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.
14/728,349	03/24/2020	10600046	RFID-085C1	5346

26797 7590 03/04/2020

LogicPatents, LLC
21701 Stevens Creek Boulevard, #284
CUPERTINO, CA 95015

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 438 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):

Xiangzhen Xie, Shenzhen, CHINA;
RFCyber Corporation, Fremont, CA;
Liang Seng Koh, Fremont, CA;
Hsin Pan, Fremont, CA;

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)

26797 7590 02/03/2020
LogicPatents, LLC
21701 Stevens Creek Boulevard, #284
CUPERTINO, CA 95015

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.

Joe Zheng	(Typed or printed name)
/ joe zheng /	(Signature)
02/04/2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/728,349	06/02/2015	Xiangzhen Xie	RFID-085C1	5346

TITLE OF INVENTION: Method and apparatus for mobile payments

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	05/04/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
HAYLES, ASHFORD S	3687	705-021000

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 Joe Zheng
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)

RFCyber Corporation, Frement, CA

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 / joe zheng / Date 02/04/2020

Typed or printed name Joe Zheng Registration No. 39,450

PTOL-85 Part B (08-18) Approved for use through 01/31/2020 OMB 0651-0033 U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

GOOG-1001
Google LLC v. RFCyber Corp. / Page 2 of 792

Electronic Patent Application Fee Transmittal

Application Number:	14728349
Filing Date:	02-Jun-2015
Title of Invention:	Method and apparatus for mobile payments
First Named Inventor/Applicant Name:	Xiangzhen Xie
Filer:	Joe Zheng
Attorney Docket Number:	RFID-085C1

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:	38481727
Application Number:	14728349
International Application Number:	
Confirmation Number:	5346
Title of Invention:	Method and apparatus for mobile payments
First Named Inventor/Applicant Name:	Xiangzhen Xie
Customer Number:	26797
Filer:	Joe Zheng
Filer Authorized By:	
Attorney Docket Number:	RFID-085C1
Receipt Date:	04-FEB-2020
Filing Date:	02-JUN-2015
Time Stamp:	02:16:52
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	E202024317282427
Deposit Account	502436
Authorized User	Joe Zheng
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

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)	FeeTransmittal.pdf	322317 43820ceffc8d439120138c6d8f2ce2db178f6f64	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30213 98c731c1c0e3e0e8694a611f0c264383081b5d40	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	352530		

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
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

26797 7590 02/03/2020

LogicPatents, LLC
21701 Stevens Creek Boulevard, #284
CUPERTINO, CA 95015

EXAMINER	
HAYLES, ASHFORD S	
ART UNIT	PAPER NUMBER
3687	

DATE MAILED: 02/03/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/728,349	06/02/2015	Xiangzhen Xie	RFID-085C1	5346

TITLE OF INVENTION: Method and apparatus for mobile payments

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	05/04/2020

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.

PTOL-85 (Rev. 02/11)

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)

26797 7590 02/03/2020
LogicPatents, LLC
21701 Stevens Creek Boulevard, #284
CUPERTINO, CA 95015

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.
14/728,349	06/02/2015	Xiangzhen Xie	RFID-085C1	5346

TITLE OF INVENTION: Method and apparatus for mobile payments

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	05/04/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
HAYLES, ASHFORD S	3687	705-021000

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.
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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. _____

GOOG-1001
Google LLC v. RFCyber Corp. / Page 8 of 792

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
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/728,349	06/02/2015	Xiangzhen Xie	RFID-085C1	5346

26797 7590 02/03/2020

LogicPatents, LLC
21701 Stevens Creek Boulevard, #284
CUPERTINO, CA 95015

EXAMINER	
HAYLES, ASHFORD S	

ART UNIT	PAPER NUMBER
3687	

DATE MAILED: 02/03/2020

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.

PTOL-85 (Rev. 02/11)

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.** 14/728,349	**Applicant(s)** Xie et al.	
	Examiner ASHFORD S HAYLES	**Art Unit** 3687	**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 1/7/2020.
   ☐ 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 1-20 . 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 _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☑ Interview Summary (PTO-413), Paper No./Mail Date. 1/7/2020.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☑ Other See Continuation Sheet.

/ASHFORD S HAYLES/
Primary Examiner, Art Unit 3687

Continuation of Attachment(s) 7. Other: E-MAIL CORRESPONDANCE, PROPOSED AMENDMENTS

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Joe Zheng on January 7, 2020.

The application has been amended as follows:

As per Claim 1, (*Currently amended*) A method for mobile payment, the method comprising:

causing a mobile device to capture data directly from a tag physically presented

thereto, wherein the tag receives the data directly from a POS device and allows the mobile device to capture the data ~~therefrom~~, the data embedded in the tag includes an electronic invoice and settlement information with a merchant associated with the POS device;

extracting the electronic invoice from the captured data in the mobile device; displaying the electronic invoice on a display of the mobile device to show an

amount to be paid by a user of the mobile device, wherein the mobile device is configured to execute an installed application therein to capture the data from the tag;

receiving an entry by the mobile device, the entry including the amount for the invoice and optionally an additional amount from the user ~~when needed~~;

calculating a total amount by adding the additional amount to the amount in the electronic invoice;

generating a payment request in the mobile device in response to the electronic invoice after the user has chosen an electronic purse (e-purse) maintained locally in the mobile device;

displaying the electronic invoice on the display of the mobile device for the user to verify the payment request

verifying the total amount with a balance in the e-purse, wherein said verifying the total amount with a balance in the e-purse is performed within the mobile device without sending the payment request to a payment gateway;

displaying a denial of the payment request when the balance is less than the total amount;

sending the payment request from the mobile device to the payment gateway, wherein the balance is sufficient to honor the payment request, the payment gateway sends a message directly to the POS device that a monetary transaction per the payment request sent from the mobile device has been successfully completed; and

displaying a confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount.

As per Claim 2, (*Previously amended*) The method as recited in claim 1, wherein said causing a mobile device to capture data directly from a tag physically presented thereto includes placing the mobile device near the tag.

As per Claim 3, (*Previously amended*) The method as recited in claim 2, wherein the POS device provides security and authentication to generate the electronic bill and transfer the data to the tag.

As per Claim 4, (*Currently amended*) The method as recited in claim 1, wherein said displaying the electronic invoice on the display of the mobile device comprises:

allowing the user to verify the amount in the electronic invoice and make a change to the amount when needed; and

paying the total amount with the e-purse ~~chosen paying instrument, wherein the chosen paying instrument is selected from a group consisting of an electronic wallet already created in the mobile device, a traditional credit or debit card, and an electronic transfer~~.

As per Claim 5, (*Previously amended*) The method as recited in claim 1 further comprising: causing the mobile device to execute an installed module upon detecting the POS device in a near field of the mobile device, wherein the installed module is executed to receive the data directly from the tag carrying the electronic invoice and the settlement information.

As per Claim 6, (*Previously amended*) The method as recited in claim 5, wherein the data further includes security information about the merchant associated with the POS device, the security information includes an account and bank information of the registered merchant, an identifier of the tag or the POS device.

As per Claim 7, (*Currently amended*) The method as recited in claim 6, wherein said sending the payment request from the mobile device to the payment gateway comprises:

transporting the payment request over a secured channel to the payment gateway, wherein the payment gateway is configured to perform the monetary transaction per the payment request by deducting the total amount from the e-purse and generates the confirmation ~~an electronic notification~~ for ~~sending to~~ the POS device.

As per Claim 8, (*Previously amended*) The method as recited in claim 7, wherein said displaying the electronic invoice on the display of the mobile device comprises:

allowing the user to modify the amount in the electronic invoice when needed; paying the total amount with an electronic payment provided by an installed module in the mobile device, wherein the installed module in the mobile device is configured to generate the payment request including the data pertaining to the electronic invoice to the payment gateway for processing.

As per Claim 9, (*Previously amended*) The method as recited in claim 8, wherein data exchange between the mobile device and the payment gateway is conducted in a secured channel established therebetween.

As per Claim 10, (*Previously amended*) The method as recited in claim 9, wherein the mobile device includes a secure element providing security and confidentiality required to support secure data communication between the mobile device and the payment gateway.

As per Claim 11, (*Currently amended*) The method as recited in claim 9, wherein said displaying a confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount comprises ~~notifying the user in the mobile device that then monetary transaction per the payment request has been successfully completed with the POS device comprising~~: sending a notification of successful payment to the merchant of the POS device.

As per Claim 12, (*Currently amended*) A method for mobile payment, the method comprising:
generating a set of data in a point of sale (POS) device, the data including an electronic invoice and settlement information with a merchant associated with the POS device;
embedding the data directly to a tag;
presenting the tag to a mobile device;
causing the mobile device to capture the data from the tag, wherein the mobile device executes an installed application therein to retrieve an amount in the electronic invoice from the data and generate a payment request in response to the captured data, the payment request is denied in the mobile device when the amount is more than a balance of an electronic purse (e-purse) maintained locally in the mobile device, the payment request is sent to a payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device; and
receiving a message in the POS device directly from the payment gateway that the electronic invoice has been settled, wherein the payment gateway is configured to cause the balance in the e-purse reduced by the amount.

As per Claim 13, (*Previously amended*) The method as recited in claim 12, wherein the tag is presented near the mobile device to allow ~~the~~ a user of the mobile device to use the mobile device to capture the data.

As per Claim 14, (*Previously amended*) The method as recited in claim 13, wherein the POS device is provided with security and authentication to generate the electronic invoice.

As per Claim 15, (*Previously amended*) The method as recited in claim 14, wherein the data includes security information of the merchant associated with the POS device, the security information includes an account and bank information, an identifier of the tag or the POS device.

As per Claim 16, (*Previously amended*) The method as recited in claim 15, wherein the message received in the POS device shows how much has been received from the user of the mobile device.

As per Claim 17, (*Previously amended*) The method as recited in claim 12, wherein data exchange between the mobile device and the payment gateway is conducted in a secured channel established between the mobile device and the payment gateway.

As per Claim 18, (*Currently amended*) A system for mobile payment, the system comprising: a point of sale (POS) device provided to generate a set of data including an electronic invoice upon receiving an entry, wherein the data including the electronic invoice and settlement information is transferred to a tag, a mobile device is executing a module configured to capture the data directly from the tag physically presented thereto, extract an amount expressed in the electronic invoice and display the amount in the mobile device; and wherein the POS device receives an electronic notification directly from a payment gateway that the electronic invoice has been settled for a total amount including an additional amount and the amount expressed in the electronic invoice, the additional amount is added optionally by the user, after the user of the mobile devices verifies the electronic invoice displayed on the mobile device and authorizes a payment to the electronic invoice, the mobile device is configured to generate a payment request, wherein the payment request is denied within the mobile device without sending the payment request to the payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device; the payment request is sent to the payment gateway to proceed with a payment according to the payment request when the amount is more than the balance of the e-purse.

As per Claim 19, (*Previously amended*) The system as recited in claim 18, wherein the data from the POS device includes an account and bank information of the merchant of the POS device.

As per Claim 20, (*Previously amended*) The system as recited in claim 19, wherein the payment gateway acts to deduct an amount equivalent to the total amount from an account associated with the user of the mobile devices and generates the electronic notification for the POS device.

Drawings

Drawings submitted on June 23, 2015 are sufficient.

Reasons for Allowance

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

The most remarkable prior arts on record are to Gallagher U.S. Patent Application Publication 2011/01736060, Brendell et al. U.S. Patent Application Publication 2013/0048717 and Lu et al. WO 2012000438.

Gallagher is directed to a guest check presenter for a food establishment is provided. The guest check presenter includes a holder for holding a guest check information and a wireless communication device attached to the holder and adapted to communicate with a wireless mobile device of the guest. The wireless communication device contains a guest check identifier that identifies the guest check. The guest check identifier is adapted to be retrieved by the wireless mobile device of the guest for use in providing various useful mobile services that are associated with the food establishment or the food consumed by the guest. Thus, the check presenter is used as a platform for providing such mobile services as mobile payment of the guest check and loyalty coupons. Gallagher. *Abstract*.

Brendall et al. is directed to a coordination server of a contactless payment system may receive a total bill of purchases for a customer from a merchant POS terminal, associate the total bill of purchases with a unique identifier of an RFID tag of a check presenter, and receive notification that payment of the total bill of purchases is authorized. The coordination server may receive the unique identifier and payment information from a contactless-enabled device, and transmit the payment information and the total bill to the merchant POS terminal for transmittal to a merchant acquirer for completion of the transaction under business as usual standards. In one embodiment, the coordination server transmits the payment information and the total bill to a merchant acquirer, which then routes the payment request to an appropriate payment network. In another embodiment, the coordination

server transmits the payment information and the total bill directly to the appropriate payment network. Brendell et al., *Abstract*.

Lu et al. is directed to a (mobile payment) transaction process more secure, and prevents illegal means from being used to modify the compound application special file in the CPU card, and further simplifies the implementation of the discount operation. The compound application-specific file can be preset, and easily managed, thereby saving management costs. *Objective*

Gallagher, Brendell et al. nor Lu et al. teach the limitations of the claimed invention, sending the payment request from the mobile device to the payment gateway, wherein the balance is sufficient to honor the payment request, the payment gateway sends a message directly to the POS device that a monetary transaction per the payment request sent from the mobile device has been successfully completed. Moreover, none of the prior art of record remedies the deficiencies found in Gallagher, Brendell et al. and Lu et al. or could be combined with any other reference to produce the claimed invention.

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

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Florek et al. U.S. Patent Application Publication 2011/0112968 discusses a POS payment terminal and a method of direct debit payment transaction using a mobile communication device such as a mobile phone.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASHFORD S HAYLES whose telephone number is (571)270-5106. The examiner can normally be reached on M-F 6AM-4PM with Flex.

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, Fahd Obeid can be reached on 5712703324. 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.

/ASHFORD S HAYLES/
Primary Examiner, Art Unit 3687

Applicant-Initiated Interview Summary	**Application No.** 14/728,349	**Applicant(s)** Xie et al.	
	Examiner ASHFORD S HAYLES	**Art Unit** 3687	**AIA (FITF) Status** No

All participants (applicant, applicants representative, PTO personnel):

(1) ASHFORD S. HAYLES. (3) _____.

(2) JOE ZHENG. (4) _____.

Date of Interview: 07 January 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: WO 2012000438.

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...)

Discussed allowable subject matter and prior art reference and amendments that would overcome prior art references. Attorney planned to review references and provide amendments. Upon follow-up agreement was reached and Examiner Amendments have been entered..

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

/ASHFORD S HAYLES/ Primary Examiner, Art Unit 3687	

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.

Notice of References Cited	Application/Control No. 14/728,349	Applicant(s)/Patent Under Reexamination Xie et al.	
	Examiner ASHFORD S HAYLES	Art Unit 3687	Page 1 of 7

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-8601266-B2	12-2013	Aabye; Christian	G06F21/445	713/168
*	B	US-20100211504-A1	08-2010	Aabye; Christian	G06Q20/10	705/44
*	C	US-20130171929-A1	07-2013	ADAMS; NEIL PATRICK	H04W4/80	455/41.1
*	D	US-8172135-B1	05-2012	Aidasani; Dilip	G06Q20/4012	235/379
*	E	US-20120078792-A1	03-2012	Bacastow; Steven V.	G06Q20/3223	705/44
*	F	US-20130144731-A1	06-2013	Baldwin; Christopher F.	G06Q20/20	705/17
*	G	US-20130060618-A1	03-2013	Barton; Loren	G06Q20/3223	705/14.23
*	H	US-20110087610-A1	04-2011	Batada; Asif	G06F21/72	705/318
*	I	US-20090164330-A1	06-2009	Bishop; Fred A.	G06Q20/02	705/19
*	J	US-20090289106-A1	11-2009	Bishop; Fred	G06Q20/02	235/379
*	K	US-20130054413-A1	02-2013	Brendell; Brian	G06Q20/3276	705/26.41
*	L	US-20130054412-A1	02-2013	Brendell; Brian	G06Q20/12	705/26.41
*	M	US-20130048717-A1	02-2013	Brendell; Brian	G06Q20/325	235/380

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N	WO-2012000438-A1	01-2012	WO	YU HUAZHANG	G07F7/0866
	O	JP-11073542-A	03-1999	JP	NAKAYA, MITSURU	
	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.

Notice of References Cited	Application/Control No. 14/728,349	Applicant(s)/Patent Under Reexamination Xie et al.	
	Examiner ASHFORD S HAYLES	Art Unit 3687	Page 2 of 7

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20100325048-A1	12-2010	Carlson; Mark	G06Q20/20	705/44
*	B	US-20120304255-A1	11-2012	Carnes; Daniel Wilson	H04L9/3234	726/3
*	C	US-20130103574-A1	04-2013	Conrad; Abbe Elizabeth	G06Q20/36	705/39
*	D	US-8577731-B1	11-2013	Cope; Warren B.	G06Q20/3224	705/17
*	E	US-20110113473-A1	05-2011	Corda; Alexandre	G06Q20/32	726/3
*	F	US-20080126260-A1	05-2008	Cox; Mark A.	G06Q20/20	705/67
*	G	US-20140095382-A1	04-2014	Desai; Mehul	G06Q20/322	705/41
*	H	US-20130246258-A1	09-2013	Dessert; Robert	G06Q20/40	705/41
*	I	US-20120290376-A1	11-2012	Dryer; Trevor D.	G06Q20/3278	705/14.23
*	J	US-20120239566-A1	09-2012	Everett; David	G06Q20/10	705/41
*	K	US-20130203345-A1	08-2013	Fisher; Michelle	H04B11/00	455/41.1
*	L	US-20110112968-A1	05-2011	FLOREK; Miroslav	G06Q20/20	705/50
*	M	US-20100274726-A1	10-2010	Florek; Miroslav	G06Q20/20	705/72

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

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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20100274677-A1	10-2010	Florek; Miroslav	G06Q20/10	705/16
*	B	US-20110173060-A1	07-2011	Gallagher; Kevin N.	G06Q20/0425	705/14.27
*	C	US-20040127256-A1	07-2004	Goldthwaite, Scott	G06K7/0004	455/558
*	D	US-8565676-B2	10-2013	Gormley; Georgiana	H04M1/274516	455/41.1
*	E	US-20130140360-A1	06-2013	GRAYLIN; WILL W.	G06Q20/322	235/380
*	F	US-20120253974-A1	10-2012	Haikonen; Mikko Sakari	G06Q20/29	705/26.41
*	G	US-20070131780-A1	06-2007	Ho; Chun-Hsin	G06K19/07	235/492
*	H	US-20120143702-A1	06-2012	Ho; Yu-Ping	G06Q20/10	705/16
*	I	US-20120072309-A1	03-2012	Hultberg; Stefan	G06Q20/32	705/26.41
*	J	US-8341083-B1	12-2012	Jain; Deepak	H04L63/083	705/41
*	K	US-20090248579-A1	10-2009	Kaminski; Ronald	G06Q20/0855	705/67
*	L	US-20130024383-A1	01-2013	Kannappan; Sasikumar	G06Q20/40	705/71
*	M	US-20110251952-A1	10-2011	Kelly; Mary L.	G06Q20/14	705/40

FOREIGN PATENT DOCUMENTS

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

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*		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.

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20130124349-A1	05-2013	Khan; Mohammad	G06Q20/36	705/21
*	B	US-20130138517-A1	05-2013	Khan; Sameer Mohamed	G06Q30/00	705/16
*	C	US-20120116963-A1	05-2012	Klein; Charmaine	G06Q20/102	705/40
*	D	US-20130173736-A1	07-2013	KRZEMINSKI; Marek	H04W12/10	709/213
*	E	US-20140012751-A1	01-2014	Kuhn; Stephen	G06Q20/36	705/41
*	F	US-20130221092-A1	08-2013	Kushevsky; Mikhail	G06Q20/3672	235/379
*	G	US-20130226812-A1	08-2013	Landrok; Mads	G06Q20/32	705/67
*	H	US-20130132219-A1	05-2013	Liberty; Michael A.	G06Q20/202	705/21
*	I	US-20120296819-A1	11-2012	Lu; Zhou	G06Q20/352	705/41
*	J	US-20130151400-A1	06-2013	Makhotin; Oleg	H04W12/08	705/39
*	K	US-20130160134-A1	06-2013	MARCOVECCHIO; Vincenzo Kazimierz	G06Q20/3563	726/26
*	L	US-20090307140-A1	12-2009	Mardikar; Upendra	G06Q20/1085	705/71
*	M	US-20110042456-A1	02-2011	Masaryk; Michal	G06Q20/20	235/380

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
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NON-PATENT DOCUMENTS

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

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20110155800-A1	06-2011	Mastrangelo; Edward L.F.	G06Q20/352	235/379
*	B	US-20130346305-A1	12-2013	Mendes; Rui	G06Q20/351	705/41
*	C	US-20130218766-A1	08-2013	Mueller; Michael	G06Q20/32	705/42
*	D	US-20120290472-A1	11-2012	MULLEN; Jeffrey D.	G06Q10/00	705/39
*	E	US-20110180610-A1	07-2011	Narendra; Siva G.	G06K19/0701	235/492
*	F	US-20120178433-A1	07-2012	Narendra; Siva G.	G06K19/06187	455/420
*	G	US-20080093467-A1	04-2008	Narendra; Siva G.	G06Q20/341	235/492
*	H	US-20120118952-A1	05-2012	Norair; John Peter	G06K7/0008	235/380
*	I	US-20130138959-A1	05-2013	PELLY; Nicholas Julian	H04L9/083	713/168
*	J	US-20110078081-A1	03-2011	Pirzadeh; Kiushan	G06Q20/32	705/44
*	K	US-8270578-B2	09-2012	Poniatowski; Paul	G06Q30/06	235/462.45
*	L	US-20110117839-A1	05-2011	Rhelimi; Alain	G06K19/0719	455/41.1
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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*	A	US-7962369-B2	06-2011	Rosenberg; Einar	G06Q20/20	705/26.1
*	B	US-20130254102-A1	09-2013	Royyuru; Vijay Kumar	G06Q20/382	705/39
*	C	US-20130097031-A1	04-2013	Royyuru; Vijay Kumar	G06Q20/20	705/16
*	D	US-20110066550-A1	03-2011	Shank; Clinton L.	G06Q20/1085	705/43
*	E	US-20130339253-A1	12-2013	Sincai; Dan Moshe	G06Q20/3227	705/71
*	F	US-20130152185-A1	06-2013	Singh; Ravi	G06F21/35	726/9
*	G	US-20100114773-A1	05-2010	Skowronek; Daniel P.	G06Q20/40	705/44
*	H	US-20130097080-A1	04-2013	Smets; Patrik	G06T1/20	705/44
*	I	US-20130200999-A1	08-2013	Spodak; Douglas A.	G05B1/01	340/5.65
*	J	US-20100306076-A1	12-2010	Taveau; Sebastien	G06Q20/02	705/26.8
*	K	US-20140013406-A1	01-2014	Tremlet; Christophe	G06F21/32	726/5
*	L	US-20130151292-A1	06-2013	Van Deloo; Lori	G06Q10/02	705/5
*	M	US-20120166333-A1	06-2012	von Behren; Rob	G06Q20/10	705/41

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	U	
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*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.

Notice of References Cited	Application/Control No. 14/728,349	Applicant(s)/Patent Under Reexamination Xie et al.	
	Examiner ASHFORD S HAYLES	Art Unit 3687	Page 7 of 7

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*	A	US-8196131-B1	06-2012	von Behren; Rob	G06Q20/367	705/64
*	B	US-20130334318-A1	12-2013	Wakerly; Michael John	G06Q20/3576	235/492
*	C	US-20060085266-A1	04-2006	Wei; Chang	G06Q50/12	705/15
*	D	US-20110258120-A1	10-2011	Weiss; Kenneth P.	G06F21/32	705/44
*	E	US-20080167017-A1	07-2008	Wentker; Dave	G06Q20/32	455/414.1
*	F	US-20130138518-A1	05-2013	White; Spencer Neil	G06Q20/204	705/16
*	G	US-20100213253-A1	08-2010	Wollbrand; Karin	G06K19/07769	235/380
*	H	US-20120317628-A1	12-2012	Yeager; C. Douglas	G06Q20/204	726/5
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	K					
	L					
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/728,349	Xie et al.
	Examiner	Art Unit
	ASHFORD S HAYLES	3687

CPC - Searched*		
Symbol	Date	Examiner
(G06Q20/3278 or G06Q20/204 or G06Q20/3223 or G06Q20/20 or G06Q30/04 or G06Q20/102 or G06Q20/352 or G06Q20/3552 or G06Q20/3672 or G06Q20/40 or G06Q30/0601 or G06Q20/3227)	01/08/2020	ASH

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
705	21	09/21/2017	ASH

* 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
EAST (SEE ATTACHMENTS)	09/21/2017	ASH
UPDATED EAST (SEE ATTACHMENTS)	04/06/2018	ASH
COMMON CITATION (http://ccd.fiveipoffices.org) (SEE ATTACHMENTS)	04/06/2018	ASH
UPDATED EAST (SEE ATTACHMENTS)	09/11/2018	ASH
UPDATED EAST (SEE ATTACHED)	03/19/2019	ASH
UPDATED EAST (SEE ATTACHED)	08/22/2019	ASH
UPDATED EAST (SEE ATTACHED)	01/08/2020	ASH

/ASHFORD S HAYLES/ Primary Examiner, Art Unit 3687	

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Google LLC v. RFCyber Corp. / Page 31 of 792

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/728,349	Xie et al.
	Examiner	Art Unit
	ASHFORD S HAYLES	3687

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
G06Q	20/3278, 20/204, 20/3223, 20/20, 30/04, 20/102, 20 /352, 20/3552, 20/3672, 20/40, 30/0601, 20/3227	01/08/2020	ASH

/ASHFORD S HAYLES/ Primary Examiner, Art Unit 3687	

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Google LLC v. RFCyber Corp. / Page 32 of 792

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/728,349	Xie et al.
	Examiner	Art Unit
	ASHFORD S HAYLES	3687

CPC							
Symbol						Type	Version
G06Q	/	20	/	3278		F	2013-01-01
G06Q	/	20	/	3227		I	2013-01-01
G06Q	/	20	/	102		I	2013-01-01
G06Q	/	20	/	352		I	2013-01-01
G06Q	/	20	/	3552		I	2013-01-01
G06Q	/	20	/	3672		I	2013-01-01
G06Q	/	20	/	40		I	2013-01-01
G06Q	/	30	/	0601		I	2013-01-01
G06Q	/	20	/	20		I	2013-01-01
G06Q	/	30	/	04		I	2013-01-01
G06Q	/	20	/	204		I	2013-01-01
G06Q	/	20	/	3223		I	2013-01-01

CPC Combination Sets								
Symbol						Type	Set	Ranking	Version
	/		/						

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/ASHFORD S HAYLES/ Primary Examiner, Art Unit 3687	08 January 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200108

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/728,349	Xie et al.
	Examiner	Art Unit
	ASHFORD S HAYLES	3687

INTERNATIONAL CLASSIFICATION				
CLAIMED				
G06Q20/32	/	20	/	32

NON-CLAIMED				
G06Q20/10	/	20	/	10
G06Q20/34	/	20	/	34
G06Q20/36	/	20	/	36
G06Q20/40	/	20	/	40
G06Q30/06	/	30	/	06
G06Q20/20	/	20	/	20
G06Q30/04	/	30	/	04

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/ASHFORD S HAYLES/ Primary Examiner, Art Unit 3687	08 January 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20200108

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14/728,349	Xie et al.
	Examiner	Art Unit
	ASHFORD S HAYLES	3687

☐ 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	10	10	19	19										
2	2	11	11	20	20										
3	3	12	12												
4	4	13	13												
5	5	14	14												
6	6	15	15												
7	7	16	16												
8	8	17	17												
9	9	18	18												

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/ASHFORD S HAYLES/ Primary Examiner, Art Unit 3687	08 January 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

U.S. Patent and Trademark Office

Part of Paper No.: 20200108

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Bibliographic Data

Application No: 14/728,349

Foreign Priority claimed: ○ Yes ◉ No

35 USC 119 (a-d) conditions met: ☐ Yes ☑ No ☐ Met After Allowance

Verified and Acknowledged: /ASHFORD S HAYLES/ (Examiner's Signature) | ASH (Initials)

Title: Method and apparatus for mobile payments

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
06/02/2015	705	3687	RFID-085C1
RULE			

APPLICANTS

RFCyber Corporation, Fremont, CA, UNITED STATES

INVENTORS

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Liang Seng Koh Fremont, CA, UNITED STATES

