously Presented) The system of claim 14, wherein completing the transaction includes accessing an application.

21. (Currently Amended) The method of claim 1, wherein [[a]] the transaction being completed responsive to the third-party trusted authority successfully authenticating the ID code includes the third-party trusted authority sending an indication that the third-party trusted authority authenticated the ID code to another party.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 15/049,060	Filing Date 02/20/2016	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $40 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $210 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	02/11/2019	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 21	= 0		x $50 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $230 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	SLIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/PATIENCE RESPER/
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The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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PTO/SB/08a (02-18)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	15049060
Filing Date	2016-02-20
First Named Inventor	John J. Giobbi
Art Unit	2438
Examiner Name	VU, PHY ANH TRAN
Attorney Docket Number	10001-05488 US

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4759060		1988-07-19	Hayashi et al.	
	2	4993068		1991-02-12	Piosenka et al.	
	3	5187352		1993-02-16	Blair et al.	
	4	5296641		1994-03-22	Stelzel	
	5	5325285		1994-06-28	Araki	
	6	5392433		1995-02-21	Hammersley et al.	
	7	5416780		1995-05-16	Patel	
	8	5422632		1995-06-06	Bucholtz et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	VU, PHY ANH TRAN
	Attorney Docket Number	10001-05488 US

	9	5450489		1995-09-12	Ostrover et al.	
	10	5619251		1997-04-08	Kuroiwa et al.	
	11	5629980		1997-05-13	Stefik et al.	
	12	5644354		1997-07-01	Thompson et al.	
	13	5666412		1997-09-09	Handelman et al.	
	14	5692049		1997-11-25	Johnson et al.	
	15	5784464		1998-07-21	Akiyama et al.	
	16	5825876		1998-10-20	Peterson Jr.	
	17	5835595		1998-11-10	Fraser et al.	
	18	5857020		1999-01-05	Peterson Jr.	
	19	5892825		1999-04-06	Mages et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	VU, PHY ANH TRAN
	Attorney Docket Number	10001-05488 US

	20	5892900		1999-04-06	Ginter et al.	
	21	5894551		1999-04-13	Huggins et al.	
	22	5898880		1999-04-27	Ryu	
	23	5917913		1999-06-29	Wang	
	24	5928327		1999-07-27	Wang et al.	
	25	5991399		1999-11-23	Graunke et al.	
	26	5991749		1999-11-23	Morrill Jr.	
	27	6016476		2000-01-18	Maes et al.	
	28	6035038		2000-03-07	Campinos et al.	
	29	6035329		2000-03-07	Mages et al.	
	30	6038334		2000-03-14	Hamid	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	15049060
	Filing Date	2016-02-20
	First Named Inventor	John J. Giobbi
	Art Unit	2438
	Examiner Name	VU, PHY ANH TRAN
	Attorney Docket Number	10001-05488 US

	31	6042006		2000-03-28	Van Tilburg et al.	
	32	6055314		2000-04-25	Spies et al.	
	33	6070796		2000-06-06	Sirbu	
	34	6088730		2000-07-11	Kato et al.	
	35	6104334		2000-08-15	Allport	
	36	6121544		2000-09-19	Petsinger	
	37	6148142		2000-11-14	Anderson	
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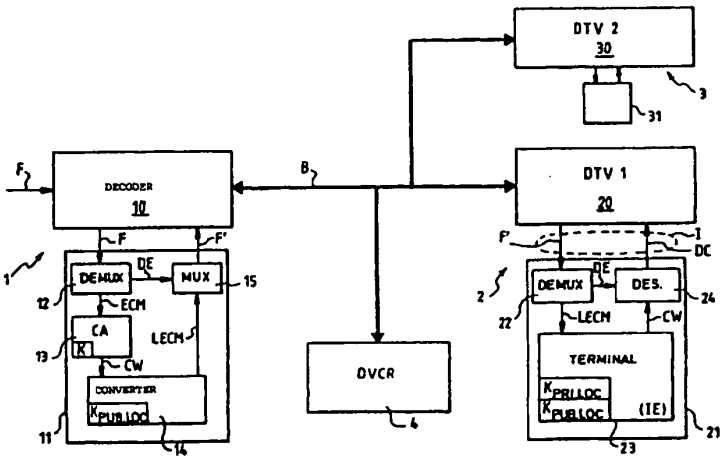
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(57) Abstract

The local digital network comprises: access devices (1), for receiving data originating from outside the network and transmitting them at a point of the network; and presentation devices (2, 3) for receiving the data flowing in the network and presenting them at a point of the network. The data flow in the network in encrypted form and all the devices of the network use a single key, the local key of the network, for the encryption and decryption of the data. Preferably, the local key of the network is formed by a pair of public and private keys. The purpose of this network is to make it possible to copy data in the local network whilst preventing pirate copies destined for other local networks.

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DIGITAL HOME NETWORK AND METHOD FOR CREATING AND UPDATING SUCH A NETWORK

The present invention relates generally to the field of local digital networks and more particularly to the field of digital home networks.

Such a network consists of a set of devices interlinked by a digital bus, for example a bus according to the IEEE 1394 standard. It comprises two main types of devices:

- access devices capable of receiving data originating from outside the local network and of transmitting them at a point of the network to which the devices are connected, and
- presentation devices, adapted to receive the data flowing in the network so as to present them at another point of the network to which these devices are connected. This second type of device has no link with the outside of the local network.

Thus, if one takes the example of a digital home network intended for conveying audio and/or video data into various rooms of a house, the access devices are for example digital decoders or set-top boxes receiving video programmes from outside the network, via a satellite antenna or via a cable connection, or else readers of optical disks broadcasting on the network, in digital form, data (audio and/or video) read from a disk (in this case the disk contains data originating from outside the network). The presentation devices are for example television receivers making it possible to view video programmes received from the network or, more generally, any type of apparatus capable of converting digital information received into an analogue signal so as to broadcast this signal to an end user.

A home network of the type mentioned hereinabove can also comprise a third type of device having no link

with the outside of the network and having the function of recording the data flowing in the network. By way of example of apparatuses of this third type, mention may in particular be made of digital video recorders or apparatuses capable of recording optical disks, of the DVD type (the abbreviation "DVD" standing for "Digital Versatile Disk").

It should be noted that one and the same apparatus can belong to two, or even three different categories of devices mentioned hereinabove. For example, an apparatus for recording optical disks can also be capable of reading commercial prerecorded disks and thus of belonging at the same time to the first and to the third categories of devices mentioned above.

If one considers the viewpoint of the content providers who provide the data originating from outside the local network, especially providers of services broadcasting pay-televised programmes or else publishers of optical disks for example, it is necessary to prevent these transmitted data from being copied and from being able to flow easily (for example by being copied onto an optical disk or any other recording medium) from one local network to the other.

To do this, it is known practice to transmit the data in secret form by encrypting them with the aid of cryptography algorithms using keys which are known beforehand to the devices authorized to receive these data or else which are exchanged according to particular secure protocols between the content provider and these devices.

If one now considers the viewpoint of a user who possesses a digital home network, it is desirable for these data to be able to be transmitted to all the other devices of the network when one of the devices of the network is authorized to receive data from a content provider. Thus, a user who is a subscriber to a pay-television service and receives programmes (transmitted

in encrypted form) on a set-top box located in his lounge (authorized to decrypt them), will wish to be able to watch these programmes for example on a television located in his bedroom. Moreover, the user is interested in recording programmes received and in being able subsequently to view them on several devices of the network even when he no longer subscribes to the pay-television service.

To take into account the wishes of content providers and also of users, it is an object of the invention to provide a means such that data received by a local digital network can flow freely between the various devices of the network whilst preventing them from flowing from one local network to another.

To this end, the invention proposes a local digital network, in particular a digital home network, comprising at least one access device, capable of receiving data originating from outside the network and of transmitting them at a point of the network; and at least one presentation device, adapted to receive data flowing in the network so as to present them at a point of the network; in which the data are adapted to flow only in encrypted form. According to the invention, all the devices of the network use for the encryption and decryption of the data flowing in the network a single encryption key specific to the network: the local key of the network.

Since each local network possesses its own local key which is different from that of the other local networks, any information which enters the said network will be readable equally by all the devices of the network but will not be copiable for being read onto another local network. More exactly, the information will be copiable, in its encrypted form, but it will not be possible to replay it in a local network different from that to which it was copied. Thus, the invention meets the wishes of content providers and also of users.

According to a preferred aspect of the invention, the data are encrypted using a cryptographic system with public keys, also known as asymmetric cryptographic system. The local key of the network is in this case formed by a pair of public and private keys: the local public key and the local private key of the network.

Preferably, only the presentation devices connected to the network know the local private key.

According to a particular embodiment, at a given instant, a single presentation device of the network is authorized to transmit the local private key to a new presentation device apt to be connected to the network. This device will subsequently be referred to as the genitor of the network.

Thus, if this genitor is removed from the local network, especially to create a pirate local network possessing the same local key as the initial local network, the latter will no longer be able to alter since no device of the initial network will any longer be capable of transmitting the local private key of the network to a new presentation device apt to be connected to the initial local network.

According to another aspect of the invention, at a given instant, a presentation device can be in only one of the following states:

i) a first state, the virgin state, when the presentation device is connected for the first time to the network;

ii) a second state, the genitor state, in which the presentation device is authorized to transmit the local private key of the network to any new presentation device apt to be connected to the network;

iii) a third state, the sterile state, in which the presentation device is no longer authorized to transmit the local private key of the network to any new presentation device apt to be connected to the said network.

A presentation device can change state only so as to pass to a state of higher rank, that is to say from the virgin state to the genitor state or from the genitor state to the sterile state, or else from the virgin state to the sterile state.

According to a preferred aspect of the invention, a single presentation device of the network is in the second state, the genitor state: the genitor of the network.

According to a particular embodiment, at a given instant, the genitor of the network is the presentation device which was connected last to the network.

Thus, the title of "genitor" of the network is transmitted to each new apparatus connected to the local network. This prevents a pirate from being able, starting from a single genitor presentation device, to create in series local networks all having the same local keys.

The invention also relates to a presentation device adapted to be connected to a digital network such as described hereinabove and which, at a given instant, can be in only one of the states which were mentioned above, namely: the virgin state, the genitor state or the sterile state, the said presentation device being adapted to change state only so as to go to a state of higher rank.

According to one aspect of the invention, when the presentation device is in the virgin state, it possesses its own pair of public and private keys and it is authorized to receive the pair of local keys of a network to which it is apt to be connected so as to store them instead of its own pair of keys.

According to another aspect of the invention, when the presentation device is in the sterile state, it is no longer authorized to receive the pair of local keys of a network to which it is apt to be connected.

According to another aspect of the invention, the presentation device comprises a means for storing the

state which said presentation device occupies, this storage means being integrated into a smart card.

According to yet another aspect of the invention, the pair of local keys of the network is contained in a smart card with which said device is furnished.

The invention also relates to a process for creating and for updating a network such as hereinabove, which will be described subsequently.

Other characteristics and advantages of the invention will become apparent on reading the following description of a particular, nonlimiting embodiment of the invention, given with reference to the appended drawings in which:

- Figure 1 represents a local digital network according to the invention;
- Figure 2 illustrates a process for creating a digital network such as that of Figure 1; and
- Figure 3 illustrates a process for connecting a new presentation device to a local digital network created according to the process of Figure 2 for example.

In the figures, only the elements which are vital to the understanding of the invention and of the particular embodiment which will be described have been represented.

Represented in Figure 1 is a digital home network comprising an access device 1, two presentation devices 2 and 3 as well as a digital video recorder 4, commonly referred to as a DVCR (the abbreviation DVCR standing for "Digital Video Cassette Recorder"). The assembly of devices 1, 2, 3 and 4 is connected to a domestic digital bus B which is for example a bus according to the IEEE 1394 standard.

The access device 1 comprises a digital decoder 10 equipped with a smart card reader furnished with a smart card 11. This digital decoder 10 is connected, either to a satellite antenna, or to a cable network, so as to receive video programmes distributed by a service

provider. These programmes are received in a stream F of data for example in the MPEG-2 format. In a manner known per se, they are transmitted in scrambled form, the content being scrambled by control words CW. These control words are themselves transmitted, in the data stream F, in a form encrypted using a key K according to a given enciphering algorithm in such a way as to remain secret during transmission.

Thus, only the users authorized by the service provider are empowered to descramble the data transmitted (against payment of a subscription for example). To do this, the provider supplies the authorized users with the key K serving to decrypt the control words CW. Very often, authorization to receive the programmes is only temporary, so long as the user pays his subscription. The key K is therefore modified regularly by the service provider.

By virtue of the invention, and as will be seen hereinbelow, the user will nevertheless be able to record programmes transmitted while he is subscribing and to replay them as often as he wishes on his own network, even if he is no longer a subscriber. On the other hand, since the data are recorded in scrambled form, it will only be possible to replay them on the network of the user who recorded them.

In Figure 1, the network is represented in the state which it occupies when all the apparatuses have been connected according to the processes which will be described subsequently in conjunction with Figures 2 and 3.

We shall now describe how the data which are transmitted in the stream F received by the decoder 10 are processed. As is known to the person skilled in the art, in the case of data transmitted according to the MPEG-2 format, the data stream F comprises a succession of video data packets, of audio data packets and of management data packets. The management data packets

comprise in particular control messages denoted ECM (the abbreviation "ECM" standing for "Entitlement Control Message") in which are transmitted, in a form encrypted using a key K, the control words CW which served to scramble the data transmitted in the video and audio data packets.

This data stream F is transmitted to the smart card 11 so as to be processed therein. It is received by a demultiplexer circuit (DEMUX) 12, which circuit transmits, on the one hand to an access control circuit (CA) 13 the ECMs and, on the other hand, to a multiplexing circuit (MUX) 15 the packets, denoted DE, of scrambled video and audio data. The circuit CA contains the key K and can thus decrypt the control words CW which are contained in the ECMs. The circuit CA transmits these control words CW to a converter circuit 14 which contains, according to the invention, the local public key of the network $K_{PUB.LOC}$. The converter 14 uses the key $K_{PUB.LOC}$ to encrypt the control words CW and transmits these control words, encrypted using the local public key, to the multiplexing circuit 15 in control messages denoted LECM. These messages LECM have the same function as the messages ECM received in the initial data stream F, namely of transmitting the control words CW, but in the messages LECM, the control words CW are encrypted therein using the local public key $K_{PUB.LOC}$ instead of being encrypted using the key K of the service provider.

The multiplexing circuit 15 then transmits the data packets DE and the converted control messages LECM in a data stream F' which is received by the decoder 10. It is this data stream F' which will then flow around the domestic bus B so as to be received, either by one of the presentation devices 2 or 3, or by the digital video recorder 4 so as to be recorded. According to the invention, the data therefore always flow in encrypted form in the bus B, and only the apparatus containing the private local key $K_{PRI.LOC}$ of the network are capable of

decrypting the control words CW and hence of decrypting the data DE. This therefore prevents the broadcasting to other local networks of any copy made in the domestic network of Figure 1.

In the example of Figure 1, the circuits 12 to 15 are integrated into the smart card 11 but in a variant embodiment, it is possible to place the circuits DEMUX and MUX in the decoder 10, only the circuits 13 and 14 remaining integrated into the smart card. Specifically, since the circuit CA 13 and the converter 14 contain decryption and encryption keys, they must be integrated into a secure medium such as a smart card.

The presentation device 2 comprises a digital television receiver (DTV1) 20 equipped with a smart card reader furnished with a smart card 21. The receiver 20 receives the data stream F' originating, either from the decoder 10, or from the digital video recorder 4, through the bus B. The data stream F' is transmitted to the smart card 21. It is received by a demultiplexer circuit (DEMUX) 22, which transmits, on the one hand the scrambled video and audio data packets DE to a descrambling circuit (DES.) 24, and on the other hand the converted control messages LECM to a terminal module 23. The terminal module contains the pair of public ($K_{PUB.LOC}$) and private ($K_{PRI.LOC}$) keys of the network. Since the control messages LECM contain the control words CW which have been encrypted using the local public key $K_{PUB.LOC}$ of the network, the terminal module can decrypt these control words using the local private key $K_{PRI.LOC}$ so as to obtain the control words CW in clear. These control words CW are then transmitted to the descrambling circuit 24 which uses them to descramble the data packets DE and to output clear data packets DC to the television receiver 20.

In order to secure the transmission lastly of the clear data DC between the smart card 21 and the display circuits of the television receiver 20, the interface I

between said smart card and the card reader of the receiver 20 is for example made secure according to the American NRSS standard (NRSS being the acronym for National Renewable Security Standard) for securing smart cards.

The second presentation device 3, comprising a digital television receiver (DTV2) 30 equipped with a smart card reader furnished with a smart card 31 operates in exactly the same way as the presentation device 2 and will not be described further.

By virtue of the local digital network just described, the data stream F originating from a content provider is transformed by the access device which receives it into a data stream F' by virtue of the local public key of the network $K_{PUB.LOC}$. This data stream F' thus contains data having a format specific to the local network, which data cannot be decrypted other than by the presentation devices of the local network which all contain the local private key of the network.

We shall now describe how the local digital network of Figure 1 is created and how the connecting of new apparatuses to the said network is managed so as to guarantee that all the apparatuses of the network all share the unique local pair of keys of the network.

In Figure 2, the process for creating the digital network represented in Figure 1 is illustrated diagrammatically.

To create a digital network according to the invention, it is necessary to connect together an access device and a presentation device.

In Figure 2, it is assumed that at the outset the network is created by connecting the access device 1 and the presentation device 2 by way of the digital bus B. The various steps of the process for creating the network have been represented along a time axis t which is doubled up in such a way as to illustrate the exchanges which take place between the two devices.

In the first step 100 of the process, when the two devices are connected together, the presentation device contains a pair of public K_{PUB2} and private K_{PRI2} keys and is, according to the invention, in the virgin state.

The state of the device is stored preferably by a state indicator IE which is a 2-bit register located in the terminal module 23 (Figure 1) of the presentation device. By convention, it is assumed that when the device is in the virgin state, the state indicator IE is equal to 00; when the device is in the genitor state, IE = 01 and when the device is in the sterile state, IE = 10.

The state indicator IE is contained in an integrated circuit in a smart card so as to guarantee that it is tamper-proof.

When a presentation device is sold by a manufacturer, it must be able to be connected to any existing local digital network, of the type of the invention. It must also be capable of being connected to an access device so as to create a new network. This is why any presentation device which is manufactured according to the invention routinely comprises a pair of public and private keys, this pair of keys being unique and different from one device to another, so as to guarantee the fact that each local network created according to the invention also possesses a unique pair of keys. Moreover, to guarantee the security of the exchanges, all the pairs of private/public keys used are certified according to a method known to the person skilled in the art.

The access devices, on the other hand, are manufactured and sold without containing any encryption/decryption key. They nevertheless preferably contain a converter circuit (contained in a smart card) according to the invention and such as described previously in conjunction with Figure 1, which is capable

of storing a local key of a network to which they are apt to be connected.

Referring again to Figure 2, step 101 of the process consists, for the presentation device 2, in dispatching over the bus B its public key K_{PUB2} destined for all the access devices apt to be connected to the bus B, in this instance the access device 1.

Step 102 consists, for the access device 1, in receiving the public key K_{PUB2} and in storing it as the new local public key of the network ($K_{PUB.LOC} = K_{PUB2}$).

In step 103, the access device 1 dispatches over the bus B a change of state signal destined for the presentation device 2. This step has the objective of indicating to the presentation device 2 that it is the first to be connected to the network and that it must therefore become the genitor of the network, that is to say the only presentation device authorized to transmit its private key K_{PRI2} (which becomes the local private key of the network $K_{PRI.LOC}$) to any new presentation device apt to be connected to the network.

Step 104 therefore consists, for the presentation device 2, in receiving the change of state signal and modifying its state indicator so as to pass to the genitor state (IE = 01).

At the end of the process, one therefore has a local digital network in accordance with the invention which comprises a unique local public key $K_{PUB.LOC}$ (equal to the initial public key K_{PUB2} of the presentation device 2) which is known to both devices of the network, and a unique local private key $K_{PRI.LOC}$ which is known only to the presentation device 2. The network also comprises, in accordance with the invention, a genitor presentation device which is capable of altering it by allowing the connection of new presentation devices.

The process for connecting a new presentation device, in this instance the presentation device 3, to the network created in accordance with the process of

Figure 2, will now be described in conjunction with Figure 3.

In the first step 200, 200' 200" of the process, which consists in connecting the presentation device 3 to the existing local network by way of the digital bus B, the presentation device 3 contains its own pair of public K_{PUB3} and private K_{PRI3} keys and it is in the virgin state (IE = 00). The access device 1 and presentation device 2 are respectively in the same state as at the end of the process of Figure 2, that is to say the access device 1 contains the local public key of the network $K_{PUB.LOC}$ and the presentation device is the genitor of the network (IE = 01) and contains the pair of local keys ($K_{PUB.LOC}$, $K_{PRI.LOC}$) of the network.

The second step 201 consists, for the presentation device 3, in dispatching over the bus B its public key K_{PUB3} destined for all the access devices apt to be connected to the bus B, in this instance the access device 1. This step is the same as step 101 (Figure 2) of the creation process.

Step 202 consists, for the access device 1, in receiving the public key K_{PUB3} and in verifying whether it already contains a public key or not (VERIF. PRESENCE $K_{PUB.LOC}$).

In the event of a positive verification, this being the case in this instance, the next step 203 consists, for the access device 1, in dispatching the local public key $K_{PUB.LOC}$ over the bus B destined for the new presentation device 3.

In step 204, the presentation device 3 receives the local public key $K_{PUB.LOC}$ and stores it, preferably in its terminal module.

The next step 205 consists, for the presentation device 3, in dispatching a signal over the bus B, addressed to all the presentation devices of the network, in the form of a message (GENITOR?) requesting the genitor device of the network to respond to it.

In step 206, the genitor device of the network, in this instance the presentation device 2, receives this message and, once the communication has been established in a dependable manner between the presentation devices 2 and 3, it changes state so as to pass to the sterile state (IE = 10).

Step 207 then consists, for the presentation device 2, in dispatching the local private key of the network in encrypted form ($E(K_{PRI.LOC})$) which can be decrypted by the presentation device 3. In particular, this secure transmission of the local private key between the presentation devices 2 and 3 can be performed using the initial public key K_{PUB3} of the presentation device 3 to encrypt the local private key, the presentation device 3 being capable of decrypting this message using its private key K_{PRI3}. The key K_{PUB3} is for example transmitted to the presentation device 2 during step 205.

In step 208, the presentation device 3 receives and decrypts the local private key and stores it, preferably in its terminal module, integrated into the smart card 31 (Figure 1).

Step 209 consists, for the presentation device 3, in dispatching a signal acknowledging receipt of the local private key (ACKNOWLEDGE-RECEIPT ($K_{PRI.LOC}$)) over the bus B destined for the presentation device 2.

In step 210, the presentation device 2 receives this acknowledgement of receipt signal and dispatches, in response, a change of state signal to the new presentation device 3 and in step 211, the presentation device 3 receives this signal and changes state so as to become the new genitor of the network (IE = 01).

Since the presentation device 2 is henceforth in the sterile state, it is no longer authorized to transmit the local public key of the network to another presentation device. This makes it possible to prevent this device 2 from being removed from the network so as

to create another pirate local network possessing the same pair of local keys as the network just described.

At the end of the process, there are therefore two presentation devices 2 and 3 and one access device 1 which are connected to the local network. They all share the local key pair of the network $K_{PUB.LOC}$, $K_{PRI.LOC}$. There is always a unique genitor in the network which is the presentation device which was connected last to the network.

The connecting of a new access device to the local network is for its part much simpler since any access device in accordance with the invention is sold without containing a key. It is in particular possible to envisage that when a new access device is plugged into the network, it dispatches a message over the bus B requesting to receive the public key of the network. It is then possible to make provision for either the first network device which receives this message, or only the genitor device, to dispatch, in response to this message, the public key of the network to the new access device.

CLAIMS

1. Local digital network, in particular digital home network, comprising:

- at least one access device (1), capable of receiving data originating from outside said network and of transmitting them at a point of said network; and

- at least one presentation device (2, 3), adapted to receive data flowing in the network so as to present them at a point of the network;

in which the data are adapted to flow only in encrypted form, characterized in that all the devices of said network use for the encryption and decryption of the data flowing in the network a single encryption key specific to the network: the local key ($K_{PUB.LOC}$, $K_{PRI.LOC}$) of the network.

2. Digital network according to Claim 1, in which the data are encrypted using a public keys cryptographic system, characterized in that said local key of the network is formed by a pair of public and private keys: the local public key ($K_{PUB.LOC}$) and the local private key ($K_{PRI.LOC}$) of the network.

3. Digital network according to Claim 2, characterized in that only the presentation devices (2, 3) connected to the said network contain the local private key ($K_{PRI.LOC}$).

4. Digital network according to Claim 3, characterized in that at a given instant, a single presentation device of the network is authorized to transmit the local private key ($K_{PRI.LOC}$) to a new presentation device apt to be connected to said network.

5. Digital network according to Claim 3, characterized in that at a given instant, a presentation device can be in only one of the following states:

i) a first state, the virgin state (IE = 00), when the presentation device is connected for the first time to said network;

ii) a second state, the genitor state (IE = 01), in which the presentation device is authorized to transmit the local private key of the network to any new presentation device apt to be connected to said network;

iii) a third state, the sterile state (IE = 10), in which the presentation device is no longer authorized to transmit the local private key of the network to any new presentation device apt to be connected to the said network,

a presentation device being adapted to change state only so as to pass to a state of higher rank.