Hsin Pan Fremont, CA, UNITED STATES

CONTINUING DATA

This application is a CON of 13853937 03/29/2013 PAT 9047601

13853937 has PRO of 61618802 04/01/2012

13853937 is a CIP of 13350832 01/16/2012ABN

13350832 is a CIP of 11534653 09/24/2006 PAT 8118218

FOREIGN APPLICATIONS

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	758	(electronic near (purse or wallet)) and NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/13 06:44
S2	138	S1 and emulat$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/13 06:45
S3	137	S2 and (app or application or applet)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/13 06:45
S4	86	S3 and PIN	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/13 06:45
S5	43	S4 and POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/13 06:45
S6	3	(("20130124351") or ("20080011833") or ("20130132219")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/04/22 17:49
S7	156	(mobile or portable or wireless) near (POS) and NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/23 16:54
S8	34	(mobile or portable or wireless) near (POS) with NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2014/04/23 16:54

			DERWENT; IBM_TDB			
S9	0	(smartcard) near (POS) with NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/23 17:00
S10	2	(smartcard) near (POS) and NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/23 17:00
S11	0	(smartcard) near ("transaction terminal") and NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/23 17:05
S12	76	(smartcard) near NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/23 17:05
S13	40	S12 and POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/23 17:06
S14	98	("smart card" or "chip card" or EMV) near (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/23 17:11
S15	38	(contactless) near (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/23 17:17
S16	217	(contactless) near (POS or payment or transaction) and (electronic or digital) near (receipt or bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/24 10:18
S17	217	((contactless) near (POS or payment or transaction)) and (electronic or digital) near (receipt or bill or invoice)	US-PGPUB; USPAT; USOCR;	OR	ON	2014/04/24 10:18

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S18	165	S17 and (provision$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/24 10:18
S19	124	S18 and NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/24 10:18
S20	58	S17 and (restaurant)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/24 10:30
S21	139	((contactless or NFC) near (POS or payment or transaction)) and (send$4 or transmit$4) near (receipt or bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/24 10:46
S22	59	S21 and (restaurant)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/24 10:46
S23	64	(wireless or mobile) near POS and (contactless near (transaction or payment))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/25 21:46
S24	4	POS near (contactless near (card))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/25 22:10
S25	1838	POS near ((card))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/25 22:11
S26	100	S25 and (contactless near (transaction	US-PGPUB;	OR	ON	2014/04/25

		or payment))	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			22:11
S27	16	(portable) near POS and ((nfc or contactless) near (transaction or payment))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 20:39
S28	17	folio and nfc	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 21:33
S29	0	(restaurant near folio) and nfc	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 21:37
S30	273	(restaurant or table) and (nfc near (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 21:38
S31	165	S30 and provision$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 21:38
S32	55	S31 and emulat$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 21:39
S33	32	proximity near mobile near payment	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 21:46
S34	403	(mobile near (transaction or payment)) and (smartcard)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2014/04/26 21:58

			IBM_TDB			
S35	29	(mobile near (transaction or payment)) with (smartcard)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 21:59
S36	0	(smartcard-smartcard) near (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 22:14
S37	9	(mobile near phone) with (smartcard)near (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 22:14
S38	2	(mobile near phone) near (transaction or payment) and (smartcard)near (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 22:27
S39	0	(mobile near phone) near (transaction or payment) and (smartcard)near (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 22:28
S40	9	(mobile near phone) and (smartcard)near (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 22:29
S41	67	(person-person) or (peer-peer) and (smartcard near (transaction or payment))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 22:35
S42	4	(smartcard or chipcard) and (POS near emulat$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 22:48
S43	9	(nfc) and (POS near emulat$4)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2014/04/26 22:49

			EPO; JPO; DERWENT; IBM_TDB			
S44	0	proximity near smartcard near payment	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/26 22:59
S45	3	"20130124351"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 06:04
S46	54	(portable or mobile or slim or wireless) near (POS or "transaction terminal") and (nfc or emv or smartcard) near (reader)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 06:14
S47	67	(portable or mobile or slim or wireless) near (nfc or emv or smartcard) near (POS or "transaction terminal" or reader)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 06:17
S48	123	(portable or mobile or slim or wireless) near (nfc or emv or smartcard or contactless) near (POS or "transaction terminal" or reader)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 06:25
S49	0	(portable or mobile or slim or wireless) near (rfid) near (POS or "transaction terminal")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 07:22
S50	99	(rfid) near (POS or "transaction terminal")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:18
S51	598	(portable or mobile or slim or wireless) near (nfc or emv or smartcard or contactless) and (mobile or wireless or cellular) near (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:19
S52	104	(portable or mobile or slim or wireless) near (nfc or emv or smartcard or	US-PGPUB; USPAT;	OR	ON	2014/04/29 09:21

		contactless) near (device or terminal) and (mobile or wireless or cellular) near (payment or transaction)	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S53	11	(portable or mobile or slim or wireless) near (nfc or emv or smartcard or contactless) near (device or terminal) and (digital or electronic) near (bill or invoice or check)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:28
S54	6	(portable or mobile or wireless) near (contactless) near (transaction or payment) near (device or terminal)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:32
S55	0	S51 and (person-person or peer-peer) near (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:42
S56	5	(person-person or peer-peer) near (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:42
S57	0	("peer to peer") near (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:42
S58	1128	(peer) near (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:43
S59	133	S58 and (nfc or emv or smartcard or contactless) near (device or terminal)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:43
S60	10	S59 and (send$4 or transmit$4) near (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 09:49

S61	550	(portable or mobile or slim or wireless) near (nfc or emv or smartcard or contactless) near (device or terminal or scanner)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 10:05
S62	1	S61 and (send$4 or transmit$4) near (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 10:05
S63	0	("2013/0221092").URPN.	USPAT	OR	ON	2014/04/29 11:16
S64	229	(mobile or cellular near phone) and (smartcard)near (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 11:27
S65	180	((mobile or cellular) near phone) and (smartcard)near (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 11:27
S66	1	S65 and (send$4 or transmit$4) near (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 11:28
S67	46	S65 and emulat$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 11:29
S68	1776	(electronic near (transaction or payment) near card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 11:32
S69	397	S68 and (nfc or emv or smartcard or contactless)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/04/29 11:32
S70	49	S69 and (send$4 or transmit$4) near (bill or invoice)	US-PGPUB; USPAT; USOCR;	OR	ON	2014/04/29 11:32

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S71	3	"20130024383"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 07:06
S72	3	"20130132219"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 09:14
S73	258	TSM with (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 09:32
S74	161	S73 and (nfc or emv or smartcard or chipcard)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 09:32
S75	14	S74 and SAM	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 09:33
S76	147	S74 and "secure element"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 09:33
S77	2	"20130218766"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 11:58
S78	41	(TSM or "trusted service") and (transaction or payment) near sett$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 13:56
S79	3	13/245498	US-PGPUB;	OR	ON	2014/05/02

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			13:59
S80	531	provision$4 near (POS or merchant or vendor)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 14:07
S81	3	S80 and (TSM or "trusted service") and (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 14:08
S82	2	12/563444	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 18:16
S83	27	(TSM or "trusted service") and (transaction or payment) near settl$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 18:45
S84	5	(TSM or "trusted service") and (purchase) near settl$4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 19:55
S85	88	(TSM or "trusted service") and (verif$4 or confirm$4) near (purchase or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 19:56
S86	34	S85 and "secure element"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/02 19:58
S87	393	(TSM or "trusted service") and (purchase or transaction) near (process$4 or settl$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2014/05/04 12:17

			IBM_TDB			
S88	152	S87 and (smartcard or chipcard or nfc)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/04 12:19
S89	131	S88 and (secure near element)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/04 12:19
S90	58	S89 and (electronic near (purse or wallet))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/04 12:20
S91	19	S89 and (SAM)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/04 12:20
S92	2230	(electronic near (purse or wallet)) and (payment or transaction) near (settl$4 or process$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/04 14:42
S93	41	S92 and (TSM)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/04 14:43
S94	59	(mobile near nfc near (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/10 17:20
S95	415	(smartcard or chipcard) and (mobile near (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/11 15:04
S96	54	S95 and (secure near element)	US-PGPUB; USPAT; USOCR; FPRS;	OR	ON	2014/05/11 15:05

			EPO; JPO; DERWENT; IBM_TDB			
S97	53	S96 and (provisioning or personal$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/11 15:24
S98	25	S96 and (provisioning or personaliz$3)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/11 15:24
S99	78	(smartcard or chipcard) and (nfc near (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 15:16
S100	42	S99 and (payment near process$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 15:16
S101	248	(nfc with (invoic$4 or bill$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 22:13
S102	78	S101 and (mobile near (transaction or payment))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 22:14
S103	25	(nfc with mobile near (invoic$4 or bill$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 22:49
S104	0	(secure near element) and (mobile near (billing or invoic$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 22:52
S105	549	(secure near element) and ((billing or invoic$4))	US-PGPUB; USPAT;	OR	ON	2014/05/13 22:52

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S106	83	S105 and (mobile near (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/13 22:53
S107	41	(smartcard or chipcard) and ((storing or saving) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:07
S108	0	(nfc near (transaction or payment)) and ((storing or saving) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:08
S109	175	(nfc near (transaction or payment)) and ((bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:08
S110	0	(secure adj element) and ((storing or saving) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:09
S111	107	(secure adj element) and ((transmit$4 or receiv$4) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:09
S112	2	S111 and (nfc near (transaction or payment)) and ((bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:10
S113	2	S111 and (nfc near (transaction or payment))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:10

S114	106	(nfc near (transaction or payment)) and ((bill or invoice) near (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:10
S115	15	S114 and TSM	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:10
S116	589	(smartcard or chipcard or emv) and ((bill or invoice) near (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:12
S117	0	S116 and TSM	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:12
S118	246	S116 and trusted	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:12
S119	27	S116 and trusted near service	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:12
S120	55	(smartcard or chipcard or emv) with ((bill or invoice) near (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/14 23:14
S121	15	"security authentication module" and (electronic or virtual) near (purse or wallet)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/05/15 14:36
S122	10	"security authentication module" and (mobile near (purchase or payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2014/05/15 14:47

			DERWENT; IBM_TDB			
S123	66	(personal$4) near (secure adj element)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/02 14:59
S124	21	S123 and (identif$4 near issuer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/02 15:00
S125	2	"20120290376"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/02 16:15
S126	1	((identif$4 or match$4 or locat$4) near issuer) same ((match$4 or compar$4) near (device or element) near (ID or identif$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/03 14:16
S127	0	((identif$4 or match$4 or locat$4) near issuer) same ((match$4 or compar$4) near (secure adj element) near (ID or identif$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/03 14:17
S128	4	((identif$4 or match$4 or locat$4) near issuer) same ((secure adj element) near (ID or identif$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/03 14:18
S129	1	(mobile-mobile) near (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/03 14:40
S130	30	(mobile adj mobile) near (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/03 14:40
S131	1	S130 and (secure adj element)	US-PGPUB; USPAT; USOCR;	OR	ON	2014/10/03 14:41

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S132	1102	(smartcard or chipcard) and (fund adj transfer$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 15:55
S133	1	S132 and (personal$4 near (secure adj element))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 15:55
S134	97	S132 and (personal$6near (secure adj element))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 15:55
S135	1	S132 and (personal$6 near (secure adj element))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 15:55
S136	11	(Fund adj transfer) and (personal$6 near (secure adj element))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 15:56
S137	137	("20010011250" | "20010021927" | "20010027441" | "20010039657" | "20020004783" | "20020042776" | "20020068554" | "20020194138" | "20030023954" | "20030074579" | "20030140176" | "20040029569" | "20040030601" | "20040123152" | "20040128259" | "20040140351" | "20050001711" | "20050071418" | "20050091659" | "20050102679" | "20050149926" | "20050184163" | "20050184164" | "20050184165" | "20050188360" | "20050193218" | "20050222961" | "20060036570" | "20060041507" | "20060126831" | "20060165060" | "20060219774" | "20070067325" | "20070090195" | "20070135164" | "20070169043" | "20070226786" | "20080056501" | "20080073426" | "20080130902" | "20080162834" | "20080167988" | "20080208681" | "20080208762" | "20080270253" | "20090158028" |	US-PGPUB; USPAT; USOCR	OR	ON	2014/10/09 15:57

		"20090239512" | "20090261172" | "20090307142" | "20090312011" | "20100012732" | "20100042824" | "20100050271" | "20100058463" | "20100063893" | "20100088237" | "20100114731" | "20100131413" | "20100138518" | "20100203870" | "20100205432" | "20100207742" | "20100211507" | "20100250956" | "20100291896" | "20100291904" | "20100306076" | "20100306107" | "20100306531" | "20100323681" | "20100330958" | "20110016275" | "20110029671" | "20110072425" | "20110078081" | "20110087610" | "20110113473" | "20110131421" | "20120009873" | "20120129452" | "4851653" | "5221838" | "5991399" | "6005942" | "6092201" | "6101477" | "6141752" | "6151657" | "6230267" | "6233683" | "6402028" | "6434238" | "6484174" | "6601761" | "6609113" | "6633984" | "6647260" | "6792536").PN. OR ("6823520" | "6907608" | "6922835" | "6963270" | "7093122" | "7140549" | "7152782" | "7159180" | "7165727" | "7191288" | "7206769" | "7232073" | "7243853" | "7275685" | "7346170" | "7349885" | "7353396" | "7360691" | "7374099" | "7382762" | "7395535" | "7469151" | "7478389" | "7502946" | "7607175" | "7631346" | "7631810" | "7708198" | "7712658" | "7739731" | "7860486" | "7967215" | "8120460" | "8126806" | "8150767" | "8171137").PN. OR ("8429409").URPN.				
S138	0	contactless near (Fund adj transfer) and ((secure adj element))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 15:59
S139	0	contactless near (Fund adj transfer$4) and ((secure adj element))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 15:59
S140	11	(Fund adj transfer$4) and (personal$6 near (secure adj element))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:00
S141	9	S132 and (updat$4 or modify$4 or edit$4 or chang$4) near (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2014/10/09 16:02

			DERWENT; IBM_TDB			
S142	8	(contactless near (transaction or payment)) and (updat$4 or modify$4 or edit$4 or chang$4) near (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:03
S143	580	(contactless near (transaction or payment)) and (fund$1 near transfer$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:04
S144	9	mobile adj (contactless near (transaction or payment)) and (fund$1 near transfer$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:04
S145	5	(contactless) near (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:06
S146	1	(contactless near (transaction or payment)) and (virtual near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:08
S147	0	(contactless near (transaction or payment)) and (digital near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:09
S148	0	(EMV near (transaction or payment)) and (digital near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:12
S149	1	(EMV near (transaction or payment)) and ((digital or electronic or mobile or wireless)near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:13
S150	41	(EMV near (transaction or payment)) and ((bill or invoice))	US-PGPUB; USPAT; USOCR;	OR	ON	2014/10/09 16:13

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S151	56	((EMV or chipcard or smartcard) near (transaction or payment)) and ((digital or electronic or mobile or wireless)near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:13
S152	64	((contactless) near (transaction or payment)) and ((digital or electronic or mobile or wireless) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:17
S153	62	((contactless) near (transaction or payment)) and ((digital or electronic or paperless) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:53
S154	6410	((digital or electronic or paperless) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 16:54
S155	2	"20130151400"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 17:03
S156	0	((mobile or wireless or cellular) adj (contactless) near (purchase or transaction or payment)) and ((digital or electronic or mobile or wireless) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 17:05
S157	73	((mobile or wireless or cellular) adj (contactless) near (purchase or transaction or payment))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 17:05
S158	0	S157 and ((digital or electronic or mobile or wireless) near (bill or invoice))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2014/10/09 17:05
S159	0	S157 and ((digital or electronic or	US-PGPUB;	OR	ON	2014/10/09

		paperless) near (bill or invoice))	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			17:05
S181	215	(contactless or NFC or wireless or proximity) adj (billing or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/18 15:36
S182	8	S181 and (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/18 15:39
S183	52	(contactless or NFC or wireless or proximity) adj (payment or transaction or purchase) and (electronic adj (invoic$4 or billing))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/18 15:41
S184	886	(contactless or NFC or wireless or proximity) adj (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/18 18:00
S185	32	S184 and (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 18:01
S186	648	POS adj card	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 18:29
S187	7	S186 and (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 18:29
S188	1	cashless adj POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2017/09/18 18:31

			IBM_TDB			
S189	2	cashless near POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 18:32
S190	283	cashless same POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 18:32
S191	2	S190 and (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 18:35
S192	17804	(SIM) same (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:12
S193	564	(SIM adj card) same (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:12
S194	9	(SIM adj card) near (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:12
S195	11	("20010056398" | "20020097715" | "20020120537" | "20030060246" | "20070295803" | "20100030634" | "20100161478" | "6598028" | "7540408" | "7603312" | "8281991").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/09/18 20:15
S196	2	(card-to-card) near payment	US-PGPUB; USPAT; USOCR	OR	OFF	2017/09/18 20:17
S197	48	POS and generat$4 near (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:18
S198	3936	(mobile or m) adj POS	US-PGPUB;	OR	ON	2017/09/18

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			20:49
S199	4	S198 and generat$4 near (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:49
S200	16	S198 and (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:49
S201	114	S198 and (contactless or NFC or wireless or proximity) adj (payment or transaction or purchase)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/18 20:54
S202	109	S198 and (SIM adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:55
S203	114	S198 and ((nfc or contactless or chip) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:55
S204	8	S203 and (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:56
S205	234	merchant adj wallet	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 20:58
S206	51	merchant adj (mobile adj wallet)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2017/09/18 20:58

			IBM_TDB			
S207	222	((mobile or m) adj POS) and ((contactless or smart or chip) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 21:05
S208	69	((mobile or m) adj POS) same ((contactless or smart or chip) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 21:05
S209	1545	((payment or transaction) adj terminal) same ((contactless or smart or chip) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 21:16
S210	0	S209 and generat$4 near (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 21:16
S211	21	S209 and (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 21:16
S212	91	((peer-to-peer) adj (payment or transaction)) and (contactless or NFC or wireless or proximity) adj (card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/18 21:20
S213	58	S212 and (electronic or digital) near (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/18 21:21
S214	0	((peer-to-peer) adj (POS)) and (contactless or NFC or wireless or proximity) adj (card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/18 21:22
S215	1	((peer-to-peer) adj (POS))	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2017/09/18 21:22

			EPO; JPO; DERWENT; IBM_TDB			
S216	4	("20070233554" | "20100227553" | "20120092137" | "8229354").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2017/09/18 21:23
S217	1	(POS near emulat$4) and (contactless or NFC or wireless or proximity) adj (card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/18 21:24
S218	56	(POS near application) and (contactless or NFC or wireless or proximity) adj (card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 09:08
S219	11745	POS and SOC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 09:09
S220	2680	POS and (system near chip)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 09:10
S221	366	POS and (system-on-chip)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 09:10
S222	12	POS same (system-on-chip)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 09:10
S223	47	((touch or tap) adj (payment or transaction)) and (contactless or NFC or wireless or proximity) adj (card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 09:13
S224	8566	(contactless or NFC or wireless or proximity) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2017/09/19 09:21

			IBM_TDB			
S225	174	S224 and (electronic or digital) adj (bill$4 or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 09:22
S227	11	S224 and (e-bill)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 09:23
S228	8566	(contactless or NFC or wireless or proximity) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 12:15
S229	5	S228 and (electronic or digital) adj (statement)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 12:15
S230	887	(contactless or NFC or wireless or proximity) adj (POS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 12:17
S231	31	S230 and (electronic or digital) adj (bill$4 or invoic$4 or statement)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 12:18
S232	3518	(POS) and ((digital or electronic or e) adj (wallet or purse))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 12:23
S233	282	S232 and (electronic or digital) adj (bill$4 or invoic$4 or statement)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 12:23
S234	92	S233 and (contactless or NFC or wireless or proximity) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2017/09/19 12:23

			EPO; JPO; DERWENT; IBM_TDB			
S235	25	(POS) near ((digital or electronic or e) adj (wallet or purse))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 12:25
S236	189	(merchant) near ((digital or electronic or e) adj (wallet or purse))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 12:53
S237	4	"20070131780"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 16:42
S238	15	("2007/0131780").URPN.	USPAT	OR	OFF	2017/09/19 16:43
S239	184	(nfc or emv or smartcard or contactless or proxmity or chip) near (payment or purchase or transaction) and ((electronic or e or digital) adj (bill$4 or invoic$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 17:33
S240	59	(nfc or emv or smartcard or contactless or proxmity or chip) near (payment or purchase or transaction) same ((electronic or e or digital) adj (bill$4 or invoic$4))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/19 17:34
S241	4	("2003023080").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 18:17
S242	2	("20040127256").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 18:20
S243	1	(mobile or portable) adj POS and ((contactless or nfc or proximity) adj (adapter))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/19 18:21

S244	294	("2004/0127256").URPN.	USPAT	OR	OFF	2017/09/19 18:22
S245	0	(10/625823).APP.	USPAT; USOCR	OR	OFF	2017/09/19 18:25
S246	95	POS near (purse or wallet)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/25 07:00
S247	2	"20120290472"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 08:39
S248	1145	POS same (contactless or proximity or RFID) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 11:05
S249	44	S248 and (fund adj transfer$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 11:23
S250	76	S248 and ((merchant or vendor) near (purse or wallet))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 11:26
S251	67	S248 and ((merchant or vendor) adj (purse or wallet))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 11:26
S252	256	virtual adj POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 12:06
S253	14	S252 and (contactless or proximity or RFID) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 12:06

S254	7	S252 and (emv) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 12:37
S255	3	emv adj POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 12:38
S256	0	"201000274677"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 13:04
S257	3	"20100274677"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 13:04
S258	203	(contactless or proximity or RFID) adj (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 17:08
S259	0	(NFC) adj (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 17:08
S260	7	S258 and POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 17:08
S261	16	(NFC) near (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 17:08
S262	0	(smartcard) adj (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2017/09/25 17:10

			DERWENT; IBM_TDB			
S263	0	S258 and (transaction or payment) adj terminal	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 17:12
S264	6563	((customer or client) adj side) and ((payment or transaction) adj process$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:07
S265	87	S264 and (electronic near (purse or wallet)) and NFC	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/25 21:07
S266	34	(merchant-to-person)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/25 21:17
S267	3	(person-to-merchant) and (contactless or proximity or RFID) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:19
S268	0	(person-to-merchant) and (nfc) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:19
S269	23	(person-to-merchant) and (nfc)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:19
S270	618	(contactless or proximity or RFID) adj (payment or transaction) same (wallet or purse)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:22
S271	1	S270 and (security adj element)	US-PGPUB; USPAT; USOCR;	OR	OFF	2017/09/25 21:22

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S272	243	S270 and (secure adj element)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:22
S273	4	S272 and (electronic or digital or e) adj (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:23
S274	0	S272 and (wireless or paperless or nfc) adj (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:24
S275	5	(contactless or proximity or RFID or nfc) adj (payment or transaction) and (wireless or paperless or nfc) adj (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:24
S276	78	(contactless or proximity or RFID or nfc) adj (payment or transaction) near request	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:25
S277	11	(person-to-merchant) and ((smart or chip or RFID or IC) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:27
S278	12	(person-to-merchant) and ((contactless or smart or chip or RFID or IC) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:27
S279	930	(person-to-person) and ((contactless or smart or chip or RFID or IC) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:27
S280	443	S279 and POS	US-PGPUB;	OR	OFF	2017/09/25

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			21:27
S281	121	S280 and (transmit$4 or send$4) adj (payment or transaction) near request	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:28
S282	15	(person-to-person) same ((contactless or smart or chip or RFID or IC) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:28
S283	82	S281 and (electronic near (purse or wallet))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/25 21:28
S284	41	S281 and mobile adj (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/25 21:28
S285	72	business-to-consumer and mobile adj (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/25 21:32
S286	12	S285 and ((contactless or smart or chip or RFID or IC) adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 21:32
S287	5	card-to-card and (nfc or contactless or RFID or proximity or wireless) adj (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/25 21:34
S288	7	card-to-card and (nfc or contactless or RFID or proximity or wireless) near (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	ON	2017/09/25 21:34

			IBM_TDB			
S289	203	(contactless or proximity or RFID or nfc) adj (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 22:06
S290	0	(card-to-card) adj (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 22:06
S291	45	(card-to-card) same (invoic$4 or bill$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/09/25 22:06
S292	0	S289 and mobile adj (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/09/25 22:09
S293	148	(client-side) adj (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/04 23:35
S294	1	S293 and (mobile adj (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/04 23:35
S295	0	S293 and (nfc adj (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/04 23:35
S296	212	(client adj side) adj (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/04 23:35
S297	6	S296 and (mobile adj (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2017/10/04 23:36

			EPO; JPO; DERWENT; IBM_TDB			
S298	2	S296 and (nfc adj (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/04 23:36
S299	358	(closed-loop adj (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/04 23:37
S300	1	S299 and (nfc adj (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/04 23:37
S301	0	S300 and (mobile adj (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/04 23:37
S302	6	"20100114773"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 08:56
S303	459	(proximity or contactless or smartcard) adj POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 10:06
S304	91	S303 and (mobile adj (payment or transaction))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 10:07
S305	535	(mobile or virtual) adj (wallet or purse) near (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 12:54
S306	339	S305 and POS	US-PGPUB; USPAT;	OR	OFF	2017/10/05 12:55

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S307	179	S306 and (secure adj element)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 12:57
S308	83	S307 and (smart adj card)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 12:57
S309	4	"20140187153"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 13:12
S310	271	(smartcard) and (electronic or digital) adj (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 20:37
S311	53	(smartcard) with (electronic or digital) adj (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 20:38
S312	182	S310 and POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 20:38
S313	51	S311 and POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 20:39
S314	1265	(electronic or digital) adj (bill or invoice) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 20:40

S315	1267	(electronic or digital or virtual) adj (bill or invoice) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 20:40
S316	99209	nfc	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 20:41
S317	66	S315 and nfc	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 20:41
S318	90	S315 and (smartcard)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/05 21:04
S319	1372	(electronic or virtual or digital) adj (bill or invoice) adj (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/10/06 06:06
S320	50	S319 and (wireless or contactless or nfc or proximity) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/10/06 06:12
S321	376	(electronic or virtual or digital) adj (check) and (nfc or wireless or contactless or proximity) adj (transaction or payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/10/06 06:16
S322	376	(electronic or virtual or digital) adj (check) and ((nfc or wireless or contactless or proximity) adj (transaction or payment))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/10/06 06:16
S323	207	S322 and POS	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	ON	2017/10/06 06:16

			DERWENT; IBM_TDB			
S324	79	S323 and (smartcard)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/10/06 06:16
S325	6	"20140143104"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2017/10/09 07:10
S326	3	"20100274677"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/09 08:38
S327	4	(("20090170559") or ("20120191612")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/09 11:46
S328	0	5748737/pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/09 11:48
S329	4	"5748737".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/09 11:48
S330	13595	(electronic or digital or virtual) adj (wallet or purse)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/09 11:49
S331	1082	S330 and (nfc or contactless or proximity) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/09 11:49
S332	732	S331 and POS	US-PGPUB; USPAT; USOCR;	OR	OFF	2017/10/09 11:50

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S333	87	S332 and (electronic or digital or virtual) adj (bill or invoic$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/09 11:50
S334	25	(electronic or digital or virtual) adj (bill or invoic$4) adj (payment) and (nfc or contactless or proximity) adj (payment or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/09 11:54
S335	0	(nfc or contactless or proximity) adj (bill or invoic$4) adj (payment)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/10 06:09
S336	139452	restaurant brands.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/10 13:01
S337	0	restaurantbrands.as.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2017/10/10 13:01
S338	7	"20140006205"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/04/06 08:50
S339	6	"20130138517"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/04/06 08:52
S340	18375	(electronic or digital) near (bill$4 or invoic$4 or check)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/04/06 09:19
S341	5793	POS near (payment or transaction)	US-PGPUB;	OR	OFF	2018/04/06

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			09:20
S342	533	S340 and S341	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/04/06 09:20
S343	405	S342 and 705/$	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/04/06 09:20
S344	5	"20110066550"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/04/06 09:39
S345	6	(("20070253187") or ("20090309748") or ("20120323676")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/09/11 14:37
S346	17	nfc near (invoice or bill)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/09/11 14:40
S347	3	"20080167017"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/09/11 14:43
S348	4	"20120078701"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/09/11 14:45
S349	98	(bar or QR or 2D) adj (invoice or bill)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2018/09/11 14:49

			IBM_TDB			
S350	61	("2013/0339253").URPN.	USPAT	OR	OFF	2018/09/11 14:55
S351	8	(("7152230") or ("6367011") or ("20130159710")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/09/11 17:34
S352	0	(13/594914).APP.	USPAT; USOCR	OR	OFF	2018/09/12 05:53
S353	0	"20120290472"	USPAT; USOCR	OR	OFF	2018/09/12 11:36
S354	2	"20120290472"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2018/09/12 11:36
S355	119582	(rfid or NFC) adj tag	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/02/28 08:54
S356	963	S355 same (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/02/28 08:54
S357	138	(rfid or NFC) adj (bill or invoice)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/02/28 08:55
S358	9	(("20090248579") or ("20110258120") or ("20130138518") or ("20120253974")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/19 17:16
S359	0	(13/215,111).CCLS.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/19 20:14
S360	8	13/215111	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2019/03/19 20:14

			EPO; JPO; DERWENT; IBM_TDB			
S361	2	((13/215111) or (13/168072)).APP.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/19 20:47
S362	0	(12/343178).APP.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/19 20:51
S363	6	12/343,178	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/19 20:51
S364	2	"20110173060"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/19 21:48
S365	5	"20110112968"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/03/19 22:28
S366	25	13/168,072	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/08/22 15:44
S367	85	(US-20100211504-$ or US-20130171929-$ or US-20120078792-$ or US-20130144731-$ or US-20130060618-$ or US-20110087610-$ or US-20090164330-$ or US-20090289106-$ or US-20130054413-$ or US-20130054412-$ or US-20130048717-$ or US-20120304255-$ or US-20130103574-$ or US-20110113473-$ or US-20080126260-$ or US-20140095382-$ or US-20130246258-$ or US-20120290376-$ or US-20120239566-$ or US-20130203345-$ or US-20110112968-$ or US-20100274726-$ or US-20100274677-$ or US-20110173060-$ or US-20040127256-$ or US-	US-PGPUB; USPAT	OR	OFF	2019/09/06 10:01

		20130140360-$).did. or (US-20120253974-$ or US-20070131780-$ or US-20120143702-$ or US-20120072309-$ or US-20090248579-$ or US-20130024383-$ or US-20110251952-$ or US-20130124349-$ or US-20130138517-$ or US-20120116963-$ or US-20130173736-$ or US-20140012751-$ or US-20130221092-$ or US-20130226812-$ or US-20130132219-$ or US-20130151400-$ or US-20130160134-$ or US-20130198086-$ or US-20090307140-$ or US-20110042456-$ or US-20110155800-$ or US-20130346305-$ or US-20130218766-$ or US-20120290472-$ or US-20110180610-$ or US-20120178433-$ or US-20080093467-$).did. or (US-20120118952-$ or US-20130138959-$ or US-20110078081-$ or US-20110117839-$ or US-20130060699-$ or US-20120136786-$ or US-20130254102-$ or US-20130097031-$ or US-20110066550-$ or US-20130339253-$ or US-20130152185-$ or US-20100114773-$ or US-20130097080-$ or US-20130200999-$ or US-20100306076-$ or US-20140013406-$ or US-20130151292-$ or US-20120166333-$ or US-20130334318-$ or US-20110258120-$ or US-20080167017-$ or US-20130138518-$ or US-20100213253-$ or US-20120317628-$).did. or (US-8601266-$ or US-8172135-$ or US-8577731-$ or US-8565676-$ or US-8341083-$ or US-7962369-$ or US-8646059-$ or US-8196131-$).did.				
S368	6	S367 and (location-based)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 10:02
S369	6	S367 and (location near (user or customer))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 10:03
S370	176	(location-based) near (payment or transaction or purchase)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 10:30
S371	32567	(wireless or contactless or mobile) near (payment or purchase or transaction)	US-PGPUB; USPAT; USOCR;	OR	OFF	2019/09/06 10:37

			FPRS; EPO; JPO; DERWENT; IBM_TDB			
S372	57	S370 and S371	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 10:37
S373	34	(geo-fenc$4) near (payment or transaction or purchase)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:24
S374	851	(geo-fenc$4) same (payment or transaction or purchase)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:29
S375	231	S374 and S371	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:32
S376	2466	(payment or transaction or purchase) near threshold	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:33
S377	4	S374 and S371 and S376	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:33
S378	758	(location-based) near (verif$8 or authoriz$6 or authenticat$4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:35
S379	9	S374 and S371 and S378	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:36
S380	1	S376 and S371 and S378	US-PGPUB;	OR	OFF	2019/09/06

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			12:37
S381	1228	(geo-fence or geofenc$4) same (payment or transaction or purchase)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:40
S382	4	S381 and S371 and S378	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:41
S383	286	S381 and S371	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:41
S384	4	S381 and S371 and S378	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:41
S385	55	S371 and S378	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:41
S386	1065	(peer-to-peer) near (payment or purchase or transaction)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:43
S387	1	S386 and S378	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/06 12:44
S388	82	(US-20100211504-$ or US-20130171929-$ or US-20120078792-$ or US-20130144731-$ or US-20130060618-$ or US-20110087610-$ or US-20090164330-$ or US-20090289106-$ or US-20130054413-$	US-PGPUB; USPAT	OR	OFF	2020/01/07 00:08

		or US-20130054412-$ or US-20130048717-$ or US-20120304255-$ or US-20130103574-$ or US-20110113473-$ or US-20080126260-$ or US-20140095382-$ or US-20130246258-$ or US-20120290376-$ or US-20120239566-$ or US-20130203345-$ or US-20110112968-$ or US-20100274726-$ or US-20100274677-$ or US-20110173060-$ or US-20040127256-$ or US-20130140360-$).did. or (US-20120253974-$ or US-20070131780-$ or US-20120143702-$ or US-20120072309-$ or US-20090248579-$ or US-20130024383-$ or US-20110251952-$ or US-20130124349-$ or US-20130138517-$ or US-20120116963-$ or US-20130173736-$ or US-20140012751-$ or US-20130221092-$ or US-20130226812-$ or US-20130132219-$ or US-20130151400-$ or US-20130160134-$ or US-20090307140-$ or US-20110042456-$ or US-20110155800-$ or US-20130346305-$ or US-20130218766-$ or US-20120290472-$ or US-20110180610-$ or US-20120178433-$ or US-20080093467-$ or US-20120118952-$).did. or (US-20130138959-$ or US-20110078081-$ or US-20110117839-$ or US-20120136786-$ or US-20130254102-$ or US-20130097031-$ or US-20110066550-$ or US-20130339253-$ or US-20130152185-$ or US-20100114773-$ or US-20130097080-$ or US-20130200999-$ or US-20100306076-$ or US-20140013406-$ or US-20130151292-$ or US-20120166333-$ or US-20130334318-$ or US-20110258120-$ or US-20080167017-$ or US-20130138518-$ or US-20100213253-$ or US-20120317628-$).did. or (US-8601266-$ or US-8172135-$ or US-8577731-$ or US-8565676-$ or US-8341083-$ or US-7962369-$ or US-8196131-$).did.				
S389	23032	"82" and (purse or wallet or "stored value")	US-PGPUB; USPAT	OR	OFF	2020/01/07 00:09
S390	59	S388 and (purse or wallet or "stored value")	US-PGPUB; USPAT	OR	OFF	2020/01/07 00:09
S391	82	(US-20100211504-$ or US-20130171929-$ or US-20120078792-$ or US-20130144731-$ or US-20130060618-$ or US-20110087610-$ or US-20090164330-$ or US-20090289106-$ or US-20130054413-$ or US-20130054412-$ or US-20130048717-$ or US-20120304255-$ or US-20130103574-$ or US-20110113473-$ or US-20080126260-$ or US-20140095382-$ or US-	US-PGPUB; USPAT	OR	OFF	2020/01/07 07:59

		20130246258-$ or US-20120290376-$ or US-20120239566-$ or US-20130203345-$ or US-20110112968-$ or US-20100274726-$ or US-20100274677-$ or US-20110173060-$ or US-20040127256-$ or US-20130140360-$).did. or (US-20120253974-$ or US-20070131780-$ or US-20120143702-$ or US-20120072309-$ or US-20090248579-$ or US-20130024383-$ or US-20110251952-$ or US-20130124349-$ or US-20130138517-$ or US-20120116963-$ or US-20130173736-$ or US-20140012751-$ or US-20130221092-$ or US-20130226812-$ or US-20130132219-$ or US-20130151400-$ or US-20130160134-$ or US-20090307140-$ or US-20110042456-$ or US-20110155800-$ or US-20130346305-$ or US-20130218766-$ or US-20120290472-$ or US-20110180610-$ or US-20120178433-$ or US-20080093467-$ or US-20120118952-$).did. or (US-20130138959-$ or US-20110078081-$ or US-20110117839-$ or US-20120136786-$ or US-20130254102-$ or US-20130097031-$ or US-20110066550-$ or US-20130339253-$ or US-20130152185-$ or US-20100114773-$ or US-20130097080-$ or US-20130200999-$ or US-20100306076-$ or US-20140013406-$ or US-20130151292-$ or US-20120166333-$ or US-20130334318-$ or US-20110258120-$ or US-20080167017-$ or US-20130138518-$ or US-20100213253-$ or US-20120317628-$).did. or (US-8601266-$ or US-8172135-$ or US-8577731-$ or US-8565676-$ or US-8341083-$ or US-7962369-$ or US-8196131-$).did.				
S392	59	S391 and (purse or wallet or "stored value")	US-PGPUB; USPAT	OR	OFF	2020/01/07 07:59
S393	33	S392 and (balance or remainder)	US-PGPUB; USPAT	OR	OFF	2020/01/07 07:59
S394	364	(purse or e-purse) and (bill near payment)	US-PGPUB; USPAT	OR	OFF	2020/01/07 09:14
S395	14	(purse or e-purse) same (bill near payment)	US-PGPUB; USPAT	OR	OFF	2020/01/07 09:14
S396	366	(purse or e-purse) same (restaurant)	US-PGPUB; USPAT	OR	OFF	2020/01/07 09:16
S397	1	S396 and (bill near payment)	US-PGPUB; USPAT	OR	OFF	2020/01/07 09:16
S398	75	S396 and (payment)	US-PGPUB; USPAT	OR	OFF	2020/01/07 09:32
S399	39	(purse or e-purse) same ((contactless or wireless or nfc or rfid) near payment)	US-PGPUB; USPAT	OR	OFF	2020/01/07 09:40
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		or "stored value") near payment)	USPAT			15:20
S401	426	S400 and (gratuit$4 or tip)	US-PGPUB; USPAT	OR	OFF	2020/01/07 15:22
S402	226	S401 and (purse or wallet or e-purse)	US-PGPUB; USPAT	OR	OFF	2020/01/07 15:22
S403	128	S402 and restaurant	US-PGPUB; USPAT	OR	OFF	2020/01/07 15:23
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S406	0	S404 and S405	US-PGPUB; USPAT	OR	OFF	2020/01/08 06:17
S407	39	(purse or e-purse) same ((contactless or wireless or nfc or rfid) near payment)	US-PGPUB; USPAT	OR	OFF	2020/01/08 06:18
S408	7630	((contactless or wireless or nfc or rfid or "stored value") near payment)	US-PGPUB; USPAT	OR	OFF	2020/01/08 06:18
S409	0	S404 and S408	US-PGPUB; USPAT	OR	OFF	2020/01/08 06:19
S410	1104828	(gratuit$4 or tip)	US-PGPUB; USPAT	OR	OFF	2020/01/08 06:21
S411	72148	(purse or wallet or e-purse)	US-PGPUB; USPAT	OR	OFF	2020/01/08 06:21
S412	60428	(G06Q20/3278 or G06Q20/204 or G06Q20/3223 or G06Q20/20 or G06Q30/04 or G06Q20/102 or G06Q20/352 or G06Q20/3552 or G06Q20/3672 or G06Q20/40 or G06Q30/0601 or G06Q20/3227).cpc.	US-PGPUB; USPAT	OR	OFF	2020/01/08 06:26
S413	7314373	"21" and "14" and "16" and "18"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2020/01/08 06:26

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S160	1647	705/21	USPAT	OR	ON	2015/03/26 16:56
S161	75	S160 and (electronic or digital) near (invoice or check)	USPAT	OR	ON	2015/03/26 16:57
S162	25	S161 and (smart or IC or RFID or EMV) adj card	USPAT	OR	ON	2015/03/26 16:57
S163	0	S162 and TSM	USPAT	OR	ON	2015/03/26 16:58
S164	16	S162 and S161 and provision$4	USPAT	OR	ON	2015/03/26 16:58
S165	16	S162 and provision$4	USPAT	OR	ON	2015/03/26 16:58
S166	0	S165 and TSM	USPAT	OR	ON	2015/03/26

						16:58
S167	483	705/14.23	USPAT	OR	ON	2015/03/26 16:58
S168	10	S167 and (electronic or digital) near (invoice or check)	USPAT	OR	ON	2015/03/26 16:58
S169	0	S168 and TSM	USPAT	OR	ON	2015/03/26 16:58
S170	3229	705/41	USPAT	OR	ON	2015/03/26 16:58
S171	259	S170 and (electronic or digital) near (invoice or check)	USPAT	OR	ON	2015/03/26 16:59
S172	114	S171 and (smart or IC or RFID or EMV) adj card	USPAT	OR	ON	2015/03/26 16:59
S173	75	S172 and provision$4	USPAT	OR	ON	2015/03/26 16:59
S174	0	S173 and TSM	USPAT	OR	ON	2015/03/26 16:59
S175	0	S173 and (trusted near service near manag$5)	USPAT	OR	ON	2015/03/26 17:00
S176	0	S171 and (trusted near service near manag$5)	USPAT	OR	ON	2015/03/26 17:00
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S178	743	S177 and (electronic or digital) near (invoice or check)	USPAT	OR	ON	2015/03/26 17:00
S179	206	S178 and (smart or IC or RFID or EMV) adj card	USPAT	OR	ON	2015/03/26 17:00
S180	1	S179 and (trusted near service near manag$5)	USPAT	OR	ON	2015/03/26 17:00
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S416	583418	(gratuit$4 or tip)	USPAT	OR	OFF	2020/01/08 06:21
S417	31467	(purse or wallet or e-purse)	USPAT	OR	OFF	2020/01/08 06:21
S418	0	S414 and S415 and S416 and S417	USPAT	OR	OFF	2020/01/08 06:21
S419	0	S414 and S415 and S416	USPAT	OR	OFF	2020/01/08 06:25
S420	22696	(G06Q20/3278 or G06Q20/204 or G06Q20/3223 or G06Q20/20 or G06Q30/04 or G06Q20/102 or G06Q20/352 or G06Q20/3552 or G06Q20/3672 or G06Q20/40 or G06Q30/0601 or G06Q20/3227).cpc.	USPAT	OR	OFF	2020/01/08 06:25
S421	43	S420 and S415 and S416 and S417	USPAT	OR	OFF	2020/01/08 06:26
S422	23	S421 and (balance or remainder)	USPAT	OR	OFF	2020/01/08 06:30

1/8/2020 8:59:35 AM
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(81) 指定国 (除另有指明，要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW。

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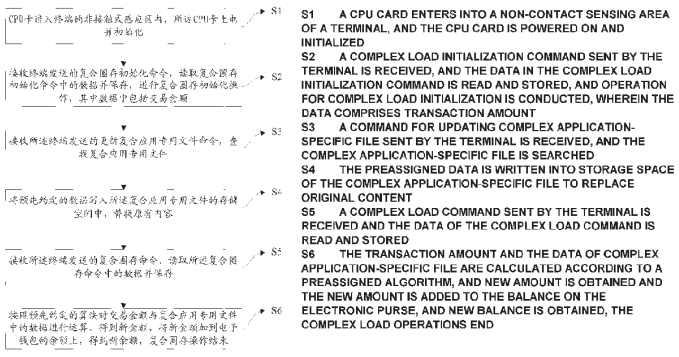
(54) **Title**: METHOD FOR OPERATING ELECTRONIC PURSE

(54) **发明名称**: 一种对电子钱包进行操作的方法



S1 A CPU CARD ENTERS INTO A NON-CONTACT SENSING AREA OF A TERMINAL, AND THE CPU CARD IS POWERED ON AND INITIALIZED
S2 A COMPLEX LOAD INITIALIZATION COMMAND SENT BY THE TERMINAL IS RECEIVED, AND THE DATA IN THE COMPLEX LOAD INITIALIZATION COMMAND IS READ AND STORED, AND OPERATION FOR COMPLEX LOAD INITIALIZATION IS CONDUCTED, WHEREIN THE DATA COMPRISES TRANSACTION AMOUNT
S3 A COMMAND FOR UPDATING COMPLEX APPLICATION-SPECIFIC FILE SENT BY THE TERMINAL IS RECEIVED, AND THE COMPLEX APPLICATION-SPECIFIC FILE IS SEARCHED
S4 THE PREASSIGNED DATA IS WRITTEN INTO STORAGE SPACE OF THE COMPLEX APPLICATION-SPECIFIC FILE TO REPLACE ORIGINAL CONTENT
S5 A COMPLEX LOAD COMMAND SENT BY THE TERMINAL IS RECEIVED AND THE DATA OF THE COMPLEX LOAD COMMAND IS READ AND STORED
S6 THE TRANSACTION AMOUNT AND THE DATA OF COMPLEX APPLICATION-SPECIFIC FILE ARE CALCULATED ACCORDING TO A PREASSIGNED ALGORITHM, AND NEW AMOUNT IS OBTAINED AND THE NEW AMOUNT IS ADDED TO THE BALANCE ON THE ELECTRONIC PURSE, AND NEW BALANCE IS OBTAINED, THE COMPLEX LOAD OPERATIONS END

图 1 / Fig. 1

(57) **Abstract**: A method for operating an electronic purse is disclosed, which belongs to the field of information security. The method includes: a CPU card enters into a non-contact sensing area of a terminal, and is powered on and initialized; an operation initialization command sent by the terminal is received, and the data in the operation initialization command is read out and stored, and the data comprises transaction amount, and the operation initialization command is specifically a complex load initialization command or a consumption initialization command; and corresponding operations are conducted.

[见续页]

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(57) 摘要:

公开了一种对电子钱包进行操作的方法，属于信息安全领域。所述方法包括：CPU 卡进入终端的非接触式感应区内，上电并初始化；接收终端发送的操作初始化命令，读取操作初始化命令中的数据并保存，上述数据包括交易金额，操作初始化命令具体为复合圈存初始化命令或消费初始化命令；并进行相应的操作。

一种对电子钱包进行操作的方法

技术领域

本发明涉及信息安全领域，特别涉及一种对 CPU 卡内的电子钱包进行操作的方法。

背景技术

CPU 卡的芯片内含有一个微处理器，它的功能相当于一台微型计算机，并且 CPU 卡内包括中央处理器（CPU）、只读存储器（ROM）、随机存取存储器(RAM)、电可擦除可编程只读存储器（EEPROM）等，具有信息量大、防伪安全性高、可脱机作业，可多功能开发等优点。CPU 卡采用强大而稳定的安全控制器，增强了卡片的安全性，并且 CPU 卡所特有的内外部认证机制以及以金融 IC 卡规范为代表的专用认证机制，能够完全保证交易的合法性和安全性，然后 CPU 卡的应用防火墙功能可以保障同一张卡中不同应用的安全独立性，同时，CPU 卡的大容量存储空间又可以满足预期的大金额消费应用所要求的更多客户信息的存储。

在现有技术中，CPU 卡中的电子钱包可以实现普通的圈存、消费/取现、圈提、更新透支限额等基本交易功能，但是在遇到特殊的应用时，如在需要对不同的充值金额进行分级打折优惠的促销性应用时，如商场、超市、餐馆、健身会所等机构的会员卡，则现有的电子钱包的普通的圈存操作和消费操作不能满足这种应用。

发明内容

为了解决现有技术中的不足，本发明提供了一种对电子钱包进行操作的方法。

一种对电子钱包进行操作的方法，包括:

CPU 卡进入终端的非接触式感应区内，所述 CPU 卡上电并初始化;

接收所述终端发送的操作初始化命令，读取所述操作初始化命令中的数据并保存，所述数据包括交易金额，所述操作初始化命令为复合圈存初始化命令或消费初始化命令;

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如果所述操作初始化命令为复合圈存初始化命令，则进行复合圈存初始化操作；接收所述终端发送的更新复合应用专用文件命令，查找复合应用专用文件；将预先约定的数据写入所述复合应用专用文件的存储空间中，替换原有内容；接收所述终端发送的复合圈存命令，读取所述复合圈存命令中的数据并保存；按照预先约定的算法对所述交易金额与所述复合应用专用文件中的数据进行运算，得到新金额，将所述得到新金额加到电子钱包的余额上，得到新余额；

如果所述操作初始化命令为消费初始化命令，按照预先约定的算法对所述交易金额和复合应用专用文件中的相应记录中的值进行计算，得到新金额；读取所述电子钱包的余额，判断所述新金额是否超过所述电子钱包的余额与透支限额的和；若是，则向所述终端返回所述电子钱包余额不足的信息，终止操作；若否，则生成一个伪随机数和一个过程密钥，将所述消费初始化命令的响应报文返回给所述终端；接收所述终端发送的消费命令，读取所述消费命令终的数据并保存；从所述电子钱包的余额中扣减所述新金额，得到新的金额，并将所述消费命令的响应报文返回给所述终端。

本发明的有益效果在于：本发明提供了一种对电子钱包进行操作的方法，通过本发明提供的方法使整个交易过程更安全，且防止了采取非法的手段去修改 CPU 卡中的复合应用专用文件，进一步地简化了分级打折优惠操作的实现，只需要在圈存时对复合应用专用文件进行设定即可，并且方便管理，从而节省了管理的成本。

附图说明

图 1 为本实施例 1 提供的一种对电子钱包进行复合圈存的方法的流程图；

图 2 为本实施例 1 提供的一种对电子钱包进行复合圈存的方法的详细流程图；

图 3 为本实施例 1 提供的一种对电子钱包进行消费的方法的详细流程图；

图 4 为本实施例 2 提供的一种对电子钱包进行消费的方法的流程图；以及

图 5 为本实施例 2 提供的一种对电子钱包进行消费的方法的详细流程图。

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具体实施方式

为使本发明的目的、技术方案和优点更加清楚，下面将结合附图对本发明实施方式做进一步地详细描述。

实施例 1

为了简化分级打折优惠操作，在复合圈存时对复合应用专用文件进行设定，本发明实施例提供了一种对电子钱包进行复合圈存的方法，参见图 1，该方法内容包括：

S1:CPU 卡进入终端的非接触式感应区内，所述 CPU 卡上电并初始化；

S2:接收所述终端发送的复合圈存初始化命令，读取所述复合圈存初始化命令中的数据并保存，进行复合圈存初始化操作，其中所述数据中包括交易金额；

S3:接收所述终端发送的更新复合应用专用文件命令，查找复合应用专用文件；

S4:将预先约定的数据写入所述复合应用专用文件的存储空间中，替换原有内容；

S5:接收所述终端发送的复合圈存命令，读取所述复合圈存命令中的数据并保存；

S6:按照预先约定的算法对所述交易金额与所述复合应用专用文件中的数据进行运算，得到新金额，将所述得到的新金额加到电子钱包的余额上，得到新余额，复合圈存操作结束。

为了对本发明实施例提供的方法进行详细说明，请参见如下实施例：

实施例

本发明实施例提供了一种对电子钱包进行复合圈存的方法，在本实施例中，以 CPU 卡内的电子钱包为例进行说明，CPU 卡内的电子钱包除了具有普通电子钱包的基本交易功能外，还具有支持复合应用的钱包的所有交易功能，相应地也支持复合圈存的功能，并且对 CPU 卡内电子钱包的复合圈存操作是在 CPU 终端进行的，其中进行复合圈存操作时，按照预先约定的规则对交易金额与复合专用文件中规定的值进行运算，得到新金额，并将得到的新金额加

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到电子钱包的余额上，完成复合圈存操作，相应地，在消费时，则按照该余额进行消费。

参见图 2，一种对 CPU 卡内的电子钱包进行复合圈存的方法，具体实现步骤如下：

步骤 101：CPU 卡进入终端的非接触式感应区内，CPU 卡上电并初始化；

步骤 102：接收终端发送的复合圈存初始化命令 INITIALIZE FOR CAPP LOAD，读取命令中包含的数据并保存；

在本实施例中，复合圈存初始化命令 INITIALIZE FOR CAPP LOAD 用于初始化复合圈存交易，其中 INITIALIZE FOR CAPP LOAD 命令报文分成：命令头 + 命令体，即为：(CLA + INS + P1 + P2) + (Lc + Data + Le)；

其中，CLA + INS + P1 + P2 为命令头，Lc + Data + Le 为命令体，命令头为命令的编码，命令头中的 CLA 为指令类别，INS 为指令代码，P1 和 P2 为指令参数；命令体中的 Lc 为命令体内 Data 中数据的长度，Data 为 INITIALIZE FOR CAPP LOAD 命令中的数据，Le 是期望的应答 APDU 数据字段的最大字节数；

本实施例中 INITIALIZE FOR CAPP LOAD 命令 Data 中包含的数据具体为密钥索引号、交易金额和终端机编号；

具体地，在本实施例中，接收到的 INITIALIZE FOR CAPP LOAD 命令具体为：80 50 06 02 0B 02 00 00 03 E8 00 00 00 00 00 01 10，其中 80 为 CLA，50 为 INS，06 为 P1，定义为复合圈存初始化的标识，02 为 P2，定义为电子钱包的标识，0B 为 Lc，02 为 Data 中的密钥索引号，00 00 03 E8 为 Data 中的交易金额，00 00 00 00 00 01 为 Data 中的终端机编号，10 为 Le。

步骤 103：检查自身是否支持 INITIALIZE FOR CAPP LOAD 命令中包含的密钥索引号，若不支持，则执行步骤 104，若支持，则执行步骤 105；

步骤 104：向终端返回状态码 0x9403，同时终止执行复合圈存初始化操作；

步骤 105：生成一个四字节的伪随机数和一个过程密钥；

在本实施例中，生成过程密钥的方法具体为：

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将上述伪随机数、电子钱包联机交易序号和‘8000’顺序链接，再利用圈存子密钥 DLK 对链接后得到的数据进行加密，得到的加密后的数据即为过程密钥。

步骤 106：利用上述过程密钥计算得到第一报文鉴别码 MAC1；

在本实施例中，利用过程密钥计算得到第一报文鉴别码 MAC1 的方法具体为：

将交易前的电子钱包的余额、交易金额、交易类型标识和终端机编号顺序链接，再利用过程密钥对链接后的数据进行加密，得到的加密后的数据的前四个字节即为第一报文鉴别码 MAC1。

步骤 107：将 INITIALIZE FOR CAPP LOAD 命令的响应报文返回给终端；

其中，INITIALIZE FOR CAPP LOAD 命令的响应报文由 Data + sw1 + sw2 组成，当 INITIALIZE FOR CAPP LOAD 命令执行成功时，则响应报文中的状态码 sw1 和 sw2 为‘9000’，相应地，响应报文数据域 Data 中包含的数据具体为交易前的 CPU 电子钱包的余额、CPU 钱包的联机交易序号、密钥版本号、算法标识、伪随机数和 MAC1，当 INITIALIZE FOR CAPP LOAD 命令执行不成功时，则响应报文中的状态码 sw1 和 sw2 不为‘9000’，并且也不存在数据域 Data；

具体地，在本实施例中，INITIALIZE FOR CAPP LOAD 命令的响应报文具体为：00 00 00 00 00 01 02 03 01 02 03 04 00 01 B1 0A 90 00。

步骤 108：接收终端发送的更新复合应用专用文件的命令 UPDATE CAPP DATA CACHE；

在本实施例中，更新复合应用专用文件的命令 UPDATE CAPP DATA CACHE 用于更新复合应用专利文件中的数据；

复合应用专用文件由文件头和文件体组成，文件头具体包括：2 个字节的 **FILE_ID**、1 个字节的 **FILE TYPE**、2 个字节的 **FILE SIZE**、1 个字节的 **AC1**、1 个字节的 **AC2** 和 2 个字节的 RFU，其中当 **FILE TYPE** 为 00 时，表示该文件为二进制文件，当 **FILE TYPE** 为 01 时，表示该文件为定长记录文件，当 **FILE TYPE** 为 02 时，表示该文件为变长记录文件，当 **FILE TYPE** 为 03 时，表示该文件为循环文件，当 **FILE TYPE** 为 05 时，表示该文件为密钥文件，相

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应地，二进制文件对应的 **FILE SIZE** 为文件大小，定长记录文件对应的 **FILE SIZE** 为记录条数和记录长度，变长记录文件对应的 **FILE SIZE** 为记录条数和记录最大长度，循环文件对应的 **FILE SIZE** 为记录条数和记录长度，密钥文件对应的 **FILE SIZE** 为记录条数和记录长度，并且 AC1 为读文件权限，AC2 为写文件权限；文件体中为复合应用专用文件的数据；