6. Digital network according to Claim 5, characterized in that a single presentation device of the network is in the second state, the genitor state: the genitor of the network.

7. Digital network according to Claim 6, characterized in that at a given instant, the genitor of the network is the presentation device which was connected last to the said network.

8. Presentation device adapted to be connected to a digital network according to one of Claims 2 to 7, characterized in that at a given instant, said presentation device can be in only one of the following states:

i) a first state, the virgin state (IE = 00), when the presentation device is connected for the first time to a network;

ii) a second state, the genitor state (IE = 01), in which the presentation device is authorized to transmit the local private key of the network to any new presentation device apt to be connected to said network;

iii) a third state, the sterile state (IE = 10), in which the presentation device is no longer authorized to transmit the local private key of the network to any new presentation device apt to be connected to said network,

said presentation device being adapted to change state only so as to pass to a state of higher rank.

9. Presentation device according to Claim 8, characterized in that when said presentation device is in the virgin state, it contains its own pair of public and private keys and it is authorized to receive the pair of local keys of a network to which it is apt to be connected so as to store them instead of its own pair of keys.

10. Presentation device according to one of Claims 8 or 9, characterized in that when said presentation device is in the sterile state, it is no longer authorized to receive the pair of local keys of a network to which it is apt to be connected.

11. Presentation device according to one of Claims 8 to 10, characterized in that it comprises a means (IE) for storing the state which said presentation device occupies, this storage means being integrated into a smart card (21, 31).

12. Presentation device according to one of Claims 8 to 11, characterized in that the pair of local keys of the network is contained in a smart card (21, 31) with which said device is furnished.

13. Process for creating a local digital network according to one of Claims 5 to 7, characterized in that it comprises the steps consisting successively:

a) in connecting together by way of a digital bus (B) an access device (1) and a presentation device (2) in the virgin state and containing a pair of public (K_{PUB2}) and private (K_{PRI2}) keys;

b) for the presentation device (2), in dispatching over said bus (B) its public key (K_{PUB2});

c) for the access device (1), in receiving said public key (K_{PUB2}), in storing it as a new local public key of the network ($K_{PUB.LOC} = K_{PUB2}$) and in dispatching over said bus a signal of change of state of the presentation device;

d) for the presentation device (2), in receiving said change of state signal and in passing to the genitor state (IE = 01).

14. Process for connecting a new presentation device (3) in the virgin state (IE = 00) and containing a pair of public (K_{PUB3}) and private (K_{PRI3}) keys to a local digital network according to one of Claims 5 to 7, characterized in that it comprises the steps consisting successively:

e) in connecting the new presentation device (3) to the said local network by way of a digital bus (B);

f) for the new presentation device (3), in dispatching over said bus its public key (K_{PUB3});

g) for at least one of the access devices (1) of said network, in receiving the public key (K_{PUB3}) of the new presentation device, in verifying that said access device already contains a public key, the local public key ($K_{PUB.LOC}$) of the network, and, in the event of a positive verification, in dispatching over the bus (B) the local public key of the network;

h) for the new presentation device (3), in receiving the local public key ($K_{pub,LOC}$) of the network, in storing it and in dispatching over said bus a signal, addressed to all the presentation devices of the network, requesting response from the presentation device in the genitor state;

i) for the genitor presentation device of the network (2), in receiving said response request signal, in passing to the sterile state (IE = 10), and in dispatching in response to the new presentation device (3) the local private key ($K_{PRI.LOC}$) of the network in an encrypted form which can be decrypted by the new presentation device (3);

j) for the new presentation device (3), in receiving said local private key ($K_{PRI.LOC}$) of the network, in storing it and in dispatching an acknowledgement of

receipt signal to the presentation device which was formerly the genitor of the network (2);

k) for the presentation device which was formerly the genitor of the network (2), in receiving said acknowledgement of receipt signal and in dispatching to the new presentation device (3) a change of state signal;

l) for the new presentation device (3), in receiving said change of state signal and in passing to the genitor state (IE = 01).

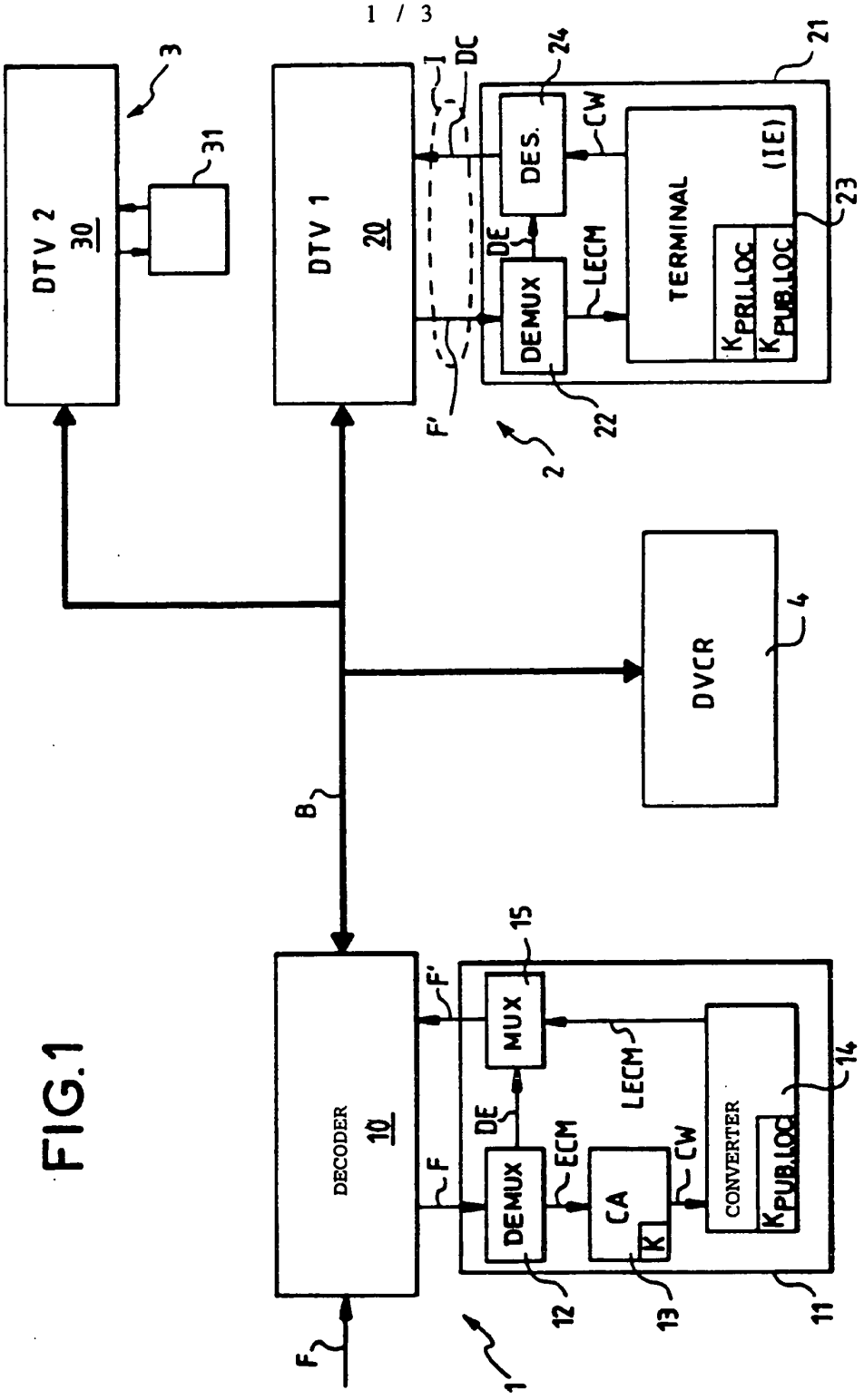

DTV 2
30
31
3
DTV 1
20
DC
I
24
DES.
CW
21
TERMINAL
(IE)
23
DE
DEMUX
LECM
K PRI.LOC
K PUB.LOC
22
F'
2
DVCR
4
B
DECODER
10
F
15
MUX
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ECM
CW
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CONVERTER
K PUB.LOC
14
12
13
11
1
F

FIG.1

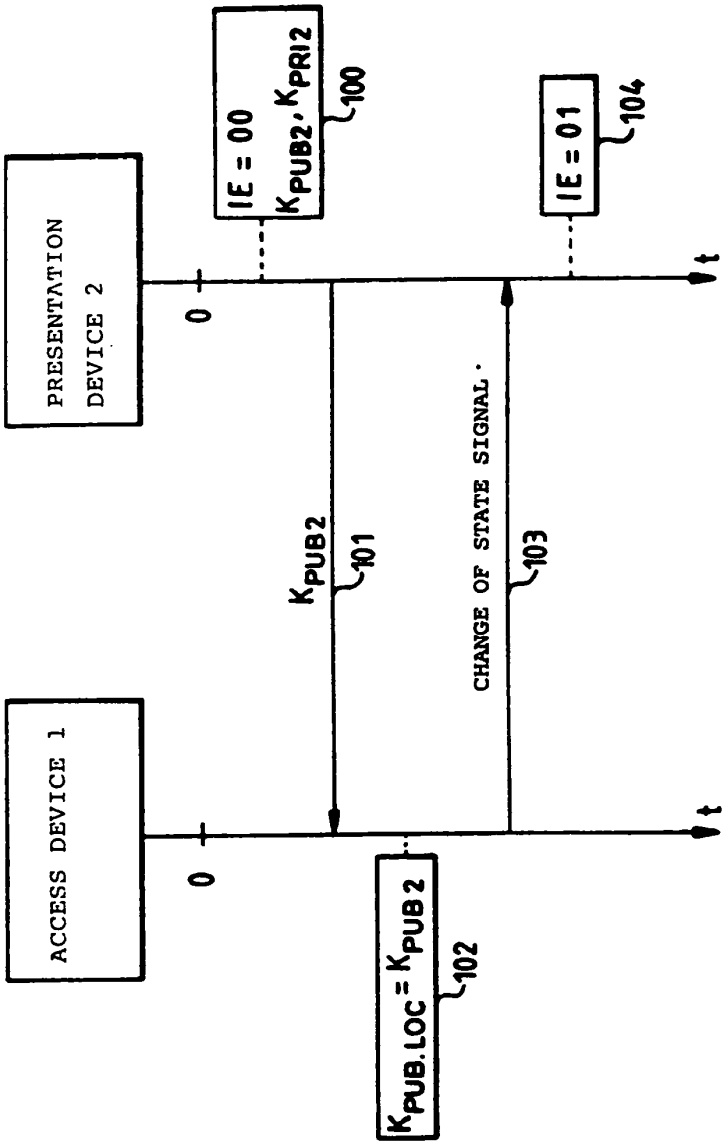

PRESENTATION DEVICE 2
ACCESS DEVICE 1
0
0
t
t
IE = 00
K_{PUB2}, K_{PRI2}
100
IE = 01
104
K_{PUB2}
101
CHANGE OF STATE SIGNAL
103
$K_{PUB.LOC} = K_{PUB2}$
102

FIG. 2

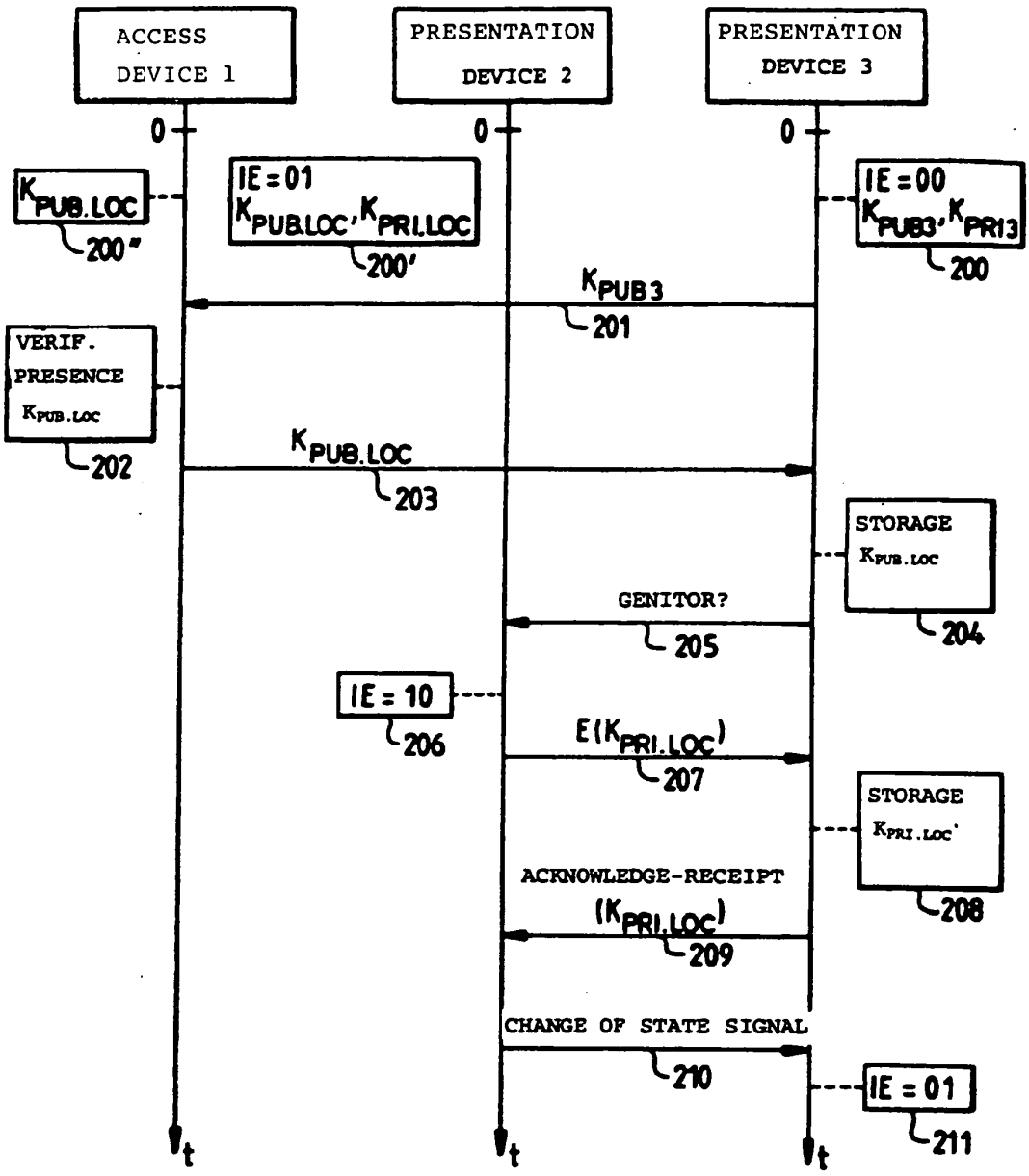

ACCESS DEVICE 1
PRESENTATION DEVICE 2
PRESENTATION DEVICE 3
0
0
0
$K_{PUB.LOC}$
200"
IE = 01
$K_{PUB.LOC}$, $K_{PRI.LOC}$
200'
IE = 00
K_{PUB3}, K_{PRI3}
200
K_{PUB3}
201
VERIF. PRESENCE $K_{PUB.LOC}$
202
$K_{PUB.LOC}$
203
STORAGE $K_{PUB.LOC}$
204
GENITOR?
205
IE = 10
206
$E(K_{PRI.LOC})$
207
STORAGE $K_{PRI.LOC}$
208
ACKNOWLEDGE-RECEIPT ($K_{PRI.LOC}$)
209
CHANGE OF STATE SIGNAL
210
IE = 01
211
t
t
t

FIG.3

INTERNATIONAL SEARCH REPORT

Inter xnal Application No
PCT/EP 00/02918

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L29/06 H04L12/28

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 7 H04L H04N

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, INSPEC, IBM-TDB, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 382 296 A (N.V. PHILIPS GLOEILAMPENFABRIEKEN) 16 August 1990 (1990-08-16)	1
A	column 2, line 2-37 column 3, line 12-29 column 4, line 40-44 column 4, line 55 -column 5, line 34 column 6, line 57 -column 7, line 5 column 8, line 56 -column 9, line 42	2-14
A	EP 0 679 029 A (SCIENTIFIC ATLANTA) 25 October 1995 (1995-10-25) page 2, line 22-41 page 3, line 31-34 page 3, line 47-50 page 7, line 34-57 page 9, line 46-57	1-14

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 July 2000	21/07/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Lázaro Lõpez, M.L.

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INTERNATIONAL SEARCH REPORT

information on patent family members

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(74) Agent: KOHRS, Martin; Thomson Multimedia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR).

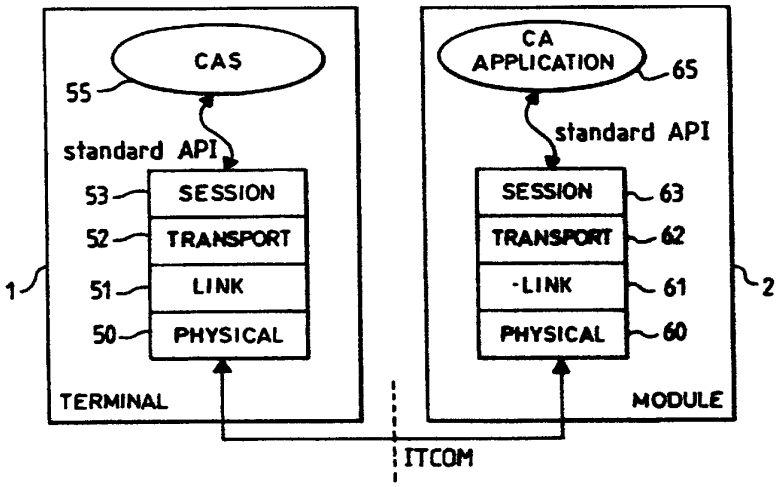
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Published:
— *With international search report.*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MULTIMEDIA DIGITAL TERMINAL AND DETACHABLE MODULE COOPERATING WITH THE TERMINAL COMPRISING AN INTERFACE PROTECTED AGAINST COPYING



(57) Abstract: The terminal (1) receives a scrambled data stream (TS(D.EMB.)) in which the control words (CW) having served to scramble the data are transmitted in encrypted form. It transmits, via a first interface (ITTS), this stream to a detachable module (2) containing the conditional access system specific to the service provider supplying the data. The module (2) extracts from the stream and decrypts the control words (CW) before transmitting them to the terminal, via a second interface (ITCOM). These control words are used by a descrambler (16) of the terminal to descramble the data. The data stream leaving the module (TS'(D.EMB.)) contains only scrambled data, thus guaranteeing better protection against copying.

WO 01/22724 A1

Multimedia digital terminal and detachable module cooperating with the terminal comprising an interface protected against copying

The present invention relates to the field of conditional access systems for multimedia digital terminals. It relates more particularly to a multimedia digital terminal as well as to a detachable module associated with this terminal for implementing a conditional access system, in which the interface between the terminal and the module is protected against illicit copying.

The invention has been embodied within the context of the so-called DVB-CI interface (the initials standing for "Digital Video Broadcasting - Common Interface" which is described in particular in European Standard EN 50221 published by CENELEC (Comité Européen de Normalisation Electrotechnique).

This DVB-CI common interface has been defined by the DVB group so as to allow standardization of digital receiving equipment whilst allowing service providers supplying the data, (for example suppliers of Pay TV programmes) to remain proprietors of the conditional access system and of the corresponding security elements. This is because a conditional access system must be envisaged whenever it is necessary to control access to broadcast data. However, the service providers supplying the data wish to preserve a specific conditional access system. By virtue of the DVB-CI interface, the specific proprietary elements can be integrated into a module which is separate from the standardized parts of the terminal which receive and decode the digital video data or the service data. Thus, the proprietary elements can be manufactured and sold separately from the terminals, thereby making their distribution easier. The module is referred to as a "DVB-CI module" by extension.

The aforesaid European standard describes in particular the hardware and software architecture of the common interface between a server (the host) and one or more DVB-CI modules connected to the server.

We have represented this architecture in Figure 1. The host server 1 is a multimedia digital terminal such as a decoder of programmes broadcast by satellite or by cable, a video recorder or a personal computer, to which may be connected one or more modules 2. The module 2 is a detachable device which cannot operate alone but which is intended to execute certain specific tasks in association with the host server, in particular the implementation of a conditional access system or of an electronic programme guide. To do this, the module can access resources, that is to say software or hardware functional units, of the host server. The aforesaid common interface standard defines for this purpose a certain number of objects able to be exchanged between the module and the host server and allowing the module to use the resources of the host server.

Within the framework of the standards defined by the DVB group, the digital data are transmitted in the form of an information stream coded according to the MPEG 2 standard (ISO/IEC 13818-1), but naturally any other data transport standard can be used within the framework of the invention.

The digital terminal 1 of Figure 1 comprises a tuner/demodulator 10 which receives a signal S, emanating from a satellite antenna or from a cable network, and which outputs a digital data stream transmitted in the form of packets, and referred to as the TS (standing for "Transport Stream") in the aforesaid MPEG 2 standard, and containing the services supplied by providers.

The data stream TS comprises, in a known manner, packets of data supplied by various service providers and, so as to guarantee that the data reach only those users having acquired the right to receive them (for

example by means of a subscription to the service), these data are transmitted whilst being scrambled by control words CW.

In order to descramble the data, the service provider also supplies the users with the control words having served to scramble the data. So as to keep the control words secret, they are supplied after having been encrypted with an algorithm with key K. The various encrypted control words are sent to the users in control messages, commonly denoted ECMs (the abbreviation ECM standing for "Entitlement Control Message") transmitted in the data stream TS. The control words are thereafter decrypted in a secure processor containing the key K, the secure processor being included within a security element, for example a smart card, which is supplied to the users.

Returning to Figure 1, TS(D.EMB.) therefore denotes the data stream TS containing the data in scrambled form. In accordance with the principle defined in the aforesaid standard EN 50221, all the elements of the conditional access system which are specific to the service provider are contained in the detachable module 2 which receives the data stream TS(D.EMB.) from the digital terminal 1 across the DVB-CI common interface.

The module 2 comprises a microcontroller 21, in which the access control software application CA specific to the service provider is executed. It furthermore comprises a component 22 referred to as demultiplexer which receives the data stream TS(D.EMB.) so as to extract therefrom the video or audio data packets corresponding to a service which the user wishes to view or so as to extract therefrom data packets containing so-called "service" information, such as control messages ECM. The video or audio data packets are sent to a descrambler 23 contained in the module 2 whilst the messages ECM are sent to a smart card 3 which has been inserted into the module 2 and which contains, in a

secure processor 30, the key K having served to encrypt the control words. The decryption of the control words contained in the messages ECM is performed by the secure processor 30 which outputs the control words CW unenciphered to the descrambler 23 situated in the module 2. The descrambler 23 is thus in a position to descramble the video or audio data packets received from the demultiplexer 22 by virtue of the control words CW which it receives from the smart card 3. It outputs a digital data stream TS(D.DES.) in which the data packets corresponding to the service which has been selected by the user are descrambled.

The data stream TS(D.DES.) is transmitted to the digital terminal 1 via the DVB-CI common interface. It is more particularly transmitted to an MPEG decoder 14 of the terminal which supplies the audio and video outputs of the terminal which can be read directly by an apparatus such as a television.

The terminal 1 also comprises a microcontroller 11 in which the various software applications of the terminal are executed.

The DVB-CI common interface in fact comprises two logic interfaces:

- the first, the interface of the data stream ITTS, constitutes a bi-directional bus and transports the digital data packets of the TS stream in both directions between the terminal 1 and the module 2 according to the MPEG 2 transport standard. From the terminal to the module, the stream TS(D.EMB.) transmitted via the ITTS interface is a scrambled data stream whilst in the other direction stream TS(D.DES)), and on condition that the module 2 allows access to the data selected by the user (that is to say that it contains the elements of the conditional access system of the service provider which are necessary for descrambling the said data), the packets containing the selected data are returned

descrambled whilst the remainder of the TS stream remains unchanged;

- the second, the command interface ITCOM, transmits commands in both directions between the terminal 1 and the module 2 (more particularly between the microcontrollers 11 and 21) by way of the objects (or primitive functionalities) defined in the standard and which were mentioned above.

A notable drawback of the system just described is that certain data flow unenciphered at the DVB-CI common interface level (in the stream TS(D.DES.). In actual fact, data broadcasters are becoming increasingly preoccupied by illicit copies which may be made from the data which these broadcasters transmit, all the more so when these data are transmitted in digital form as is the case in the present instance, and they are asking for means of protection against copying to be set in place.

The current DVB-CI common interface cannot guarantee this protection against copying since, the module 2 being detachable, it is possible for a pirate to connect a digital recorder to a connection port across which the stream TS(D.DES.) travels and to record the data packets which flow unenciphered.

A purpose of the present invention is to solve the aforesaid problems by providing means of ensuring protection against copying at the level of the common interface between a digital terminal and a module which are linked together by an interface of the DVB-CI type.

The invention therefore relates to a multimedia digital terminal intended for receiving a stream of digital data scrambled by control words, the control words being contained in the stream in encrypted form, and intended to cooperate with a detachable module for descrambling the data stream. The terminal is able to transmit the scrambled data stream to the detachable module. According to the invention, the terminal is furthermore capable of receiving from the detachable

module the decrypted control words, and it comprises a descrambler capable of descrambling the digital data stream by using the control words received from the detachable module.