具体地，在本实施例中，复合应用专用文件具体为二进制文件，则 **FILE TYPE** 为 00，且 **FILE SIZE** 为文件大小，具体为 00 0B，文件体中的内容为空；

进一步地，UPDATE CAPP DATA CACHE 命令报文由 CLA + INS + P1 + P2 + Lc + Data 组成，本实施例中，UPDATE CAPP DATA CACHE 命令具体为：80 D6 92 B1 04 00 01 20 00，其中，80 为 CLA，D6 为 INS，92 为 P1，B1 为 P2，04 为 Lc，00 01 20 00 为 Data；

并且 UPDATE CAPP DATA CACHE 命令的数据域 Data 中的数据为要写入复合应用专用文件的新数据，其中，由于复合应用专用文件的具体应用可以由发卡方自定义，因此数据域中的数据也可以是自定义的，如在本实施例中复合应用专用文件可以自定义为费率文件，则相应地，数据域中的数据具体为费率值，在本实施例中具体定义费率值为 120％；

相应地，当定义费率值为 120%时，UPDATE CAPP DATA CACHE 命令中的数据可以不是 120％，可以是 83.3％，还可以是 20％，或者，UPDATE CAPP DATA CACHE 命令的数据中可以不包括费率值，而由 CPU 卡对复合圈存初始化命令中包含的交易金额进行判断，根据交易金额生成一个费率值，将这个生成的费率值写入复合应用专用文件中，如当复合圈存初始化命令中的交易金额为 800 元时，即小于预先约定的下限时，具体如为 2000 时，则生成一个费率值 90％，或者 111.1％，或者 11.1％，或者 100 元，当复合圈存初始化命令中的交易金额为 5000 元时，即在预先约定的下限与上限之间时，具体如为 2000 到 6000 时，则生成一个数据 80％，或者 125％，或者 25％，或者 600 元，当复合圈存初始化命令中的交易金额为 8000 元时，即大于预先约定的下限时，具体如为 6000 时，则生成一个数据 75％，或者 133％，或者 33％，或者 2000 元等等。

步骤 109：判断接收到的 UPDATE CAPP DATA CACHE 命令中是否存在 SFI 域，若存在，则执行步骤 110，若不存在，则执行步骤 111；

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在本实施例中，判断 UPDATE CAPP DATA CACHE 命令中是否存在 SFI 域具体为：判断 UPDATE CAPP DATA CACHE 命令中的 P1 的高三位是否为 100，若是，则表示命令中存在 SFI 域，PI 的低 5 位即为 SFI 域的值，否则，表示命令中不存在 SFI 域；

具体地，本实施例中 UPDATE CAPP DATA CACHE 命令中的 P1 为 92，表示 P1 的高三位为 100，存在 SFI 域。

步骤 110：查找 CPU 卡当前应用下是否存在一个文件的 SFI 值与 UPDATE CAPP DATA CACHE 命令中的 SFI 值相同，若不存在，则执行步骤 111，若存在，则执行步骤 112；

步骤 111：向终端返回状态码 0x6A82，同时终止操作；

步骤 112：将步骤 110 中查找得到的文件作为复合应用专用文件，并检查 UPDATE CAPP DATA CACHE 命令中的数据域的长度是否大于复合应用专用文件的长度，若大于，则执行步骤 113，若不大于，则执行步骤 114；

在本实施例中，由于复合应用专用文件是二进制文件，所以复合应用专用文件的长度具体为 **FILE SIZE** 的值，具体即为判断 UPDATE CAPP DATA CACHE 命令中 Lc 的值是否大于复合应用专用文件 **FILE SIZE** 的值，由于本实施例中 UPDATE CAPP DATA CACHE 命令中 Lc 的值为 04，**FILE SIZE** 的值为 00 0B，所以命令中的数据域的长度不大于复合应用专用文件的长度。

步骤 113：向终端返回状态码 0x6A84，同时终止操作；

步骤 114：将 UPDATE CAPP DATA CACHE 命令中的数据域中的数据写入复合应用专用文件中，替换该复合应用专用文件中的原有内容；

在本实施例中，具体将费率值 120％写入该复合应用专用文件中，替换其原有内容；

由于本实施例中复合应用专用文件中的原有内容为空，因此直接将 UPDATE CAPP DATA CACHE 命令中的数据域中的 00 01 20 00 写入复合应用专用文件中即可；

相应地，当 UPDATE CAPP DATA CACHE 命令中的费率值为 83.3％时，则写入复合应用专用文件中的数据具体为 83.3％，当 UPDATE CAPP DATA

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CACHE 命令中的费率值为 20％时，则写入复合应用专用文件中的数据具体为 20％；

或者，当 UPDATE CAPP DATA CACHE 命令的数据中可以不包括费率值，而由 CPU 卡对复合圈存初始化命令中包含的交易金额进行判断，按照预先约定的规则根据交易金额生成一个费率值，再将这个生成的费率值写入复合应用专用文件中，并且在写入复合应用专用文件之前还要判断生成的费率值的长度是否大于复合应用专用文件的长度，例如，当复合圈存初始化命令中的交易金额为 800 元时，即小于预先约定的下限时，具体如为 2000 时，则将生成的 90％，或者 111.1％，或者 11.1％，或者 100 元写入复合应用专用文件中，而当复合圈存初始化命令中的交易金额为 5000 元时，即在预先约定的下限与上限之间时，具体如为 2000 到 6000 时，则将生成的 80％，或者 125％，或者 25％，或者 600 元写入复合应用专用文件中，或者当复合圈存初始化命令中的交易金额为 8000 元时，即大于预先约定的下限时，具体如为 6000 时，则将生成的 75％，或者 133％，或者 33％，或者 2000 元写入复合应用专用文件中。

步骤 115：将 UPDATE CAPP DATA CACHE 命令的响应报文返回给终端；

其中，UPDATE CAPP DATA CACHE 命令的响应报文由 sw1 + sw2 组成，不存在数据域 data，当 UPDATE CAPP DATA CACHE 命令执行成功时，则响应报文为‘9000’，当 UPDATE CAPP DATA CACHE 命令执行不成功时，则响应报文不为‘9000’。

步骤 116：接收终端发送的复合圈存命令 CREDIT FOR CAPP LOAD，读取命令数据域中的数据并保存；

在本实施例中，复合圈存命令 CREDIT FOR CAPP LOAD 用于复合圈存交易；

CREDIT FOR CAPP LOAD 命令报文由 CLA + INS + P1 + P2 + Lc + Data + Le 组成，其中数据域 Data 中的数据具体包括：交易日期、交易时间和第二报文鉴别码 MAC2；

具体地，本实施例中接收到的 CREDIT FOR CAPP LOAD 命令具体为：80 52 00 00 0B 07 DA 06 08 0A 14 2D 00 01 A1 0B 08，其中，80 为 CLA，52 为 INS，00 为 P1，00 为 P2，0B 为 Lc，07 DA 06 08 为 Data 中的交易日期，0A 14 2D 为 Data 中的交易时间，00 01 A1 0B 为 Data 中的 MAC2，08 为 Le。

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步骤 117：验证数据中的第二报文鉴别码 MAC2 是否有效，若无效，则执行步骤 118，若有效，则执行步骤 119;

在本实施例中，验证 MAC2 是否有效的方法，具体为：

将交易金额、交易类型标识、终端机编号、交易日期和交易时间顺序链接，然后使用步骤 105 中生成的过程密钥对链接得到的数据进行加密，再比较加密后得到的数据的前四个字节与 CREDIT FOR CAPP LOAD 命令数据域中的 MAC2 是否相同，若不相同，则 MAC2 无效，若相同，则 MAC2 有效。

步骤 118：向终端返回状态码 0x9302，提示 MAC2 无效;

步骤 119：将电子钱包的联机交易序号加 1，按照预先约定的算法对交易金额与复合应用专用文件中的值进行运算，得到新金额，并将得到的新金额加到电子钱包的余额上;

在本实施例中，预先约定的算法包括乘法、除法、加法和减法，以及所述四种算法的各种组合;

进一步地，复合应用专用文件中的值为费率值，具体为 120％，因此若当交易金额为 1000 元，电子钱包中的余额为 0 元时，则将交易金额 1000 元乘上复合专用文件中的费率值 120％之后，得到的新金额为 1200 元，因此将这 1200 元加到电子钱包的余额 0 元上，得到新的余额为 1200 元，这样电子钱包中的新余额 1200 元就比将交易金额 1000 元直接加到电子钱包的余额上得到的余额 1000 元要多;

当写入复合应用专用文件中的费率值具体为 83.3％时，若交易金额为 1000 元，电子钱包中的余额为 0 元，则将交易金额 1000 元除以费率值 83.3％之后，得到的新金额为 1200 元，因此将这 1200 元加到电子钱包的余额 0 元上，得到新的余额为 1200 元，这样电子钱包中的新余额 1200 元就比将交易金额 1000 元直接加到电子钱包的余额上得到的余额 1000 元要多;

当写入复合应用专用文件中的费率值具体为 20％时，若交易金额为 1000 元，电子钱包中的余额为 0 元，则将交易金额 1000 元乘上费率值 20％后，再加上交易金额 1000 元，最后得到的新金额为 1200 元，因此将这 1200 元加到电子钱包的余额 0 元上，得到新的余额为 1200 元，这样电子钱包中的新余额

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1200 元就比将交易金额 1000 元直接加到电子钱包的余额上得到的余额 1000 元要多；

或者当复合圈存初始化命令中的交易金额为 8000 元时，则将生成的费率值 75％，或者 133％，或者 33％，或者 2000 元写入复合应用专用文件中，此时当写入复合应用专用文件中的费率值为 75％时，交易金额 8000 元除以 75％之后得到的新金额为 10060 元，因此将这 10060 元加到电子钱包的余额 0 元上，得到新的余额为 10060 元，这样电子钱包中的新余额 10060 元就比将交易金额 8000 元直接加到电子钱包的余额上得到的余额 8000 元要多；当写入复合应用专用文件中的费率值为 133％时，交易金额 8000 元乘上 133％之后得到的新金额为 10060 元，因此将这 10060 元加到电子钱包的余额 0 元上，得到新的余额为 10060 元，这样电子钱包中的新余额 10060 元就比将交易金额 8000 元直接加到电子钱包的余额上得到的余额 8000 元要多；当写入复合应用专用文件中的费率值为 33％时，交易金额 8000 元乘上 33％之后，再加上交易金额 8000 元，得到的新金额为 10060 元，因此将这 10060 元加到电子钱包的余额 0 元上，得到新的余额为 10060 元，这样电子钱包中的新余额 10060 元就比将交易金额 8000 元直接加到电子钱包的余额上得到的余额 8000 元要多；当写入复合应用专用文件中的费率值为 2000 元时，交易金额 8000 元加上 2000 元后得到的新余额为 10000 元，因此将这 10000 元加到电子钱包的余额 0 元上，得到新的余额为 10000 元，这样电子钱包中的新余额 10000 元就比将交易金额 8000 元直接加到电子钱包的余额上得到的余额 8000 元要多。

步骤 120：更新电子钱包的交易明细；

具体地为：将电子钱包的联机交易序号、交易金额、交易类型标识、终端机编号、交易日期和交易时间顺序链接组成一个记录来更新标准交易明细。

步骤 121：计算交易验证码 TAC；

在本实施例步骤 121 中，计算交易验证码 TAC 码，具体为：

用 DTK 左右 8 个字节进行异或运算，并将交易后的电子钱包的余额、加 1 前的电子钱包的联机交易序号、交易金额、交易类型标识、终端机编号、交易日期和交易时间顺序链接，再利用异或运算得到的结果对链接得到的数据进行加密，得到的加密后的数据即为 TAC 码。

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步骤 122：将 CREDIT FOR CAPP LOAD 命令的响应报文返回给终端，复合圈存操作结束。

其中，CREDIT FOR CAPP LOAD 命令的响应报文由 data + sw1 + sw2 组成，当 CREDIT FOR CAPP LOAD 命令执行成功时，则响应报文中的状态码 sw1 和 sw2 为‘9000’，相应地，数据域 data 具体为 TAC 码，当 CREDIT FOR CAPP LOAD 命令执行不成功时，则响应报文中的状态码 sw1 和 sw2 不为‘9000’，并且不包含数据域；

具体地，在本实施例中返回的 CREDIT FOR CAPP LOAD 命令的响应报文为 00 05 D2 BC 90 00。

进一步地，在本实施例中，当复合应用专用文件为记录型文件时，则复合应用专用文件中的每一条记录对应着一个应用，具体地，本实施例中复合应用专用文件中的 **FILE TYPE** 为 01，表示该复合应用专用文件为定长记录文件，相应地，定长记录文件对应的 **FILE SIZE** 为记录条数和记录长度；

相应地，对复合应用专用文件进行更新的步骤 108 至步骤 116 还可以替换为：

步骤 108’：接收终端发送的更新记录命令 UPDATE RECORD；

其中，更新记录命令 UPDATE RECORD 用于更新命令中指定的记录，并且该 UPDATE RECORD 命令适用于定长记录文件和变长记录文件；

具体地，UPDATE RECORD 命令报文由 CLA + INS + P1 + P2 + Lc + Data 组成，其中 P1 和 P2 用于指定将哪个文件的第几条记录作为复合应用专用文件的记录，Lc 为 Data 中的数据的长度加上 4 个字节，本实施例中，UPDATE RECORD 命令具体为：00 DC 03 04 08 00 01 20 00，其中，00 为 CLA，DC 为 INS，03 为 P1，04 为 P2，08 为 Lc，00 01 20 00 为 Data；

并且 UPDATE RECORD 命令的数据域中即为要写入复合应用专用文件的新数据，其中，由于复合应用专用文件的具体应用可以由发卡方自定义，因此数据域中的数据也可以是自定义的，如在本实施例中复合应用专用文件可以自定义为费率文件，则相应地，数据域中的数据具体为费率值，在本实施例中具体定义费率值为 120％。

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步骤 109'：判断接收到的更新记录命令 UPDATE RECORD 中是否存在 SFI 域，若存在，则执行步骤 110'，若不存在，则执行步骤 111'；

其中，判断更新记录命令 UPDATE RECORD 中是否存在 SFI 域的方法具体为：判断 UPDATE RECORD 命令中的 P2 的高 5 位是否全为 0，若是，则表示命令中存在 SFI 域，即 P2 的高 5 位即是 SFI 域的值，否则，表示命令中不存在 SFI 域。

步骤 110'：查找 CPU 卡当前应用下是否存在一个文件的 SFI 值与 UPDATE RECORD 命令中的 SFI 值相同，若不存在，则执行步骤 111'，若存在，则执行步骤 112'；

步骤 111'：向终端返回状态码 0x6A82，同时终止执行此次复合圈存交易；

步骤 112'：将步骤 110'中查找得到的文件作为复合应用专用文件，并根据 UPDATE RECORD 命令中指定的记录号在该复合应用专用文件中查找相应的记录，若没有找到相应的记录，则执行步骤 113'，若找到相应的记录，则执行步骤 114'；

步骤 113'：向终端返回状态码 0x6A83，同时终止执行此次复合圈存交易；

步骤 114'：检查 UPDATE RECORD 命令中的数据域的长度是否大于步骤 112'中查找得到的记录的指定长度，若大于，则执行步骤 115'，若不大于，则执行步骤 116'；

步骤 115'：向终端返回状态码 0x6A84，同时终止执行此次复合圈存交易；

步骤 116'：将 UPDATE RECORD 命令中的数据域中的数据写入查找得到的记录中，替换该记录中的原有内容；

在本实施例中，具体将费率值 120％写入该记录中，替换该记录中的原有内容。

步骤 117'：将 UPDATE RECORD 命令的响应报文返回给终端；

其中，UPDATE RECORD 命令的响应报文由 sw1 + sw2 组成，不存在数据域 data，当 UPDATE RECORD 命令执行成功时，则响应报文为'9000'，当 UPDATE RECORD 命令执行不成功时，则响应报文不为'9000'。

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进一步地，在本实施例中，通过上述方法进行复合圈存操作之后，则可以利用该 CPU 卡中的电子钱包进行消费，参见图 3，消费操作的流程具体如下：

步骤 201：接收终端发送的消费初始化命令 INITIALIZE FOR PURCHASE，读取命令中的数据并保存；

在本实施例中，消费初始化命令 INITIALIZE FOR PURCHASE 用于初始化消费交易；

INITIALIZE FOR PURCHASE 命令报文分成：命令头 + 命令体

即为：(CLA + INS + P1 + P2) + (Lc + Data + Le)；

其中， CLA + INS + P1 + P2 为命令头，Lc + Data + Le 为命令体，命令头为命令的编码，命令头中的 CLA 为指令类别，INS 为指令代码，P1 和 P2 为指令参数；命令体中的 Lc 为命令体内 Data 中数据的长度，Data 为 INITIALIZE FOR PURCHASE 命令中的数据，Le 是期望的应答 APDU 数据字段的最大字节数；

并且 INITIALIZE FOR PURCHASE 命令中的数据具体为密钥索引号、交易金额和终端机编号；

具体地，在本实施例中，接收到的 INITIALIZE FOR PURCHASE 命令具体为：80 50 01 02 0B 02 00 00 00 C8 00 00 00 00 00 01 0F，其中 80 为 CLA，50 为 INS，01 为 P1， 02 为 P2，定义为电子钱包的标识，0B 为 Lc，02 为 Data 中的密钥索引号，00 00 00 C8 为 Data 中的交易金额，00 00 00 00 00 01 为 Data 中的终端机编号，0F 为 Le。

步骤 202：检查自身是否支持上述 INITIALIZE FOR PURCHASE 命令中包含的密钥索引号，若不支持，则执行步骤 203，若支持，则执行步骤 204；

步骤 203：返回状态码 0x9403 给终端，并终止执行消费初始化操作；

步骤 204：读取电子钱包的余额，判断 INITIALIZE FOR PURCHASE 命令中包含的交易金额是否超过电子钱包的余额与透支限额的和，若是，则执行步骤 205，若否，则执行步骤 206；

步骤 205：返回状态码 0x9401 给终端，并终止执行消费初始化操作；

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步骤 206：生成一个伪随机数和一个过程密钥；

在本实施例中，过程密钥用于 CPU 电子钱包或 M1 电子钱包的消费交易，过程密钥是用密钥 DPK 分散得到的。

步骤 207：发送 INITIALIZE FOR PURCHASE 命令的响应报文给终端；

其中，INITIALIZE FOR PURCHASE 响应报文由 Data + sw1 + sw2 组成，当 INITIALIZE FOR PURCHASE 命令执行成功时，则返回的响应报文中的状态码 sw1 和 sw2 为‘9000’，且响应报文数据域 Data 中包含的数据具体为电子钱包的余额、CPU 电子钱包的脱机交易序号、透支限额、密钥版本号、算法标识和伪随机数，若命令执行不成功，则返回的响应报文中只含有状态码 sw1 和 sw2，且状态码 sw1 和 sw2 不为‘9000’；

具体地，本实施例中返回给终端的 INITIALIZE FOR PURCHASE 响应报文为：00 00 4B 00 00 01 00 00 64 02 03 01 02 03 04 90 00 。

步骤 208：接收终端发送的消费命令 DEBIT FOR PURCHASE，读取命令中的数据并保存；

在本实施例中，DEBIT FOR PURCHASE 命令用于进行消费操作；

其中，DEBIT FOR PURCHASE 命令报文也由 CLA + INS + P1 + P2 + Lc + Data + Le 组成，DEBIT FOR PURCHASE 命令中的数据具体为：终端交易序号、交易日期、交易时间和第三鉴别码 MAC3；

具体地，在本实施例中，接收到的 DEBIT FOR PURCHASE 命令具体为：80 54 01 00 0F 00 00 00 01 7D A0 06 09 0F 27 13 01 0A D1 0C 08，其中 80 为 CLA，54 为 INS，01 为 P1， 00 为 P2，0F 为 Lc，00 00 00 01 为 Data 中的终端交易序号，7D A0 06 09 为 Data 中的交易日期，0F 27 13 为 Data 中的交易时间，01 0A D1 0C 为 Data 中的 MAC3，08 为 Le。

步骤 209：使用步骤 205 中生成的过程密钥来验证 DEBIT FOR PURCHASE 命令中包含的 MAC3 是否有效，若无效，则执行步骤 210，若有效，则执行步骤 211；

在本实施例中，验证 DEBIT FOR PURCHASE 命令中包含的 MAC3 是否有效的方法，具体为：

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将交易金额、交易类型标识、终端机编号、终端的交易日期和终端的交易时间顺序链接，用步骤 206 中生成的过程密钥对链接得到的数据进行加密，再比较得到的加密后的数据的前四个字节与 DEBIT FOR PURCHASE 命令中包含的 MAC3 是否相同，若不相同，则 MAC3 无效，若相同，则 MAC3 有效。

步骤 210：返回状态码 0x9302 给终端，终止操作；

步骤 211：将电子钱包的脱机交易序号加 1，从电子钱包的余额中扣减计算得到的金额；

在本实施例中，若当交易金额为 200 元，电子钱包中的余额为 1200 元时，则从电子钱包的余额 1200 中扣减掉金额 200 元后，得到新的余额为 1000 元。

步骤 212：更新电子钱包的交易明细；

在本实施例中，需要更新的电子钱包的相关交易明细具体为：交易金额、交易类型标识、终端编号、交易日期和交易时间，具体地，CPU 卡将交易金额、交易类型标识、终端编号、交易日期和交易时间顺序链接组成一个记录以便更新。

步骤 213：生成第四报文鉴别码 MAC4，然后计算交易验证码 TAC 码；

在本实施例中，生成第四报文鉴别码 MAC4 方法具体为：

用步骤 206 中生成的过程密钥对交易金额进行加密，得到的加密后的数据的前四个字节即为第四报文鉴别码 MAC4。

其中，利用异或运算得到的结果来计算 TAC 码的方法具体为：

用 DTK 左右 8 个字节进行异或运算，并将交易金额、交易类型标识、终端机编号、终端交易序号、终端的交易日期和终端的交易时间顺序链接，并用异或运算得到的结果对链接得到的数据进行加密，得到的加密后的数据的前四个字节即为 TAC 码。

步骤 214：返回 DEBIT FOR PURCHASE 命令的响应报文给终端，交易结束。

其中，DEBIT FOR PURCHASE 命令的响应报文由 data + sw1 + sw2 组成，当 DEBIT FOR PURCHASE 命令执行成功时，则响应报文中的状态码 sw1 和

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sw2 为‘9000’，相应地，数据域 data 具体为 TAC 码和 MAC4，当 DEBIT FOR PURCHASE 命令执行不成功时，则响应报文中的状态码 sw1 和 sw2 不为‘9000’，且不包含数据域；

具体地，本实施例中 DEBIT FOR PURCHASE 命令的响应报文为：01 0D B1 09 00 02 EA B1 90 00。

本实施例提供了一种对 CPU 卡内的电子钱包进行复合圈存的方法，该方法可以使整个复合圈存的过程更安全，防止采取非法的手段去修改 CPU 卡中特定的复合应用专用文件，并且该方法中通过对复合应用专用文件中写入新的数据，简化了分级打折优惠业务的实现,只需充值时设定充值金额对应的费率即可，更方便管理，会员享受的优惠只跟充值金额挂钩，多充多优惠,从而节省了管理的成本。

实施例 2

为了简化了分级打折优惠操作，便于对消费金额自动进行处理，本发明实施例提供了一种对电子钱包进行消费的方法，参见图 4，该方法内容包括：

401: CPU 卡进入终端的非接触式感应区内，所述 CPU 卡上电并初始化；

402:等待接收所述终端发送的命令；

403:当接收所述终端发送的消费初始化命令时，读取所述消费初始化命令中的数据并保存，其中所述数据中包括交易金额；

404:按照预先约定的算法对所述交易金额和复合应用专用文件中的相应记录中的值进行运算，得到新金额；

405:读取所述电子钱包的余额，判断所述新金额是否超过所述电子钱包的余额与透支限额的和；

若是，则向所述终端返回所述电子钱包余额不足的信息，终止操作；

若否，则生成一个伪随机数和一个过程密钥，将所述消费初始化命令的响应报文返回给所述终端；

406:接收所述终端发送的消费命令，读取所述消费命令中的数据并保存；

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407:从所述电子钱包的余额中扣减所述新金额，得到新的余额，并将所述消费命令的响应报文返回给所述终端。

为了对本发明实施例提供的方法进行详细说明，请参见如下实施例：

实施例

本发明实施例提供了一种对电子钱包进行消费的方法，在本实施例中，CPU 卡内的电子钱包除了具有支持复合应用的钱包的所有交易功能外，还支持复合圈存和消费的功能，并且对 CPU 卡内电子钱包的复合圈存操作是在 CPU 终端进行的，本实施例中进行复合圈存操作时，将交易金额直接加到电子钱包的余额上，相应地，在消费时，则按照预先约定的算法对交易金额和复合专用文件的相应记录中的值进行运算，得到新金额，再从电子钱包的余额中扣减得到的新金额，得到电子钱包的新余额，完成消费操作。

参见图 5，一种对电子钱包进行消费的方法，具体实现步骤如下：

步骤 501：CPU 卡进入终端的非接触式感应区内，CPU 卡上电并初始化；

步骤 502：等待接收终端发送的应用命令，当接收到复合圈存初始化命令 INITIALIZE FOR CAPP LOAD 时，执行步骤 503，当接收到消费初始化命令 INITIALIZE FOR PURCHASE，执行步骤 526；

步骤 503：读取复合圈存初始化命令 INITIALIZE FOR CAPP LOAD 中包含的数据并保存；

在本实施例中，复合圈存初始化命令 INITIALIZE FOR CAPP LOAD 用于初始化复合圈存交易，并且 INITIALIZE FOR CAPP LOAD 命令的报文分成：命令头 + 命令体，即为：(CLA + INS + P1 + P2) + (Lc + Data + Le)，其中，CLA + INS + P1 + P2 为命令头，Lc + Data + Le 为命令体，命令头为命令的编码，命令头中的 CLA 为指令类别，INS 为指令代码，P1 和 P2 为指令参数；命令体中的 Lc 为命令体内 Data 中数据的长度，Data 为 INITIALIZE FOR CAPP LOAD 命令中的数据，Le 是期望的应答 APDU 数据字段的最大字节数；

并且 INITIALIZE FOR CAPP LOAD 命令的 Data 中保存的数据具体为密钥索引号、交易金额和终端机编号；

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具体地，在本实施例中，接收到的 INITIALIZE FOR CAPP LOAD 命令具体为：80 50 06 02 0B 02 00 00 03 E8 00 00 00 00 00 01 10，其中 80 为 CLA，50 为 INS，06 为 P1，定义为复合圈存初始化的标识，02 为 P2，定义为电子钱包的标识，0B 为 Lc，02 为 Data 中的密钥索引号，00 00 03 E8 为 Data 中的交易金额，00 00 00 00 00 01 为 Data 中的终端机编号，10 为 Le。

步骤 504：检查自身是否支持 INITIALIZE FOR CAPP LOAD 命令中包含的密钥索引号，若不支持，则执行步骤 505，若支持，则执行步骤 506；

步骤 505：向终端返回状态码 0x9403，同时终止执行复合圈存初始化操作；

步骤 506：生成一个四字节的伪随机数和一个过程密钥；

在本实施例中，生成过程密钥的方法具体为：

将上述伪随机数、电子钱包联机交易序号和'8000'顺序链接，再利用圈存子密钥 DLK 对链接后得到的数据进行加密，得到的加密后的数据即为过程密钥。

步骤 507：利用上述过程密钥计算得到第一报文鉴别码 MAC1；

在本实施例中，利用过程密钥计算得到第一报文鉴别码 MAC1 的方法具体为：

将交易前的电子钱包的余额、交易金额、交易类型标识和终端机编号顺序链接，再利用过程密钥对链接后的数据进行加密，得到的加密后的数据的前四个字节即为第一报文鉴别码 MAC1。

步骤 508：将 INITIALIZE FOR CAPP LOAD 命令的响应报文返回给终端；

其中，INITIALIZE FOR CAPP LOAD 命令的响应报文由 Data + sw1 + sw2 组成，当命令执行成功时，则响应报文中的状态码 sw1 和 sw2 为'9000'，相应地，数据域 Data 中包含的数据有：交易前的 CPU 电子钱包的余额、CPU 钱包的联机交易序号、密钥版本号、算法标识、伪随机数和 MAC1，当命令执行不成功时，则响应报文中的状态码 sw1 和 sw2 不为'9000'，并且也不存在数据域 Data；

具体地，在本实施例中，INITIALIZE FOR CAPP LOAD 命令的响应报文具体为：00 00 00 00 00 01 02 01 01 02 03 04 00 01 B1 0A 90 00。

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步骤 509：接收终端发送的更新记录命令 UPDATE RECORD;

在本实施例中，更新记录命令 UPDATE RECORD 用于更新复合应用专用文件中的相应记录中的数据;

复合应用专用文件由文件头和文件体组成，文件头具体包括：2 个字节的 **FILE_ID**、1 个字节的 **FILE TYPE**、2 个字节的 **FILE SIZE**、1 个字节的 **AC1**、1 个字节的 **AC2** 和 2 个字节的 RFU，其中当 **FILE TYPE** 为 00 时，表示该文件为二进制文件，当 **FILE TYPE** 为 01 时，表示该文件为定长记录文件，当 **FILE TYPE** 为 02 时，表示该文件为变长记录文件，当 **FILE TYPE** 为 03 时，表示该文件为循环文件，当 **FILE TYPE** 为 05 时，表示该文件为密钥文件，相应地，二进制文件对应的 **FILE SIZE** 为文件大小，定长记录文件对应的 **FILE SIZE** 为记录条数和记录长度，变长记录文件对应的 **FILE SIZE** 为记录条数和记录最大长度，循环文件对应的 **FILE SIZE** 为记录条数和记录长度，密钥文件对应的 **FILE SIZE** 为记录条数和记录长度，并且 AC1 为读文件权限，AC2 为写文件权限；文件体中为复合应用专用文件的数据;

具体地，在本实施例中，复合应用专用文件具体为定长记录文件，则 **FILE TYPE** 为 01，且 **FILE SIZE** 为记录条数和记录长度，具体为 0A 10，文件体中的内容为空;

进一步地，UPDATE RECORD 命令报文由 CLA + INS + P1 + P2 + Lc + Data 组成，其中 P1 和 P2 用于指定将哪个文件的第几条记录作为复合应用专用文件的记录，Lc 为 Data 中的数据的长度加上 4 个字节，本实施例中，UPDATE RECORD 命令具体为：80 DC 03 68 08 00 00 80 00，其中，00 为 CLA，DC 为 INS，03 为 P1，04 为 P2，08 为 Lc，00 00 80 00 为 Data;

并且 UPDATE RECORD 命令的数据域中即为要写入复合应用专用文件的相应记录中的新数据，其中，由于复合应用专用文件中的每条记录对应的具体应用可以由发卡方自定义，数据域中的数据也可以是自定义的，如在本实施例中自定义数据域中的数据具体为费率值，则将该费率值写入复合应用专用文件中用于写费率值的记录中，具体地，在本实施例中具体定义费率值为 80％;

相应地，当定义费率值为 80%时，更新记录命令中的数据可以不是 80％，可以是 125％，还可以是 20％，或者，更新记录命令的数据中可以不包括费率值，而由 CPU 卡对复合圈存初始化命令中包含的交易金额进行判断，根据交易金额生成一个费率值，将这个生成的费率值写入复合应用专用文件的相应记

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录中，或者，更新记录命令的数据中包含一个费率值和该费率值的前提条件，由于本实施例中的复合应用专用文件具体为定长记录文件，则预先约定该复合应用专用文件中的每一条记录具体包含一种前提条件下的费率值，如当消费时的交易金额大于 200 元，小于 300 元时，费率值为负 20 元或者费率值为 90%，表示消费时满 200 减 20 或者满 200 打 9 折，或当消费时的交易金额大于 500 元，小于 600 元时，则费率值为负 100 元或者费率值为 80%，表示消费时满 500 减 100 或者满 500 打 8 折等等，具体复合应用专用文件中的每一条记录对应的前提条件可以由发卡方预先定义的，并且在该种前提条件下的费率值也是由发卡方自定义的。

步骤 510：判断 UPDATE RECORD 命令中是否存在短文件标识符 SFI 域，若存在，则执行步骤 511，若不存在，则执行步骤 512；

其中，判断更新记录命令 UPDATE RECORD 中是否存在 SFI 域的方法具体为：判断 UPDATE RECORD 命令中的 P2 的高 5 位是否全为 0，若是，则表示命令中存在 SFI 域，即 P2 的高 5 位即是 SFI 值，否则，表示命令中不存在 SFI 域；

具体地，本实施例中 UPDATE RECORD 命令中的 P2 为 68，表示 P2 的高 5 位为 01101，存在 SFI 域。

步骤 511：查找 CPU 卡当前应用下是否存在一个文件的 SFI 值与 UPDATE RECORD 命令中的 SFI 值相同，若不存在，则执行步骤 512，若存在，则执行步骤 513；

步骤 512：向终端返回状态码 0x6A82，同时终止执行此次复合圈存交易；

步骤 513：将步骤 511 中查找得到的文件作为复合应用专用文件，并根据 UPDATE RECORD 命令中指定的记录号在该复合应用专用文件中查找相应的记录，若没有找到相应的记录，则执行步骤 514，若找到，则执行步骤 515；

具体地，在本实施例中，UPDATE RECORD 命令中的 P1 为 03，因此上述复合应用专用文件中记录号为 03 的记录即为需要查找的记录。

步骤 514：向终端返回状态码 0x6A83，同时终止执行此次复合圈存交易；

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步骤 515：检查 UPDATE RECORD 命令中的数据域的长度是否大于步骤 513 中查找得到的记录的指定长度，若大于，则执行步骤 516，若不大于，则执行步骤 517；

在本实施例中，由于复合应用专用文件是定长记录文件，且复合应用专用文件中的 **FILE SIZE** 为记录条数和记录长度，所以复合应用专用文件中的记录长度由 **FILE SIZE** 的值决定，由于本实施例中 UPDATE RECORD 命令中 Lc 的值为 08，**FILE SIZE** 的值为 0A 10，所以命令中的数据域的长度不大于复合应用专用文件的长度。

步骤 516：向终端返回状态码 0x6A84，同时终止执行此次复合圈存交易；

步骤 517：将 UPDATE RECORD 命令中的数据域中的数据写入查找得到的记录中，替换该记录中的原有内容；

在本实施例中，具体将费率值 80％写入该记录中，替换该记录中的原有内容；由于本实施例中复合应用专用文件中的记录中的原有内容为空，因此直接将 UPDATE RECORD 命令中的数据域中的 00 00 80 00 写入复合应用专用文件中的记录号为 03 的记录中即可；

相应地，当更新记录命令中的费率值为 125％时，则写入复合应用专用文件的相应记录中的数据具体为 125％，当更新记录命令中的费率值为 20％时，则写入复合应用专用文件的相应记录中的数据具体为 20％；

或者，当更新记录命令的数据中可以不包括费率值，而由 CPU 卡对复合圈存初始化命令中包含的交易金额进行判断，按照预先约定的规则根据交易金额生成一个费率值，再将这个生成的费率值写入复合应用专用文件的相应记录中，例如，当复合圈存初始化命令中的交易金额为 800 元时，即小于预先约定的下限时，具体如为 2000 时，则生成一个数据 95％，或者 105％，或者 5％，因此将 95％或者 105％或者 5％写入复合应用专用文件的相应记录中，而当复合圈存初始化命令中的交易金额为 5000 元时，即在预先约定的下限与上限之间时，具体如为 2000 到 6000 时，则生成一个数据 80％或者 125％或者 20％，因此将 80％或者 125％或者 20％写入复合应用专用文件的相应记录中，或者当复合圈存初始化命令中的交易金额为 8000 元时，则生成一个数据 75％或者 133％或者 25％，即大于预先约定的下限时，具体如为 6000 时，因此将 75％或者 133％或者 25％写入复合应用专用文件的相应记录中；

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或者，当复合应用专用文件中的每条记录对应的是不同前提下的费率值时，则将更新记录命令的数据中包含的费率值和该费率值的前提条件写入相应的记录中，如将费率值负 20 元或者 90％以及该费率值的前提条件消费时的交易金额大于 200 元，小于 300 元写入相应的记录中，或者将费率值负 100 元或者 80％以及该费率值的前提条件消费时的交易金额大于 500 元，小于 600 元写入相应的记录中等等。

步骤 518：将 UPDATE RECORD 命令的响应报文返回给终端；

其中，UPDATE RECORD 命令的响应报文由 sw1 + sw2 组成，不存在数据域 data，当命令执行成功时，则返回的响应报文为‘9000’，当命令执行不成功时，则返回的响应报文不为‘9000’，具体本实施例中返回的响应报文为 90 00。

步骤 519：接收终端发送的复合圈存命令 CREDIT FOR CAPP LOAD，读取命令数据域中的数据并保存；

在本实施例中，复合圈存命令 CREDIT FOR CAPP LOAD 用于复合圈存交易；

CREDIT FOR CAPP LOAD 命令报文由 CLA + INS + P1 + P2 + Lc + Data + Le 组成，其中 Data 中的数据具体包括：交易日期、交易时间和第二报文鉴别码 MAC2；

具体地，本实施例中接收到的 CREDIT FOR CAPP LOAD 命令具体为：80 52 00 00 0B 07 DA 06 08 0A 14 2D 00 01 A1 0B 08，其中，80 为 CLA，52 为 INS，00 为 P1，00 为 P2，0B 为 Lc，07 DA 06 08 为 Data 中的交易日期，0A 14 2D 为 Data 中的交易时间，00 01 A1 0B 为 Data 中的 MAC2，08 为 Le。

步骤 520：验证数据中的第二报文鉴别码 MAC2 是否有效，若无效，则执行步骤 521，若有效，则执行步骤 522；

在本实施例中，验证 MAC2 是否有效的方法，具体为：

将交易金额、交易类型标识、终端机编号、交易日期和交易时间顺序链接，然后使用步骤 506 中生成的过程密钥对链接得到的数据进行加密，再比较加密后得到的数据的前四个字节与 CREDIT FOR CAPP LOAD 命令数据域中的 MAC2 是否相同，若不相同，则 MAC2 无效，若相同，则 MAC2 有效。

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步骤 521：向终端返回状态码 0x9302，提示 MAC2 无效；

步骤 522：将电子钱包的联机交易序号加 1，将交易金额直接加到电子钱包的余额上；

在本实施例中，当交易金额为 1000 元，电子钱包的余额为 0 元时，则将交易金额 1000 元加到电子钱包的余额上，得到新的余额 1000 元。

步骤 523：更新电子钱包的交易明细；

具体地为：将电子钱包的联机交易序号、交易金额、交易类型标识、终端机编号、交易日期和交易时间顺序链接组成一个记录来更新标准交易明细；

步骤 524：计算交易验证码 TAC；

在本实施例中，计算交易验证码 TAC 码，具体为：

用内部密钥 DTK 左右 8 个字节进行异或运算，并将交易后的电子钱包的余额、加 1 前的电子钱包的联机交易序号、交易金额、交易类型标识、终端机编号、交易日期和交易时间顺序链接，再利用异或运算得到的结果对链接得到的数据进行加密，得到的加密后的数据即为 TAC 码。

步骤 525：将 CREDIT FOR CAPP LOAD 命令的响应报文返回给终端；

其中，CREDIT FOR CAPP LOAD 命令的响应报文由 data + sw1 + sw2 组成，当命令执行成功时，则返回的响应报文中的状态码 sw1 和 sw2 为‘9000’，相应地，响应报文的数据域中的数据具体为 TAC 码，当命令执行不成功时，则返回的响应报文中的状态码 sw1 和 sw2 不为‘9000’，响应报文中不存在数据域；

具体地，在本实施例中返回的 CREDIT FOR CAPP LOAD 命令的响应报文为 00 05 D2 BC 90 00。

步骤 526：读取消费初始化命令 INITIALIZE FOR PURCHASE 中的数据并保存；

在本实施例中，消费初始化命令 INITIALIZE FOR PURCHASE 用于初始化消费交易，INITIALIZE FOR PURCHASE 命令报文由 CLA + INS + P1 + P2

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+Lc + Data + Le 组成，其中 Data 中的数据具体为密钥索引号、交易金额和终端机编号；

具体地，在本实施例中，接收到的 INITIALIZE FOR PURCHASE 命令具体为：80 50 01 02 0B 02 00 00 00 C8 00 00 00 00 00 01 0F，其中 80 为 CLA，50 为 INS，01 为 P1， 02 为 P2，定义为电子钱包的标识，0B 为 Lc，02 为 Data 中的密钥索引号，00 00 00 C8 为 Data 中的交易金额，00 00 00 00 00 01 为 Data 中的终端机编号，0F 为 Le。

步骤 527: 检查自身是否支持上述 INITIALIZE FOR PURCHASE 命令中包含的密钥索引号，若不支持，则执行步骤 528，若支持，则执行步骤 529;

步骤 528: 返回状态码 0x9403 给终端，并终止操作;

步骤 529: 按照预先约定的算法对 INITIALIZE FOR PURCHASE 命令中包含的交易金额和复合应用专用文件的相应记录中的值进行运算，得到新金额;

在本实施例中，预先约定的算法包括乘法、除法、加法和减法，以及所述四种算法的各种组合;

进一步地，复合应用专用文件的记录中的值为费率值，具体为 80％，因此若当消费时的交易金额为 200 元时，则对交易金额 200 元与复合专用文件中的费率值 80％进行乘法运算，得到的新金额为 160 元;

而当复合应用专用文件的记录中的费率值为 125％时，则对交易金额 200 元与复合专用文件中的费率值 125％进行除法运算，得到的新金额为 160 元;

而当复合应用专用文件的记录中的费率值为 20％时，则对交易金额 200 元与复合专用文件中的费率值 20％进行乘法运算，得到 40 元，再对交易金额 200 元与 40 元进行减法运算，得到的新金额为 160 元;

或者，当消费时的交易金额为 550 元时，则该交易金额 550 元满足的前提条件是交易金额大于 500 元小于 600 元，因此根据该前提条件在相应的记录中就可以找到相应的费率值，具体的在相应的记录中自定义费率值为负 100 元，则在消费时，自动对交易金额 550 元与相应记录中的费率值负 100 元进行加法运算，得到新金额为 450 元。

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步骤 530：读取电子钱包的余额，判断上述新金额是否超过电子钱包的余额与透支限额的和，若是，则执行步骤 531，若否，则执行步骤 532；

步骤 531：返回状态码 0x9401 给终端，并终止操作；

步骤 532：生成一个伪随机数和一个过程密钥；

在本实施例中，过程密钥用于 CPU 电子钱包或 M1 电子钱包的消费交易，过程密钥是用密钥 DPK 分散得到的。

步骤 533：发送 INITIALIZE FOR PURCHASE 命令的响应报文给终端；

其中，INITIALIZE FOR PURCHASE 响应报文由 Data + sw1 + sw2 组成，当命令执行成功时，则返回给终端的响应报文中的状态码 sw1 和 sw2 为‘9000’，且响应报文 Data 中包含的数据具体为电子钱包的余额、CPU 电子钱包的脱机交易序号、透支限额、密钥版本号、算法标识和伪随机数，若命令执行不成功，则返回给终端的响应报文中只含有状态码 sw1 和 sw2，且状态码 sw1 和 sw2 不为‘9000’；

具体地，本实施例中返回给终端的 INITIALIZE FOR PURCHASE 响应报文为：00 00 4B 00 00 01 00 00 64 02 03 01 02 03 04 90 00。

步骤 534：接收终端发送的消费命令 DEBIT FOR PURCHASE，读取命令中的数据并保存；

在本实施例中，DEBIT FOR PURCHASE 命令用于进行消费操作；

其中，DEBIT FOR PURCHASE 命令报文也由 CLA + INS + P1 + P2 + Lc + Data + Le 组成，Data 中的数据具体为：终端交易序号、交易日期、交易时间和第三鉴别码 MAC3；

具体地，在本实施例中，接收到的 DEBIT FOR PURCHASE 命令具体为：80 54 01 00 0F 00 00 00 01 7D A0 06 09 0F 27 13 01 0A D1 0C 08，其中 80 为 CLA，54 为 INS，01 为 P1， 00 为 P2，0F 为 Lc，00 00 00 01 为 Data 中的终端交易序号，7D A0 06 09 为 Data 中的交易日期，0F 27 13 为 Data 中的交易时间，01 0A D1 0C 为 Data 中的 MAC3，08 为 Le。

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步骤 535: 使用步骤 532 中生成的过程密钥来验证 DEBIT FOR PURCHASE 命令中包含的 MAC3 是否有效，若无效，则执行步骤 536，若有效，则执行步骤 537;

在本实施例中，验证 DEBIT FOR PURCHASE 命令中包含的 MAC3 是否有效的方法，具体为:

将交易金额、交易类型标识、终端机编号、终端的交易日期和终端的交易时间顺序链接，用步骤 532 中生成的过程密钥对链接得到的数据进行加密，再比较得到的加密后的数据的前四个字节与 DEBIT FOR PURCHASE 命令中包含的 MAC3 是否相同，若不相同，则 MAC3 无效，若相同，则 MAC3 有效。

步骤 536: 返回状态码 0x9302 给终端，终止操作;

步骤 537: 将电子钱包的脱机交易序号加 1，并从电子钱包的余额中扣减步骤 529 中得到的新金额;

步骤 538: 更新电子钱包的交易明细;

在本实施例中，需要更新的电子钱包的相关交易明细具体为: 交易金额、交易类型标识、终端编号、交易日期和交易时间，具体地，CPU 卡将交易金额、交易类型标识、终端编号、交易日期和交易时间顺序链接组成一个记录以便更新。

步骤 539: 生成第四报文鉴别码 MAC4，然后计算交易验证码 TAC 码;

在本实施例中，生成第四报文鉴别码 MAC4 方法具体为:

用步骤 532 中生成的过程密钥对交易金额进行加密，得到的加密后的数据的前四个字节即为第四报文鉴别码 MAC4。

其中，利用异或运算得到的结果来计算 TAC 码的方法具体为:

用 DTK 左右 8 个字节进行异或运算，并将交易金额、交易类型标识、终端机编号、终端交易序号、终端的交易日期和终端的交易时间顺序链接，并用异或运算得到的结果对链接得到的数据进行加密，得到的加密后的数据的前四个字节即为 TAC 码。

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步骤 540：返回 DEBIT FOR PURCHASE 命令的响应报文给终端，交易结束。

其中，DEBIT FOR PURCHASE 命令的响应报文由 data + sw1 + sw2 组成，当命令执行成功时，则响应报文中的状态码 sw1 和 sw2 为‘9000’，相应地，数据域 data 具体为 TAC 码和 MAC4，当命令执行不成功时，则响应报文中的状态码 sw1 和 sw2 不为‘9000’，且不包含数据域；

具体地，本实施例中 DEBIT FOR PURCHASE 命令的响应报文为：01 0D B1 09 00 02 EA B1 90 00。

进一步地，在本实施例中，当复合应用专用文件为二进制文件时，因此 CPU 卡接收到的对复合应用专用文件进行更新的命令就不是更新记录命令 UPDATE RECORD，而是 UPDATE CAPP DATA CACHE 命令，其中 CPU 卡接收到 UPDATE CAPP DATA CACHE 命令之后的具体操作如下：

步骤 509’：接收终端发送的更新复合应用专用文件的命令 UPDATE CAPP DATA CACHE；

在本实施例中，更新复合应用专用文件的命令 UPDATE CAPP DATA CACHE 用于更新复合应用专利文件中的数据；

具体地，UPDATE CAPP DATA CACHE 命令报文由 CLA + INS + P1 + P2 + Lc + Data 组成，本实施例中，UPDATE CAPP DATA CACHE 命令具体为：80 D6 92 B1 04 00 01 20 00，其中，80 为 CLA，D6 为 INS，92 为 P1，B1 为 P2，04 为 Lc，00 01 20 00 为 Data；

并且 UPDATE CAPP DATA CACHE 命令的数据域 Data 中的数据为要写入复合应用专用文件的新数据，其中，由于复合应用专用文件的具体应用可以由发卡方自定义，因此数据域中的数据也可以是自定义的，如在本实施例中复合应用专用文件可以自定义为费率文件，则相应地，数据域中的数据具体为费率值，在本实施例中具体定义费率值为 120％；

具体地，在本实施例中，复合应用专用文件具体为二进制文件，则 **FILE TYPE** 为 00，且 **FILE SIZE** 为文件大小，具体为 00 0B，文件体中的内容为空。

步骤 510’：判断接收到的 UPDATE CAPP DATA CACHE 命令中是否存在 SFI 域，若存在，则执行步骤 511’，若不存在，则执行步骤 512’；

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在本实施例中，判断 UPDATE CAPP DATA CACHE 命令中是否存在 SFI 域具体为：判断 UPDATE CAPP DATA CACHE 命令中的 P1 的高三位是否为 100，若是，则表示命令中存在 SFI 域，PI 的低 5 位即为 SFI 域，否则，表示命令中不存在 SFI 域；

具体地，本实施例中 UPDATE CAPP DATA CACHE 命令中的 P1 为 92，表示 P1 的高三位为 100，存在 SFI 域。

步骤 511'：查找 CPU 卡当前应用下是否存在一个文件的 SFI 值与 UPDATE CAPP DATA CACHE 命令中的 SFI 值相同，若不存在，则执行步骤 512'，若存在，则执行步骤 513'；

步骤 512'：向终端返回状态码 0x6A82，同时终止执行此次复合圈存交易；

步骤 513'：将步骤 511'中查找得到的文件作为复合应用专用文件，并检查 UPDATE CAPP DATA CACHE 命令中的数据域的长度是否大于复合应用专用文件的长度，若大于，则执行步骤 514'，若不大于，则执行步骤 515'；

在本实施例中，由于复合应用专用文件是二进制文件，所以复合应用专用文件的长度具体为 **FILE SIZE** 的值，具体即为判断 UPDATE CAPP DATA CACHE 命令中 Lc 的值是否大于复合应用专用文件 **FILE SIZE** 的值，由于本实施例中 UPDATE CAPP DATA CACHE 命令中 Lc 的值为 04，**FILE SIZE** 的值为 00 0B，所以命令中的数据域的长度不大于复合应用专用文件的长度。

步骤 514'：向终端返回状态码 0x6A84，同时终止执行此次复合圈存交易；

步骤 515'：将 UPDATE CAPP DATA CACHE 命令中的数据域中的数据写入复合应用专用文件中，替换该复合应用专用文件中的原有内容；

在本实施例中，具体将费率值 120％写入该复合应用专用文件中，替换其原有内容；

由于本实施例中复合应用专用文件中的原有内容为空，因此直接将 UPDATE CAPP DATA CACHE 命令中的数据域中的 00 01 20 00 写入复合应用专用文件中即可。

步骤 516'：将 UPDATE CAPP DATA CACHE 命令的响应报文返回给终端；

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其中，UPDATE CAPP DATA CACHE 命令的响应报文由 sw1 + sw2 组成，不存在数据域 data，当 UPDATE CAPP DATA CACHE 命令执行成功时，则响应报文为‘9000’，当 UPDATE CAPP DATA CACHE 命令执行不成功时，则响应报文不为‘9000’。

本实施例提供了一种对 CPU 卡内的电子钱包进行消费的方法，该方法可以使整个复合圈存的过程更安全，防止采取非法的手段去修改 CPU 卡中特定的复合应用专用文件，并且该方法中通过对复合应用专用文件中写入新的数据，简化了分级打折优惠业务的实现,在消费时自动对消费的金额进行处理，更方便管理，从而节省了管理的成本。

以上所述，仅为本发明的具体实施方式，但本发明的保护范围并不局限于此，任何熟悉本技术领域的技术人员在本发明揭露的技术范围内，可轻易想到变化或替换，都应涵盖在本发明的保护范围之内。因此，本发明的保护范围应所述以权利要求的保护范围为准。

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权 利 要 求 书

1. 一种对电子钱包进行操作的方法，其特征在于，所述方法包括：

CPU 卡进入终端的非接触式感应区内，所述 CPU 卡上电并初始化；

接收所述终端发送的操作初始化命令，读取所述操作初始化命令中的数据并保存，所述数据包括交易金额，所述操作初始化命令为复合圈存初始化命令或消费初始化命令；

如果所述操作初始化命令为复合圈存初始化命令，则进行复合圈存初始化操作；接收所述终端发送的更新复合应用专用文件命令，查找复合应用专用文件；将预先约定的数据写入所述复合应用专用文件的存储空间中，替换原有内容；接收所述终端发送的复合圈存命令，读取所述复合圈存命令中的数据并保存；按照预先约定的算法对所述交易金额与所述复合应用专用文件中的数据进行运算，得到新金额，将所述得到新金额加到电子钱包的余额上，得到新余额；

如果所述操作初始化命令为消费初始化命令，按照预先约定的算法对所述交易金额和复合应用专用文件中的相应记录中的值进行计算，得到新金额；读取所述电子钱包的余额，判断所述新金额是否超过所述电子钱包的余额与透支限额的和；若是，则向所述终端返回所述电子钱包余额不足的信息，终止操作；若否，则生成一个伪随机数和一个过程密钥，将所述消费初始化命令的响应报文返回给所述终端；接收所述终端发送的消费命令，读取所述消费命令终的数据并保存；从所述电子钱包的余额中扣减所述新金额，得到新的金额，并将所述消费命令的响应报文返回给所述终端。

2. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令中的数据还包括：密钥索引号和终端机编号。

3. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述预先约定的算法包括乘法、除法、加法和减法，以及所述四种算法的各种组合。

4. 如权利要求 2 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为消费初始化命令时，所述按照预先约定的算法对所述交

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易金额和复合应用专用文件中的相应记录中的值进行运算之前，所述方法还包括：

所述 CPU 卡检查自身是否支持所述密钥索引号；

若不支持，则向终端返回 CPU 卡不支持所述密钥索引号的信息，终止操作；

若支持，则按照预先约定的算法对所述交易金额和复合应用专用文件中的相应记录中的值进行运算。

5. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为消费初始化命令时，所述消费命令中的数据包括：终端交易号，交易日期，交易时间和第三鉴别码。

6. 如权利要求 5 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为消费初始化命令时，所述从所述电子钱包的余额中扣减所述新金额之前，所述方法还包括：

验证所述第三鉴别码是否有效；

若无效，则向终端返回第三鉴别码无效 的信息，终 止操作；

若有效，则将所述电子钱包的脱机交易序号加 1，从所述电子钱包的余额中扣减所述新金额。

7. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为消费初始化命令时，所述从电子钱包的余额中扣减所述新金额，得到新的余额之后，所述方法还包括：

更新所述电子钱包的交易明细；

生成第四报文鉴别码和验证码。

8. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为消费初始化命令时，所述等待接收终端发送的命令的同时，所述方法还包括：

接收所述终端发送的复合圈存初始化命令时，读取所述复合圈存初始化命令中的数据并保存，进行复合圈存初始化操作；

接收所述终端发送的更新记录命令，更新复合应用专用文件中的相应记录中的数据；

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接收所述终端发送的复合圈存命令，进行复合圈存操作。

9. 如权利要求 8 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为消费初始化命令时，所述更新复合应用专用文件中的相应记录中的数据的步骤为：

查找所述复合应用专用文件中的相应记录；

判断所述更新记录命令中的数据的长度是否大于所述查找得到的记录的长度；

若是，则向所述终端返回所述记录存储空间不够的信息，终止操作；

若否，则更新所述查找得到的记录中的数据。

10. 如权利要求 9 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为消费初始化命令时，所述查找复合应用专用文件中的相应记录的操作为：

判断所述更新记录命令中是否存在短文件标识符；

若不存在所述短文件标识符，则向所述终端返回未找到复合应用专用文件的信息，终止操作；

若存在所述短文件标识符，则检查是否存在一个文件的短文件标识符的值与所述短文件标识符的值相同，若不存在，则向所述终端返回未找到复合应用专用文件的信息，终止操作，若存在，则将所述检查到的文件作为复合应用专用文件，并根据所述更新记录命令中指定的记录号在所述复合应用专用文件中查找相应的记录；

若没有查找到，则向终端返回未找到相应记录的信息，终止操作；

若查找到，则将查找到的记录作为需要更新的记录。

11. 如权利要求 9 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为消费初始化命令时，所述更新查找得到的记录中的数据的方法包括：

将所述更新记录命令中的数据写入所述查找得到的记录中，替换原有内容；

或者，

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根据预先约定的规则对所述复合圈存初始化命令中包含的交易金额进行判断，并根据判断结果生成一个数据，将所述生成的数据写入所述查找得到的记录中，替换原有内容。