The descrambling of the data is therefore performed solely in the decoder and no data item now travels unenciphered at the level of the interface between the terminal and the detachable module. The risks of illicit copies are therefore considerably reduced by virtue of the invention.

According to a preferred embodiment of the invention, the digital terminal is furthermore able to receive from the detachable module the scrambled digital data stream, wherein the data stream received by the terminal is not modified relative to the data stream transmitted by the terminal.

According to another embodiment, the digital terminal is able to receive from the detachable module the scrambled digital data stream from which, relative to the data stream transmitted by the terminal, the data packets containing the control words have been removed.

According to another aspect of the invention, the terminal is able to transmit the scrambled data stream to the detachable module across a first interface with the detachable module, and it is furthermore capable of receiving from the detachable module the decrypted control words across a second interface with said module.

According to another particular characteristic of the invention, the terminal is furthermore able to receive from the detachable module, across the first interface, the scrambled digital data stream.

The invention also relates to a multimedia digital terminal intended for receiving a stream of digital data scrambled by control words, the stream of data containing the control words encrypted using a first key, and intended to cooperate with a detachable module for descrambling the data stream. The terminal is able to

transmit the scrambled data stream to the detachable module across a first interface with the detachable module. According to the invention, the terminal is furthermore capable of receiving from the detachable module the decrypted control words which are encrypted using a second key before being transmitted across a second interface with the module. The terminal also comprises means for decrypting the control words received from the detachable module using the second key; and a descrambler capable of descrambling the digital data stream by using the decrypted control words.

Thus, in addition to the data which travel at the level of the first interface between the module and the terminal only in scrambled form, the control words are also encrypted so as to travel at the level of the second interface, thereby further increasing the security of the assembly.

The invention also relates to a module intended for cooperating with a digital terminal as described above, this module being able to receive from the terminal a scrambled digital data stream. According to another aspect of the invention, the module is furthermore capable of extracting from the data stream the control words having served to scramble the digital data; of decrypting the control words; and of transmitting the decrypted control words (CW) to the terminal.

According to another aspect of the invention, the module is furthermore adapted for returning the scrambled digital data stream to the terminal without modifying the stream.

According to yet another aspect of the invention, the module is furthermore adapted for returning the scrambled digital data stream to the terminal by removing, relative to the data stream transmitted by the terminal, the data packets containing the control words.

According to another characteristic of the invention, the module is able to receive the digital data stream across a first interface with the terminal, and it is furthermore capable of transmitting the decrypted control words to the terminal across a second interface with the terminal.

According to a particular embodiment of the invention, the module is able to cooperate with a detachable security element for decrypting the control words, the module being capable of extracting from the digital data stream messages containing the encrypted control word; of transmitting the messages to a security element inserted into the module; of receiving from the security element the decrypted control words; and of transmitting the decrypted control words to the digital terminal with which it cooperates.

The invention also relates to a module intended for cooperating with a digital terminal as described above, the module being able to receive from the terminal a scrambled digital data stream across a first interface with the terminal. According to the invention, the module is furthermore capable of extracting from the data stream the control words having served to scramble the digital data; of decrypting the control words and encrypting the control words using a second key; and of transmitting the encrypted control words to the terminal across a second interface with said terminal.

The invention also relates to a method for descrambling a stream of digital data, scrambled by control words, which is received by a multimedia digital terminal, the control words being contained in the stream in encrypted form. The method comprises a first step consisting in transmitting the scrambled data stream to a detachable module. It furthermore comprises the steps consisting, for the detachable module, in extracting from the data stream the control words having served to scramble the digital data; in decrypting said control

words; and in transmitting the decrypted control words to the terminal.

The invention also relates to a method for descrambling a stream of digital data, scrambled by control words, which is received by a multimedia digital terminal, the stream of data containing the control words encrypted using a first key. The method comprises a first step consisting in transmitting the scrambled data stream to a detachable module. According to the invention, it furthermore comprises the steps consisting, for the detachable module, in extracting from the data stream the control words having served to scramble the digital data; in decrypting the control words; in encrypting the control words with using a second key; and in transmitting the encrypted control words to the terminal. The method furthermore comprises the steps consisting, for the terminal, in decrypting the control words using the second key; and in descrambling the digital data stream by using said decrypted control words.

The invention also relates to a method for transferring control words between a module as described above and a digital terminal also described above. This method consists essentially:

- for the module, in sending a first identification object to the terminal;
- for the terminal, in sending, in response to the first object, a second identification object indicating whether the terminal is or is not able to receive the control words from the module; and
- for the module, in the event of a positive response with the second object, in sending the control words enclosed in a third object.

Other characteristics and advantages of the invention will become apparent on reading a particular, non-limiting embodiment of the invention given with reference to Figures 1 to 4, among which:

- Figure 1, described above, represents a digital terminal into which is plugged a DVB-CI module according to the prior art;

- Figure 2 represents a digital terminal into which is plugged a module according to the principle of the invention;

- Figure 3 diagrammatically represents a part of the common interface between a digital terminal and a module such as those of Figure 2;

- Figure 4 illustrates a protocol for communication across the part of the common interface represented in Figure 3.

Represented in Figure 2 are a digital terminal 1 together with a module 2 connected to the terminal via an interface which is improved relative to the DVB-CI interface so as ensure better protection against copying at the level of this interface.

The elements which are similar to those of Figure 1 described earlier bear the same reference numbers and will not be described further.

In the embodiment of the invention illustrated in Figure 2, it will be considered that the digital terminal 1 is a decoder receiving programmes from various service providers via cable or via a satellite antenna.

A module 2 containing the specific elements of the conditional access system of a first service provider is connected to this decoder.

According to the principle of the invention, the data stream TS'(D.EMB.) leaving the module 2 via the interface ITTS contains only data in scrambled form. The module 2 extracts only the control words CW from the stream TS(D.EMB.) received so as to transmit them, once decrypted, to the decoder. The descrambling of the data is performed only in the decoder 1 by virtue of a descrambler 16 contained in the decoder. Thus, the digital data are no longer available unenciphered at the level of the ITTS interface and illicit copying is, if

not eliminated, at least made much more complex than in the prior art.

To do this, as in the prior art, the module 2 comprises a demultiplexer 22 which extracts the ECM control messages from the data stream TS(D.EMB.) received and which transmits them to a smart card 3 inserted into the module. The secure processor 30 of the smart card decrypts the control words CW contained in the ECM messages and it transmits them to the module 2.

According to a preferred embodiment of the invention, the control words CW are transmitted from the module 2 to the decoder 1 across the control interface ITCOM. The details of the transmission of the control words via the ITCOM interface will be explained later in conjunction with Figures 3 and 4.

Preferably, the data stream TS(D.EMB.) which is received by the module 2 is retransmitted as is to the decoder (link 29) without being modified (TS'(D.EMB) = TS(D.EMB.)). It is received in the decoder by a demultiplexer 15 which extracts the video or audio data packets corresponding to the programme which the user wishes to view and which transmits them to the descrambler 16 so as to be descrambled before being transmitted to the MPEG decoder 14. For this purpose the descrambler 16 receives the control words CW from the module 2 via the ITCOM interface.

According to a first variant embodiment, the module 2 extracts the ECM control messages from the data stream TS(D.EMB.) and replaces them, in the data stream TS'(D.EMB.) transmitted to the decoder, with stuffing packets. This variant is represented diagrammatically via the link 28 shown dashed.

According to a second variant embodiment, the demultiplex 22, contained in the module 2, extracts the video or audio data packets corresponding to the programme which the user wishes to view and it transmits them in the data stream TS'(D.EMB.) so that they are

received directly by the descrambler 16 of the decoder. This variant is represented diagrammatically by the link 27 shown dashed.

Also represented dashed in Figure 2 is a smart card 4 which can be inserted into the decoder 1 and which belongs to the conditional access system of a second service provider. Indeed, the decoder can comprise an integrated conditional access system for accessing the services of the second provider and furthermore comprise several connectors for modules 2 so as to access the services of several other providers.

It is for this reason that the decoder comprises a demultiplexer 15 and a descrambler 16. The access control software application CA' of the second provider is executed in the microcontroller 11. When the user selects a service of the second provider, the stream TS(D.EMB.) is transmitted directly to the demultiplexer 15 via a link 19. This demultiplexer extracts the control messages ECM' and transmits them to the secure processor 40 of the smart card 4 which, with the aid of the key K', decrypts the control words CW' contained in the messages ECM' and sends them unenciphered to the descrambler 16, so as to descramble the services selected by the user.

According to a third variant embodiment of the invention, the data stream TS(D.EMB.) is transmitted from the decoder 1 to the module 2 so that the latter extracts the control words CW and retransmits them unenciphered to the decoder, but unlike the variants mentioned earlier, the stream TS(D.EMB.) is not returned via the ITTS interface to the decoder. Only the control words are transmitted to the decoder after having been decrypted by the module. The stream TS(D.EMB.) is for its part sent directly to the demultiplexer 15 of the decoder via the link 19 inside the decoder.

According to a fourth variant embodiment of the invention, the control words CW are not transmitted unenciphered across the ITCOM interface. They are

encrypted by the microcontroller 21 of the module 2 using a second key, different from the key K used to encrypt the control words upon their transmission in the data stream TS(D.EMB.), before being transmitted over the ITCOM interface. This variant thus offers increased security since now no element travels unenciphered via the interface between the module and the decoder.

The microcontroller 11 of the decoder 1 will therefore have to decrypt, using this second key, the control words received by the ITCOM interface before transmitting them to the descrambler 16.

In a first embodiment of this variant, the module 2 and the decoder 1 generate, before a single control word travels through the ITCOM interface, a session key SSK by using the Diffie Hellman protocol, which is well known to the person skilled in the art. Thereafter, all the control words are encrypted in the module using the session key SSK, then are transmitted to the decoder in this encrypted form across the ITCOM interface before being decrypted, using the session key, in the decoder.

In this embodiment, a different session key is generated each session, that is to say each time the user selects a programme which needs to be descrambled in the module 2.

In a second embodiment of this variant, the decoder 1 and the module 2 each contain a secret key K2 which is stored in a secure area of the decoder or of the module, for example in a secure processor. This secret key is unique for each decoder and if several modules are plugged into the decoder, they all contain the secret key of the decoder.

In this embodiment, the control words are therefore encrypted with the secret key K2 in the module before being transmitted to the decoder via the ITCOM interface; they are then decrypted in the decoder using the key K2.

The principle of the invention is particularly advantageous since it makes it possible to harness the demultiplexer and the descrambler which are already contained in the decoder so as to use them even when the conditional access system of another provider, contained in a detachable module, is used.

It should be stated in this regard that the demultiplexer and the descrambler components have been standardized within the framework of the DVB digital broadcasting standard in particular. Only the conditional access system (access control software, decryption algorithm and key, smart card, etc.) remains a proprietary system of the service provider.

We shall now describe in greater detail, in conjunction with Figures 3 and 4, how the control words CW are transmitted via the command interface ITCOM.

The ITCOM interface between the terminal (decoder) 1 and the module 2 uses a communication protocol which is represented diagrammatically in Figure 3 and which comprises several layers:

- a "Physical" layer (50, 60) which comprises the physical connector and low-level software for initializing the communication;
- a "Link" layer (51, 61) which forms the link between the Physical layer which deals only with bytes (8 bits of data) and the higher layer which can deal with much larger packets of data;
- a "Transport" layer (52, 62) which optimizes the occupation of the data stream by the various session in progress and which conveys the messages from the higher layer to the "Link" layer;
- a "Session" layer (53, 63) which opens, closes and manages the sessions in which the messages of the applications using the ITCOM interface are transmitted.

Represented in Figure 3 are on the one hand the access control application CA 65 which is executed in the microcontroller 21 (cf. Fig. 2) of the module 2 and on

the other hand a software resource 55 called CAS (standing for "Conditional Access Support") of the terminal 1.

This resource CAS defines a certain number of specific objects intended for use by the access control applications of the modules connected to the terminal. It communicates with the four layers of the ITCOM interface across a " Standard API " (the abbreviation API standing for "Application Programming Interface"), the standard API defining other objects which are used by all the resources of the system.

Likewise, the access control application 65 of the module uses the objects defined by the resources of the terminal through a standard API.

It was seen earlier that, according to the principle of the invention, the control words which are decrypted in the module 2 are thereafter transmitted to the terminal 1 across the ITCOM interface. In order that the control words may "cross" the various layers of the ITCOM interface, they must be enclosed in specific objects, comprehensible both to the application CA and to the resource CAS, which will be called "CPTS_CW()" hereinafter. Of course, when the control words are transmitted encrypted with the aid of a second key (SSK or K2) as in the fourth variant set forth above, they are enclosed, in this encrypted form, in the objects CPTS_CW().

Figure 4 illustrates the protocol for communication between the access control application CA of the module and the resource CAS of the terminal which allows, according to the invention, protection against copying.

The time scale has been represented by two downward vertical arrows.

After a first session-opening phase (not represented), the application CA of the module checks that the resource CAS of the terminal does indeed support

protection against copying over the ITCOM interface. To do this, the application CA sends during a step 100 an object "CPTS_identification()" which will be defined later. The resource CAS responds by sending, in step 101, an object "CPTS_identification_answer()" which indicates whether the resource CAS does or does not support protection, against copying. In the event of a positive response, the application CA of the module then regularly sends (steps 102a, 102b, 102i) the control words enclosed in the objects "CPTS_CW()" as and when they are decrypted by the module.

Conversely, in the event of a negative response, the terminal is not considered reliable. Consequently, the control words are not sent to the terminal and the data of the stream TS(D.EMB.) are not descrambled in the terminal. Any appropriate action can be envisaged at that moment (displaying of a message destined for the user by way of the User Interface resource of the terminal for example).

As seen above, it is necessary, in order to implement the protocol of Figure 4, to define additional objects over and above those already envisaged in the existing standards.

Identification objects

The function of the identification objects is to allow an access control application CA of a module supporting protection against copying to check whether the terminal to which the module is connected also supports protection against copying. That is to say, whether the resource CAS of the terminal possesses the functionality of protection against copying.

The first object used is the following:

```
CPTS_identification() {
    CPTS_identification_tag        24 bits   uimsbf
    Length_field() = 0             8 bits    uimsbf
    }
```

The notation used here corresponds to that used in the aforesaid standard EN 50221 in which the objects are generally defined by means of a tag (here the "CPTS_identification_tag"), of a length field ("Length_field()") and of parameters which can take various values.

The CPTS_identification_tag tag is a number defined on 24 bits and the notation "uimsbf" (stemming from "unsigned integer most significant bit first") signifies that this pertains to an unsigned integer whose most significant bits (highest order bits) are always situated first.

The "Length_field()" field defines the length in terms of number of bytes of the parameters forming part of the object. Since here the object "CPTS_identification()" contains no parameter, the length field is equal to zero.

The second object used is the following:

```
CPTS_identification_answer() {
     CPTS_identification_answer_tag     24 bitsuimsbf
     Length_field() = 1
     Identification_result               8 bits  uimsbf
}
```

This "CPTS_identification_answer()" object is used to indicate whether the resource CAS of the terminal does or does not support protection against copying according to the invention. It comprises a "CPTS_identification_answer_tag()" tag and a length field which is equal to 1 since the object also comprises an "Identification_result" parameter defined on 8 bits. This parameter is for example a Boolean indicating whether or not protection against copying is supported by the resource CAS.

Other parameters can be envisaged, for example to indicate a version number of the copy protection.

Contro- word transmission objects

These objects enclose the control words which are decrypted in the module. They allow the access control application CA of the module to send them, across the various layers of the ITCOM interface, to the resource CAS of the terminal which can thereafter utilize them by transmitting them to the descrambler 16 (Fig. 2).

These objects have the following format:

```
CPTS_CW()  {
   CPTS_CW_tag                  24 bits uimsbf
   Length_field()
   MPEG2_stream_type             8 bits uimsbf
   MPEG2_pid                    16 bits uimsbf
   Odd_CW                      128 bits uimsbf
   Even_CW                     128 bits uimsbf
}
```

They comprise a "CPTS_CW_tag" tag, a length field "Length_field()" and parameters identifying:

- the type of data packet transported (video, audio or other data), in "MPEG2_stream_type" defined on 8 bits;
- the PID (standing for "Programme Identifier"), that is to say the programme identifier associated with the packet transported in "MPEG2_pid", defined on 16 bits;
- the odd ("Odd_CW") and even ("Even_CW") control words defined on 128 bits each.

Indeed, it is well known that a succession of even and odd control words is transmitted in the TS data stream, each control word being transmitted in advance relative to the data packets which are scrambled with this control word. The descrambler therefore continuously memorizes the even control word serving to descramble the

current data packet and the odd control word serving to descramble the next packet (or vice versa).

The "CPTS_CW()" object comprises, in a first embodiment, parameters making it possible to send both an even control word (in "Even_CW") and an odd control word (in "Odd_CW"). It can also comprise, in another embodiment, a parameter "CW", on 128 bits, containing the control word and a parameter "Type_CW" on 8 bits, defining the type, even or odd, of the control word transmitted.

Of course, the invention is not limited to the exemplary embodiments which are mentioned hereinabove. In particular, the person skilled in the art will be able to introduce any variant into the definition of the identification objects and control-word transmission objects by adding other parameters to these objects.

Moreover, although the invention has been described with reference to the DVB-CI standard it is not limited to the framework of this standard. The invention can in particular be advantageously applied within the framework of the American NRSS (standing for "National Renewable Security Standard") standard.

CLAIMS

1. Multimedia digital terminal (1) intended for receiving a stream (TS(D.EMB.)) of digital data scrambled by control words (CW), said control words being contained in said stream (TS(D.EMB.)) in encrypted form, and intended to cooperate with a detachable module (2) for descrambling said data stream,

said terminal being able to transmit the scrambled data stream (TS(D.EMB.)) to the detachable module,

characterized in that it is furthermore capable of receiving from said detachable module the decrypted control words (CW), and

in that it comprises a descrambler (16) capable of descrambling the digital data stream by using the control words (CW) received from the detachable module (2).

2. Digital terminal according to Claim 1, characterized in that it is furthermore able to receive from the detachable module (2) the scrambled digital data stream (TS'(D.EMB.)), said data stream received by the terminal not being modified relative to the data stream (TS(D.EMB.)) transmitted by the terminal.

3. Digital terminal according to Claim 1, characterized in that it is furthermore able to receive from the detachable module (2) the scrambled digital data stream (TS'(D.EMB.)) from which, relative to the data stream (TS(D.EMB.)) transmitted by the terminal, the data packets containing the control words (CW) have been removed.

4. Digital terminal according to one of Claims 1 to 3, characterized in that said terminal is able to transmit the scrambled data stream (TS(D.EMB.)) to the

detachable module across a first interface (ITTS) with said detachable module, and

in that it is furthermore capable of receiving from said detachable module the decrypted control words (CW) across a second interface (ITCOM) with said module.

5. Terminal according to Claim 4, in combination with Claims 2 and 3, characterized in that it is furthermore able to receive from the detachable module (2), across said first interface (ITTS), the scrambled digital data stream (TS'(D.EMB.)).

6. Multimedia digital terminal (1) intended for receiving a stream (TS(D.EMB.)) of digital data scrambled by control words (CW), said stream of data (TS(D.EMB.)) containing the control words encrypted using a first key (K), and intended to cooperate with a detachable module (2) for descrambling said data stream,

said terminal being able to transmit the scrambled data stream (TS(D.EMB.)) to the detachable module across a first interface (ITTS) with said detachable module,

characterized in that it is furthermore capable of receiving from said detachable module the decrypted control words (CW) which are encrypted using a second key (SSK, K2) before being transmitted across a second interface (ITCOM) with the module (2), and

in that it comprises:

- means for decrypting said control words received from the detachable module using said second key (SSK, K2); and
- a descrambler (16) capable of descrambling the digital data stream (TS(D.EMB.)) by using said decrypted control words (CW).

7. Module (2) intended for cooperating with a digital terminal according to Claim 1, said module being

able to receive from the terminal a scrambled digital data stream (TS(D.EMB.)), characterized in that said module is furthermore capable of:

- extracting from the data stream (TS(D.EMB.)) the control words (CW) having served to scramble the digital data;
- decrypting said control words; and
- transmitting the decrypted control words (CW) to said terminal.

8. Module according to Claim 7, characterized in that it is furthermore adapted for returning the scrambled digital data stream (TS'(D.EMB.)) to the terminal without modifying said stream.

9. Module according to Claim 7, characterized in that it is furthermore adapted for returning the scrambled digital data stream (TS'(D.EMB.)) to the terminal by removing, relative to the data stream (TS(D.EMB.)) transmitted by the terminal, the data packets containing the control words.

10. Module according to one of Claims 7 to 9, characterized in that it is able to receive the digital data stream (TS(D.EMB.)) across a first interface (ITTS) with said terminal (1), and

in that it is furthermore capable of transmitting the decrypted control words to said terminal across a second interface (ITCOM) with said terminal.

11. Module according to one of Claims 7 to 10, characterized in that it is able to cooperate with a detachable security element (3) for decrypting the control words, said module being capable of:

- extracting from the digital data stream (TS(D.EMB.)) messages (ECM) containing the encrypted control words;

- transmitting said messages (ECM) to a security element (3) inserted into said module;
- receiving from said security element (3) the decrypted control words (CW); and
- transmitting the decrypted control words to the digital terminal (1) with which it cooperates.

12. Module (2) intended for cooperating with a digital terminal according to Claim 6, said module being able to receive from the terminal a scrambled digital data stream (TS(D.EMB.)) across a first interface (ITTS) with the terminal (1), characterized in that said module is furthermore capable of:
- extracting from the data stream (TS(D.EMB.)) the control words (CW) having served to scramble the digital data;
- decrypting said control words; and
- encrypting said control words using the second key (SSK, K2); and
- transmitting said encrypted control words (CW) to the terminal across a second interface (ITCOM) with said terminal.

13. Module according to one of Claims 10 or 12, characterized in that it pertains to a module according to the DVB-CI standard and in that the first interface (ITTS) of the module is the interface of the transport stream according to the MPEG-2 standard and the second interface (ITCOM) is the control interface.

14. Method for descrambling a stream (TS(D.EMB.)) of digital data, scrambled by control words (CW), which is received by a multimedia digital terminal (1), said control words (CW) being contained in said stream in encrypted form, the method comprising a first step consisting in:

transmitting the scrambled data stream (TS(D.EMB.)) to a detachable module (2),

characterized in that it furthermore comprises the steps consisting, for the detachable module (2), in:

- extracting from the data stream (TS(D.EMB.)) the control words (CW) having served to scramble the digital data;
- decrypting said control words; and
- transmitting the decrypted control words (CW) to said terminal.

15. Method for descrambling a stream (TS(D.EMB.)) of digital data, scrambled by control words (CW), which is received by a multimedia digital terminal (1), said stream of data containing said control words (CW) encrypted using a first key (K), the method comprising a first step consisting in:

transmitting the scrambled data stream (TS(D.EMB.)) to a detachable module (2),

characterized in that it furthermore comprises the steps consisting, for the detachable module (2), in:

- extracting from the data stream (TS(D.EMB.)) the control words (CW) having served to scramble the digital data;
- decrypting said control words;
- encrypting said control words using a second key (SSK, K2); and
- transmitting the encrypted control words (CW) to said terminal; and,

for the terminal (1), in:

- decrypting said control words using the second key (SSK, K2); and
- descrambling the digital data stream by using said decrypted control words.

16. Method for transferring control words (CW) between a module according to one of Claims 7 to 13 and a

digital terminal according to one of Claim 1 to 6, characterized in that it comprises the steps consisting:

- for the module (2), in sending (100) a first identification object ("CPTS_identification()") to the terminal (1);
- for the terminal (1), in sending (101), in response to said first object, a second identification object ("CPTS_identification_answer()") indicating whether the terminal is or is not able to receive the control words from the module (2); and
- for the module (2), in the event of a positive response with said second object, in sending (102a, 102b, 102i) said control words (CW) enclosed in a third object ("CPTS_CW()").

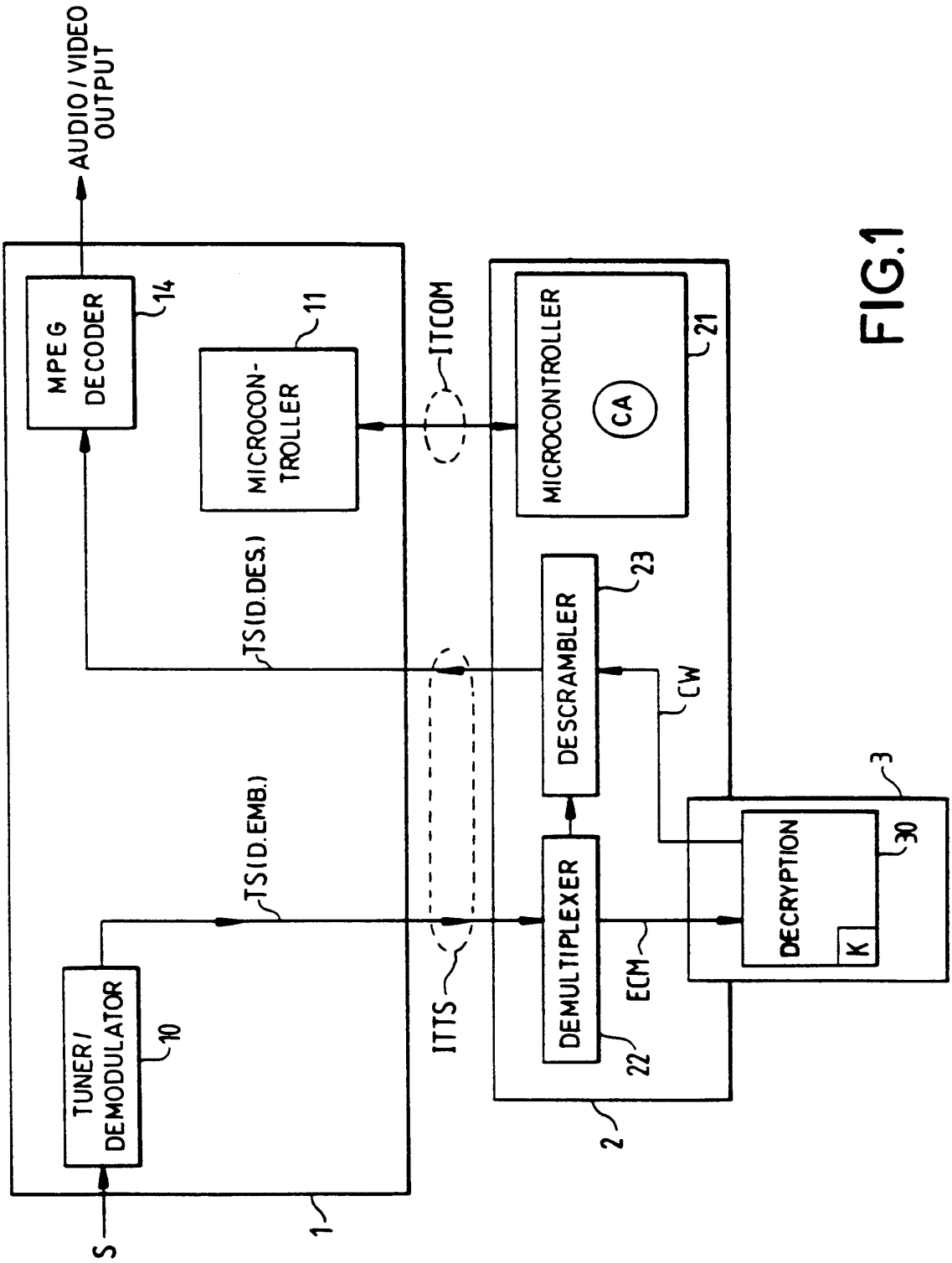


FIG.1

APPLE EX1002
000638

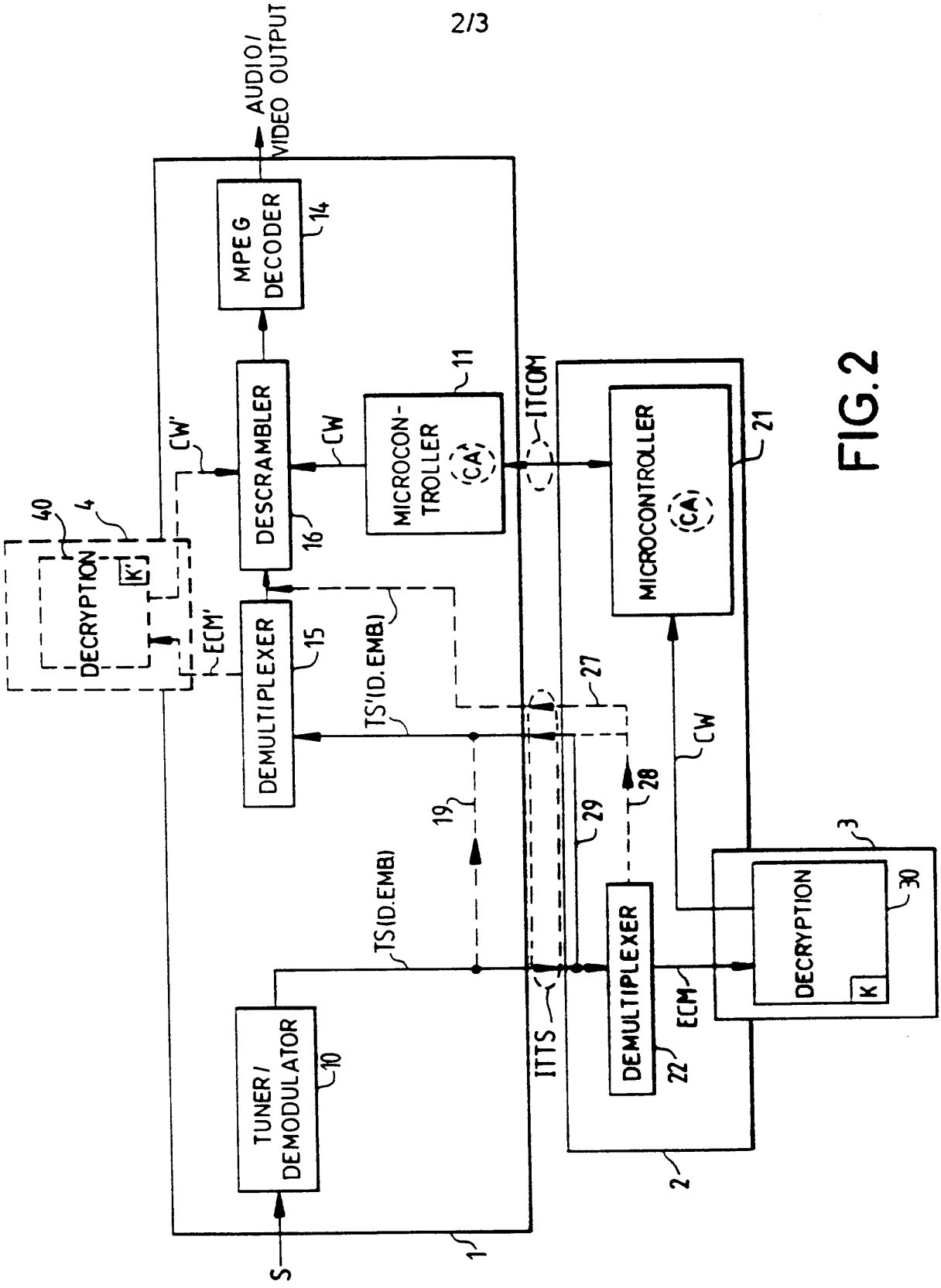


FIG.2

APPLE EX1002
000639

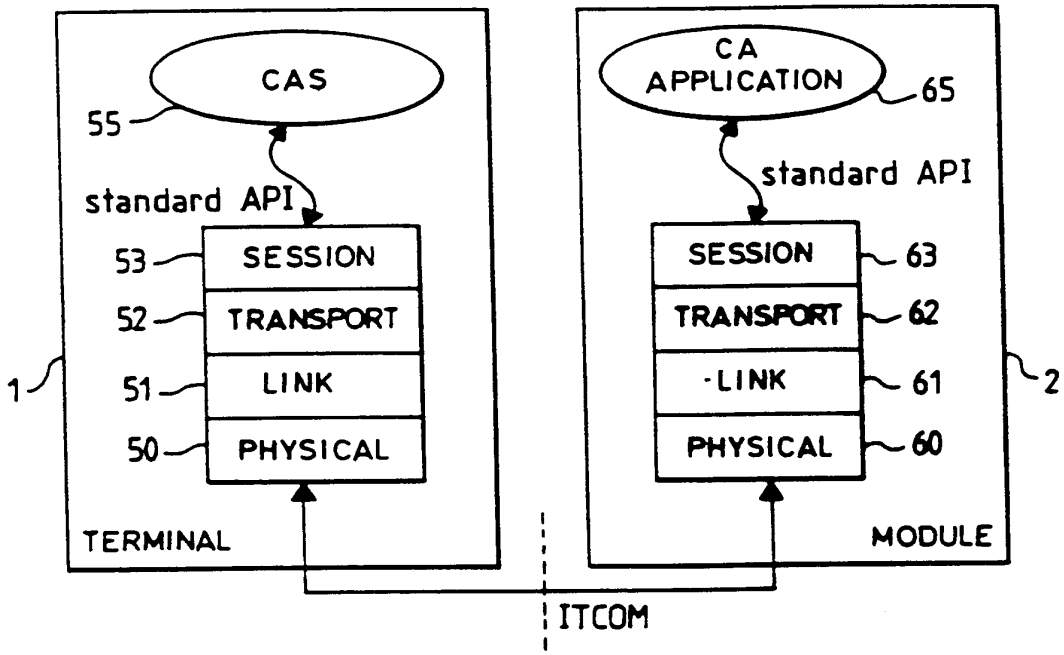

CAS
55
standard API
53
SESSION
52
TRANSPORT
1
51
LINK
50
PHYSICAL
TERMINAL
CA
APPLICATION
65
standard API
SESSION
63
TRANSPORT
62
LINK
61
2
PHYSICAL
60
MODULE
ITCOM

FIG.3

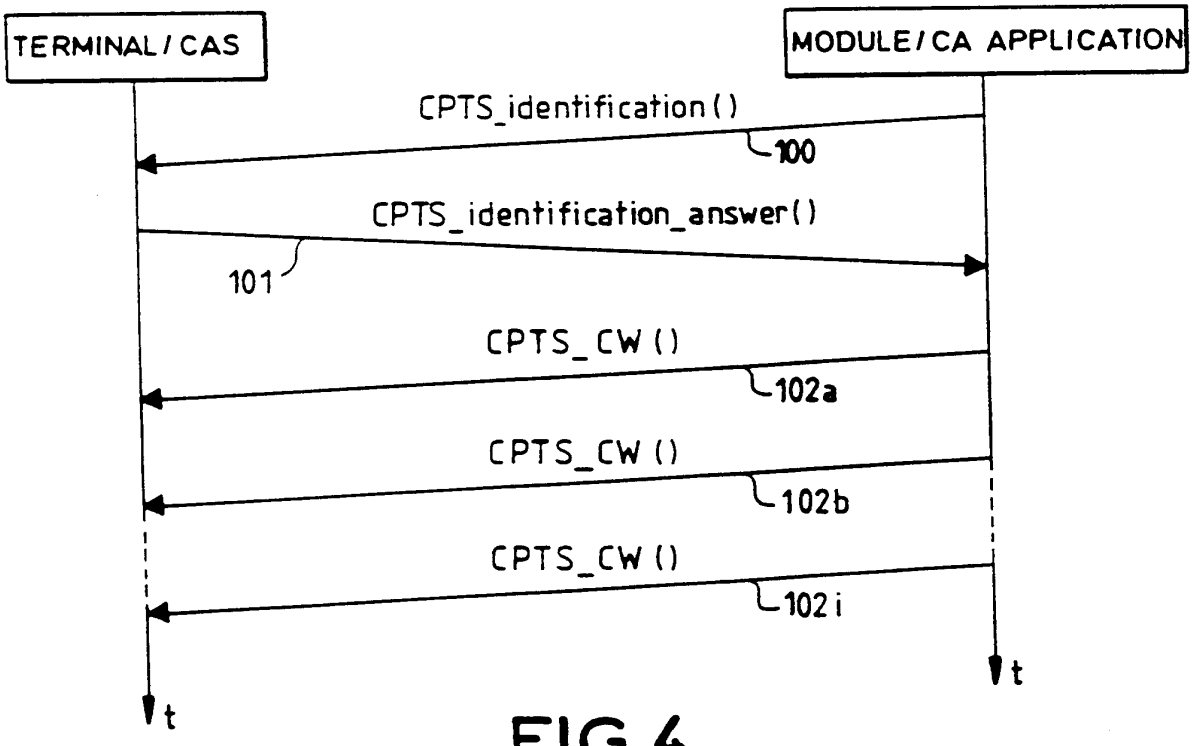

TERMINAL / CAS
MODULE / CA APPLICATION
CPTS_identification()
100
CPTS_identification_answer()
101
CPTS_CW()
102a
CPTS_CW()
102b
CPTS_CW()
102i
t
t

FIG.4

INTERNATIONAL SEARCH REPORT

Interr. nal Application No
PCT/EP 00/08439

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04N5/00 H04N7/16 H04N7/167

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 7 H04N

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 923 245 A (SONY UK LTD) 16 June 1999 (1999-06-16) page 3, column 4, line 19 -page 7, column 11, line 10 figures 1-7	1-15
A	WO 96 06504 A (CHANEY JOHN WILLIAM ;THOMSON CONSUMER ELECTRONICS (US)) 29 February 1996 (1996-02-29) page 6, line 1 -page 19, line 16 figures 1-4	1-15

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

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

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"O" document referring to an oral disclosure, use, exhibition or other means

"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.

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Date of the actual completion of the international search	Date of mailing of the international search report
7 December 2000	14/12/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Van der Zaal, R

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Form PCT/ISA/210 (second sheet) (July 1992)

APPLE EX1002
000641

INTERNATIONAL SEARCH REPORT

Interr. nal Application No
PCT/EP 00/08439

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 706 291 A (NEWS DATACOM LTD) 10 April 1996 (1996-04-10) page 2, column 2, line 47 -page 3, column 3, line 19 page 5, column 8, line 12 - line 50 page 6, column 9, line 47 -column 10, line 30 figures 1-3	1,6,7, 14,15

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

APPLE EX1002
000642

INTERNATIONAL SEARCH REPORT

information on patent family members

Interr. nal Application No
PCT/EP 00/08439

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		JP 11331801 A	30-11-1999
WO 9606504 A	29-02-1996	AU 3238595 A	22-03-1996
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		US 5878134 A	02-03-1999

(12) DEMANDE INTERNATIONALE PUBLIÉE EN VERTU DU TRAITÉ DE COOPÉRATION EN MATIÈRE DE BREVETS (PCT)

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(10) Numéro de publication internationale
WO 01/75876 A1

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G11B 20/00, H04L 29/06

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28 février 2001 (28.02.2001)

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(30) Données relatives à la priorité :
00/04222 31 mars 2000 (31.03.2000) FR

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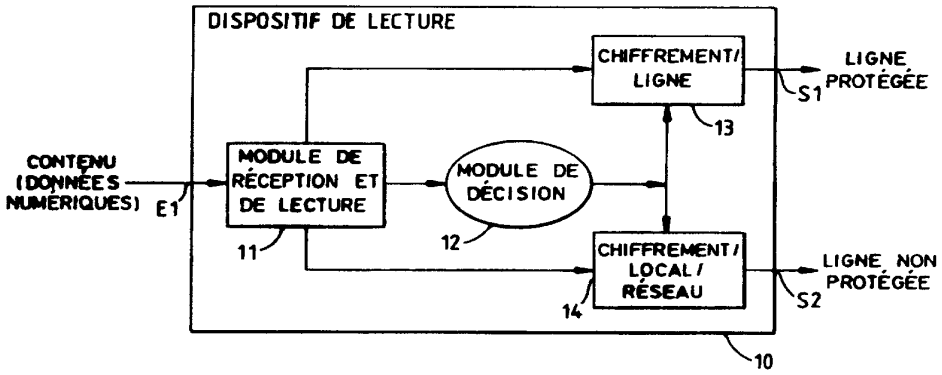
(72) Inventeurs; et
(75) Inventeurs/Déposants *(pour US seulement)* : **DIEHL, Eric** [FR/FR]; Thomson Multimédia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR). **ANDREAUX, Jean-Pierre** [FR/FR]; Thomson Multimédia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR). **FURON, Teddy** [FR/FR]; Thomson Multimédia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR). **CHEVREAU, Sylvain** [FR/FR]; Thomson Multimédia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR).

(74) Mandataire : **KOHRS, Martin**; Thomson Multimédia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR).

[Suite sur la page suivante]

(54) Title: DEVICE FOR READING, RECORDING AND RESTORING DIGITAL DATA IN A COPY-PROTECTION SYSTEM FOR SAID DATA

(54) Titre : DISPOSITIFS DE LECTURE, D'ENREGISTREMENT ET DE RESTITUTION DE DONNEES NUMERIQUES DANS UN SYSTEME DE PROTECTION CONTRE LA COPIE DESDITES DONNEES



10...READING DEVICE
13...LINE ENCRYPTION
S1...PROTECTED LINE
S2...UNPROTECTED LINE
14...LOCAL NETWORK ENCRYPTION
12...DECISION MODULE
11...RECEIVING AND READING MODULE
E1...CONTENTS (DIGITAL DATA)

(57) Abstract: The invention concerns a device for reading digital data (10) receiving data representing a content designed to be connected to a digital home network. It comprises: first means for encrypting (13) data in accordance with a protection mode specific to a line whereby the device is to be connected to another digital network device, the encrypted data being in that case supplied to a first output (S1); and second means for encrypting (14) data in accordance with a mode specific to the home network, the encrypted data being in that case supplied to a second output (S2). The invention also concerns a device for recording and restoring digital data designed to be connected to said reading device (10).

[Suite sur la page suivante]

WO 01/75876 A1

(81) États désignés *(national)* : AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) États désignés *(régional)* : brevet ARIPO (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), brevet eurasien (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), brevet européen (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), brevet OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Publiée :

— *avec rapport de recherche internationale*

En ce qui concerne les codes à deux lettres et autres abréviations, se référer aux "Notes explicatives relatives aux codes et abréviations" figurant au début de chaque numéro ordinaire de la Gazette du PCT.

(57) Abrégé : Le dispositif de lecture de données numériques (10) recevant des données représentant un contenu est destiné à être raccordé à un réseau numérique domestique. Il comporte: un premier moyen de chiffrement (13) des données selon un mode de protection spécifique à une ligne avec laquelle le dispositif est destiné à être raccordé à un autre dispositif du réseau numérique, les données chiffrées étant dans ce cas fournies à une première sortie (S1); et un deuxième moyen de chiffrement (14) des données selon un mode de protection spécifique au réseau domestique, les données chiffrées étant dans ce cas fournies à une deuxième sortie (S2). L'invention concerne également un dispositif d'enregistrement et un dispositif de restitution de données numériques destinés à être raccordés à ce dispositif de lecture (10).

Dispositifs de lecture, d'enregistrement et de restitution de données numériques dans un système de protection contre la copie desdites données

Domaine de l'invention

L'invention se rapporte d'une manière générale au domaine de la protection contre la copie de données numériques, plus particulièrement dans un environnement de réseau numérique domestique.

Etat de la technique

Un réseau numérique domestique peut véhiculer des données numériques issues de différentes sources extérieures au réseau. Il peut s'agir de données stockées sur des supports détachables tels que des disques optiques, par exemple des disques DVD (de l'anglais "*Digital Versatile Disc*" signifiant littéralement "*Disque Numérique Polyvalent*"), ou des bandes magnétiques, les supports étant soit pré-enregistrés, soit enregistrables.

Il peut aussi s'agir de données diffusées puis injectées sur le réseau numérique domestique, par exemple des signaux de télévision numérique diffusés par satellite, par le câble ou encore par des réseaux numériques hertziens. Les données peuvent également être téléchargées en provenance de l'Internet.

Enfin, un réseau numérique domestique peut en outre être amené à gérer des données numériques stockées localement, par exemple dans un disque dur relié au réseau domestique.

Ces données numériques peuvent être séparées en deux grandes catégories: d'une part les données qui ne nécessitent pas de protection particulière (par exemple, celle qui relèvent d'une création personnelle de l'utilisateur du réseau domestique) et d'autre part les données qui doivent être protégées contre la copie pour garantir les intérêts de leur créateur (film, musique, jeux, etc.).

Divers mécanismes et possibilités existent actuellement pour protéger des données numériques contre une copie illégitime.

Les deux principales techniques de protection sont actuellement:

- le chiffrement des données, qui consiste à transformer des données intelligibles (ou "claires") en données chiffrées ou embrouillées à l'aide d'une clé, cette clé étant soit une clé secrète partagée par le dispositif qui chiffre les données et par celui qui est autorisé à les déchiffrer, soit dans les systèmes de cryptographie asymétrique une clé privée ou publique;

- le tatouage des données, qui consiste à insérer de manière non perceptible un tatouage (communément appelé "Watermark") attaché aux données à protéger. Le tatouage doit être non-modifiable et non effaçable même en cas de transformation des données à protéger.

Les deux techniques ci-dessus peuvent naturellement être associées en combinant le tatouage et le chiffrement des données.

Par ailleurs, les données numériques diffusées sont le plus souvent protégées dans le cadre d'un système à accès conditionnel. Dans ce type de système, les données fournies par différents prestataires de services sont transmises sous forme embrouillée par des mots de contrôle CW (de l'anglais "*Control Word*") afin de garantir que les données ne parviennent qu'aux utilisateurs ayant acquis le droit de les recevoir (par exemple moyennant un abonnement au service). Les mots de contrôle sont eux-mêmes transmis dans le flux de données diffusées après avoir été chiffrés avec un algorithme de clé K, cette clé K étant contenue dans un processeur sécurisé, par exemple inclus dans une carte à puce, qui est fournie aux utilisateurs par le prestataire de service pour leur permettre de déchiffrer les mots de contrôle et donc de désembrouiller les données.

Dans les réseaux numériques domestiques, deux grandes méthodes ont été proposées jusqu'à présent pour utiliser et combiner ces techniques de protection:

- la première méthode consiste à protéger les données qui doivent l'être en les chiffrant / embrouillant localement d'un bout à l'autre du réseau (on parle en général de "*end-to-end protection*" – signifiant littéralement "protection d'un bout à l'autre"), c'est à dire dès leur entrée en un point du réseau jusqu'au moment où elle sont restituées à l'utilisateur (affichage de vidéo sur un écran de téléviseur, diffusion de musique par un haut-parleur, etc.), tous les appareils du réseau utilisant le même type de protection, spécifique au réseau domestique. Les données ne sont donc jamais disponibles en clair dans le réseau, que ce soit sur le bus numérique reliant les appareils entre eux ou dans les appareils eux-même, sauf au moment ultime de leur restitution, généralement sous forme analogique, à l'utilisateur ;

- la seconde méthode consiste à associer une protection locale à chaque type d'appareil du réseau (un type de chiffrement particulier, un système d'accès conditionnel, etc.) avec une "protection de ligne" (ou protection "point-à-point"); dans ce type de méthode, les données sont disponibles en clair à l'intérieur des appareils mais ne sont jamais disponibles en clair sur le bus

numérique reliant les différents appareils du réseau entre eux; les données sont en effet re-chiffrées avant d'être transmises sur le bus.

Exposé de l'invention

Un but de la présente invention est de proposer un système permettant de concilier les différentes méthodes de protection qui ont été proposées jusque là.

L'invention concerne à cet effet un dispositif de lecture de données numériques destiné à être raccordé à un réseau numérique domestique et susceptible de recevoir des données représentant un contenu. Celui-ci comporte, selon l'invention :

- un premier moyen de chiffrement des données selon un mode de protection spécifique à une ligne avec laquelle le dispositif est destiné à être raccordé à un autre dispositif du réseau numérique, les données chiffrées étant dans ce cas fournies à une première sortie; et

- un deuxième moyen de chiffrement des données selon un mode de protection spécifique au réseau domestique, les données chiffrées étant dans ce cas fournies à une deuxième sortie.

Selon une caractéristique avantageuse de l'invention, le dispositif comporte en outre un module de décision adapté à délivrer une permission ou une interdiction de copie et/ ou de lecture desdites données numériques, lesdites données numériques étant fournies au premier ou au deuxième moyen de chiffrement lorsque ledit module de décision délivre une interdiction de copie ou une permission de copie unique.

Selon une autre caractéristique avantageuse de l'invention, lesdites données numériques sont fournies directement à la première et/ou à la deuxième sortie sans être chiffrées lorsque ledit module de décision délivre une permission de copie illimitée.

Selon une autre caractéristique particulière de l'invention, le dispositif ne fournit aucune données numérique à la première ni à la deuxième sortie lorsque ledit module de décision délivre une interdiction de lecture.

Selon une autre caractéristique particulière de l'invention, le module de décision délivre une permission de copie illimitée lorsque lesdites données numériques reçues ne sont pas chiffrées.

Selon une caractéristique préférée de l'invention, le module de décision délivre une permission de copie illimitée lorsqu'en outre lesdites données numériques reçues ne sont pas tatouées.

Selon une autre caractéristique particulière de l'invention, le module de décision délivre une interdiction de lecture lorsque à la fois lesdites données numériques reçues ne sont pas chiffrées et sont tatouées.

Selon une autre caractéristique particulière de l'invention, le module de décision délivre une interdiction de copie lorsque lesdites données numériques reçues sont chiffrées; qu'elles sont stockées sur un support de type enregistrable; et que des informations de contrôle de la copie contenues dans lesdites données indiquent qu'une copie unique est autorisée.

Selon une autre caractéristique particulière de l'invention, le module de décision délivre une interdiction de lecture lorsque lesdites données numériques reçues sont chiffrées; qu'elles sont stockées sur un support de type enregistrable; et que des informations de contrôle de la copie contenues dans lesdites données indiquent qu'aucune copie n'est autorisée.

Selon une autre caractéristique particulière de l'invention, le module de décision délivre une permission de copie unique lorsque lesdites données numériques reçues sont chiffrées; qu'elles sont stockées sur un support de type non-enregistrable ou que ce sont des données diffusées ou téléchargées; et que des informations de contrôle de la copie contenues dans lesdites données indiquent qu'une copie unique est autorisée.

Selon une autre caractéristique particulière de l'invention, le module de décision délivre une interdiction de copie lorsque lesdites données numériques reçues sont chiffrées; qu'elles sont stockées sur un support de type non-enregistrable ou que ce sont des données diffusées ou téléchargées; et que des informations de contrôle de la copie contenues dans lesdites données indiquent qu'aucune copie n'est autorisée.