12. 如权利要求 2 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述复合圈存初始化操作为：

所述 CPU 卡检查自身是否支持所述密钥索引号；

若不支持，则向所述终端返回所述 CPU 卡不支持所述密钥索引号的信息，终止操作；

若支持，则生成一个伪随机数和一个过程密钥，并用所述过程密钥计算得到第一报文鉴别码；

将复合圈存初始化命令的响应报文返回给所述终端。

13. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述查找复合应用专用文件的操作为：

判断所述更新复合应用专用文件命令中是否存在短文件标识符；

若不存在，则将当前文件作为复合应用专用文件；

若存在，则检查当前应用下的文件中是否存在一个文件的短文件标识符的值与所述短文件标识符相同；

若否，则向终端返回未找到复合应用专用文件的信息，终止操作；

若是，则将得到的文件作为复合应用专用文件。

14. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述将预先约定的数据包括：

所述更新复合应用专用文件命令中包含的数据，或者，根据所述复合圈存初始化命令中包含的交易金额生成的数据。

15. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述将预先约定的数据写入所述复合应用专用文件的存储空间中之前，所述方法还包括：

判断所述预先约定的数据的长度是否大于所述复合应用专用文件的存储空间的大小；

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若是，向所述终端返回所述复合应用专用文件的存储空间不够的信息，终止操作；

若否，将将预先约定的数据写入所述复合应用专用文件的存储空间中。

16. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述将预先约定的数据写入所述复合应用专用文件的存储空间中，替换原有内容之后，所述方法还包括：

将更新复合应用专用文件命令的响应报文返回给所述终端。

17. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述复合圈存命令中的数据包括：交易日期、交易时间和第二报文鉴别码；

所述按照预先约定的算法对所述交易金额与所述复合应用专用文件中的数据进行运算之前，所述方法还包括：

验证所述第二报文鉴别码是否有效；

若无效，则向所述终端返回第二报文鉴别码无效的信息，终止操作；

若有效，则将所述电子钱包的联机交易序号加 1，并按照预先约定的算法对所述交易金额与所述复合应用专用文件中的数据进行运算。

18. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述将得到的新金额加到电子钱包的余额上，得到新余额之后，所述方法还包括：

更新所述电子钱包的交易明细；

计算交易验证码；

将所述复合圈存命令的响应报文返回给所述终端。

19. 如权利要求 1 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述更新复合应用专用文件命令还为：更新记录命令；

所述查找复合应用专用文件的操作还具体为：查找复合应用专用文件，并查找所述复合应用专用文件中的相应记录。

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20. 如权利要求 19 所述的对电子钱包进行操作的方法，其特征在于，所述操作初始化命令为复合圈存初始化命令时，所述查找复合应用专用文件，并查找所述复合应用专用文件中的相应记录的方法为：

判断所述更新记录命令中是否存在短文件标识符；

若不存在，则向所述终端返回未找到复合应用专用文件的信息，终止操作；

若存在，则检查当前应用下的文件中是否存在一个文件的短文件标识符的值与所述短文件标识符相同；

若否，则向终端返回未找到复合应用专用文件的信息，终止操作；

若是，则将得到的文件作为复合应用专用文件，并根据所述更新记录命令中指定的记录号在所述复合应用专用文件中查找相应的记录；

若没有查找到，则向终端返回未找到需要更新的记录的信息，终止操作；

若查找到，则将查找得到的记录作为需要更新的记录。

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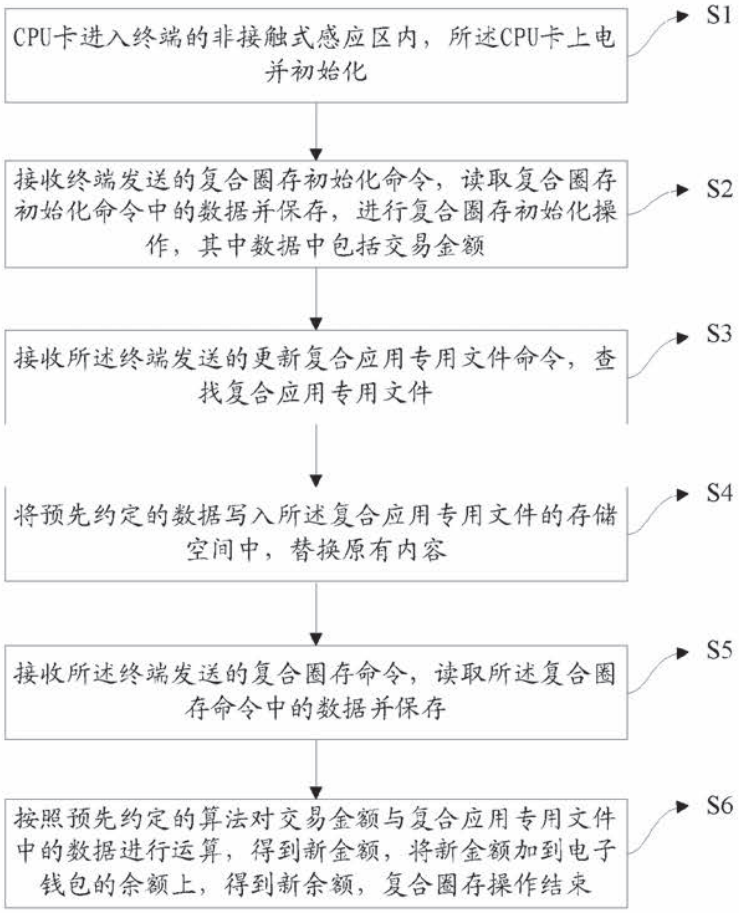

图 1

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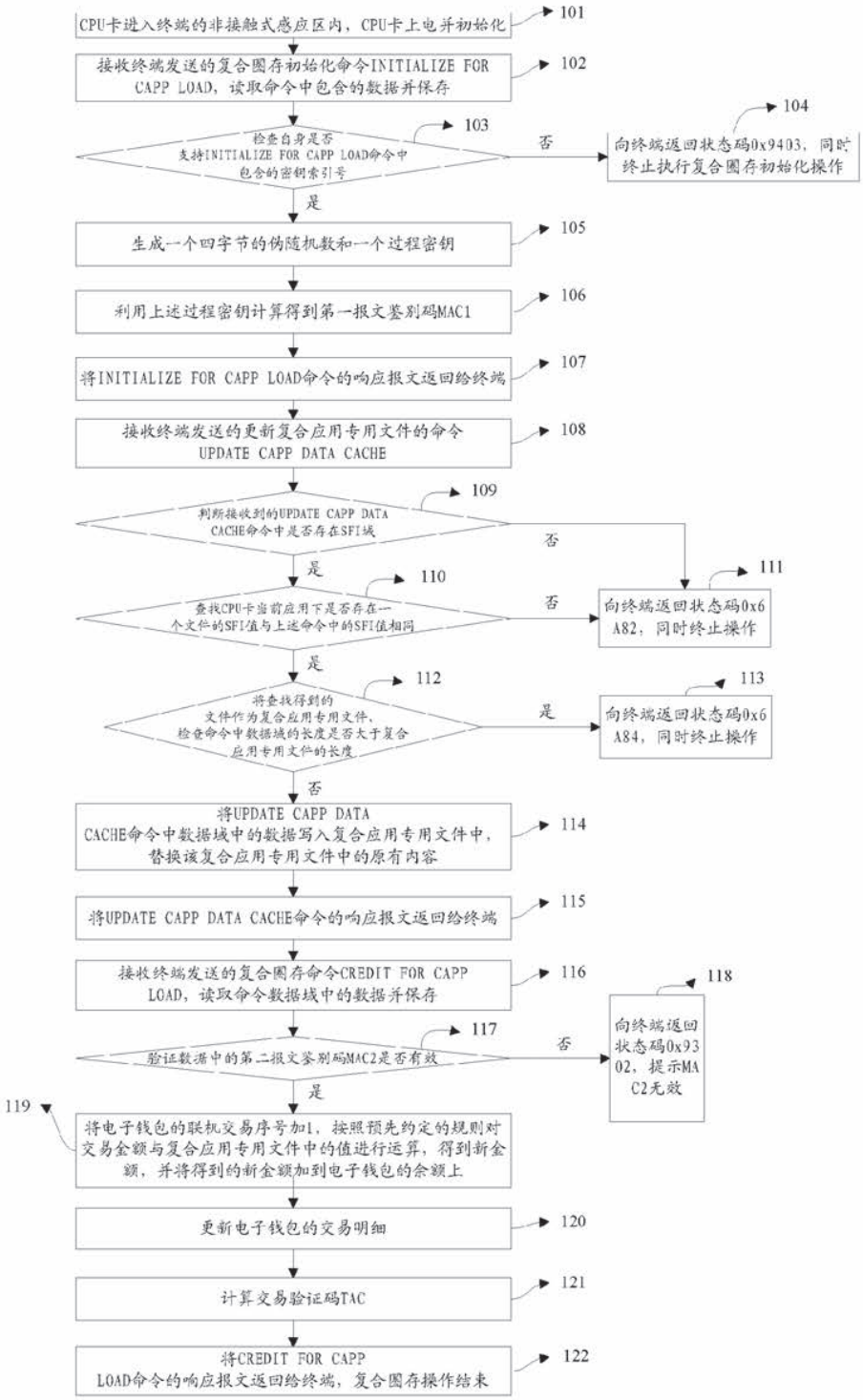

图 2

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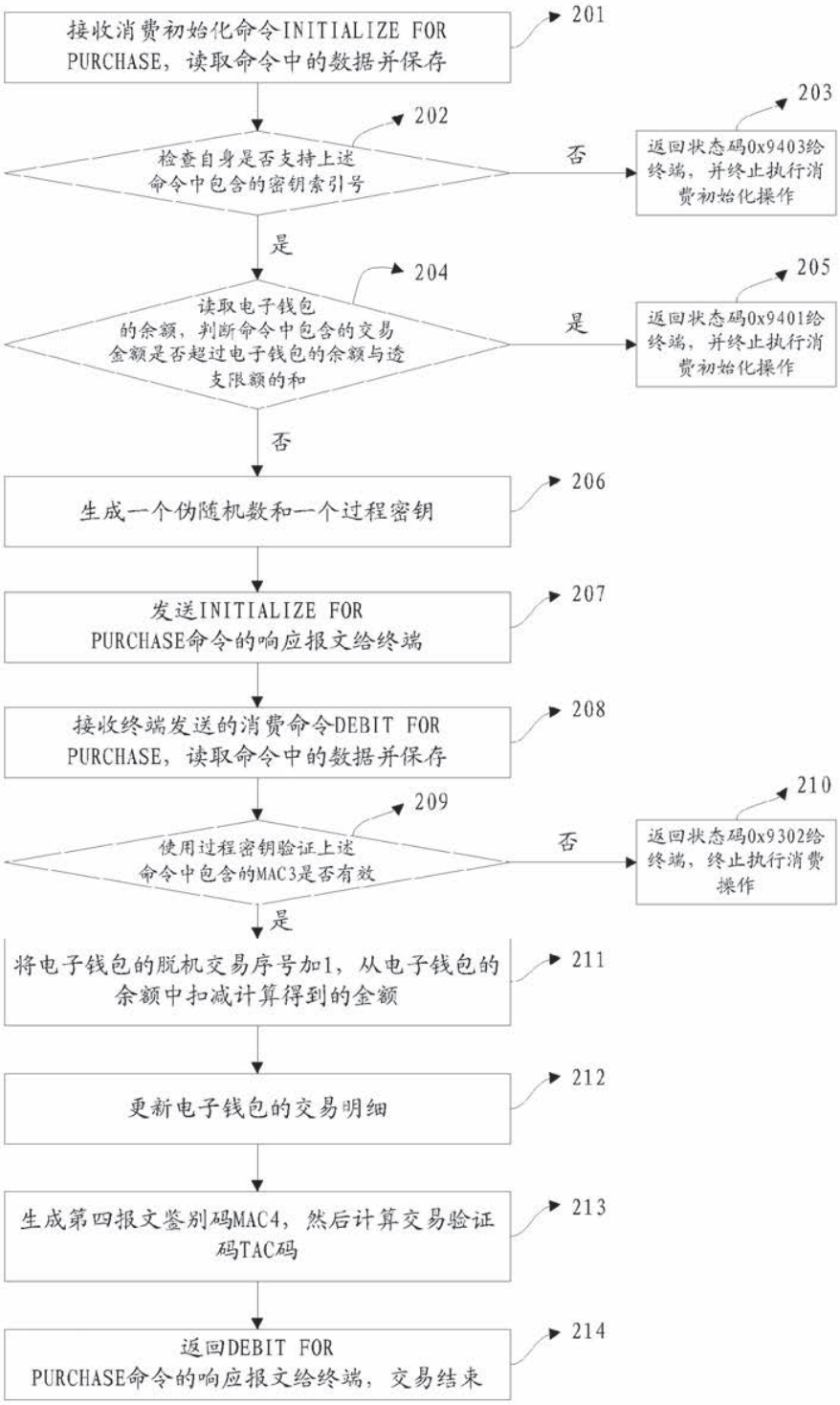

图 3

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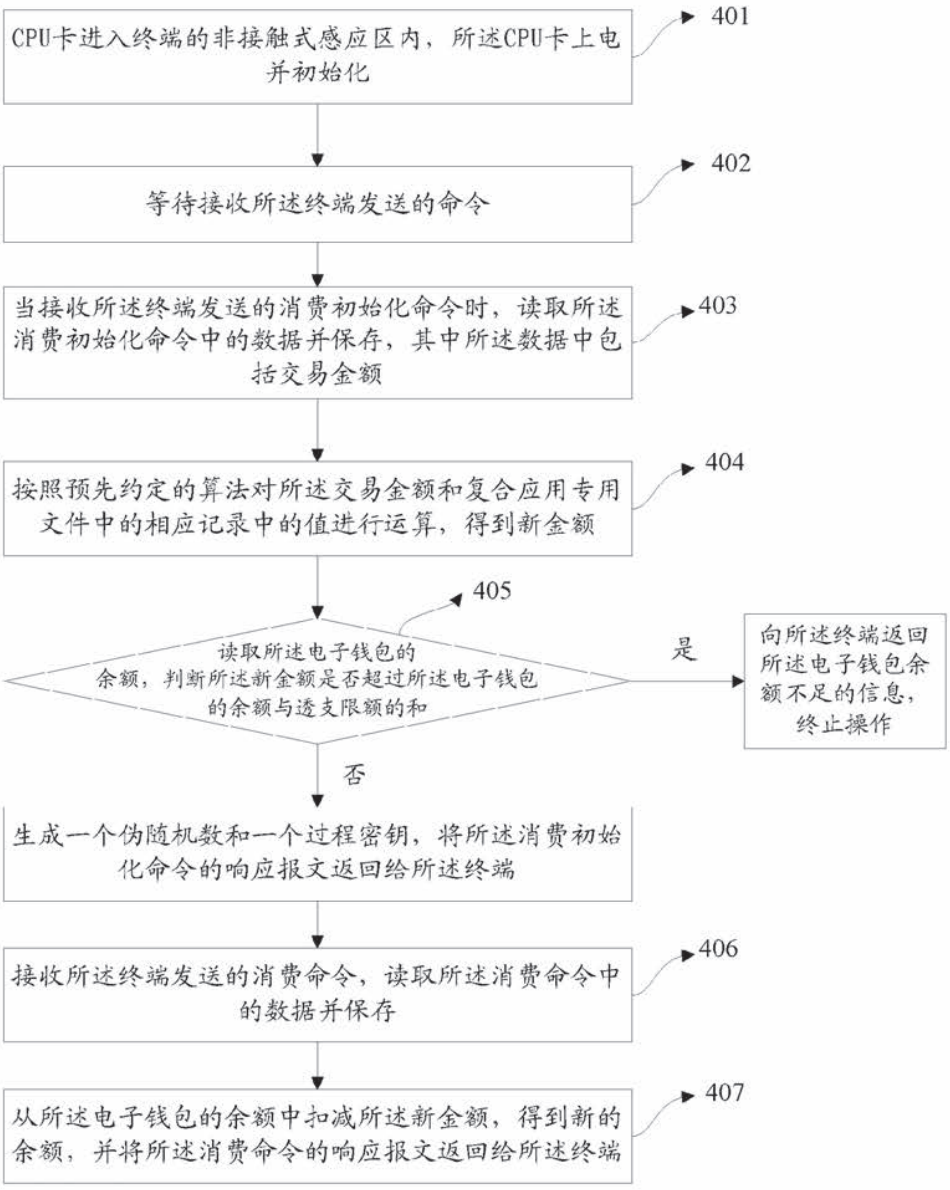

图 4

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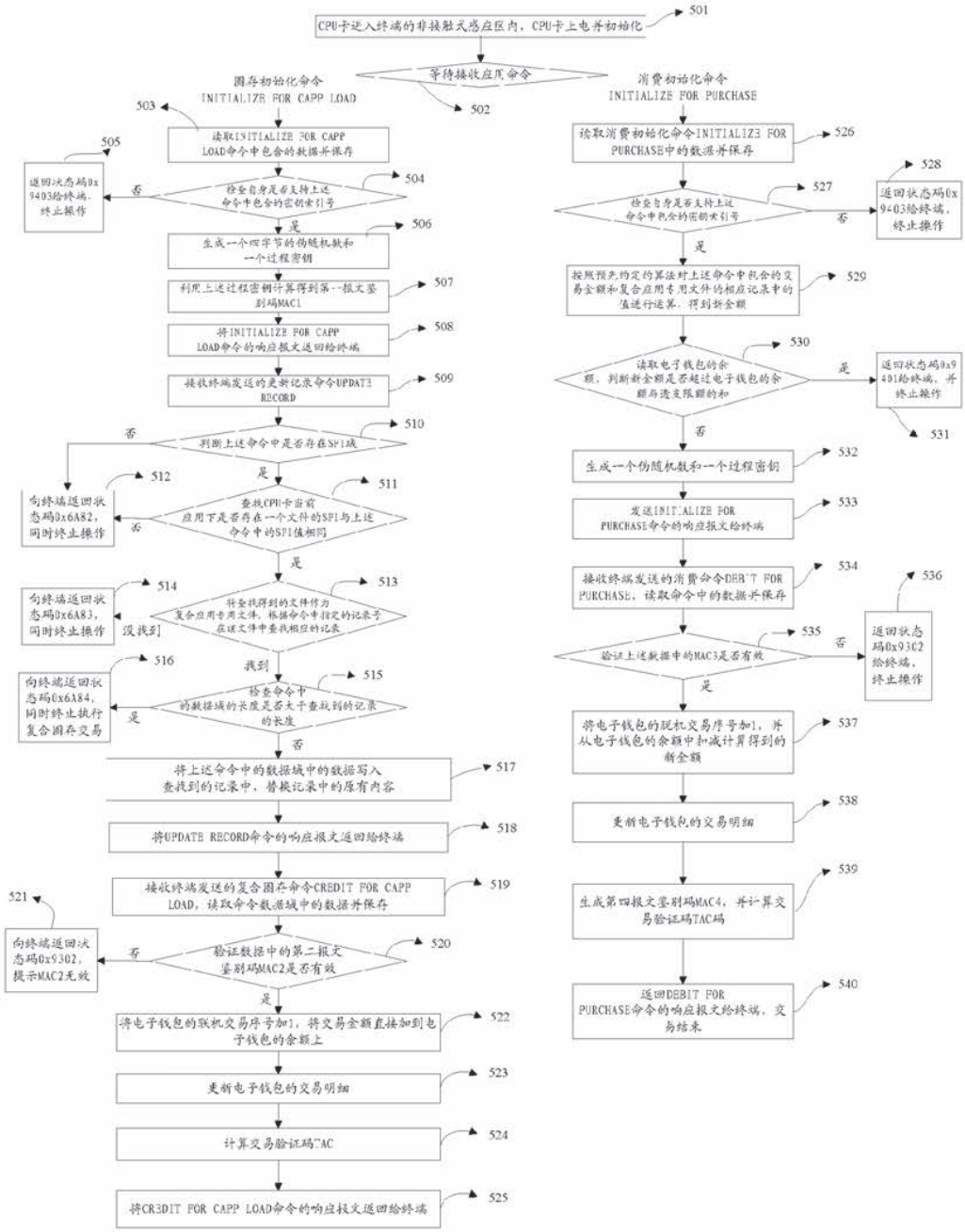

图 5

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2011/076590

A. CLASSIFICATION OF SUBJECT MATTER

G07F 7/08 (2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: G07F 7/-,G06Q 20/-,G06Q 30/-,G06F 17/-,G06K 19/-

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)

CNPAT; CNKI; WPI; EPODOC; PAJ

cpu, ic, pos, electronic, purse, card, smart, smart?card, initializ+, transaction, financial, purchas+, discount+, reward+, rebate+, terminal, command

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	CN102013132A (BEIJING FEITIAN TECHNOLOGIES CO LTD) 13 Apr. 2011(13.04.2011) see the claims 1-13, the figures 1-3	1-20
P,X	CN102044114A (BEIJING FEITIAN TECHNOLOGIES CO LTD) 04 May 2011(04.05.2011) see the claims 1-11, the figures 1-2	1-20
P,A	CN101799954A (BEIJING FEITIAN TECHNOLOGIES CO LTD) 11 Aug.2010(11.08.2010) see the claims 1-19, the figures 1-4	1-20

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

* 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

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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
26 Aug.2011(26.08.2011)	**22 Sep. 2011 (22.09.2011)**
Name and mailing address of the ISA/CN The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	Authorized officer WANG,Yue Telephone No. (86-10)62411848

Form PCT/ISA /210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2011/076590

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,A	CN101799955A (BEIJING FEITIAN TECHNOLOGIES CO LTD) 11 Aug.2010(11.08.2010) see the claims 1-26, the figure 1	1-20
A	CN1700222A (CHEN,Shu) 23 Nov.2005(23.11.2005) see the whole document	1-20
A	CN1277399A (CITICORP DEV CENT INC) 20 Dec.2000(20.12.2000) see the whole document	1-20
A	CN101645184A (BEIJING WATCH DATA SYSTEM CO LTD) 10 Feb.2010(10.02.2010) see the whole document	1-20
A	CN101281666A (BEIJING WATCH DATA SYSTEM CO LTD) 08 Oct.2008(08.10.2008) see the whole document	1-20

Form PCT/ISA /210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2011/076590

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN102013132A	13.04.2011	none	
CN102044114A	04.05.2011	none	
CN101799954A	11.08.2010	WO2011060662A1	26.05.2011
		US2011196788A1	11.08.2011
CN101799955A	11.08.2010	WO2011060662A1	26.05.2011
		US2011196788A1	11.08.2011
CN1700222A	23.11.2005	none	
CN1277399A	20.12.2000	SG97867A1	20.08.2003
		EP1039403A2	27.09.2000
		EP1039403A3	24.09.2003
		JP2000331096A	30.11.2000
		AU2242600A	05.10.2000
CN101645184A	10.02.2010	none	
CN101281666A	08.10.2008	CN100589131C	10.02.2010

Form PCT/ISA /210 (patent family annex) (July 2009)

国际检索报告

国际申请号
PCT/CN2011/076590

A. 主题的分类

G07F 7/08 (2006.01)i

按照国际专利分类(IPC)或者同时按照国家分类和 IPC 两种分类

B. 检索领域

检索的最低限度文献(标明分类系统和分类号)

IPC: G07F 7/-,G06Q 20/-,G06Q 30/-,G06F 17/-,G06K 19/-

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在国际检索时查阅的电子数据库(数据库的名称，和使用的检索词（如使用）)

CNPAT；CNKI；WPI；EPODOC；PAJ

CPU 卡,智能卡,IC,卡,电子钱包,初始化,圈存,充值,消费,购买,交易,算,金额,北京飞天诚信科技有限公司, 北京握奇, pos,终端,命令, 折扣,打折,费率,优惠,促销, electronic, purse, cpu, card, smart, smart?card, initializ+, transaction, financial, purchas+, discount+, reward+, rebate+, terminal, command

C. 相关文件

类　型*	引用文件，必要时，指明相关段落	相关的权利要求
P,X	CN102013132A (北京飞天诚信科技有限公司) 13.4 月 2011(13.04.2011) 参见权利要求 1-13、图 1-3	1-20
P,X	CN102044114A (北京飞天诚信科技有限公司) 04.5 月 2011(04.05.2011) 参见权利要求 1-11、图 1-2	1-20
P,A	CN101799954A (北京飞天诚信科技有限公司)11.8 月 2010(11.08.2010) 参见权利要求 1-19、图 1-4	1-20
P,A	CN101799955A (北京飞天诚信科技有限公司)11.8 月 2010(11.08.2010) 参见权利要求 1-26、图 1	1-20

☒ 其余文件在 C 栏的续页中列出。　　☒ 见同族专利附件。

* 引用文件的具体类型：

"A" 认为不特别相关的表示了现有技术一般状态的文件

"E" 在国际申请日的当天或之后公布的在先申请或专利

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"T" 在申请日或优先权日之后公布，与申请不相抵触，但为了理解发明之理论或原理的在后文件

"X" 特别相关的文件，单独考虑该文件，认定要求保护的发明不是新颖的或不具有创造性

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"&" 同族专利的文件

国际检索实际完成的日期	国际检索报告邮寄日期
26.8 月 2011(26.08.2011)	**22.9 月 2011 (22.09.2011)**
ISA/CN 的名称和邮寄地址： 中华人民共和国国家知识产权局 中国北京市海淀区蓟门桥西土城路 6 号 100088 传真号：　(86-10)62019451	受权官员 王越 电话号码：(86-10) **62411848**

PCT/ISA/210 表(第 2 页) (2009 年 7 月)

C(续). 相关文件

类 型	引用文件，必要时，指明相关段落	相关的权利要求
A	CN1700222A (陈澍) 23.11 月 2005(23.11.2005) 参见全文	1-20
A	CN1277399A (城市集团发展中心有限公司) 20.12 月 2000(20.12.2000) 参见全文	1-20
A	CN101645184A (北京握奇数据系统有限公司) 10.2 月 2010(10.02.2010) 参见全文	1-20
A	CN101281666A (北京握奇数据系统有限公司) 08.10 月 2008(08.10.2008) 参见全文	1-20

国际检索报告
关于同族专利的信息

国际申请号
PCT/CN2011/076590

检索报告中引用的专利文件	公布日期	同族专利	公布日期
CN102013132A	13.04.2011	无	
CN102044114A	04.05.2011	无	
CN101799954A	11.08.2010	WO2011060662A1	26.05.2011
		US2011196788A1	11.08.2011
CN101799955A	11.08.2010	WO2011060662A1	26.05.2011
		US2011196788A1	11.08.2011
CN1700222A	23.11.2005	无	
CN1277399A	20.12.2000	SG97867A1	20.08.2003
		EP1039403A2	27.09.2000
		EP1039403A3	24.09.2003
		JP2000331096A	30.11.2000
		AU2242600A	05.10.2000
CN101645184A	10.02.2010	无	
CN101281666A	08.10.2008	CN100589131C	10.02.2010

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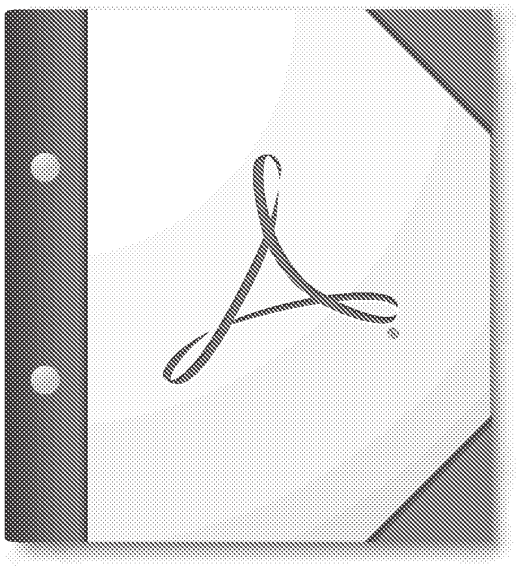

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(19)日本国特許庁（ＪＰ）　(12) **公開特許公報**（Ａ）　(11)特許出願公開番号

特開平11－73542

(43)公開日　平成11年(1999)３月16日

(51)Int.Cl.[6]	識別記号	ＦＩ	
Ｇ０７Ｄ　9/00	４７１	Ｇ０７Ｄ　9/00	４７１
Ｇ０６Ｆ　19/00		Ｇ０６Ｆ　15/30	３１０

審査請求　未請求　請求項の数５　ＯＬ　（全　７　頁）

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(22)出願日　平成９年(1997)８月27日

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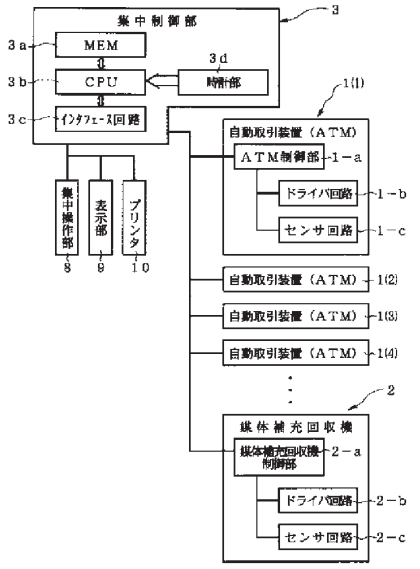
東京都港区虎ノ門１丁目７番12号　沖電気工業株式会社内
(74)代理人　弁理士　金倉　喬二