Selon encore une autre caractéristique avantageuse de l'invention, les informations de permission ou d'interdiction de copie et/ ou de lecture desdites données numériques délivrées par le module de décision sont attachées aux données fournies à la première ou à la deuxième sortie.

Selon un mode de réalisation particulier de l'invention, la première et la deuxième sortie sont reliées respectivement à un unique connecteur pour raccorder le dispositif à un bus numérique du réseau domestique, ledit bus fonctionnant dans un premier mode protégé lorsque les données sont issues de la première sortie et dans un second mode non protégé lorsque les données sont issues de la deuxième sortie.

Avantageusement, le choix de la première ou de la deuxième sortie pour fournir les données est déterminé par le dispositif raccordé au réseau

numérique domestique destiné à recevoir lesdites données émises par le dispositif de lecture sur le réseau domestique.

L'invention concerne également un dispositif d'enregistrement de données numériques destiné à être raccordé à un dispositif de lecture tel que ci-dessus par l'intermédiaire d'un réseau numérique domestique. Selon l'invention, ce dispositif d'enregistrement comporte :

- une première entrée destinée à recevoir des données qui ont été fournies à la première sortie du dispositif de lecture; et
- une seconde entrée destinée à recevoir des données qui ont été fournies à la deuxième sortie du dispositif de lecture.

Selon une caractéristique particulière de l'invention, le dispositif d'enregistrement comporte un moyen de déchiffrement des données selon un mode de protection spécifique à une ligne avec laquelle le dispositif est destiné à être raccordé au dispositif de lecture, ledit moyen de déchiffrement étant relié à la première entrée du dispositif d'enregistrement.

Selon une autre caractéristique particulière de l'invention, le dispositif d'enregistrement comporte en outre un module de décision adapté à analyser les informations de permission ou d'interdiction de copie et/ou de lecture attachées aux données à enregistrer. Le dispositif d'enregistrement délivre les données à enregistrer à une sortie lorsque le module de décision détecte une permission de copie. Par contre, le dispositif d'enregistrement ne délivre aucune donnée à enregistrer à ladite sortie lorsque le module de décision détecte une interdiction de copie.

L'invention concerne aussi un dispositif de restitution de données numériques destinés à être raccordés à un dispositif de lecture tel que ci-dessus par l'intermédiaire d'un réseau numérique domestique. Selon l'invention, ce dispositif comporte :

- une première entrée destinée à recevoir des données qui ont été fournies à la première sortie du dispositif de lecture et qui est reliée à un premier moyen de déchiffrement des données selon un mode de protection spécifique à une ligne avec laquelle le dispositif est destiné à être raccordé au dispositif de lecture ; et
- une seconde entrée destinée à recevoir des données qui ont été fournies à la deuxième sortie dudit dispositif de lecture et qui est reliée à un deuxième moyen de déchiffrement des données selon un mode de protection spécifique au réseau domestique.

Brève description des dessins

L'invention sera mieux comprise à la lecture de la description suivante d'un mode de réalisation particulier, non limitatif, de celle-ci faite en référence aux dessins annexés dans lesquels :

- la figure 1 représente un réseau numérique domestique servant à illustrer le principe de l'invention ;
- la figure 2 représente un dispositif de lecture de données numériques selon l'invention destiné à être raccordé à un réseau domestique;
- la figure 3 représente un dispositif d'enregistrement de données numériques selon l'invention destiné à être raccordé à un réseau domestique;
- la figure 4 représente un dispositif de restitution de données numériques destiné à être raccordé à un réseau domestique;
- la figure 5 illustre un procédé mis en œuvre dans le dispositif de la figure 2 ; et
- la figure 6 illustre un procédé mis en œuvre dans le dispositif de la figure 3.

Description détaillée de modes de réalisation de l'invention

Sur la figure 1, on a représenté un exemple de réseau numérique domestique. Celui-ci se compose d'un certain nombre de dispositifs reliés entre eux par un bus numérique B, par exemple un bus selon la norme IEEE 1394. Ces dispositifs peuvent être divisés en trois catégories :

- les dispositifs de lecture qui sont capables de recevoir des données numériques en provenance de différentes sources de données; sur la figure 1, deux exemples de ces dispositifs sont représentés: le décodeur 1 recevant des données d'une antenne satellite 6, notamment des programmes de télévision numérique, et le lecteur DVD 2 capable de lire des disques DVD 5 ;
- les dispositifs d'enregistrement de données, tel le dispositif 3, qui sont capables d'enregistrer le contenu des données lues par les dispositifs de lecture sur des supports d'enregistrement persistants ; et
- les dispositifs de restitution, tel le téléviseur numérique 4 de la figure 1, qui sont prévus pour restituer le contenu de données lues par un dispositif de lecture.

Bien entendu, cette séparation entre les trois catégories de dispositifs est faite pour les besoins de simplification de l'explication et un appareil d'électronique grand public réel peut très bien regrouper deux catégories de dispositifs décrits ci-dessus, voire les trois. Par exemple, un

téléviseur numérique peut contenir aussi le dispositif de lecture des émissions diffusées sous forme numérique ou bien un lecteur de DVD peut aussi contenir un dispositif d'enregistrement.

Sur la figure 2, on a représenté un dispositif de lecture 10 selon l'invention. Celui-ci reçoit sur son entrée E1 des données numériques représentant un contenu. Ce contenu peut être un contenu pré-enregistré, un contenu enregistré dans le réseau, un contenu diffusé ou un contenu téléchargé. Les données numériques sont reçues par un module de réception et de lecture 11 qui est capable d'interpréter le format des données reçues. En fait ce module est différent selon le type d'appareil appartenant à la première catégorie. Ce module a des fonctions dédiées selon le type de contenu qu'il reçoit: ainsi, si le dispositif de lecture est un lecteur de DVD Vidéo, le module 11 reconnaîtra le format de données embrouillées selon le système CSS (de l'anglais "*Content Scramble System*" signifiant littéralement "*Système d'Embrouillage de Contenu*") utilisé habituellement pour protéger le contenu des disques DVD et sera capable de désembrouiller les données; si le dispositif de lecture est un décodeur numérique, le module 11 reconnaîtra le format de flux de données diffusées protégées par un système d'accès conditionnel et sera capable de désembrouiller les données si l'utilisateur possède les droits nécessaires.

Le dispositif de lecture comprend en outre un module de décision 12 qui effectue un contrôle sur la lecture des données, c'est à dire qu'il détermine si les données lues en entrée peuvent être copiées librement (statut "*Copy-Free*"), ne peuvent être copiées qu'une seule fois (statut "*Copy-Once*"), ne peuvent plus être copiées (statut "*Copy-No-More*"), ne peuvent jamais être copiées (statut "*Copy-Never*") ou bien si ces données lues représentent une copie illégale et ne doivent donc pas être restituées sur un dispositif de restitution. Pour déterminer ces différents statuts, le module de décision utilise un procédé qui sera décrit plus bas en liaison avec la figure 5, à partir, soit de l'ensemble du flux de données qu'il reçoit du module de réception et de lecture 11, soit de seulement certaines informations extraites de ce flux de données, selon le type d'implémentation choisie par l'homme du métier.

Il génère en sortie des informations de gestion de génération de copie, par exemple des informations au format CGMS (de l'anglais "*Copy Generation Management Status*" signifiant littéralement "*Statut pour la Gestion des Générations de Copies*"), qui sont ensuite utilisées par les dispositifs d'enregistrement ou de restitution pour déterminer si les données peuvent être enregistrées ou copiées.

En pratique, ces informations sont transmises à deux modules de chiffrement de sortie 13 et 14 qui, en fonction des informations de gestion de génération de copie reçues, fournissent les données respectivement aux sorties S1 ou S2 sous forme protégée ou non, les informations concernant le statut des données étant également transmises en sortie dans le flux de données.

Si l'information de gestion de génération de copie indique que les données lues représentent une copie illégale, les modules de chiffrement 13 ou 14 ne fourniront aucune donnée en sortie. Il ne sera ainsi pas possible de visualiser le contenu, par exemple s'il s'agit d'un film, ou de l'enregistrer.

Si ces informations indiquent que les données ont un statut "*Copy-Free*", c'est à dire qu'elles peuvent être copiées librement, les données seront transmises sur l'une ou l'autre des sorties S1 ou S2 ou sur les deux sans être chiffrées.

Par contre si ces information indiquent que les données ont un statut "*Copy-No-More*" ou "*Copy-Never*" ou "*Copy-Once*", elles seront transmises aux sorties S1 ou S2 sous forme chiffrée.

Selon l'invention, le dispositif de lecture comprend deux modules de chiffrement de sortie différents. Les sorties S1 et S2 du dispositif sont des sorties numériques, c'est à dire qu'elles sont destinées à être reliées à un bus numérique. Par contre, elles utilisent chacune un mode de protection différent.

Pour la sortie S1, les données sont protégées au niveau de la ligne, par exemple selon la proposition de protection "DTCP" pour un bus numérique selon la norme IEEE 1394 ("DTCP" est un acronyme de "*Digital Transmission Content Protection*", aussi connu sous le nom de "5C", pour laquelle on pourra se référer pour plus de détails à la publication *"5C Digital Transmission Content Protection White Paper", Rev. 1.0, 14 juillet 1998*, disponible à l'adresse Internet suivante *http://www.dtcp.com/*). Lorsque cette sortie est utilisée, les données sont chiffrées par le module de chiffrement 13 de manière spécifique pour la ligne.

La sortie S2 conduit quant à elle à une ligne non protégée. Dans ce cas, les données sont chiffrées selon un mode de protection local du réseau domestique, de manière à ce que le contenu soit protégé. On pourra notamment utiliser le mode de chiffrement local des données conforme à la proposition XCA (acronyme de "eXtended Conditional Access", pour laquelle on pourra se référer pour plus de détails à la publication "*XCA, A Global Copy Protection System for Home Networks, White Paper v. 1.2*" publiée le 6 janvier 2000). Dans le cas où cette sortie S2 est utilisée, les données sont chiffrées par le module de chiffrement local 14.

Les sorties S1 et S2 du dispositif de lecture ont été représentées de manière séparée à la figure 1 mais il peut en réalité s'agir d'un seul connecteur de sortie permettant de connecter le dispositif au bus B du réseau domestique. Dans ce cas, le bus numérique pourra comporter deux modes distincts de fonctionnement: le mode protégé dans lequel les données sont chiffrées pour une liaison spécifique entre deux appareils du réseau et le mode non protégé dans lequel les données sont chiffrées de manière globale au niveau du réseau.

Le choix du type de sortie dépend en fait de l'appareil destiné à recevoir les données lues par le dispositif de lecture. En effet, le dispositif de lecture de l'invention est destiné à pouvoir être utilisé en liaison avec d'autres dispositifs qui ne supportent qu'un seul mode de protection: soit celui au niveau de la ligne, soit celui au niveau du réseau local. Entre le dispositif qui reçoit les données et celui qui les émet sur le bus à son intention, il existe de manière connue un échange lors duquel le dispositif de lecture connaît le type de protection supporté par l'appareil destinataire et peut ainsi déterminer quelle sortie S1 ou S2 sera choisie pour transmettre les données. Si l'appareil destiné à recevoir les données supporte les deux modes de protection tout comme le dispositif de lecture, le choix de la sortie S1 ou S2 sera prédéterminé selon l'implémentation choisie par l'homme du métier. Il est également possible dans ce cas d'utiliser les deux sorties, c'est à dire de transmettre les données à la fois sur la ligne protégée et sur la ligne non protégée, si celles-ci sont physiquement séparées.

En liaison avec la figure 5, nous allons maintenant décrire le procédé mis en œuvre par le module de décision 12 pour déterminer le statut des données pour la gestion de génération de copie.

Le premier test 100 consiste à vérifier si les données reçues sont chiffrées. Si ce n'est pas le cas (sortie "*N*"), cela signifie que l'on a affaire à un contenu qui est une création de l'utilisateur ou bien à un contenu qui a été piraté. C'est pourquoi un test supplémentaire 101 peut être effectué de manière préférentielle mais non obligatoire, pour déterminer si le contenu est tatoué. Si la réponse est positive (sortie "*O*"), cela signifie que le contenu a été piraté et le dispositif de lecture doit refuser de le lire (sortie "*STOP!*"). Si par contre, le contenu n'est pas tatoué (sortie "*N*" au test 101), alors le contenu est effectivement libre de copie et le statut "*Copy-Free*" lui est attribué.

Si la réponse au premier test 100 est positive (sortie "*O*"), c'est à dire si les données reçues sont chiffrées, le test suivant 102 consiste à détecter le type de support du contenu. Ceci s'applique en particulier pour les supports

détachables tels que les DVD qui peuvent être du type "*Enregistrable*" (par exemple les formats DVD-RAM, DVD-RW, DVD-R) ou du type "*Non enregistrable*" (par exemple DVD-ROM ou DVD vidéo pré-enregistré). Les données diffusées ou téléchargées seront par convention du type "*Non enregistrable*".

Si le support du contenu est du type "*Enregistrable*", le test suivant 103 consiste à détecter si le fournisseur du contenu a donné le droit d'effectuer une copie unique (statut "*Copy-Once*") ou aucune copie (statut "*Copy-Never*") de son contenu. Ces informations de contrôle de la copie communément notées CCI (acronyme de l'anglais "*Copy Control Information*") ou encore CGMS (acronyme de l'anglais "*Copy Generation Management System*" signifiant "système de gestion de la génération de copie") sont présentes dans les données sous une forme déterminée par le fournisseur du contenu et qui est bien connue de l'homme du métier. Si un support du type "*Enregistrable*" a un statut "*Copy-Once*", cela signifie que le support est lui-même la copie unique et qu'il ne doit plus être autorisé de copie. Par conséquent le statut de sortie sera "*Copy-No-More*". Par contre, si celui-ci a un statut "*Copy-Never*", cela signifie qu'il s'agit d'une copie pirate et celle-ci ne doit pas être lue par le dispositif de lecture (sortie "*STOP!*").

Il est à noter que le statut "*Copy-No-More*" signifie qu'il est interdit d'effectuer une génération supplémentaire de copie des données reçues. Ce statut signifie également, dans le cas où nous avons une protection locale au niveau du réseau (par exemple selon la proposition XCA), qu'il est possible d'effectuer une copie locale des données, cette copie n'étant lisible par aucun autre dispositif que ceux du réseau dans lequel elle a été copiée, ou en d'autres termes qu'il n'est pas possible d'effectuer une génération supplémentaire de copie pour un autre réseau domestique.

Si le support du contenu est du type "*Non-enregistrable*" ou si les données reçues sont des données diffusées ou téléchargées, le même test que le test 103 est effectué (test 104) et le statut détecté ("*Copy-Once*" ou "*Copy-Never*") correspond au statut de sortie attribué aux données.

Le statut "*Copy-Once*" autorise également la copie locale au niveau du réseau domestique lorsque nous avons un mode de protection local au réseau.

Nous allons maintenant décrire un dispositif d'enregistrement 20 selon l'invention tel que représenté schématiquement à la figure 3.

Celui-ci comporte deux entrées numériques E2 et E3, la première E2 recevant les données par une ligne protégée et la seconde E3 par une ligne non protégée. Comme on l'a vu plus haut, il peut s'agir en réalité d'une seule connexion physique avec un bus numérique capable de fonctionner dans un mode "protégé" ou dans un mode "non protégé". Le choix de l'entrée dépend du type d'appareil avec lequel le dispositif d'enregistrement est relié et des modes de protection supportés par cet appareil.

Dans le cas où les données sont reçues sur l'entrée E2, elles sont transmises à un module de déchiffrement 21 qui effectue un déchiffrement en utilisant une clé spécifique de la ligne, qui a par exemple été échangée avec le dispositif de lecture ayant envoyé les données sur la ligne.

Les informations concernant le statut des données, c'est à dire les informations de gestion de génération de copie des données, sont extraites du flux de données et analysées par un module de décision 22 selon le procédé qui sera décrit en liaison avec la figure 6 ci-dessous. Celui-ci effectue le contrôle de la copie au niveau du dispositif d'enregistrement.

Si le statut détecté est du type "*Copy-No-More*" ou "*Copy-Never*", l'enregistrement est stoppé et le module de décision 22 donne l'instruction au module de mise en forme pour l'enregistrement 23 de ne transmettre aucune donnée en sortie pour l'enregistrement.

Si en revanche le statut détecté est du type "*Copy-Once*", le module de décision 22 donne l'instruction au module 23 d'effectuer une mise en forme pour l'enregistrement de manière à ce que les données ne soient pas enregistrées en clair. Il peut s'agir par exemple d'un chiffrement selon la proposition CPRM (acronyme de "*Content Protection for Recordable Media*" signifiant littéralement "*Protection de Copie pour Support Enregistrable*" pour laquelle on pourra trouver plus de détails à l'adresse Internet suivante : *http://www.4centity.com/4centity/tech/cprm/*). Les données mises en forme sont ensuite transmises en sortie S3 pour être stockées sur un support d'enregistrement 24.

Lorsque le statut détecté par le module de décision 22 est du type "*Copy-Free*", l'enregistrement des données peut être effectué en clair, c'est à dire sans que les données ne soient mises en forme par le module 23.

Dans le cas où les données sont reçues sur l'entrée E3, elles sont déjà protégées par un chiffrement local au niveau du réseau. Dans ce cas, le dispositif d'enregistrement n'effectue aucun traitement et se contente d'enregistrer les données sous forme chiffrée.

En liaison avec la figure 6, nous allons maintenant décrire le procédé mis en œuvre dans le module de décision 22 du dispositif d'enregistrement.

Le module 22 a deux sources d'informations pour connaître le statut des données vis à vis de la gestion des générations de copie: les informations définies par le système de protection au niveau de la ligne – ces informations étant analysées à l'étape 110 – et les informations intégrées dans le contenu même des données transmises sur la ligne non protégée – informations analysées à l'étape 111. En principe, les deux sources doivent fournir les mêmes statuts de données mais, de manière préférentielle, et pour améliorer la sécurité du système, un test supplémentaire 112 est effectué pour définir le statut le plus restrictif parmi les informations reçues.

L'ordre de restriction parmi les statuts est le suivant:

"*Copy-Never*" = "*Copy-No-More*" > "*Copy-Once*" > "*Copy-Free*" ;

">" signifiant "est plus restrictif que".

Par exemple, si une information analysée à l'étape 110 indique un statut "*Copy-Once*" tandis que celle analysée à l'étape 111 indique un statut "*Copy-Free*", le statut retenu à l'étape 112 sera "*Copy-Once*".

Ensuite, selon le statut défini à l'étape 112, le module de décision 22 du dispositif d'enregistrement autorisera l'enregistrement (statuts "*Copy-Free*" ou "*Copy-Once*") ou bien n'autorisera pas l'enregistrement (statuts "*Copy-No-More*" ou "*Copy-Never*").

Il est à noter que les données reçues sur la ligne non protégée pourront toujours être enregistrées puisque celles-ci bénéficient déjà d'une protection spécifique au réseau local, c'est à dire qu'elles sont chiffrées de telle sorte qu'elles ne peuvent être lues (et restituées) que par un appareil du réseau.

Nous allons maintenant décrire un dispositif de restitution de données 30 selon l'invention tel que représenté à la figure 4.

Celui-ci comporte, comme le dispositif d'enregistrement 20, deux entrées numériques E4 et E5, reliées respectivement à une ligne protégée et à une ligne non protégée. Lorsque les données sont reçues sur l'entrée E4, celles-ci sont déchiffrées par le module de déchiffrement 31 spécifique à la ligne. Elles sont ensuite transmises en sortie S4 pour être restituées. Par exemple, s'il s'agit d'un téléviseur numérique, les données sont transmises au moyen d'affichage (tube cathodique, écran plasma, etc.) pour être visualisées.

Lorsque les données sont reçues sur l'entrée E5, elles sont transmises à un module de déchiffrement local 32 spécifique au réseau dans

lequel se trouve le dispositif. Ce module constitue la fin de la protection "d'un bout à l'autre" du réseau puisque les données ne sont déchiffrées, dans ce mode de protection, que pour être restituées en sortie S4 du dispositif.

Les dispositifs de lecture, d'enregistrement et de restitution de l'invention sont ainsi compatibles avec les différents modes de protection existants dans les réseaux numériques domestiques et permettent ainsi une meilleure interopérabilité des systèmes de protection contre la copie illicite.

Il est à noter que le terme "ligne" tel qu'employé dans toute la description s'entend de tout canal de communication dans un réseau numérique, que ce canal soit constitué par une ligne physique ou par une voie de communication dite "sans fil".

REVENDICATIONS

1. Dispositif de lecture de données numériques (1, 2, 10) destiné à être raccordé à un réseau numérique domestique et susceptible de recevoir des données représentant un contenu, caractérisé en ce qu'il comporte :

- un premier moyen de chiffrement (13) des données selon un mode de protection spécifique à une ligne avec laquelle le dispositif est destiné à être raccordé à un autre dispositif du réseau numérique, les données chiffrées étant dans ce cas fournies à une première sortie (S1) ; et
- un deuxième moyen de chiffrement (14) des données selon un mode de protection spécifique au réseau domestique, les données chiffrées étant dans ce cas fournies à une deuxième sortie (S2).

2. Dispositif selon la revendication 1, caractérisé en ce qu'il comporte en outre un module de décision (12) adapté à délivrer une permission ou une interdiction de copie et/ ou de lecture desdites données numériques,

lesdites données numériques étant fournies au premier (13) ou au deuxième (14) moyen de chiffrement lorsque ledit module de décision (12) délivre une interdiction de copie ("Copy-Never"; "Copy-No-More") ou une permission de copie unique ("Copy-Once").

3. Dispositif selon la revendication 2, caractérisé en ce que lesdites données numériques sont fournies directement à la première (S1) et/ou à la deuxième (S2) sortie sans être chiffrées lorsque ledit module de décision (12) délivre une permission de copie illimitée ("Copy-Free").

4. Dispositif selon l'une des revendications 2 ou 3, caractérisé en ce qu'il ne fournit aucune données numérique à la première (S1) ni à la deuxième (S2) sortie lorsque ledit module de décision (12) délivre une interdiction de lecture ("STOP!").

5. Dispositif selon l'une des revendications 2 à 4, caractérisé en ce que ledit module de décision (12) délivre une permission de copie illimitée ("Copy-Free") lorsque lesdites données numériques reçues ne sont pas chiffrées.

6. Dispositif selon la revendication 5, caractérisé en ce que ledit module de décision (12) délivre une permission de copie illimitée ("Copy-Free") lorsqu'en outre lesdites données numériques reçues ne sont pas tatouées.

7. Dispositif selon l'une des revendications 2 à 4, caractérisé en ce que ledit module de décision (12) délivre une interdiction de lecture ("STOP!") lorsque:

- lesdites données numériques reçues ne sont pas chiffrées ; et
- lesdites données numériques reçues sont tatouées.

8. Dispositif selon l'une des revendications 2 à 4, caractérisé en ce que ledit module de décision (12) délivre une interdiction de copie ("Copy-No-More") lorsque :

- lesdites données numériques reçues sont chiffrées; et
- lesdites données numériques reçues sont stockées sur un support de type enregistrable; et
- des informations de contrôle de la copie contenues dans lesdites données indiquent qu'une copie unique est autorisée.

9. Dispositif selon l'une des revendications 2 à 4, caractérisé en ce que ledit module de décision (12) délivre une interdiction de lecture ("STOP!") lorsque:

- lesdites données numériques reçues sont chiffrées; et
- lesdites données numériques reçues sont stockées sur un support de type enregistrable; et
- des informations de contrôle de la copie contenues dans lesdites données indiquent qu'aucune copie n'est autorisée.

10. Dispositif selon l'une des revendications 2 à 4, caractérisé en ce que ledit module de décision (12) délivre une permission de copie unique ("Copy-Once") lorsque:

- lesdites données numériques reçues sont chiffrées; et
- lesdites données numériques reçues sont stockées sur un support de type non-enregistrable ou sont des données diffusées ou téléchargées;
- des informations de contrôle de la copie contenues dans lesdites données indiquent qu'une copie unique est autorisée.

11. Dispositif selon l'une des revendications 2 à 4, caractérisé en ce que ledit module de décision (12) délivre une interdiction de copie ("Copy-Never") lorsque :

- lesdites données numériques reçues sont chiffrées;
- lesdites données numériques reçues sont stockées sur un support de type non-enregistrable ou sont des données diffusées ou téléchargées;
- des informations de contrôle de la copie contenues dans lesdites données indiquent qu'aucune copie n'est autorisée.

12. Dispositif selon l'une des revendications précédentes, caractérisé en ce que les informations de permission ou d'interdiction de copie et/ ou de lecture desdites données numériques délivrées par le module de décision (12) sont attachées aux données fournies à la première (S1) ou à la deuxième (S2) sortie.

13. Dispositif selon l'une des revendications précédentes, caractérisé en ce que la première (S1) et la deuxième (S2) sortie sont reliées respectivement à un unique connecteur pour raccorder ledit dispositif à un bus numérique (B) du réseau domestique, ledit bus fonctionnant dans un premier mode protégé lorsque les données sont issues de la première sortie (S1) et dans un second mode non protégé lorsque les données sont issues de la deuxième sortie (S2).

14. Dispositif selon l'une des revendications précédentes, caractérisé en ce que le choix de la première (S1) ou de la deuxième (S2) sortie pour fournir les données est déterminé par le dispositif raccordé audit réseau numérique domestique destiné à recevoir lesdites données émises par ledit dispositif de lecture sur ledit réseau domestique.