(54)【発明の名称】　自動取引装置群管理システム

(57)【要約】　（修正有）
【課題】　係員に負担をかけないで媒体補充回収処理を行う自動取引装置群管理システムを提供する。
【解決手段】　現在日時を認識する日時認識手段と、所望の日時に更新させる補充開始枚数と回収開始枚数を予め記憶しておく記憶手段と、日時が記憶されている日時に一致するか否かを判断する日時比較判断手段と、そのときの日時に対応する補充開始枚数と回収開始枚数に更新させる更新手段と、有高をそれぞれ認識する有高認識手段と、更新された補充開始枚数と有高とをそれぞれ比較し、補充の判断をする有高比較判断手段と、更新前の補充回収枚数と更新後の補充開始枚数を比較してその旨を強制補充情報として記憶しておく増減判断手段とを有する自動取引装置群管理システムを、集中制御部３で順次実行する。



システムの制御ブロック図

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【特許請求の範囲】

【請求項１】　媒体補充回収機が複数の自動取引装置に沿って移動し、所望の自動取引装置と接続して、自動取引装置との間で取引媒体の補充・回収を行う自動取引装置群管理システムにおいて、

時計による現在日時を認識する日時認識手段と、

所望の日時に更新させる補充開始枚数と回収開始枚数を予め記憶しておく記憶手段と、

前記日時認識手段で認識した日時が前記記憶手段に記憶されている日時に一致するか否かを比較して判断する日時比較判断手段と、

前記日時比較判断手段で一致していると判断された場合に、そのときの日時に対応する補充開始枚数と回収開始枚数に更新させる更新手段と、

各自動取引装置の有高をそれぞれ認識する有高認識手段と、

前記更新手段で更新された補充開始枚数と前記有高認識手段で認識した有高とをそれぞれ比較し、補充開始枚数の方よりも有高が大きいと判断した場合には補充を行わず、小さいと判断した場合には補充を行うものと判断する有高比較判断手段と、

前記更新手段による更新前の補充回収枚数と更新後の補充開始枚数を比較して増加か減少方向かを判断し、増加した場合には各自動取引装置の媒体補充を有高の有無に係わらず行うものと判断し、その旨を強制補充情報として記憶しておく増減判断手段とを備えたことを特徴とする自動取引装置群管理システム。

【請求項２】　請求項１において、スケジュールされている日時が一致した時に補充優先情報をセットし回収条件が成立している自動取引装置に対しての回収動作を行わないようにし補充動作を優先することを特徴とする自動取引装置群管理システム。

【請求項３】　請求項１において、スケジュールされている日時が一致した時に回収停止情報をセットし、回収開始枚数より多く補充し回収動作を停止させることを特徴とする自動取引装置群管理システム。

【請求項４】　請求項１において、スケジュールされている日時が一致した時に回収遅延情報をセットし、補充要求が無くなったことを確認後に回収動作することを特徴とする自動取引装置群管理システム。

【請求項５】　請求項１において、スケジュールされている日時が一致した時に優先順位コードで示される自動取引装置順に目標枚数を変化させるように算出し、それぞれ算出値迄に有高することを特徴とする自動取引装置群管理システム。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】本発明は、銀行等の金融機関に設置され、複数台の自動取引装置の群管理を行う自動取引装置群管理方法及びその装置に関する。

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【０００２】

【従来の技術】従来の自動取引装置群管理システムとしては、特公平６－３６２２９号公報や特願平６－１５２３７４号公報等に記載のものが知られている。この種のシステムでは、自動取引装置の動作停止や係員による処置を自動化するために、補充回収用の金庫を搭載し、複数の自動取引装置の間を走行して任意の自動取引装置に紙幣の補充をしたり、別の任意の自動取引装置から紙幣を回収する機能を持つ媒体補充回収機を備えたシステムが開発されている。そして、このシステムでは、週末等の支払業務が増えた時の為に回収／補充の開始枚数をスケジューラにより変えることで自動取引装置に紙幣を多量に保持させるようにしたものが知られている。

【０００３】

【発明が解決しようとする課題】従来の自動取引装置群管理システムでは、例えば、休み明けの月曜日等の平日には平日の取引量に合わせた補充／回収枚数にスケジューラで変えるようになっているため、月曜日等には自動取引装置に入っている紙幣の有高が回収開始枚数以上残っていた場合、予め設定された順に各自動取引装置から媒体補充回収機側への回収動作を行う。

【０００４】しかしながら、従来の自動取引装置群管理システムでは、自動取引装置内の媒体の残量が多いと、媒体補充回収機内のカセットがすぐにＦＵＬＬになって交換指示を出し、行員によるカセット交換が行われるまで、媒体の補充／回収処理を中断するため、全ての自動取引装置に対して媒体の補充／回収処理を施すことができない場合がある。かかる場合、補充／回収処理を施していない自動取引装置の内で、媒体の残量がＦＵＬＬのものが存在するときには、その自動取引装置の稼働を停止したり、入金取引を停止したりしなければならない。このため、自動取引装置の稼働効率が悪くなり、営業店および顧客に迷惑をかける問題がある。また、週末等の休日の前には、自動取引装置内に多めに媒体を補充する必要があるが、補充開始枚数が自動取引装置の有高を越えて設定しないと補充動作しないため、行員等の係員が強制的に補充したり、カセット内紙幣除去を行わなければならず、係員に負担がかかる問題がある。

【０００５】

【課題を解決するための手段】そこで本発明は、媒体補充回収機が複数の自動取引装置に沿って移動し、所望の自動取引装置と接続して、自動取引装置との間で取引媒体の補充・回収を行う自動取引装置群管理システムにおいて、時計による現在日時を認識する日時認識手段と、所望の日時に更新させる補充開始枚数と回収開始枚数を予め記憶しておく記憶手段と、前記日時認識手段で認識した日時が前記記憶手段に記憶されている日時に一致するか否かを比較して判断する日時比較判断手段と、前記日時比較判断手段で一致していると判断された場合に、そのときの日時に対応する補充開始枚数と回収開始枚数

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に更新させる更新手段と、各自動取引装置の有高をそれぞれ認識する有高認識手段と、前記更新手段で更新された補充開始枚数と前記有高認識手段で認識した有高とをそれぞれ比較し、補充開始枚数の方よりも有高が大きいと判断した場合には補充を行わず、小さいと判断した場合には補充を行うものと判断する有高比較判断手段と、前記更新手段による更新前の補充回収枚数と更新後の補充開始枚数を比較して増加か減少方向かを判断し、増加した場合には各自動取引装置の媒体補充を有高の有無に係わらず行うものと判断し、その旨を強制補充情報として記憶しておく増減判断手段とを備えた自動取引装置群管理システムを提供する。

【０００６】なお、スケジュールされている日時が一致した時に補充優先情報をセットし回収条件が成立している自動取引装置に対しての回収動作を行わないようにし補充動作を優先するのが好ましい。また、スケジュールされている日時が一致した時に回収停止情報をセットし、回収開始枚数より多く補充し回収動作を停止させるのが好ましい。

【０００７】さらに、スケジュールされている日時が一致した時に回収遅延情報をセットし、補充要求が無くなったことを確認後に回収動作するのが好ましい。さらにまた、スケジュールされている日時が一致した時に優先順位コードで示される自動取引装置順に目標枚数を変化させるように算出し、それぞれ算出値迄に変化させるのが好ましい。

【０００８】

【発明の実施の形態】以下に、図面を参照して、本発明の実施の形態を説明する。

第１の実施の形態

図１は、外観斜視図である。なお、以下の説明では、自動取引装置をＡＴＭと呼ぶ。図に示すように、ＡＴＭ１(1) ～１(4) が並べて金融機関等の店舗に設置してある。これらＡＴＭ１(1) ～１(4) の後ろ側には、媒体補充回収機２がレール５，６を移動可能に設けてある。媒体補充回収機２には媒体挿入出口がＡＴＭ１側に設けてあり、各ＡＴＭ１の後部に設けられる媒体挿入出口と接続して媒体のやりとりができるようになっている。また、集中制御装置３が、操作部８、表示部９、プリンタ１０を接続して係員用のデスク上に設置されている。

【０００９】図２はシステムの制御ブロック図、図３は、補充／回収処理を実行するデータ列の概念図である。図２において、ＡＴＭ１(1) ，１(2) ，１(3) ，１(4) ，…には、装置内の各部および全体を制御するＡＴＭ制御部１－ａ、各種駆動部を駆動するドライバ回路１－ｂ、装置内の状態を検出するためにセンサ出力を読み取るセンサ回路１－ｃなどが設けられている。また、ＡＴＭ制御部１－ａは、図示せぬＣＰＵ、メモリ、インタフェース回路等で構成されている。

【００１０】媒体補充回収機２には、機内の各部および全体を制御する媒体補充回収機制御部２－ａ、各種駆動部を駆動するドライバ回路２－ｂ、機内の状態を検出するためにセンサ出力を読み取るセンサ回路２－ｃなどが設けられている。また、媒体補充回収機制御部２－ａは、図示せぬＣＰＵ、メモリ、インタフェース回路等で構成されている。

【００１１】集中制御部３には、操作部８、表示部９、プリンタ１０が接続されている。集中制御部３は、操作部８を操作してあるいは集中制御部３が自動的に、任意の媒体補充回収機２を任意のＡＴＭ１に位置決めし、ＡＴＭ１および媒体補充回収機２間での紙幣の補充や回収を行い、また、これら動作の結果や媒体補充回収機２が収納している有高を計数させた結果を表示部９に表示し、プリンタ１０に出力できるようになっている。集中制御部３の内部には、ＭＥＭ３ａ、ＣＰＵ３ｂ、インターフェース回路３ｃ、時計部３ｄが設けてある。

【００１２】前記ＭＥＭ３ａにはＡＴＭ１および媒体補充回収機２の媒体残量値、補充動作を開始させる補充開始枚数及び補充動作を終了させる補充終了値がデータとして記憶してあり、補充回収枚数及び補充終了値がデータとして記憶してある。補充開始枚数および補充終了値としては、それぞれ、例えば一取引で出金できる出金最高枚数値、装置立ち上げ時にＡＴＭ１に補充される補充規定量値が設定されている。そして、本発明では、図３に示すように、各ＡＴＭ１情報として、優先順位コード部、回収遅延情報、補充優先情報、強制補充情報が、各ＡＴＭ１情報として記憶してある。また、現時点で設定されている現補充開始枚数、現回収開始枚数は、後述するように、スケジュールポインタに基づいて、補充開始枚数、回収開始枚数が切り替えられるごとに書き換えられる。なお、ここでは、Ｘ月Ｙ日１５：００（金曜日）をスケジュールポインタａａａとし、このとき、補充回収枚数を５００枚、回収開始枚数を１０００枚を想定する。また、Ｘ月Ｚ日９：００（月曜日）をスケジュールポインタｂｂｂとし、このとき、補充回収枚数を３００枚、回収開始枚数を６００枚を想定する。したがって、補充／回収開始枚数が、ウイークデーとウイークエンドに区分けされていることになる。

【００１３】一方、前記ＣＰＵ３ｂは制御プログラムによって、ＡＴＭ１および媒体補充回収機２の制御メモリやＭＥＭ３ａの内容の更新などを行うとともに、後述するように、本発明では予め設定したスケジュールに基づいて補充／回収開始枚数を変化させる等の処理を行う。すなわち、本実施の形態では、ＣＰＵ３ｂが、時計部３ｄにより現在日時を認識し、ＭＥＭ３ａに記憶してあるスケジュールポインタと比較して、一致した場合には補充／回収開始枚数を更新するとともに、ＡＴＭ内の媒体の有高を認識し、更新された開始枚数と有高を比較し、有高が開始枚数より多いか少ないかを判断し、開始枚数より多い場合であっても補充終了値まで補充するように

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したものである。

【００１４】また、スケジューラで指定された日時が一致した場合に、補充／回収開始枚数を更新すると同時に、開始枚数が増加したと判断した場合にＡＴＭ情報の強制補充情報をセットするようにしたことで、補充／回収開始枚数を大きい値になっても、ＡＴＭの有高によっては、補充を開始しない値であっても、強制補充情報を判断して補充動作を行うようにしたものである。

【００１５】以下に、上記処理を具体的に説明する。なお、集中制御部３は、ＡＴＭ１(1)～(4) の順に、補充／回収処理を行うものとし、以下では、ＡＴＭ１(1) に対する処理を想定するが、他の場合も同様であるので説明を省略する。また、現補充開始枚数を３００枚、現回収開始枚数を６００枚として説明する。集中制御部３は、まず、ＡＴＭ１(1) の紙幣の有高を認識してＭＥＭ３ａに記憶している補充開始枚数と比較する。その補充開始枚数より少ない場合は、例えば、該ＡＴＭ１に回収開始枚数との中間値（例えば、回収開始枚数＝６００、補充開始枚数＝３００の場合、「中間値＝〔（６００－３００）／２〕＋３００＝４５０となる」）を目標にし媒体補充回収機２を接続して補充動作を行う。また、集中制御部３が、ＡＴＭ１の有高がＭＥＭ３ａに記憶している回収開始枚数を越えていた場合は、逆に該ＡＴＭ１から媒体補充回収機２を接続して回収動作を有高が中間値４５０になるように実施する。

【００１６】さらに、集中制御装置３は、時計部４から現在日時を読み出し、スケジュールポインタで示される日時と一致した場合は、ＭＥＭ３ａに記憶している補充及び回収枚数を更新し、ポインタを次のアドレスに更新する。ここで、ＭＥＭ３ａのａａａアドレスに記憶されているスケジュールと日時が一致した場合、集中制御部３は、ＭＥＭ３ａに記憶し保持している補充開始枚数を５００枚に回収開始枚数を１０００枚に更新する。なお、ＡＴＭ１(2) ～１(4) も上述の処理と同様に処理を行う。

【００１７】そして、集中制御部３は、Ｘ月Ｙ日１５：００以降は、補充開始枚数を５００枚、回収開始枚数を１０００枚とし、ＡＴＭ１(1) の有高と比較する値とすると同時に、補充開始枚数が大きくなったか否かを判断し、ＭＥＭ３ａのＡＴＭ１(1) ～(4) 情報に強制補充情報として”１”を接続されているＡＴＭ分セットする。

【００１８】ところで、集中制御部３は、ＡＴＭ１(1) から有高を読み、その値が例えば４８０枚であれば補充開始枚数５００と比較すると少ないと判断する。少ないと判断すると、補充を行う、補充終了後、ＡＴＭ１情報の強制補充情報を’０’にリセットする。次いで、集中制御部３は、ＡＴＭ１(2) の有高を読み、その値が例えば５３０枚のときに補充開始枚数５００と比較すると多いと判断するため、補充は不要であると判断する。この判断に次いで、集中制御部３は、ＡＴＭ１(2)情報の強制補充情報をみる。すると、ＭＥＭ３ａの強制補充情報が”１”にセットされているので補充必要と判断し、媒体補充回収機２を接続し、中間値７５０枚を目標に補充動作を実施する。補充終了でＡＴＭ２情報の強制補充情報を”０”にリセットする。以下同様に、ＡＴＭ１(3)，１(4) について処理を実施していく。

【００１９】これにより、補充／回収枚数が大きい値に変わった時であっても、補充開始枚数より多い有高のＡＴＭにも補充することが可能となる。このため、週末等の休日の前にも、行員等の係員が強制的に補充したり、カセット内紙幣除去を行わなくても、自動取引装置内に多めに媒体を補充することができるようになる。このため、係員にかかる負担を軽減することができる効果が得られる。

【００２０】上記第１の実施の形態によると、強制補充情報をスケジューラによる開始枚数更新時にセットするようにしたことにより、ＡＴＭの有高に左右されずに希望する値までの補充を全てのＡＴＭに実施することができ、媒体補充回収機の紙幣を早く少なくすることで、紙幣の追加が容易になり、長い連休の為の紙幣を早く群管理システムに確保するという効果が得られる。また、紙幣の回収を速やかに行うことができるため、自動取引装置がダウンすることが少なくなるため、自動取引装置の稼働効率が良くなり、営業店および顧客に迷惑をかけるようなこともなくなる効果が得られる。

【００２１】第２の実施の形態

なお、以下では、上記第１の実施の形態と相違する点を主に説明するものとする。図１～図３に基づいて説明した構成は、同様であるので説明を省略する。集中制御部３が、時計部４から現在日時を読み出しスケジュールポインタで示される日時と一致した場合、ＭＥＭ３ａに記憶している補充／回収開始枚数をスケジュールポインタで示される開始枚数に更新する。この時に開始枚数が現在迄の値に対して増加しているか減少しているか判断し減少していると判断した場合にＡＴＭ情報の補充優先に”１”を全てのＡＴＭ分にセットする。

【００２２】例えば、スケジュールポインタがｂｂｂを示していた時、日時が一致した場合、集中制御部３は、ＭＥＭ３ａに記憶している補充／回収開始枚数を３００、６００に更新するとともに、現在値であった５００、１０００と比較し減少していることを判断し、接続されているＡＴＭ分だけＡＴＭ情報の補充優先情報を”１”にセットする。通常この場合は前日までの連休で、媒体補充回収機２には紙幣が残っていない状態になっている。この為９：００以降に紙幣を媒体補充回収機２に補充する必要がある。

【００２３】集中制御部３は、媒体補充回収機２に紙幣が有ることを確認して補充可としているが、無い場合は紙幣の装填迄待つようになっている。集中制御部３は、ＡＴＭ１(1) の有高を読み、その値が例えば２００枚で

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あれば補充回収開始枚数３００より少ないことで、補充要と判断し、媒体補充回収機２に紙幣が有れば補充動作を行い、補充終了で補充優先情報を”０”にリセットする。紙幣が無ければ動作せず、ＡＴＭ２の有高を読みに行く。その値が例えば７００枚であれば、回収開始枚数６００より多いことで回収要と判断するがＡＴＭ情報の補充優先情報が”１”になっていることにより、回収動作より補充動作が優先状態になっているので回収要を不要と判断し回収動作を行わず次のＡＴＭ３の有高を読みに行く。以下同様にＡＴＭ１(2) ～１(4) 迄で行う。

【００２４】スケジューラで指定された日時が一致した場合に、補充／回収開始枚数を更新すると同時に開始枚数が減少したと判断したときに、ＡＴＭ情報の補充優先情報をセットするようにした。これにより、回収開始枚数が少なくなったことで、ＡＴＭの有高によっては、回収動作要となる値であっても、補充優先情報を判断して回収動作を行わないようにして補充動作で優先させることができる。

【００２５】上記第２の実施の形態によると、補充優先情報をスケジューラによる開始枚数更新時にセットするようにしたことにより、ＡＴＭの有高に左右されず、支払不可状態になっているＡＴＭ、不可状態になりそうなＡＴＭ等を優先して補充することで、取引不可のＡＴＭを早く復旧させるという効果が得られる。

第３の実施の形態

なお、以下では、上記第１の実施の形態と相違する点を主に説明するものとする。図１～図３に基づいて説明した構成は、同様であるので説明を省略する。

【００２６】まず、上記第１の実施の形態と同様に、補充／回収開始枚数が増加したと判断した場合、集中制御部３は、開始枚数を更新すると同時にＡＴＭ情報の回収停止情報に”１”をセットする。例えば、集中制御部３は、ＭＥＭ３ａに記憶している補充／回収枚数を５００、１０００に更新すると共に現在値３００、６００と比較し増加していることを判断し、接続されているＡＴＭ分だけＡＴＭ情報の回収停止情報を”１”にセットする。集中制御部３は、ＡＴＭ１０有高を読み、その値が例えば４８０枚であれば補充回収値５００と比較して少ないと判断し補充を開始する。ここで、この時の補充動作は、回収開始値１０００枚を越える値、例えば、１１００枚迄補充するようにする。

【００２７】また同様に、全ＡＴＭを１１００枚迄補充を実施する。再度、集中制御部３は、ＡＴＭ１の有高を読み、１１００枚であれば、回収開始値より多いと判断し、回収要とするが、ＡＴＭ情報の回収停止情報がセットされ、回収停止状態と判断し回収不要とする。回収停止情報は、その後、該ＡＴＭの取引を実施することにより補充開始枚数より有高が少なくなり補充動作を実施した時に”０”にリセットするようにしておく。

【００２８】したがって、スケジューラで指定された日時が一致した場合に、補充／回収開始枚数を更新すると同時に、開始枚数が増加したと判断した場合にＡＴＭ情報の回収停止情報をセットするようにしたことで、回収開始枚数より多く補充動作を行い、回収動作を停止させることができるようになる。上記第３の実施の形態によると、回収停止情報をスケジューラによる開始枚数更新時にセットするようにしたことにより、回収開始枚数より多めに補充することが可能となり、群管理システム全体での紙幣を多く確保し、紙幣切れ等の少なくするという効果が得られる。

【００２９】第４の実施の形態

なお、以下では、上記第１の実施の形態と相違する点を主に説明するものとする。図１～図３に基づいて説明した構成は、同様であるので説明を省略する。まず、上記第２の実施の形態と同様に、補充／回収開始枚数が減少したと判断した場合、集中制御部３は、開始枚数を更新すると同時にＡＴＭ情報の回収遅延情報に”１”をセットする。

【００３０】例えば、スケジュールポインタがｂｂを示していた時、日時が一致した場合、集中制御装置３は、ＭＥＭ３ａに記憶している補充／回収枚数を３００、６００に更新すると共に、現在値５００、１０００と比較し、減少していることを判断し接続されているＡＴＭ分だけＡＴＭ情報の回収遅延情報を”１”にリセットする。集中制御部３は、ＡＴＭ１の有高を読み、その値が例えば、２００枚であれば、補充開始値３００と比較して少ないと判断し補充を開始する。補充終了すると、ＡＴＭ１の情報の回収遅延情報を”０”にリセットする。次に、ＡＴＭ２の有高を読み、その値が例えば、７００枚であれば、回収開始値６００と比較して多いと判断し回収要とするが、ＡＴＭ情報の回収遅延情報がセットされて回収は遅らせる状態と判断し、回収不要とする。

【００３１】次に、ＡＴＭ３と同様にＡＴＭ８迄を処理していく。ＡＴＭ８の処理を終了した時点で、回収遅延情報がセットされているＡＴＭ番号を見つけ、回収動作を開始していく。以上のように、補充動作要のＡＴＭの補充が終了した時点で回収要のＡＴＭから回収動作を実施するようにした。したがって、スケジューラで指定された日時が一致した場合に、補充／回収開始枚数を更新すると同時に開始枚数が減少したと判断した場合にＡＴＭ情報の回収遅延情報をセットするようにしたことで、補充動作を優先させた後、すみやかに回収動作を開始させることができる。

【００３２】上記第４の実施の形態によると、回収遅延情報をスケジューラによる開始枚数更新時にセットするようにしたことにより、補充動作を優先して行った後、すぐ回収動作に入るようにし、ＡＴＭの有高を同じ程度にそろえることができ、回収紙幣を再利用できるという効果が得られる。

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第５の実施の形態

なお、以下では、上記第１の実施の形態と相違する点を主に説明するものとする。図１～図３に基づいて説明した構成は、同様であるので説明を省略する。

【００３３】スケジューラで開始枚数が変更した場合に、ＡＴＭの有高を中間値になるように補充または回収動作を行いそろえていくようになっている。ＡＴＭによっては、コーナーの入口に近い遠いにより取り引きが多い装置がある為、開始枚数が変更になった場合、回収開始枚数と補充開始枚数の間で多めに有高を設定できるように、優先順位コードを設定しておく。例えば、ＡＴＭ１が１番を示すコード１、ＡＴＭ２は２番を示すコード２のように設定しておく。

【００３４】集中制御部３が開始枚数の変更をスケジューラで検知した場合、優先順位コードが何番まで区別されているか見る。その値が例えば８番迄区別されていて開始枚数が５００、１０００に変更になった場合は、それぞれの順位毎の増加分を算出する。例えば、次のように算出する。

増加分＝（１０００－５００）÷２÷８≒３０

各ＡＴＭ毎の補充目標枚数を計算する。

【００３５】ＡＴＭ８＝７５０ＡＴＭ７＝７８０＝７５０＋３０

ＡＴＭ６＝８１０＝７５０＋３０×２

ＡＴＭ５＝８４０＝７５０＋３０×３

ＡＴＭ４＝８７０＝７５０＋３０×４

ＡＴＭ３＝９００＝７５０＋３０×５

ＡＴＭ２＝９３０＝７５０＋３０×６

ＡＴＭ１＝９６０＝７５０＋３０×７

以上の目標枚数になるように補充をそれぞれおこなっていく。

【００３６】したがって、スケジューラで指定された日時が一致した場合に補充／回収開始枚数を更新すると同時に、各ＡＴＭ情報の優先順位コード部を読み出し、その順位別に目標枚数を算出して補充又は回収動作を行えるようになる。上記第５の実施の形態によると、開始枚数更新時に優先順位コードにより目標枚数を個別に算出し、ＡＴＭの有高を取引量の多い順に多めにセットするようにしたことで、取引量の多いＡＴＭの紙幣切れを少なくするという効果が得られる。

【００３７】なお、上記各実施の形態における各制御は、集中制御部３のＭＥＭ３ａに格納しておくプログラムと、これに基づきＣＰＵ３ｂが順次実行するようにして提供する。

【００３８】

【発明の効果】以上説明したように本発明の自動取引装置群管理システムによると、強制補充情報をスケジューラによる開始枚数更新時にセットするようにしたことにより、ＡＴＭの有高に左右されずに希望する値までの補充を全てのＡＴＭに実施することができ、媒体補充回収機の紙幣を早く少なくすることで、紙幣の追加が容易になり、長い連休の為の紙幣を早く群管理システムに確保するという効果が得られる。また、紙幣の回収を速やかに行うことができるため、自動取引装置がダウンすることが少なくなるため、自動取引装置の稼働効率が良くなり、営業店および顧客に迷惑をかけるようなこともなくなる効果が得られる。

【図面の簡単な説明】

【図１】実施の形態を示す外観斜視図

【図２】システムの制御ブロック図

【図３】補充／回収処理を実行するデータ列の概念図

【符号の説明】

１　自動取引装置（ＡＴＭ）

２　媒体補充回収機

３　集中制御部

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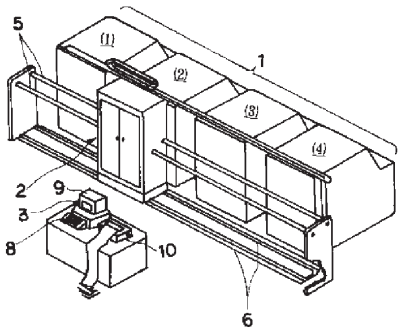
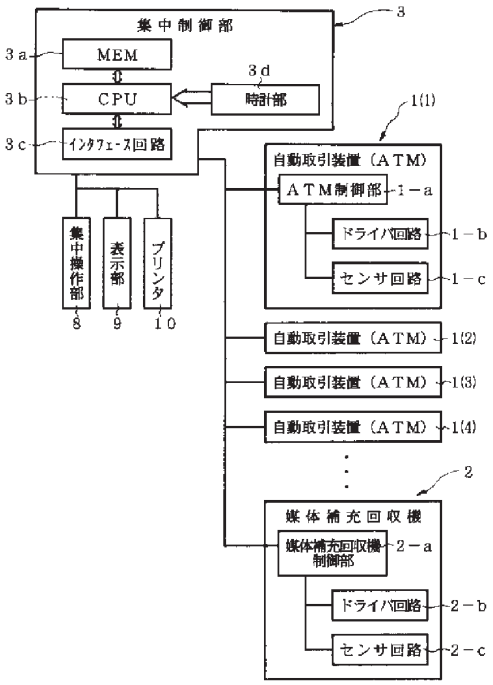
【図１】



１：ＡＴＭ
２：媒体補充回収機
３：集中制御部

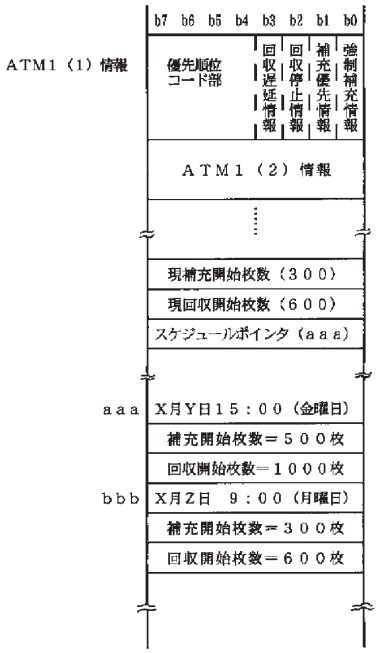
実施の形態を示す外観斜視図

【図２】



システムの制御ブロック図

【図３】



補充／回収処理を実行するデータ列の概念図

PAT-NO: JP411073542A

DOCUMENT-IDENTIFIER: JP 11073542 A

TITLE: MANAGEMENT SYSTEM FOR AUTOMATIC TELLER MACHINE GROUP

PUBN-DATE: March 16, 1999

INVENTOR-INFORMATION:

NAME	COUNTRY
NAKAYA, MITSURU	

ASSIGNEE-INFORMATION:

NAME	COUNTRY
OKI ELECTRIC IND CO LTD	N/A

APPL-NO: JP09231549

APPL-DATE: August 27, 1997

INT-CL (IPC): G07D009/00 , G06F019/00

ABSTRACT:

PROBLEM TO BE SOLVED: To easily add bills and to speedily secure bills for long holidays by comparing a replenishment start quantity after update with a replenishment recovery quantity before update and performing replenishment with media irrelevantly to the amount on hand in the case of an increase.