15. Dispositif d'enregistrement de données numériques (3, 20) destiné à être raccordé à un dispositif de lecture (1, 2, 10) selon l'une des revendications 1 à 14 par l'intermédiaire d'un réseau numérique domestique, caractérisé en ce qu'il comporte :

- une première entrée (E2) destinée à recevoir des données qui ont été fournies à la première sortie (S1) dudit dispositif de lecture (10); et
- une seconde entrée (E3) destinée à recevoir des données qui ont été fournies à la deuxième sortie (S2) dudit dispositif de lecture (10).

16. Dispositif selon la revendication 15, caractérisé en ce qu'il comporte un moyen de déchiffrement (21) des données selon un mode de protection spécifique à une ligne avec laquelle le dispositif est destiné à être raccordé au dispositif de lecture, ledit moyen de déchiffrement (21) étant relié à la première entrée (E2) dudit dispositif d'enregistrement.

17. Dispositif selon l'une des revendications 15 ou 16 prises dans leur dépendance de la revendication 12, caractérisé en ce qu'il comporte en outre un module de décision (22) adapté à analyser les informations de permission ou d'interdiction de copie et/ou de lecture attachées aux données à enregistrer,

ledit dispositif d'enregistrement délivrant lesdites données à enregistrer à une sortie (S3) lorsque ledit module de décision (22) détecte une permission de copie ("Copy-Once"; "Copy-free") ;

ledit dispositif d'enregistrement ne délivrant aucune donnée à enregistrer à ladite sortie (S3) lorsque ledit module de décision (22) détecte une interdiction de copie ("Copy-No-More"; "Copy-Never").

18. Dispositif de restitution de données numériques (4, 30) destiné à être raccordé à un dispositif de lecture (1, 2, 10) selon l'une des revendications 1 à 14 par l'intermédiaire d'un réseau numérique domestique, caractérisé en ce qu'il comporte:

- une première entrée (E4) destinée à recevoir des données qui ont été fournies à la première sortie (S1) dudit dispositif de lecture (10) et qui est reliée à un premier moyen de déchiffrement (31) des données selon un mode de protection spécifique à une ligne avec laquelle le dispositif est destiné à être raccordé au dispositif de lecture ;
- une seconde entrée (E5) destinée à recevoir des données qui ont été fournies à la deuxième sortie (S2) dudit dispositif de lecture (10) et qui est reliée à un deuxième moyen de déchiffrement (32) des données selon un mode de protection spécifique au réseau domestique ; et
- une sortie (S4) pour la restitution des données, reliée au premier et au deuxième moyen de déchiffrement.

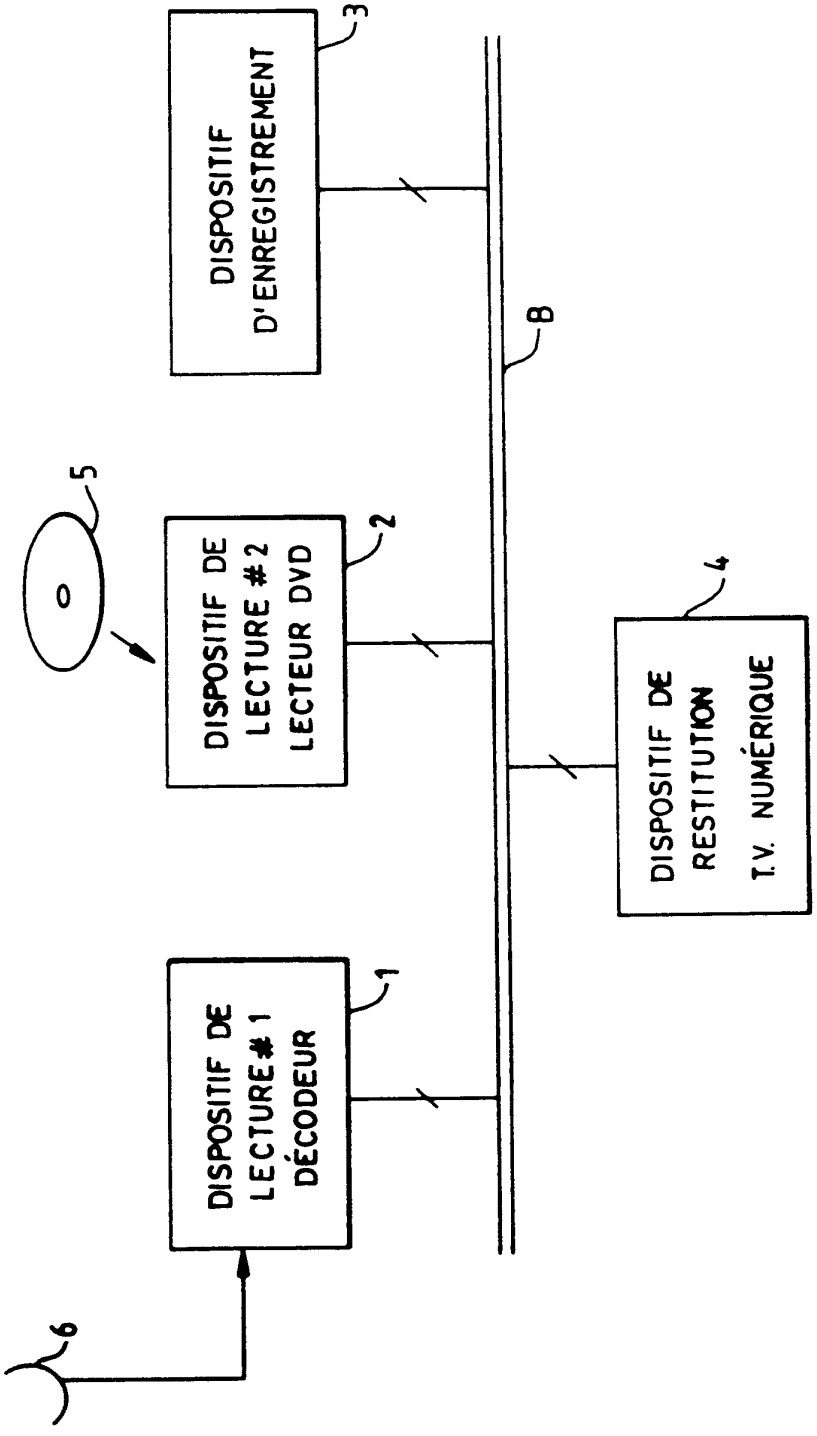

DISPOSITIF D'ENREGISTREMENT
3
8
5
DISPOSITIF DE LECTURE #2 LECTEUR DVD
2
4
DISPOSITIF DE RESTITUTION T.V. NUMÉRIQUE
DISPOSITIF DE LECTURE # 1 DÉCODEUR
1
6

FIG.1

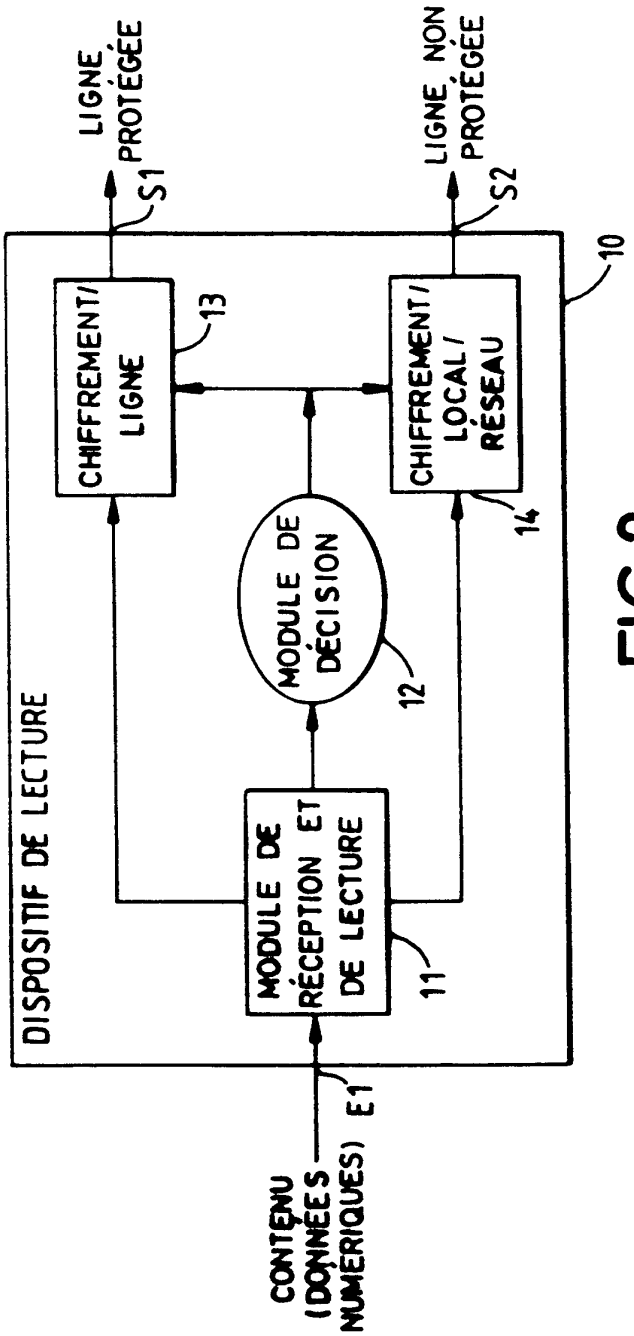

LIGNE PROTÉGÉE
S1
LIGNE NON PROTÉGÉE
S2
10
CHIFFREMENT/ LIGNE
13
CHIFFREMENT/ LOCAL/ RÉSEAU
14
MODULE DE DÉCISION
12
MODULE DE RÉCEPTION ET DE LECTURE
11
DISPOSITIF DE LECTURE
E1
CONTENU (DONNÉES NUMÉRIQUES)

FIG.2

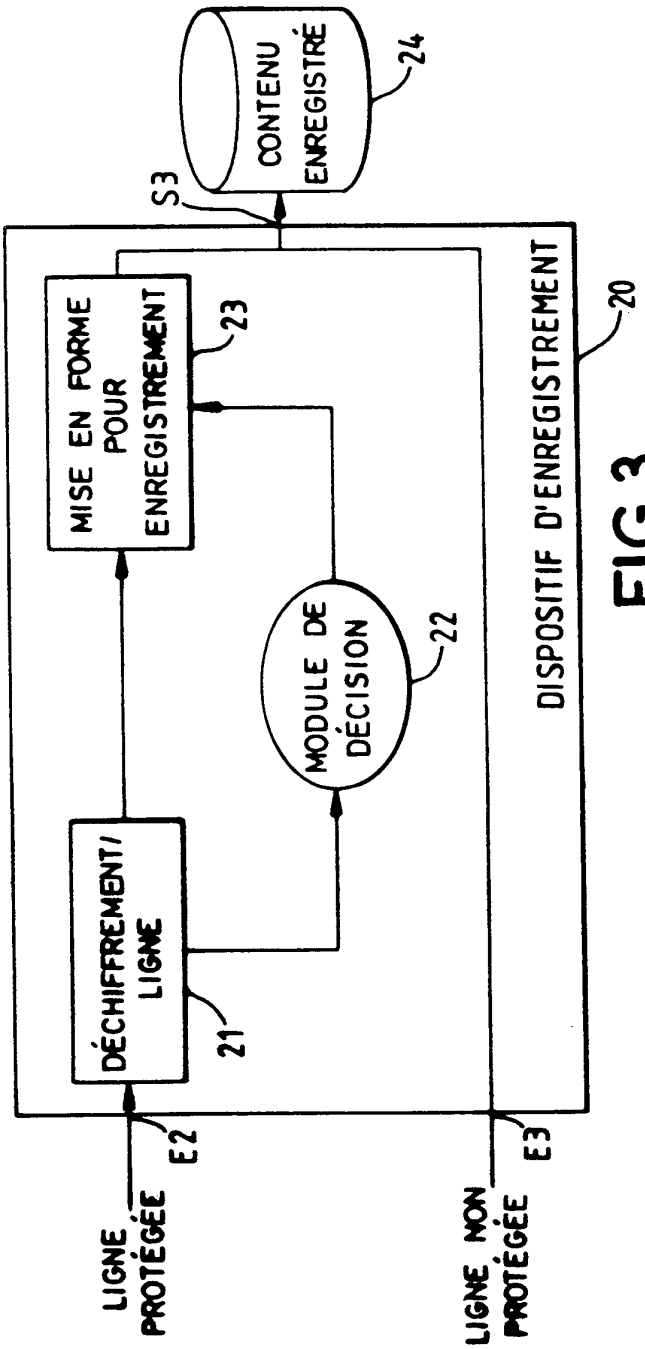

CONTENU ENREGISTRÉ
24
S3
MISE EN FORME POUR ENREGISTREMENT
23
DISPOSITIF D'ENREGISTREMENT
20
MODULE DE DÉCISION
22
DÉCHIFFREMENT/ LIGNE
21
E2
E3
LIGNE PROTÉGÉE
LIGNE NON PROTÉGÉE

FIG.3

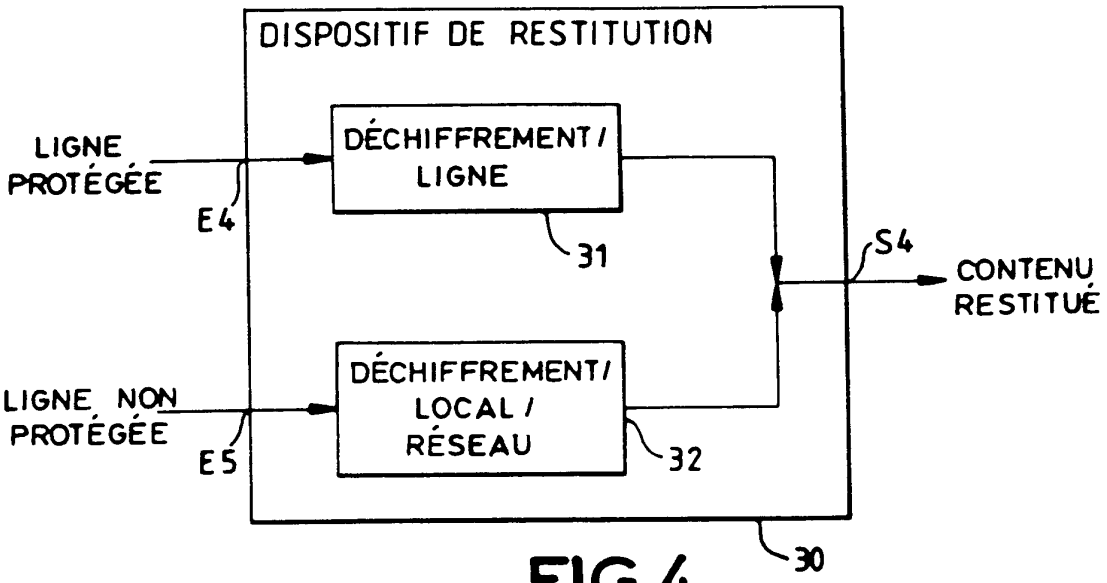

DISPOSITIF DE RESTITUTION
LIGNE PROTÉGÉE
E4
DÉCHIFFREMENT / LIGNE
31
S4
CONTENU RESTITUÉ
LIGNE NON PROTÉGÉE
E5
DÉCHIFFREMENT / LOCAL / RÉSEAU
32
30

FIG.4

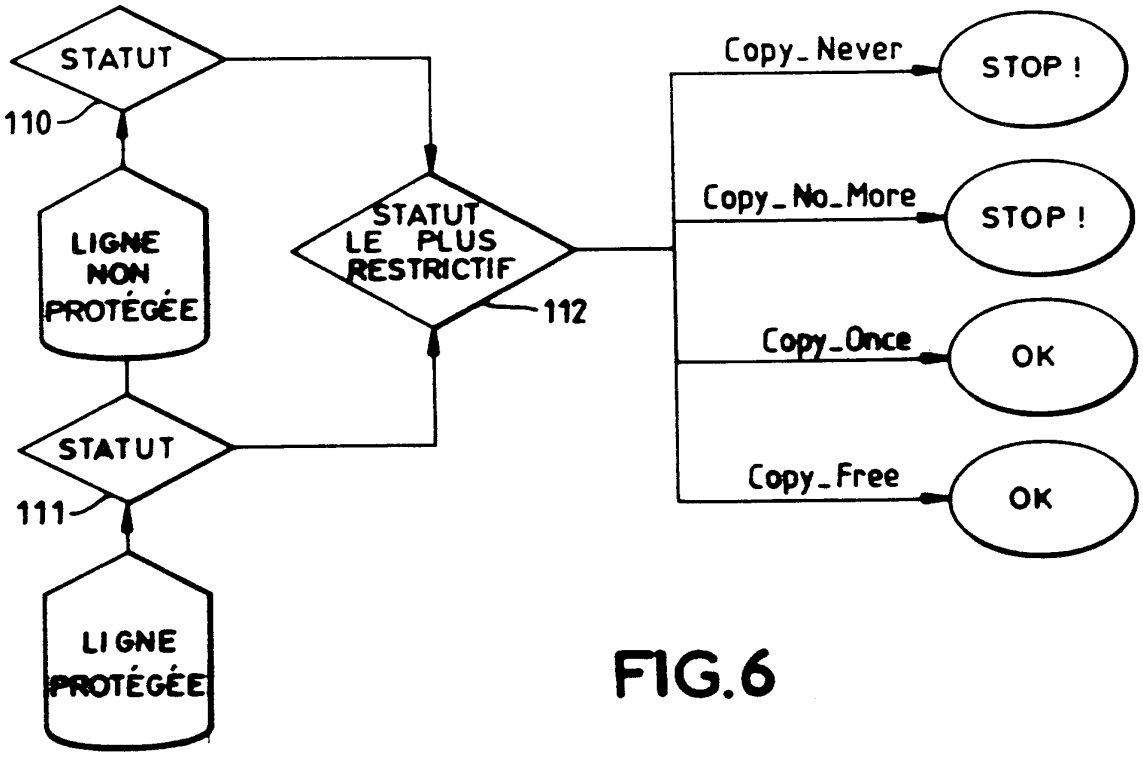

STATUT
110
LIGNE NON PROTÉGÉE
STATUT
111
LIGNE PROTÉGÉE
STATUT LE PLUS RESTRICTIF
112
Copy_Never
STOP !
Copy_No_More
STOP !
Copy_Once
OK
Copy_Free
OK

FIG.6

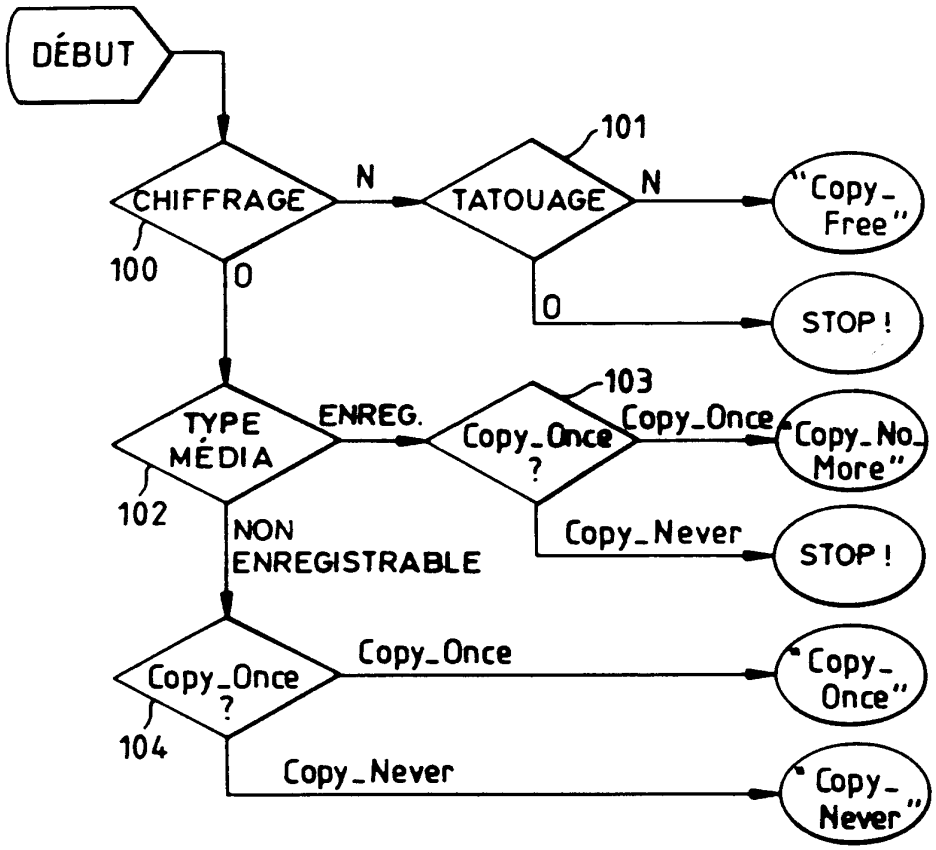

DÉBUT
CHIFFRAGE
N
100
0
101
TATOUAGE
N
"Copy_Free"
0
STOP !
TYPE MÉDIA
ENREG.
102
103
Copy_Once ?
Copy_Once
"Copy_No_More"
Copy_Never
STOP !
NON ENREGISTRABLE
Copy_Once ?
104
Copy_Once
"Copy_Once"
Copy_Never
"Copy_Never"

FIG.5

INTERNATIONAL SEARCH REPORT

International Application No
PCT/FR 01/00572

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G11B20/00 H04L29/06

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 7 G11B H04L G06F

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 382 296 A (PHILIPS NV) 16 August 1990 (1990-08-16) the whole document ---	1
A	EP 0 969 463 A (PIONEER ELECTRONIC CORP) 5 January 2000 (2000-01-05) the whole document ---	1-12,15, 17
A	HITACHI LTD ET AL: "5C Digital Transmission Content Protection White Paper - Revision 1.0" DTCP, 'Online! 14 July 1998 (1998-07-14), XP002134182 Retrieved from the Internet: <URL:http://www.dtcp.com/wp_spec.pdf> 'retrieved on 1999-10-15! cited in the application the whole document -----	1,12

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

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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	Date of mailing of the international search report
21 May 2001	29/05/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Ogor, M

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Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/FR 01/00572

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0382296 A	16-08-1990	NL 8900307 A	03-09-1990
		AU 620298 B	13-02-1992
		AU 4911190 A	16-08-1990
		CA 2009290 A	08-08-1990
		CN 1045317 A,B	12-09-1990
		DE 69011543 D	22-09-1994
		DE 69011543 T	02-03-1995
		JP 2250439 A	08-10-1990
		KR 155373 B	16-11-1998
		US 4980912 A	25-12-1990
		US 5144662 A	01-09-1992
EP 0969463 A	05-01-2000	JP 2000023089 A	21-01-2000

RAPPORT DE RECHERCHE INTERNATIONALE

Demande Internationale No
PCT/FR 01/00572

A. CLASSEMENT DE L'OBJET DE LA DEMANDE
CIB 7 G11B20/00 H04L29/06

Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB

B. DOMAINES SUR LESQUELS LA RECHERCHE A PORTE

Documentation minimale consultee (systeme de classification suivi des symboles de classement)
CIB 7 G11B H04L G06F

Documentation consultée autre que la documentation minimale dans la mesure ou ces documents relevent des domaines sur lesquels a porté la recherche

Base de donnees electronique consultee au cours de la recherche internationale (nom de la base de donnees, et si realisable, termes de recherche utilises)
EPO-Internal, WPI Data, PAJ, INSPEC

C. DOCUMENTS CONSIDERES COMME PERTINENTS

Categorie °	Identification des documents cites, avec, le cas echeant, l'indication des passages pertinents	no. des revendications visées
A	EP 0 382 296 A (PHILIPS NV) 16 août 1990 (1990-08-16) le document en entier	1
A	EP 0 969 463 A (PIONEER ELECTRONIC CORP) 5 janvier 2000 (2000-01-05) le document en entier	1-12,15, 17
A	HITACHI LTD ET AL: "5C Digital Transmission Content Protection White Paper - Revision 1.0" DTCP, 'en ligne! 14 juillet 1998 (1998-07-14), XP002134182 Extrait de l'Internet: <URL:http://www.dtcp.com/wp_spec.pdf> 'extrait le 1999-10-15! cité dans la demande le document en entier	1,12

☐ Voir la suite du cadre C pour la fin de la liste des documents

☒ Les documents de familles de brevets sont indiques en annexe

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"&" document qui fait partie de la même famille de brevets

Date à laquelle la recherche internationale a ete effectivement achevee	Date d'expedition du present rapport de recherche internationale
21 mai 2001	29/05/2001

Nom et adresse postale de l'administration chargee de la recherche internationale	Fonctionnaire autorisé
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Formulaire PCT/ISA/210 (deuxième feuille) (juillet 1992)

RAPPORT DE RECHERCHE INTERNATIONALE

Renseignements relatifs aux mem. s de familles de brevets

Demande Int[illegible]nationale No
PCT/FR 01/00572

Document brevet cité au rapport de recherche	Date de publication	Membre(s) de la famille de brevet(s)	Date de publication
EP 0382296 A	16-08-1990	NL 8900307 A	03-09-1990
		AU 620298 B	13-02-1992
		AU 4911190 A	16-08-1990
		CA 2009290 A	08-08-1990
		CN 1045317 A,B	12-09-1990
		DE 69011543 D	22-09-1994
		DE 69011543 T	02-03-1995
		JP 2250439 A	08-10-1990
		KR 155373 B	16-11-1998
		US 4980912 A	25-12-1990
		US 5144662 A	01-09-1992
EP 0969463 A	05-01-2000	JP 2000023089 A	21-01-2000

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(19) World Intellectual Property Organization
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(10) International Publication Number
WO 01/77790 A1

(51) International Patent Classification[7]: G06F 1/00, G07F 17/16

(21) International Application Number: PCT/EP01/04088

(22) International Filing Date: 10 April 2001 (10.04.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
00401007.0 11 April 2000 (11.04.2000) EP

(71) Applicant *(for all designated States except US)*: **THOMSON MULTIMEDIA** [FR/FR]; 46, quai Alphonse Le Gallo, F-92100 Boulogne-Billancourt (FR).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **DIEHL, Eric** [FR/FR]; Thomson multimedia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR). **FISCHER, Pierre** [FR/FR]; Thomson multimedia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR).

(74) Agent: **BONNANS, Arnaud**; Thomson multimedia, 46, quai Alphonse Le Gallo, F-92648 Boulogne (FR).

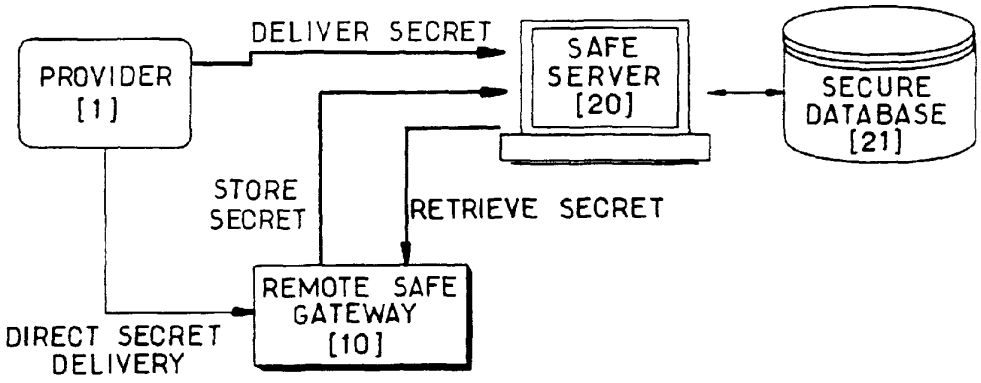
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM AND PROCESS FOR STORING SECURELY SECRET INFORMATION, APPARATUS AND SERVER TO BE USED IN SUCH A SYSTEM AND METHOD FOR DISTRIBUTION OF A DIGITAL CONTENT



(57) Abstract: A system for securely storing secret information comprises an apparatus (10; 1) containing the secret information, a device meant to use said secret information to decrypt a digital content and a remote server (20). The apparatus can send the secret information to the server (20) that has means for storing the secret information. A process with the following steps is proposed: initiating a remote communication between the apparatus (10; 1) and the remote server (20); sending the secret information from the apparatus (10; 1) to the server (20); storing the secret information on the server (20). A method for distribution of a digital content is also described.

WO 01/77790 A1

SYSTEM AND PROCESS FOR STORING SECURELY SECRET INFORMATION, APPARATUS AND SERVER TO BE USED IN SUCH A SYSTEM AND METHOD FOR DISTRIBUTION OF A DIGITAL CONTENT

Field of the invention

The invention relates generally to secure storage of secret information and more particularly to a system and a process for securely storing secret information and to an apparatus and a server to be used in said system. The invention also relates to a method for distribution of a digital content.

Background art

With the advent of digital TV, and copy protection, the access to content will be protected by rights. These rights may have many forms like entitlements, or dedicated decryption keys. The notion of rights might be extended to any secret information. All these type of data have in common that they need to be stored in a safe place.

Today none of the consumer devices has such tamper proof place. The price would be prohibitive. Only smart cards offer sufficient security. Unfortunately the size of memory of smart cards, and thus their storage capability, is limited. Furthermore a smart card can break down, or be lost. So today, once the user mislays his secret data, he will have no simple way to retrieve them. If these data represent user's rights acquired on digital content (for example the right to view a film or to listen to music) it may be prejudicial to the user if he loses these rights he has paid for.

Summary of the invention

The present invention is therefore directed to the problem of finding a way of safely and securely storing secret data to be used by a single device or by a device in a network. Another problem to be solved by the invention is to find a way of retrieving these secret data if the device or the network has lost them.

The invention relates to a system for securely storing secret information to be used by a device wherein said secret information is stored in a remote server. The device may be part of a home network and preferably the secret information is used by said device to access to a digital content.

Therefore, the remote server acts as a bank which maintains in a safe place digital secrets.

The invention proposes an apparatus containing secret information to be used by a device to decrypt a digital content and having means for sending

said secret information to a remote server in order to store said information in said remote server, said server being remote from said device.

The invention also proposes a system for securely storing secret information comprising an apparatus containing said secret information, a device meant to use said secret information to decrypt a digital content and a server remote from said apparatus and from said device, wherein said apparatus comprises means for sending said secret information to said server and wherein said server comprises means for storing said secret information.

The apparatus may be part of said device, or may belong to the same home network as said device. In such cases, the apparatus is thereafter called the remote safe gateway. The apparatus may alternatively belong to a local network generating said secret information (*i.e.* belong to the secret provider).

According to another aspect of the invention, a server for securely storing secret information to be used by a device remote from said server to decrypt a digital content has means for receiving said secret information through a remote communication

A process is proposed for securely storing secret information to be used by a device to decrypt a digital content : this process comprises the steps of :

- initiating a remote communication between an apparatus containing said secret information and a server remote from said device ;
- sending said secret information from said apparatus to said server ;
- storing said secret information on said server.

The invention also relates to a method for distribution of a digital content to be used by a device comprising the steps of :

- encrypting the digital content to thereby generate an encrypted digital content and secret information meant to later decrypt the encrypted digital content ;
- sending said secret information to a server remote from said device for storing said secret information on said server ;
- providing means for said device to retrieve said secret information from said server and to decrypt the encrypted digital content with said secret information.

Brief description of the drawings

Fig. 1 illustrates the general architecture of a system according to the invention.

Fig. 2 illustrates the architecture of a device used in the system of Fig. 1.

Fig. 3 illustrates a process for storing secret information according to a first embodiment of the invention.

Fig. 4 illustrates a process for retrieving a secret information stored according to the process illustrated in Fig. 3.

Fig. 5 illustrates a second embodiment of the invention.

Fig. 6 illustrates a process for storing a secret information in the second embodiment of the invention.

Description of the preferred embodiments

In Fig. 1, we have illustrated a first embodiment of a system according to the invention. In this embodiment, the user has a Set Top Box device 10 (STB) with a return channel such as a PSTN (for "Public Switched Telephone Network") modem or a cable modem.

We assume that all the information to store securely can be carried to this STB. For instance, we can envisage that a complete home network can benefit from the remote safe facility. In this case, preferably, a unique device of the network will be able to store and retrieve secret information according to the invention. This unique dedicated STB is used as an apparatus called the remote safe gateway. Obviously it could be another type of device, for example a computer.

Through its return channel, each remote safe gateway interacts with a remote server 20 called the remote safe server. The remote server has direct access to its own secure database 21. The secure database will store safely and securely the secret information.

In a preferred embodiment of the system, the secure database will be duplicated at least once in different locations. This will avoid loss of data due to natural or malicious crashes. Nevertheless, only one occurrence of the secure database will be considered in the following in order to simplify the presentation of the invention.

The user receives his secrets from a secret provider 1 which is consider here as having generated the secret information. It may be for example a content provider which provides, with an encrypted content, a secret to decrypt this content.

The secret provider 1 provides the information directly to the remote safe gateway 10. The user may receive information from many secret providers.

The characteristics of the system are as follows :

- A user must be identified uniquely. It must not be possible to impersonate him.

- A user must be able to transfer the secret digital information stored in his home system to the safe server 20. No information must leak from this transfer. For that purpose, the remote safe gateway 10 is used to make this transfer.

- The user must be able to retrieve one, part, or all the information stored in his remote safe. No information must leak from this transaction. For that purpose, the remote safe gateway 10 is also used for this transaction.

- There must be no constraint on the format of the stored information.

We will now describe how the system is working.

A first stage of the process consists in the registration of the user. Prior to use the remote safe, the user must sign on the remote safe server's operator. For that purpose, he provides a set of personal information. The definition of these data depends on the operator and is out of the scope of this invention. In return the operator returns a set of secret user identity information (SI_{user}) used in the next stages. Among this set of information is the unique identifier (ID_{user}) that thoroughly defines a given user.

The channel used for this communication can be different from the return channel of the remote safe gateway. In any case the transfer of the secret user identity information (SI_{user}) needs to be secured. There are several possible ways: mailing of a smart card, encrypted information sent through the return channel, ... In the last case, the decryption key is transferred through a secure separate channel such as phone or post mail.

A second stage of the process consists in the storage of secret information in the safe. This requires several steps.

In a first step, the remote safe gateway authenticates the remote safe server using known authentication methods. If the authentication fails, then the storage operation fails.

In a second step, the remote safe server authenticates the remote safe gateway. If the authentication fails, then the storage operation fails.

In a third step, they define a common session key $K_{session}$. This means a remote communication is initiated between the remote safe server and the remote safe gateway.

Then, in a fourth step, the remote safe server creates a unique identifier, $InfID_{user\_i}$ for the information i to be stored. InfIDuser_i is unique for each information stored by the user. Its choice is fully under the control of the

remote safe server. It can be either a "random" number, or a number dedicated to the user, following a given rule *f*, so that $f(InfID_{user\_i}, ID_{user})=true$.

In a fifth step, the remote safe gateway sends the information i to store to the remote safe server. The information i is encrypted using the session key Ksession before being sent. In an optional step, the remote safe gateway encrypts the information i using a secret key of the remote safe gateway before using the session key. Thus, with this optional step, the remote safe server will not have access to the plain text information.

Then, in the last step, the remote safe server decrypts the received information using the session key Ksession and stores it into its secure database.

The transfer may be secured against transmission errors, or message tampering. In that case, the remote safe server checks the integrity of the decrypted message before its eventual storage.

A third stage of the process consists in the retrieval of the secret information from the remote safe server. This operation requires the following steps.

In a first step, the remote safe server authenticates the remote safe gateway. If the authentication fails, then the retrieval operation fails.

In a second step, they define a common session key Ksession.

Then, in a third step, the remote safe gateway provides the remote safe server with the unique identifier of the information to retrieve InfIDuser_i.

In a fourth step, the remote safe server checks the validity of InfIDuser_i. It checks if the corresponding information exists in the database and if this is the case, the remote safe server sends back the requested information to the requesting remote safe gateway in a fifth step. The information is encrypted using the session key Ksession before being sent to the remote safe gateway.

Then, in a last step, the remote safe gateway decrypts the received message using the session key Ksession.

Preferably, the transfer is secured against transmission errors, or message tampering. In that case, the remote safe gateway checks the integrity of the decrypted message before using it.

According to one preferred aspect of the invention, all the operations, except the registration phase, should be transparent to the user. In other words, the retrieval of the stored secrets should be automatic and should not request any interaction from the user.

Fig. 2 illustrates a possible architecture for the remote safe gateway. In this figure, only the elements which are necessary for the understanding of the invention have been represented.

The remote safe gateway has a Central Processing Unit (CPU) 100. It is assumed that the CPU has its own volatile memory and non-volatile memory where its program is stored. In addition, the remote safe gateway has a non-volatile memory space 101 called the identifiers' memory. The CPU 100 can read and write the content of this space.

The remote safe gateway has also a secure processor 102. This secure processor is a tamper proof device that has at least a dedicated CPU 110, a non volatile memory 111 (ROM – Read Only Memory) to store program and persistent data, a volatile memory 112 (RAM – Random Access Memory), and a dedicated non-volatile memory area 113, called the secret cache memory. The secure processor 102 is, in a preferred embodiment, a smart card.

The CPU 100 never handles actual secrets. It handles only information identifiers InfIDuser_i. It maintains a list of the secret information through a list of their corresponding InfIDuser_i. This list is stored in the identifiers' memory. This space needs not to be tamper-proofed. Therefore it is not costly. The size of the identifiers' memory should be chosen to be large enough to store the expected amount of information identifiers.

The secure processor's CPU 110 handles the actual secrets. It stores them in its secret cache memory 113. Unfortunately this space is limited in size due to cost. Therefore it will employ memory-caching techniques that optimize the use of the space. It will store the most recently used secrets and some of the most frequently used secrets.

If the remote safe gateway needs a secret information which is not readily available in the secret cache memory 113, then the secure processor's CPU 110 requests it to the remote safe server.

In one embodiment of the invention, the remote safe gateway is part of a digital home network where other devices are connected. Some of these devices can also handle secrets. In that case they may reproduce the architecture of Fig. 2. Nevertheless, only the remote safe gateway is able to communicate with the remote safe server. The other devices exchange, through secure communication, with the remote safe gateway their secrets to store or to retrieve.

We will now enter into more details of this first embodiment.

Registration of the user.

When signing on, the user receives the secret user identity information as follows:

- A unique identifier IDuser.
- A pair of public (PUB_{user}) and private (PRI_{user}) keys; the remote safe server encrypts with a public key cryptosystem that we will call CS1. RSA (Rivest-Shamir-Adleman public key cryptosystem) could be such a system.
- A public key certificate $CERT_{user}$ signed by the remote safe server using its private signature key PRI_{safe_sign}. The remote safe server signs with a public key cryptosystem that we will call CS2. RSA could be such a system. CS2 can be identical to CS1.
- The public key of the remote safe server PUB_{safe_enc} using cryptosystem CS1.

These data must be transferred safely to the user. It is especially important that his private key, $PRI_{user,}$ is kept secret. He may for example receive these data in a smart card sent to him via mail.

Storage of the secret information.

The format of the message to store is preferably defined as follows:

```
Info_To_Store = {
     InfIDuser_i
     Length_clear_text
     Clear_Text
     Length_secret
     for I=0 to Length_secret-1
          Secret_data[i]
     Checksum
}
```

where :

- InfIDuser_i is a unique identifier of the information stored by the user. This identifier is unique to the user and delivered by the safe server ;
- Clear_Text is an ASCII text that describes the stored secret information. Its content is user defined. It could be envisaged that the secret provider delivers a default value for this secret ;
- Length_clear_text defines the length in bytes of Clear_Text ;
- Secret_data is the secret to store in the remote safe ;
- Length_secret defines the length in bytes of Secret_data ;
- Checksum is the sum of all previous bytes of the packet.

The process for storing a secret information is illustrated in Fig. 3 and explained in the following.

The mutual authentication and key exchange uses the Authenticated DIFFIE HELLMAN Key Exchange Protocol. The protocol generates a common key K_{com}.

The common session key Ksession is the set of the 112 lower bits of the hash of K_{com} through the Secure Hash Algorithm (SHA-1).

The remote safe server defines a new value for the information identifier, InfIDuser_i. It sends it to the remote safe gateway.

The remote safe gateway builds the message Info_To_Store with its secret data and InfIDuser_i. It encrypts it with the Triple DES algorithm using the common session key Ksession. It sends the encrypted message to the remote safe server that decrypts it using the common key Ksession.

The remote safe server checks the validity of Checksum. If the received message is valid, the remote safe server sends it to the secure database. If the operation was successful, the remote safe server returns an acknowledgement to the remote safe gateway, else it returns a non-acknowledgement.

Retrieving the secret information.

The process for retrieving a secret information stored in the remote safe server is illustrated by Fig. 4 and will be explained in the following.

The mutual authentication and key exchange uses the Authenticated DIFFIE HELLMAN Key Exchange Protocol. The protocol generates a common key K_{com}.

The common session key Ksession is the set of the 112 lower bits of the hash of K_{com} through the Secure Hash Algorithm (SHA-1).

The remote safe gateway sends the reference of the data to retrieve: InfIDuser_i.

On receipt of the information identifier InfIDuser_i, the remote safe server passes it to the secure database.

The secure database checks if the message exists, i.e., if there is an information, own by the user, that has the right identification. If it is the case, then it returns the requested information Info_To_Retrieve to the remote safe server. The remote safe server encrypts the received data using Triple DES with the session key Ksession and It sends the encrypted message to the remote safe gateway.

The remote safe gateway decrypts the received message using the session key Ksession. It checks the validity of Checksum and if it is valid, the remote safe gateway uses the retrieved secret information Info_To_Retrieve.

We will now describe a second embodiment of the invention which is illustrated in Fig. 5.

In this embodiment, the secret provider can provide the information directly to the remote safe gateway or by an indirect way using the remote safe server. The user may receive information from many secret providers.

The additional characteristics of the system are as follows:

- A third party, known as the secret provider, can deposit a secret to the remote safe server on behalf of a user. No information must leak from this transaction.

- It is not possible to impersonate a secret provider.

- Once a secret as been deposited by a secret provider, the secret provider has no possible access to it.

- A secret provider cannot retrieve any information stored on the account of a user.

- Only an authorized secret provider can deposit a secret onto the account of a user.

In this embodiment, the process for the secret provider has two stages :

The first stage consists in the registration of the secret provider. As for the remote safe gateway, the secret provider needs to sign on the remote safe server. He signs on as secret provider. In return, it receives a set of information known as secret provider identity information (SI_{prov}).

The second stage consists in the storage of a secret information on behalf of a user. This stage requires several steps.

In a first step, the secret provider, through an apparatus of a local network of its own, authenticates the remote safe server. If the authentication fails, then the storage operation fails.

In a second step, the remote safe server authenticates the secret provider. If the authentication fails, then the storage operation fails.

In a third step, the remote safe server and the secret provider's apparatus define a common session key $K_{session.}$

Then, in a fourth step, the secret provider provides the identity of the user that he is acting for: ID_{user}.

In a fifth step, the remote safe server creates a unique identifier, InfIDuser_i for the information to be stored. InfIDuser_i is unique for each information stored by the user identified by IDuser. Its choice is fully under the control of the remote safe server. It can be either a "random" number, or a number dedicated to the user, following a given rule.

In a sixth step, the secret provider sends the information to store to the remote safe server. The sent information is encrypted using the session key $K_{session}$.

In a last step, the remote safe server decrypts the received information using the session key $K_{session}$ and stores it into its secure database. The transfer may be secured against transmission errors, or message tampering using known techniques. In that case, the remote safe server checks the integrity of the decrypted message before its eventual storage.

Once the operation was successfully ended, then the secret provider sends the information identifier InfIDuser_i to the corresponding remote safe gateway. The secret provider does not keep any copy of it. Therefore, it is impossible for the secret provider to access any more to the secret information to retrieve it or to modify it.

Details of this second embodiment are explained bellow:

Registration of the secret provider

When signing on, the secret provider receives the following secret provider identity information:

- A unique identifier ID_{prov}.
- A pair of public (PUB_{prov}) and private (PRI_{prov}) keys; the remote safe server encrypts with the public key cryptosystem CS1.
- A public key certificate $CERT_{prov}$ signed by the remote safe server using its private signature key $PRI_{safe\_sign\_2}$; the safe server signs with the public key cryptosystem CS2.
- The public key of the remote safe server PUB_{safe_enc}.

These information must be transferred safely to the secret provider. It is especially important that his private key is kept secret

Storage of an information on behalf of a user.

This process, which is illustrated in Fig. 6, is similar to the process described previously in view of Fig. 3. The main differences are:

- Prior to exchange the secret information, the secret provider has to identify the user to whom is it depositing. The identification uses the user's unique identifier IDuser.

- Once the secret provider successfully stored the information, it sends the reference of the information to the user, that is to its remote safe gateway.

The system if the invention may be applied to a new distribution model. For example, a content provider wants to distribute in a controlled manner a content. This content can be any digital content such as video, MP3 files, software, etc. For that purpose it distributes the content encrypted with an encryption key $K_{enc\_cont\_i}$. To read this encrypted content, the user must have access to the decryption key $K_{dec\_cont\_i}$. The decryption key may be equal to the encryption if we use a symmetric cryptosystem. The user contacts the content provider and buys the right to access the content. Acting as a secret provider, the content provider deposits the decryption key in the user's remote safe. In return the user receives the information identifier of the decryption key.

Another possible application of the system of the invention is a small footprint backup of a jukebox. The jukebox will be a future new type of consumer device. It will probably be successful. Nevertheless with the jukebox, a major risk is introduced: loss of all the contents stored in the jukebox. Currently it is envisaged to use hard disks as storage units. In the field of software, it is well known that regular backup of the hard disk is a safe practice. But it is not reasonable to expect the same feature in a consumer device.

The system of the invention will provide a backup facility based on the remote safe as a new service. For each legally delivered content, the content provider will provide an additional information called a digital purchase proof. The digital purchase proof is the result of a one way cryptographic function using as input parameter a unique identifier of the owned content, and the user identifier ID_{user}. Instead of backing up all his contents, the user stores in his remote safe all his digital purchase proofs. If he loses one content, the user returns to the content provider the corresponding digital proof. The content provider checks if the digital proof is consistent with the claimed content and the identity of the user. If it is the case, then the content provider sends back to the user a copy of the content.

In conclusion, the invention offers the following advantages:

- the possibility to handle in a safe and secure manner a large quantity of secret data without requesting an in-house large tamper-proof space;

- a simple new model of distribution of digital content that could fit for IP streaming, or even prerecorded contents;

- a small size backup of large library of digital contents.

CLAIMS

1. Apparatus containing secret information to be used by a device to decrypt a digital content,

characterised by means for sending said secret information to a remote server (20) in order to store said information in said remote server (20), said server (20) being remote from said device.

2. Apparatus according to claim 1, being part of said device.

3. Apparatus according to claim 1, belonging to the same home network as said device.

4. Apparatus according to claim 1, belonging to a local network (1) generating said secret information.

5. System for securely storing secret information comprising :

- an apparatus (10 ; 1) containing said secret information ;
- a device meant to use said secret information to decrypt a digital content ;
- a server (20) remote from said apparatus and from said device,

wherein said apparatus (10 ; 1) comprises means for sending said secret information to said server (20) and wherein said server (20) comprises means for storing said secret information.

6. System according to claim 5, wherein said apparatus (10) is part of said device.

7. System according to claim 5, wherein said apparatus (10) and said device are connected to a common home network.

8. System according to claim 5, wherein said apparatus (1) belongs to a local network generating said secret information.

9. Server (20) for securely storing secret information to be used by a device to decrypt a digital content, said device being remote from said server (20),

characterised by means for receiving said secret information through a remote communication.

10. Process for securely storing secret information to be used by a device to decrypt a digital content comprising the steps of :

- initiating a remote communication between an apparatus (10 ; 1) containing said secret information and a server (20) remote from said device ;
- sending said secret information from said apparatus (10 ; 1) to said server (20) ;
- storing said secret information on said server (20).

11. Method for distribution of a digital content to be used by a device comprising the steps of :

- encrypting the digital content to thereby generate an encrypted digital content and secret information meant to later decrypt the encrypted digital content ;
- sending said secret information to a server (20) remote from said device for storing said secret information on said server (20) ;
- providing means (10) for said device to retrieve said secret information from said server (20) and to decrypt the encrypted digital content with said secret information.