SOLUTION: A CPU 3b recognizes the current day and time by a timer part 3d and compares it with a schedule pointer stored in MEM 3a. When they match each other, the replenishment/recovery start quantity is updated and the amount of media left in an ATM is recognized and compared with the updated start quantity. It is judged whether the remaining amount is larger or smaller than the start quantity, replenishment is carried out up to a replenishment end value even if the remaining amount is larger than the start quantity. Further, when the day and time specified by the scheduler are reached, the

replenishment/recovery start quantity is updated and at the same time, when the start quantity is judged to have increased, forcible replenishment information of ATM information is set. Therefore, the replenishing operation is performed by judging forcible replenishment information even at a value where replenishment is not started according to the remaining amount of the ATM.

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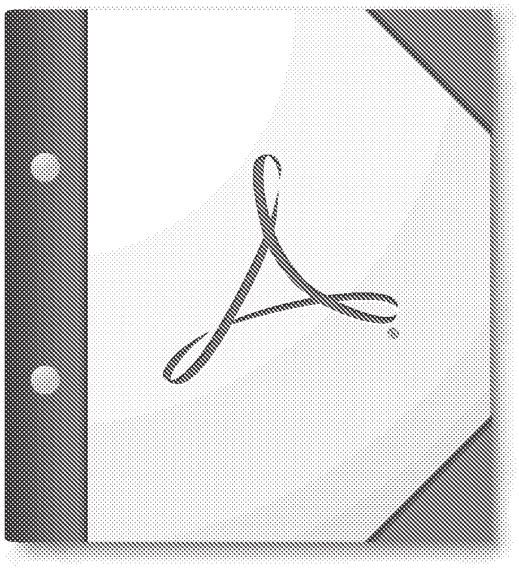

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1. (*Currently amended*) A method for mobile payment, the method comprising:

causing a mobile device to capture data directly from a tag physically presented thereto, wherein the tag receives the data directly from a POS device and allows the mobile device to capture the data ~~therefrom~~, the data embedded in the tag includes an electronic invoice and settlement information with a merchant associated with the POS device;

extracting the electronic invoice from the captured data in the mobile device;

displaying the electronic invoice on a display of the mobile device to show an amount to be paid by a user of the mobile device, wherein the mobile device is configured to execute an installed application therein to capture the data from the tag;

receiving an entry by the mobile device, the entry including the amount for the invoice and optionally an additional amount from the user ~~when needed~~;

calculating a total amount by adding the additional amount to the amount in the electronic invoice;

generating a payment request in the mobile device in response to the electronic invoice after the user has chosen an electronic purse (e-purse) maintained locally in the mobile device;

displaying the electronic invoice on the display of the mobile device for the user to verify the payment request

verifying the total amount with a balance in the e-purse, wherein said verifying the total amount with a balance in the e-purse is performed within the mobile device without sending the payment request to a payment gateway;

displaying a denial of the payment request when the balance is less than the total amount;

sending the payment request from the mobile device to the payment gateway, wherein the balance is sufficient to honor the payment request, the payment gateway sends a message directly to the POS device that a monetary transaction per the payment request sent from the mobile device has been successfully completed; and

displaying a confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount.

2. (*Previously amended*) The method as recited in claim 1, wherein said causing a mobile device to capture data directly from a tag physically presented thereto includes placing the mobile device near the tag.

3. (*Previously amended*) The method as recited in claim 2, wherein the POS device provides security and authentication to generate the electronic bill and transfer the data to the tag.

4. (*Currently amended*) The method as recited in claim 1, wherein said displaying the electronic invoice on the display of the mobile device comprises:
   allowing the user to verify the amount in the electronic invoice and make a change to the amount when needed; and
   paying the total amount with the e-purse~~chosen paying instrument, wherein the chosen paying instrument is selected from a group consisting of an electronic wallet already created in the mobile device, a traditional credit or debit card, and an electronic transfer~~.

5. (*Previously amended*) The method as recited in claim 1 further comprising: causing the mobile device to execute an installed module upon detecting the POS device in a near field of the mobile device, wherein the installed module is executed to receive the data directly from the tag carrying the electronic invoice and the settlement information.

6. (*Previously amended*) The method as recited in claim 5, wherein the data further includes security information about the merchant associated with the POS device, the security information includes an account and bank information of the registered merchant, an identifier of the tag or the POS device.

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7. (*Currently amended*) The method as recited in claim 6, wherein said sending the payment request from the mobile device to the payment gateway comprises:

transporting the payment request over a secured channel to the payment gateway, wherein the payment gateway is configured to perform the monetary transaction per the payment request by deducting the total amount from the e-purse and generates the confirmation ~~an electronic notification~~ for ~~sending to~~ the POS device.

8. (*Previously amended*) The method as recited in claim 7, wherein said displaying the electronic invoice on the display of the mobile device comprises:

allowing the user to modify the amount in the electronic invoice when needed;

paying the total amount with an electronic payment provided by an installed module in the mobile device, wherein the installed module in the mobile device is configured to generate the payment request including the data pertaining to the electronic invoice to the payment gateway for processing.

9. (*Previously amended*) The method as recited in claim 8, wherein data exchange between the mobile device and the payment gateway is conducted in a secured channel established therebetween.

10. (*Previously amended*) The method as recited in claim 9, wherein the mobile device includes a secure element providing security and confidentiality required to support secure data communication between the mobile device and the payment gateway.

11. (*Currently amended*) The method as recited in claim 9, wherein said displaying a confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount comprises ~~notifying the user in the mobile device that then monetary transaction per the payment request has been successfully completed with the POS device comprising~~: sending a notification of successful payment to the merchant of the POS device.

12. (*Currently amended*) A method for mobile payment, the method comprising:

generating a set of data in a point of sale (POS) device, the data including an electronic invoice and settlement information with a merchant associated with the POS device;

embedding the data directly to a tag;

presenting the tag to a mobile device;

causing the mobile device to capture the data from the tag, wherein the mobile device executes an installed application therein to retrieve an amount in the electronic invoice from the data and generate a payment request in response to the captured data, the payment request is denied in the mobile device when the amount is more than a balance of an electronic purse (e-purse) maintained locally in the mobile device, the payment request is sent to a payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device; and

receiving a message in the POS device directly from the payment gateway that the electronic invoice has been settled, wherein the payment gateway is configured to cause the balance in the e-purse reduced by the amount.

13. (*Previously amended*) The method as recited in claim 12, wherein the tag is presented near the mobile device to allow ~~the~~ a user of the mobile device to use the mobile device to capture the data.

14. (*Previously amended*) The method as recited in claim 13, wherein the POS device is provided with security and authentication to generate the electronic invoice.

15. (*Previously amended*) The method as recited in claim 14, wherein the data includes security information of the merchant associated with the POS device, the security information includes an account and bank information, an identifier of the tag or the POS device.

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16. (*Previously amended*) The method as recited in claim 15, wherein the message received in the POS device shows how much has been received from the user of the mobile device.

17. (*Previously amended*) The method as recited in claim 12, wherein data exchange between the mobile device and the payment gateway is conducted in a secured channel established between the mobile device and the payment gateway.

18. (*Currently amended*) A system for mobile payment, the system comprising:

a point of sale (POS) device provided to generate a set of data including an electronic invoice upon receiving an entry, wherein the data including the electronic invoice and settlement information is transferred to a tag, a mobile device is executing a module configured to capture the data directly from the tag physically presented thereto, extract an amount expressed in the electronic invoice and display the amount in the mobile device; and wherein

the POS device receives an electronic notification directly from a payment gateway that the electronic invoice has been settled for a total amount including an additional amount and the amount expressed in the electronic invoice, the additional amount is added optionally by the user, after the user of the mobile devices verifies the electronic invoice displayed on the mobile device and authorizes a payment to the electronic invoice, the mobile device is configured to generate a payment request, wherein the payment request is denied within the mobile device without sending the payment request to the payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device; the payment request is sent to the payment gateway to proceed with a payment according to the payment request when the amount is more than the balance of the e-purse.

19. (*Previously amended*) The system as recited in claim 18, wherein the data from the POS device includes an account and bank information of the merchant of the POS device.

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20. (*Previously amended*) The system as recited in claim 19, wherein the payment gateway acts to deduct an amount equivalent to the total amount from an account associated with the user of the mobile devices and generates the electronic notification for the POS device.

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Electronic Acknowledgement Receipt

EFS ID:	37889331
Application Number:	14728349
International Application Number:	
Confirmation Number:	5346
Title of Invention:	Method and apparatus for mobile payments
First Named Inventor/Applicant Name:	Xiangzhen Xie
Customer Number:	26797
Filer:	Joe Zheng
Filer Authorized By:	
Attorney Docket Number:	RFID-085C1
Receipt Date:	29-NOV-2019
Filing Date:	02-JUN-2015
Time Stamp:	14:23:43
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	Amendment/Req. Reconsideration-After Non-Final Reject	ResponseTo1stOA2ndRCE.pdf	156242 8b8fe712e26727e04cf41a118a0158f131754e66	no	12

Warnings:

Information:	
Total Files Size (in bytes):	156242

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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

Applicant(s):	Xiangzhen Xie et al
Title:	Trusted Service Management Process
Serial No.:	14/728,349
Filing Date:	06/02/2015
Confirmation:	5346
Examiner:	Ashford Hayles
Group Art Unit:	3687
Docket No.:	RFID-085C1

November 28, 2019

Mail Stop: No-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Response to First OA (2nd RCE)

Dear Sir:

In response to Office Action dated 08/28/2019, the Applicant respectfully requests the Examiner to enter the following amendments:

AMENDMENTS TO THE CLAIMS are reflected in the listing of claims which begins on page 2 of this Response.

REMARKS/ARGUMENTS begin on page 8 of this Response.

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AMENDMENTS TO THE CLAIMS

Please amend Claims 1, 4, 7, 12 and 18 as follows:

1. (*Currently amended*) A method for mobile payment, the method comprising:

causing a mobile device to capture data directly from a tag physically presented thereto, wherein the tag receives the data directly from a POS device and allows the mobile device to capture the data therefrom, the data embedded in the tag includsing an electronic invoice and settlement information with a merchant associated with the POS device;

extracting the electronic invoice from the captured data in the mobile device;

displaying the electronic invoice on a display of the mobile device to show an amount to be paid by a user of the mobile device, wherein the mobile device is configured to execute an installed application therein to capture the data from the tag;

receiving an entry by the mobile device, the entry including the amount for the invoice and an additional amount from the user when needed;

calculating a total amount by adding the additional amount to the amount in the electronic invoice;

generating a payment request in the mobile device in response to the electronic invoice after the user has chosen an electronic purse (e-purse) maintained locally in the mobile device; ~~a paying instrument, wherein the payment request includes the total amount and the settlement information;~~

displaying the electronic invoice on the display of the mobile device for the user to verify the payment request ~~along with the chosen paying instrument;~~

verifying the total amount with a balance in the e-purse, wherein said verifying the total amount with a balance in the e-purse is performed within the mobile device without sending the payment request to a payment gateway;

displaying a denial of the payment request when the balance is less than the total amount;

sending the payment request from the mobile device to ~~a~~ the payment gateway, wherein the balance is sufficient to honor the payment request, the payment gateway sends a message directly to the POS device that a monetary transaction per the payment request sent from the mobile device has been successfully completed ~~in the payment gateway with the POS device when an amount equivalent to the total amount is deducted from an account associated with the user~~; and

~~recording~~ displaying a confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount ~~monetary transaction per the payment request has been successfully completed with respect to the electronic invoice~~.

2. (*Previously amended*) The method as recited in claim 1, wherein said causing a mobile device to capture data directly from a tag physically presented thereto includes placing the mobile device near the tag.

3. (*Previously amended*) The method as recited in claim 2, wherein the POS device provides security and authentication to generate the electronic bill and transfer the data to the tag.

4. (*Currently amended*) The method as recited in claim 1, wherein said displaying the electronic invoice on ~~a~~ the display of the mobile device comprises:

allowing the user to verify the amount in the electronic invoice and make a change to the amount when needed; and

paying the total amount with the chosen paying instrument, wherein the chosen paying instrument is selected from a group consisting of an electronic wallet already created in the mobile device, a traditional credit or debit card, and an electronic transfer.

5. (*Previously amended*) The method as recited in claim 1 further comprising: causing the mobile device to execute an installed module upon detecting the POS device in a near field of the mobile device, wherein the installed module is executed to receive

the data directly from the tag carrying the electronic invoice and the settlement information.

6. (*Previously amended*) The method as recited in claim 5, wherein the data further includes security information about the merchant associated with the POS device, the security information includes an account and bank information of the registered merchant, an identifier of the tag or the POS device.

7. (*Currently amended*) The method as recited in claim 6, wherein said sending the payment request from the mobile device to ~~a~~ the payment gateway comprises:
transporting the payment request over a secured channel to the payment gateway, wherein the payment gateway is configured to perform the monetary transaction per the payment request by deducting ~~an~~ the total amount from ~~an~~ the e-purse ~~account owned by the user~~ and generates an electronic notification for sending to the POS device.

8. (*Previously amended*) The method as recited in claim 7, wherein said displaying the electronic invoice on the display of the mobile device comprises:
allowing the user to modify the amount in the electronic invoice when needed;
paying the total amount with an electronic payment provided by an installed module in the mobile device, wherein the installed module in the mobile device is configured to generate the payment request including the data pertaining to the electronic invoice to the payment gateway for processing.

9. (*Previously amended*) The method as recited in claim 8, wherein data exchange between the mobile device and the payment gateway is conducted in a secured channel established therebetween.

10. (*Previously amended*) The method as recited in claim 9, wherein the mobile device includes a secure element providing security and confidentiality required to support secure data communication between the mobile device and the payment gateway.

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11. (*Previously amended*) The method as recited in claim 9, wherein said notifying the user in the mobile device that then monetary transaction per the payment request has been successfully completed with the POS device comprising: sending a notification of successful payment to the merchant of the POS device.

12. (*Currently amended*) A method for mobile payment, the method comprising:

generating a set of data in a point of sale (POS) device, the data including an electronic invoice and settlement information with a merchant associated with the POS device;

embedding the data directly to a tag;

presenting the tag to ~~the~~ a mobile device;

causing the mobile device to capture the data from the tag, wherein the mobile device executes an installed application therein to retrieve an amount in the electronic invoice from the data and generate a payment request in response to the captured data, the payment request is denied in the mobile device when the amount is more than a balance of an electronic purse (e-purse) maintained locally in the mobile device, the payment request is ~~being~~ sent to a payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device ~~includes a total amount combining an additional amount added by a user of the mobile device and the amount expressed in the electronic invoice~~; and

receiving a message in the POS device directly from the payment gateway that the electronic invoice has been settled ~~but for the total amount more than the amount expressed in the electronic invoice~~, wherein the payment gateway is configured to cause the balance in the e-purse reduced by the amount ~~send the message directly to the POS device when an amount equivalent to the total amount is deducted from an account associated with the user of the mobile devices~~.

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13. (*Previously amended*) The method as recited in claim 12, wherein the tag is presented near the mobile device to allow the user to use the mobile device to capture the data.

14. (*Previously amended*) The method as recited in claim 13, wherein the POS device is provided with security and authentication to generate the electronic invoice.

15. (*Previously amended*) The method as recited in claim 14, wherein the data includes security information of the merchant associated with the POS device, the security information includes an account and bank information, an identifier of the tag or the POS device.

16. (*Previously amended*) The method as recited in claim 15, wherein the message received in the POS device shows how much has been received from the user of the mobile device.

17. (*Previously amended*) The method as recited in claim 12, wherein data exchange between the mobile device and the payment gateway is conducted in a secured channel established between the mobile device and the payment gateway.

18. (*Currently amended*) A system for mobile payment, the system comprising:

a point of sale (POS) device provided to generate a set of data including an electronic invoice upon receiving an entry, wherein the data including the electronic invoice and settlement information is transferred to a tag, a mobile device is executing a module configured to capture the data directly from the tag physically presented thereto, extract an amount expressed in the electronic invoice and display the amount in the mobile device~~voice~~; and wherein

the POS device receives an electronic notification directly from a payment gateway that the electronic invoice has been settled for a total amount including an additional amount and the amount expressed in the electronic invoice, the additional amount is added by the user, after the user of the mobile devices verifies

the electronic invoice displayed on the mobile device and authorizes a payment to the electronic invoice, the mobile device is configured to generate a payment request, wherein the payment request is denied within the mobile device without sending the payment request to the payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device; the payment request is ~~to be~~ sent to the payment gateway to proceed with a payment according to the payment request when the amount is more than the balance of the e-purse.

19. (*Previously amended*) The system as recited in claim 18, wherein the data from the POS device includes an account and bank information of the merchant of the POS device.

20. (*Previously amended*) The system as recited in claim 19, wherein the payment gateway acts to deduct an amount equivalent to the total amount from an account associated with the user of the mobile devices and generates the electronic notification for the POS device.

REMARKS

Claims 1 - 20 were examined again. In the Office Action dated 08/28/2019, Claims 1, 2, 4, 5, 12 and 17-20 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Gallagher U.S. Patent Application Publication 2011/0173060 (hereinafter "Gallagher") in view of Brendell et al. U.S. Patent Application Publication 2013/0048717 (hereinafter "Brendell"), Claims 3, 6-11, 14-15 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Gallagher in view of Brendell further in view of Florek et al. 2011/0112968 (hereinafter "Florek"), and Claim 16 is rejected under pre-AIA 35 U.S.C. 103{a) as being unpatentable over Gallagher in view of Brendell in view of Florek further in view of Shank et al. U.S. Patent Application Publication 2011/0066550 (hereinafter "Shank").

The Applicant appreciates the Examiner for providing detailed comments in the Office Action. In the foregoing amendments, Claims 1, 4, 7, 12 and 18 have been amended. No new matters have been introduced. Reconsideration of pending claims is respectfully requested.

Claim Rejections - 35 USC § 103

On Page 7 of this Office Action, Claims 1, 2, 4, 5, 12 and 17-20 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Gallagher in view of Brendell.

As amended, Claim 1 now recites:

…

generating a payment request in the mobile device in response to the electronic invoice after the user has chosen an electronic purse (e-purse) maintained locally in the mobile device;

displaying the electronic invoice on the display of the mobile device for the user to verify the payment request

verifying the total amount with a balance in the e-purse, wherein said verifying the total amount with a balance in the e-purse is performed within the mobile device without sending the payment request to a payment gateway;

displaying a denial of the payment request when the balance is less than the total amount;

sending the payment request from the mobile device to the payment gateway, wherein the balance is sufficient to honor the payment request, the payment gateway sends a message directly to the POS device that a monetary transaction per the payment request sent from the mobile device has been successfully completed; and

displaying a confirmation in the mobile device that the balance in the e-purse has been reduced by the total amount.

(*emphasis added*)

As described in Para [0033] and [0037], a customer may choose to settle the charge with an electronic wallet or purse (a.k.a., e-purse) already created in the mobile device. As further shown in FIG. 2F and FIG. 6C, and described in Para [0064 and [0131], the e-purse is a local application but managed remotely by a server. When the e-purse is used to settle a charge, the balance of the e-purse can be used to determine if the e-purse is sufficient to perform the transaction without verifying with the server. When the e-purse is sufficient to perform the transaction, the server is responsible for the settlement.

In contrast, Gallagher teaches using a check presenter 2 that includes a wireless communication device 44 and a transparent window 48. The process taught by Gallagher is clearly meant for credit or debit payment that is all handled by a remote payment server (e.g., operated by a credit company or a bank), there is no any indication in Gallagher that the payment could be made by a local instrument (*see* 114 of FIG. 4 in Gallagher). Gallagher neither teaches nor suggests the verification of a charge against the balance of a local e-purse. In one embodiment of the instant application, the balance of the e-purse is essentially used as a first step to determine if the payment request is to be sent to a payment server. In the case of the e-purse being insufficient, the user is allowed to top up (add more money to) the e-purse before the transaction happens. Accordingly, the Applicant submits Gallagher neither teaches nor suggests but teaches away from "*verifying the total amount with a balance in the e-*

purse, wherein said verifying the total amount with a balance in the e-purse is performed within the mobile device without sending the payment request to a payment gateway" and "*displaying a denial of the payment request when the balance is less than the total amount*" and "*displaying a denial of the payment request when the balance is less than the total amount*". It should be noted that the *denial* allows the user to top up the e-purse. Thus Claim 1 as amended shall be allowable over Gallagher.

On Page 10 of the Office Action, the Examiner admits Gallagher fails to explicitly state the payment gateway sends a message directly to the POS device that a monetary transaction per the payment request sent from the mobile device has been successfully completed in the payment gateway with the POS device when an amount equivalent to the total amount is deducted from an account associated with the user, and then cites Brendell to show the teaching in combination.

The Applicant respectfully contests the combination of Gallagher and Brendell as it is believed that there is no motivation to combine these two references in the manner proposed by the Examiner.

Brendell teaches contactless payments in a retail environment in which an invoice is generated on a merchant's server (merchant system 202) once a transaction is about to occur. As explicitly shown in FIG. 3 or 4 in Brendell, a user (consumer) uses his/her mobile device to scan a RFID tag 110 to access the invoice based on the tag's ID or a link. A payment can be made directly to the merchant system 202, hence a notification is sent to the merchant. It is believed that the Examiner has viewed that the merchant system 202 and the merchant POS terminal are two different entities. In view of Claim 1 of the instant application, there is only one payment gateway which is a third party to the user and merchant. The payment notification from the merchant system 202 to a POS terminal is not equivalent to a payment notification from the payment gateway to a merchant as the merchant system 202 still needs a payment gateway to settle a payment. Nevertheless, the modification of Gallagher with Brendell would not cure the deficiencies in Gallagher as discussed above. Accordingly, Claim 1 as amended shall

be allowable over Gallagher and Brendell, viewed alone or in combination. Reconsideration of Claims 1-11 is kindly requested.

Claim 12 and Claim 18 have been amended similarly to Claim 1. Without repeating the same, the Applicant wishes to rely upon the above arguments/reasons supporting Claim 1 to support Claim 12 and 18 and submits the combination of Gallagher and Brendell fails to suggest "*the payment request is denied in the mobile device when the amount is more than a balance of an electronic purse (e-purse) maintained locally in the mobile device, the payment request is sent to a payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device"* recited in Claim 12 and *"the payment request is denied within the mobile device without sending the payment request to the payment gateway when the amount is less than a balance of an electronic purse (e-purse) maintained locally in the mobile device; the payment request is sent to the payment gateway to proceed with a payment according to the payment request when the amount is more than the balance of the e-purse*" recited in Claim 18. Accordingly, the Applicant submits Claim 12 and 18 shall be allowable over Gallagher and Brendell, viewed alone or in combination. Reconsideration of Claims 12-20 is kindly requested.

The patentability of the independent claims has been argued specifically as set forth above and thus Applicant will not take this opportunity to argue further the merits of the rejection with regard to each dependent claim. However, Applicant does not concede that the dependent claims are not independently patentable and reserves the right to argue the patentability of the dependent claims at a later date if necessary.

In view of the above amendments and remark, the Applicant believes that Claims 1-20 shall be in condition for allowance over the cited references. Early and favorable action is being respectfully solicited.

If there are any issues remaining which the Examiner believes could be resolved through either a Supplementary Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at (408)777-8873.

GOOG-1001
Google LLC v. RFCyber Corp. / Page 162 of 792

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to " Mail Stop: No-fee Amendment Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450", Nov. 29, 2019. e-filed.

Name: Joe Zheng

Signature: / joe zheng /

Respectfully submitted;

/ joe zheng /

Joe Zheng
Reg.: No. 39,450

GOOG-1001
Google LLC v. RFCyber Corp. / Page 163 of 792

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 14/728,349	Filing Date 06/02/2015	☐ 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

AMENDMENT	11/29/2019	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	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

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) 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".	/LORENDA M HOOD/
*** 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.**

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LogicPatents, LLC
21701 Stevens Creek Boulevard, #284
CUPERTINO, CA 95015

Courtesy Reminder for
Application Serial No: 14/728,349

Attorney Docket No: RFID-085C1
Customer Number: 26797
Date of Electronic Notification: 08/28/2019

This is a courtesy reminder that new correspondence is available for this application. If you have not done so already, please review the correspondence. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

An email notification regarding the correspondence was sent to the following email address(es) associated with your customer number:
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/728,349	06/02/2015	Xiangzhen Xie	RFID-085C1	5346

26797 7590 08/28/2019

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EXAMINER	
HAYLES, ASHFORD S	

ART UNIT	PAPER NUMBER
3687	

NOTIFICATION DATE	DELIVERY MODE
08/28/2019	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):

uspatents@sbcglobal.net

Office Action Summary	**Application No.** 14/728,349	**Applicant(s)** Xie et al.	
	Examiner ASHFORD S HAYLES	**Art Unit** 3687	**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 7/24/2019.

☐ 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) 1-20 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) 1-20 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 6/23/2015 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 _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Amendment received on July 24, 2019 has been acknowledged. Claims 1 and 12 have been amended and entered. Therefore, claims 1-20 are pending.

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 July 24, 2019 has been entered.

Response to Arguments

Applicant's arguments filed July 24, 2019 have been fully considered but they are not persuasive.

Applicant argues: ***" The subtle difference between Gallagher and Claim 1 as amended is that the user knows exactly how much to pay before using his/her mobile device to settle the transaction in Gallagher while the user would not see exactly how much to pay before using his/her mobile device in Claim 1 of the instant application. Another important"***

Examiner respectfully disagrees. In response to applicant's argument that the user ***knows exactly how much to pay before using his/her mobile device to settle the transaction***, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

For example the prior art discloses the restaurant management module writes several payment facilitating information to the memory of the wireless communication device 44 attached to the check presenter 2 through the wireless reader/writer 54 (pg.3, ¶ [0034]).

Gallaher further teaches that payment facilitating information includes: the following information: 1) restaurant identifier, 2) unique identifier of the wireless communication device 44, if not present already, 3) identifier of the table where the guest is sitting, 4) identifier of the guest check, 5) location information of the restaurant interface system 56 such as the URL (Uniform Resource Locator) and 6) identifier of a restaurant application which is to be run by the wireless mobile device 62 of the guest when the device is brought near the wireless communication device 4 (¶ [0034].

Therefore Gallaher's system and method writes and embeds data, in particular the transaction amount and information to settle the transaction, which is illegible visually within the memory of the wireless communication device.

Gallagher teaches that the guest check presenter 2 typically includes guest check information such as a physical printout of the check *because at this point the waiter has no way of knowing how the guest intends to complete the transaction* (pg.3, ¶ [0036]). The ability to additional supply a customer a physical receipt is an obvious design choice and does not change the structural ability for the data to be embedded within the memory of the wireless communication device which is still visually illegible to the customer.

Therefore Gallagher teaches the claimed limitation of "*the data embedded in the tag including an electronic invoice and settlement information*".

Applicant argues: ***"Another important distinction from Gallagher is that the user must use his/her mobile device to capture the data from the tag, where the invoice or the amount due is retrieved from the captured data."***

Examiner respectfully disagrees. There is no distinction between the claimed invention and the prior art reference. The claimed invention requires a mobile device to capture data directly from a tag physically presented and extracting the electronic invoice from the captured data in the mobile device.