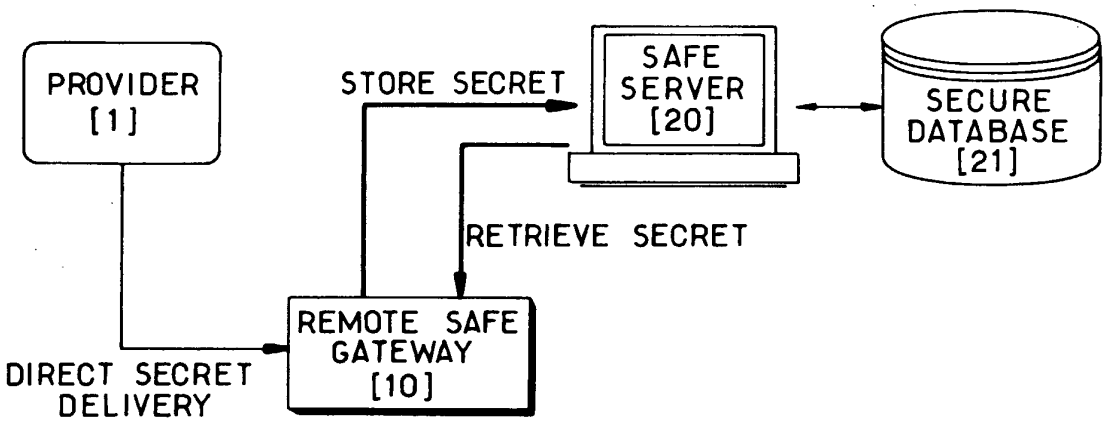

PROVIDER
[1]
STORE SECRET
SAFE
SERVER
[20]
SECURE
DATABASE
[21]
RETRIEVE SECRET
REMOTE SAFE
GATEWAY
[10]
DIRECT SECRET
DELIVERY

FIG.1

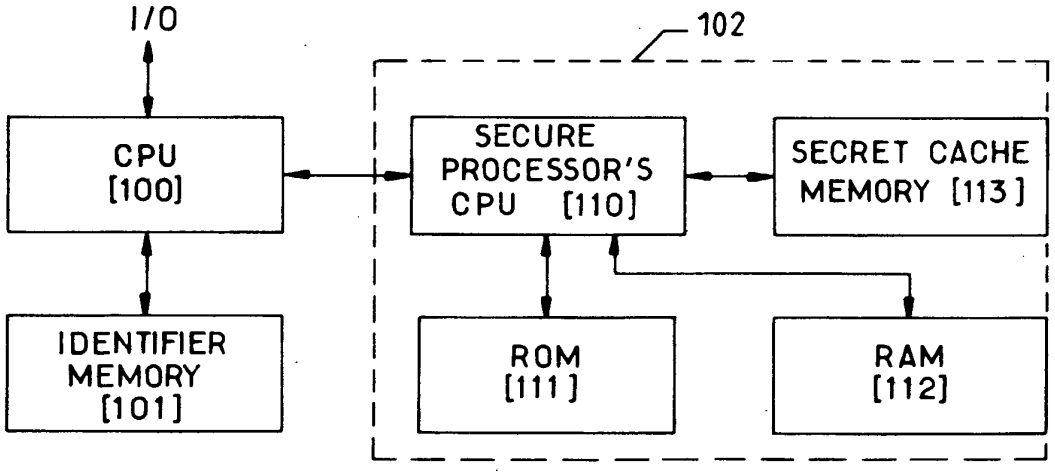

I/O
102
CPU
[100]
SECURE
PROCESSOR'S
CPU [110]
SECRET CACHE
MEMORY [113]
IDENTIFIER
MEMORY
[101]
ROM
[111]
RAM
[112]

FIG.2

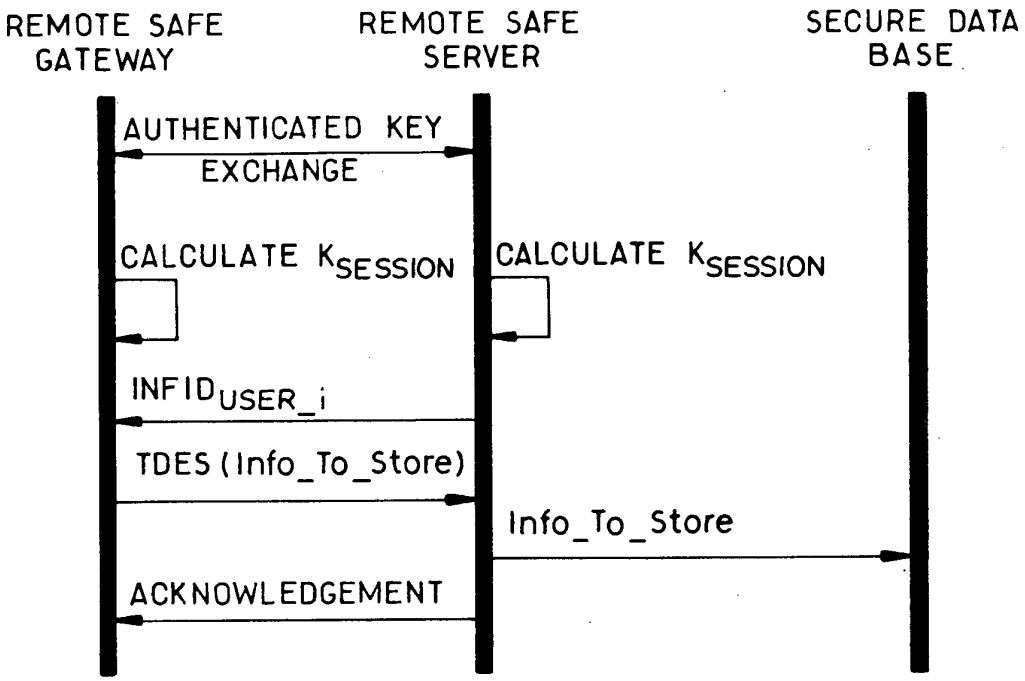


FIG.3

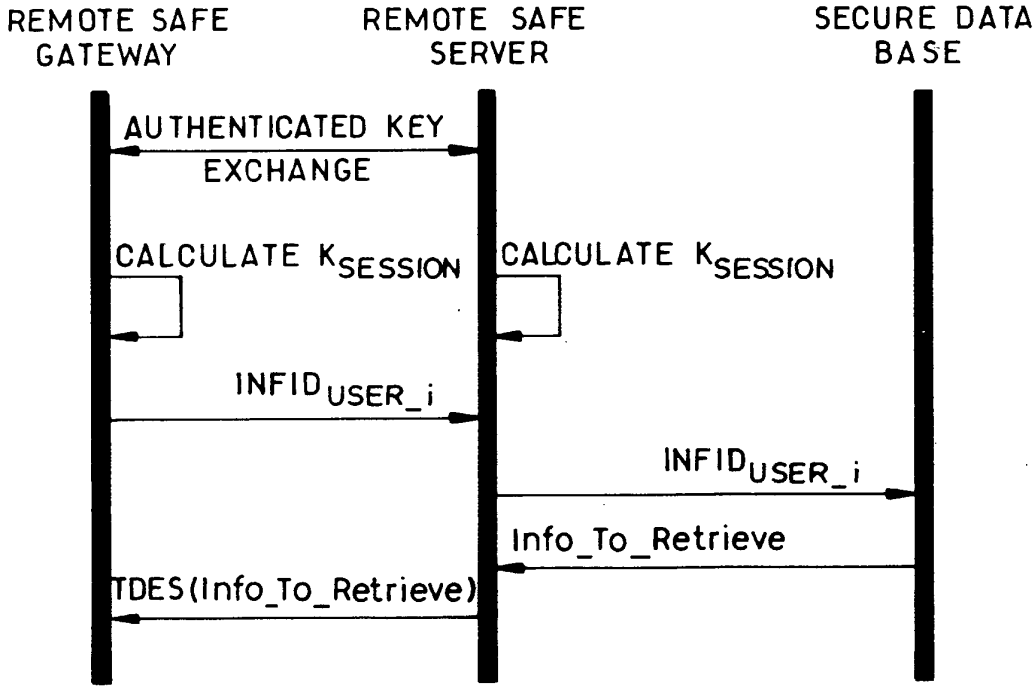


FIG.4

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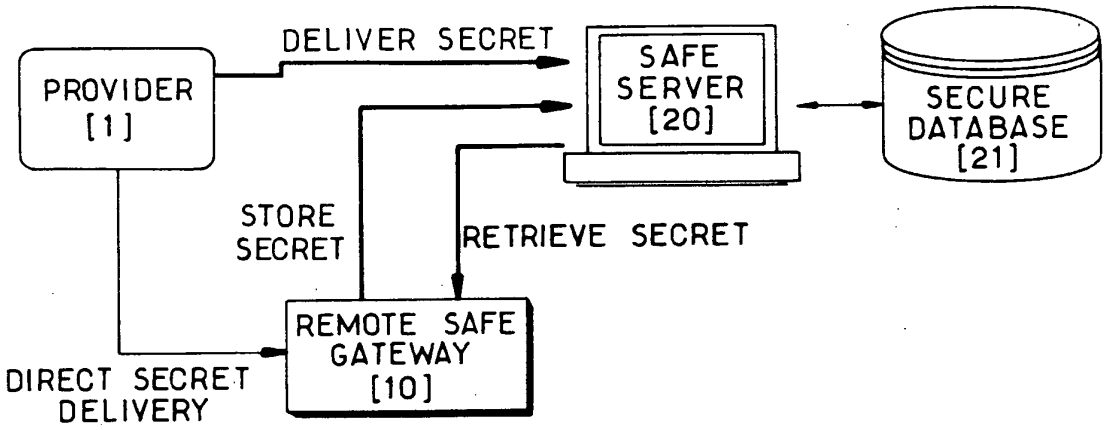

PROVIDER
[1]
DELIVER SECRET
SAFE
SERVER
[20]
SECURE
DATABASE
[21]
STORE
SECRET
RETRIEVE SECRET
REMOTE SAFE
GATEWAY
[10]
DIRECT SECRET
DELIVERY

FIG.5

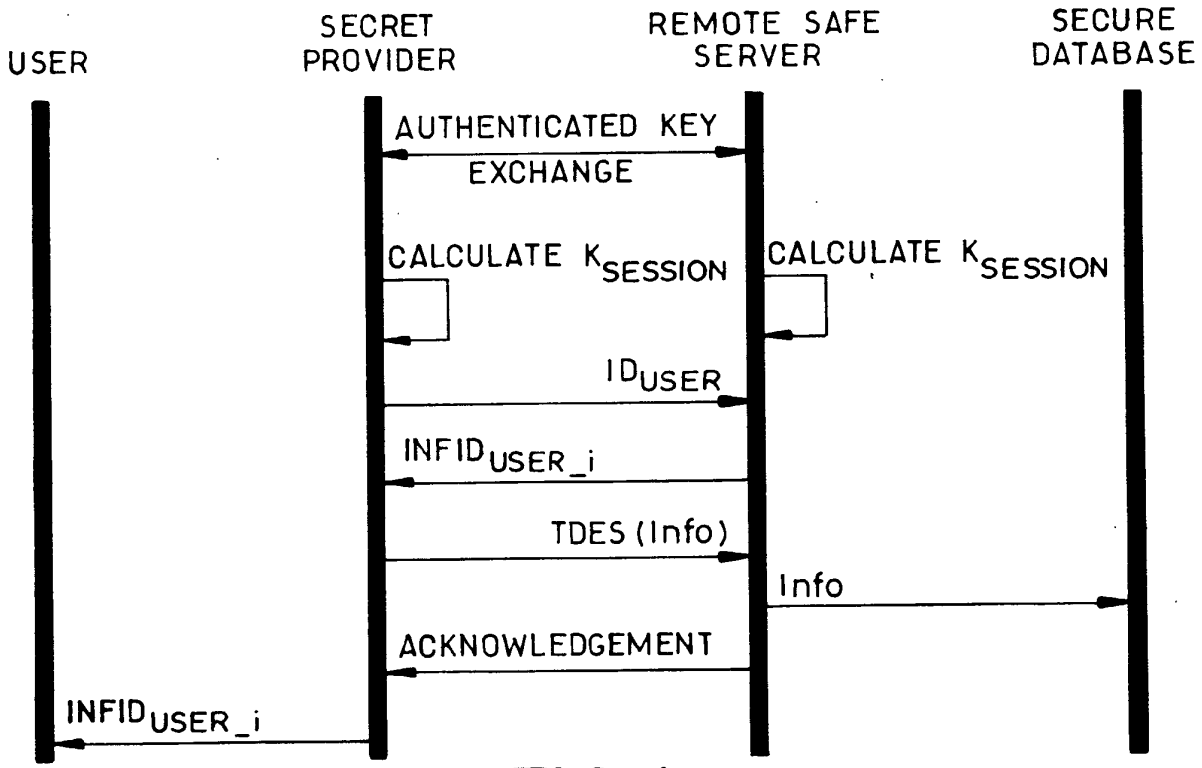

USER
SECRET
PROVIDER
REMOTE SAFE
SERVER
SECURE
DATABASE
AUTHENTICATED KEY
EXCHANGE
CALCULATE $K_{SESSION}$
CALCULATE $K_{SESSION}$
ID_{USER}
$INFID_{USER\_i}$
TDES (Info)
Info
ACKNOWLEDGEMENT
$INFID_{USER\_i}$

FIG.6

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 01/04088

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F1/00 G07F17/16

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 7 G06F G07F H04L

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

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 337 357 A (CHOU WAYNE W ET AL) 9 August 1994 (1994-08-09) figure 1 column 3, line 26 -column 4, line 37	1-11
X	EP 0 843 449 A (SUNHAWK CORP INC) 20 May 1998 (1998-05-20) column 5, line 8 -column 8, line 19 figures 2-5	1-11
X	WO 98 42098 A (CRYPTOWORKS INC) 24 September 1998 (1998-09-24) page 10, line 7 -page 11, line 29 figures 1,5,6,9	1-11

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

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Date of the actual completion of the international search	Date of mailing of the international search report
6 August 2001	14/08/2001

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Papastefanou, E

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/EP 01/04088

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5337357 A	09-08-1994	CA 2120816 A	18-12-1994
		EP 0636962 A	01-02-1995
EP 0843449 A	20-05-1998	US 5889860 A	30-03-1999
		CA 2220457 A	08-05-1998
		JP 10301904 A	13-11-1998
WO 9842098 A	24-09-1998	AU 6759198 A	12-10-1998
		EP 0968585 A	05-01-2000

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(25) Filing Language: English

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10/, 17 May 2004 (17.05.2004) US

(71) Applicant *(for all designated States except US)*: **MARGENT DEVELOPMENT, LLC** [US/US]; 391 Taylor Boulevard, Suite 105, Pleasant Hill, California 94523 (US).

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(75) Inventor/Applicant *(for US only)*: **GIOBBI, John, J.** [US/US]; 689 NW Stonepine Drive, Bend, Oregon 97701 (US).

(74) Agents: **STEFFEY, Charles, E.** et al.; P.O. Box 2938, Minneapolis, Minnesota 55402 (US).

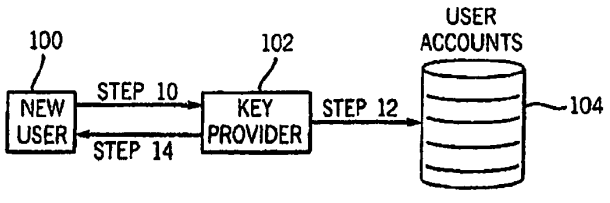
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DIGITAL CONTENT SECURITY SYSTEM



(57) Abstract: A Personal Digital Key Digital Content Security System (PDK-DCSS) is used to protect computers from unauthorized use and protect the digital content (110) stored on computers from being wrongfully accessed, copied, and/or distributed. The basic components of the PDK-DCSS are 1) a standard hard drive device (108), with the addition of a PDK Receiver/Decoder Circuit (PDK-RDC) optionally integrated into the hard drive's controller, and 2) a PDK-Key associated with the PDK-RDC. The PDK-Key and RDC technology is utilized to provide two categories of protection: 1) hard drive (108) access control for providing Drive-Level and Sector-Level protection and 2) operating system-level independent file protection for providing File-Level and Network-Level protection.

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DIGITAL CONTENT SECURITY SYSTEM

REFERENCE TO RELATED APPLICATIONS

This application is related to U.S. patent application Serial No. 10/xxx,xxx filed May 17, 2004, which is a continuation-in-part of U.S. patent application Serial No. 10/715,035 filed November 17, 2003, which is a continuation-in-part of U.S. patent application Serial No. 10/153,979 filed May 23, 2002, which is a continuation-in-part of U.S. patent application Serial No. 09/750,487 filed December 27, 2000 and Serial No. 10/016,857 filed December 14, 2001, all of which are incorporated herein by reference in their entirety.

FIELD OF THE INVENTION

The present invention relates generally to digital content security systems and, more particularly, to a digital content security system and method that provides different levels of protection of a computer or other storage device and the digital content stored thereon.

BACKGROUND OF THE INVENTION

The market for downloading digital content online is rapidly climbing because distribution of such content is inexpensive, fast, and easy and the quality of the content itself is acceptable. The market, however, remains disorganized due to competing standards, competing companies, discontented artists and producers, and outright theft of digital content.

Digital rights management (DRM) companies seek to solve the foregoing problems by delivering the digital content from the real producers to the right customers and ensuring that everyone who should be paid in fact is paid. DRM seeks to get everyone paid by managing the multiple steps for distributing digital content (music, video, software) online: watermarking, encryption, transaction management, and rights management. Some DRM companies perform all these steps, while other DRM companies specialize in one or two steps of the process.

First, watermarking stamps each piece of digital content with a digital mark so it can be tracked wherever it goes. Digital watermarks are just like paper watermarks, except they cannot be seen or heard. Special software is required to read a digital watermark.

Second, encryption scrambles watermarked digital content and stores it inside a digital safe for shipment around the Internet. The safe protects the content during shipping by allowing only those with the right software key to the safe to decrypt and use the content.

Third, transaction management handles actual payments for the digital content using credit card techniques found elsewhere in e-commerce. An order is placed, a credit card number is taken, account status is checked, and the exchange is authorized.

Finally, rights management manages the information about the digital content itself: what it is, who gets it, how it is delivered, how many times it may be used, how long the rights last, who gets paid, how much they get paid, and how. This information travels with the digital content in something called a digital permit. The permits rests on top of the digital content as it travels the Internet and allows legal users to enjoy the digital content for as long as the rights last.

The primary objective of DRM companies is to deploy technologies that protect digital content as it is distributed online. Some of these proposed technologies and DRM in general are discussed in the article "Digital Rights Management May Solve the Napster 'Problem'," *Technology Investor*, October 2000, pp. 24-27. Although such technologies should reduce the amount of digital theft, they generally favor the content provider at the expense of the consumer or favor the consumer at the expense of the content provider. That is, the rights of either the content provider or the consumer are compromised. For example, some technologies severely limit the consumer's ability to make extra copies of digital content even when the digital content is solely for personal use. Other technologies facilitate the making of copies of digital content which can be used by different

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consumers without the content provider being compensated by each consumer. The present inventor has discovered an improved DRM system and method that effectively balances and protects the rights of both the consumer and the content provider. In addition, the present inventor has discovered an associated digital content security system for protecting computers and other storage devices from unauthorized use and protecting the digital content stored on computers and other storage devices from being wrongfully accessed, copied, and/or distributed.

SUMMARY OF THE INVENTION

In accordance with the foregoing, there is disclosed a Personal Digital Key Digital Content Security System (PDK-DCSS) for protecting computers from unauthorized use and protecting the digital content stored on computers from being wrongfully accessed, copied, and/or distributed. The basic components of the PDK-DCSS are (1) a standard hard drive device, with the addition of a PDK Receiver/Decoder Circuit (PDK-RDC) optionally integrated into the hard drive's controller, and (2) a PDK-Key associated with the PDK-RDC. The PDK-Key and RDC technology is utilized to provide two categories of protection: (1) hard drive access control for providing Drive-Level and Sector-Level protection and (2) operating system-level independent file protection for providing File-Level and Network-Level protection. A number of alternative embodiments are also disclosed.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other advantages of the invention will become apparent upon reading the following detailed description and upon reference to the drawings in which:

FIG. 1 is a flow chart of a method of managing digital rights in accordance with the present invention;

FIGS. 2, 3, and 4 are block diagrams of portions of a DRM system for implementing the method in FIG. 1;

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FIG. 5 is a conceptual model of core options for acquiring digital content that can be encoded to produce key-secured content and core options for playing back the key-secured content;

FIG. 6 is a block diagram for implementing a core acquisition option of downloaded content;

FIG. 7 is a block diagram for implementing a core acquisition option of store-bought content;

FIG. 8 is a block diagram for implementing a core acquisition option of broadcast content;

FIGS. 9a and 9b are block diagrams for implementing a core playback option of stand-alone devices;

FIG. 10 is a block diagram for implementing a core playback option of networked devices;

FIG. 11 is a block diagram of a standard computer hard drive incorporating an integrated PDK-RDC (receiver/decoder circuit) for the purpose of enabling multiple methods of securing digital content;

FIG. 12 is a block diagram for implementing Drive-Level protection and Sector-Level protection in connection with the computer hard drive;

FIG. 13 is a flow chart of the logic executed by the PDK-RDC for implementing Drive-Level protection and Sector-Level protection;

FIG. 14 is a block diagram for implementing File-Level protection in connection with the computer hard drive; and

FIG. 15 is a block diagram for implementing Network-Level protection by expanding File-Level protection to a network environment.

While the invention is susceptible to various modifications and alternative forms, specific embodiments have been shown by way of example in the drawings and will be described in detail herein. However, it should be understood that the invention is not intended to be limited to the particular forms disclosed. Rather, the

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invention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the invention as defined by the appended claims.

DESCRIPTION OF SPECIFIC EMBODIMENTS

Turning now to the drawings and referring initially to FIG. 1, there is depicted a method of managing digital rights in accordance with the present invention. First, a new user requests a physical electronic key or data unit from a key provider (step 10). The key provider may offer a web site on the Internet, a toll free telephone number, and/or retail outlet where the key may be acquired. In addition, the key provider may allow a key to be requested in writing, preferably using a form designed by the key provider. In one model the user may acquire as many keys as desired, while in another model each user is only entitled to a single key.

Second, in response to the user's request for a physical key, the key provider establishes a new secure account for that new user in a secure user account database (step 12). The new account may include the following data fields: account number, password, software encryption key, user label, number of users (linked to account), address, telephone number, e-mail address, and custom fields. The custom fields may, for example, include demographic information such as the user's age, gender, marital status, income level, interests, hobbies, etc. The physical key may include the following data fields: user label, account number, software decryption key, and a custom storage area. The user label and the account number serve as a first activation code (or key code) for the acquired physical key. All data fields on the physical key, except for the user label, are preferably encrypted. To allow the user to view his or her account in the future, the user is preferably assigned a login name and the above-noted password.

Third, the key provider ships the physical electronic key to the new user via a package courier such as the U.S. Postal Service, United Parcel Service, or Federal Express (step 14). In one pricing model the physical key is sent to the user at no charge, while in another pricing model the physical key must be purchased by the

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user. If the physical key must be purchased by the user, either the user must provide credit/debit card information to the key provider in step 10 to pay with a credit/debit card, or the key provider includes an invoice with the shipped key in step 14.

FIG. 2 is a block diagram of a system for implementing steps 10, 12, and 14 of the method of managing digital rights. The system includes the new user 100, the key provider's web site 102, and the user account database 104.

Referring back to FIG. 1, fourth, the user transmits his or her activation code in the physical key to a digital content provider, who may have a cooperative relationship with the key provider, and requests to purchase digital content (music, video, or software) from that content provider (step 16). The content provider may offer a web site on the Internet containing a listing of digital content available for purchase. To transmit the activation code to the content provider via the web site, the user may manually enter the activation code onto a secure page of the web site. Alternatively, the transmission of the activation code may be automatically implemented with wireless technology. Specifically, the user's computer may be outfitted with a detector that detects the activation code in the user's physical key and then relays the activation code to the content provider via the web site. The content provider may be affiliated with the key provider or may be separate from the key provider but have an arrangement therewith.

Fifth, the content provider requests the key provider to verify the activation code transmitted by the user (step 18). The content provider may send this request to the key provider's web site. Sixth, the key provider in turn accesses the user's account in the user account database and determines whether the activation code is in fact valid (step 20). The key provider may also determine whether the activation code is associated with the user that transmitted the activation code to the content provider. If the activation code is rejected as being invalid, the content provider is so informed and the content provider in turn will not honor any request by the user to purchase digital content. If, however, the activation code is accepted as being valid, the content provider is so informed and the purchase transaction proceeds. As

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used herein, the term "key provider" generically refers to the entity or entities that manufacture, distribute, and validate the physical keys. These functions may actually be performed by multiple entities at different locations or by a single entity at a single location.

Seventh, after securing validation of the first activation code in the physical key, the content provider pulls the requested digital content from a digital content database/library, marks the digital content with a second activation code (or unlock code) associated with the first activation code in the physical key, and encrypts the marked digital content (step 22). The second activation code in the digital content may simply be the same as the first activation code in the physical key, but at least partially encrypted for security. In one embodiment, the "key-secured" content file includes the following data fields: user label, account number, and digital content. The user label and the account number serve as the second activation code for the digital content. If the content is merely for sampling (described in connection with FIG. 6), the file may include such additional data fields as a receiver/decoder circuit identification number, hour stamp, and life hours. All data fields on the content file, except for the user label, are preferably encrypted.

Eighth, the content provider delivers the encrypted digital content to the user (step 24). The encrypted digital content may be delivered by downloading the encrypted digital content to the user's computer while the user is online at the content provider's web site, by attaching the digital content to an e-mail addressed to the user, or by shipping a disk containing the encrypted digital content to the user via a package courier. The user may pay for the digital content either by providing credit/debit card information to the content provider in step 16 or by paying off of an invoice included with delivered digital content. If the digital content is delivered online, the user is preferably required to provide the credit/debit card information and have such information approved as a prerequisite to delivery of the digital content. If the user possesses more than one physical electronic key and would like the acquired digital content to function with each of the user's keys, all of the

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activation codes are applied to the digital content. The content provider charges the user based on the number of keys with which the user would like the digital content to function. For example, the user may be charged the same amount for each activation code, or may be charged a larger amount for one activation code and lesser amounts (e.g., surcharges) for additional activation codes.

FIG. 3 is a block diagram of a system for implementing steps 16, 18, 20, 22, and 24 of the method of managing digital rights. The system includes the new user 100, the content provider 106, the key provider's web site 102, the digital content database 108, and the acquired digital content 110.

Returning to FIG. 1, ninth, the user enters the encrypted digital content into a playing device of a type suitable for playing the digital content (step 26). The device may, for example, be an MP3 player, a personal computer, a DVD player, a CD player, a cellular phone, or other portable device. In one embodiment, the device contains a wireless transceiver adapted to receive a radio frequency signal transmitted by a corresponding wireless transceiver in the user's physical electronic key. The wireless transceiver in the device is optionally tracked and "secured" for audit purposes by permanently including a unique identifier assigned by the device manufacturer in the transceiver.

Tenth, with the user's physical electronic key within a short range (e.g., few meters) of the playing device, the playing device reads (1) the first activation code carried in a secure radio frequency signal transmitted by the transceiver in the physical key to the transceiver in the device and (2) the second activation code marked on the encrypted digital content (step 28). The device contains decryption software or hardware for decrypting the encrypted digital content to the extent necessary to read any encrypted portion of the second activation code.

Eleventh, the playing device compares the first activation code and the second activation code and determines whether the first activation code is associated with the second activation code (step 30). Steps 29 and 30 may be performed, for example, when the user presses a "play" button on the playing device or when the

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