SYSTEM AND METHOD FOR PRINTING DETAILED ACCOUNT

A system and method for printing a detailed account is provided. When after certification of personal financial information stored in an IC card chip (for example, an embedded or external smart card chip or a traffic card chip) of a mobile communication terminal storing the personal financial information for supporting a banking function, the mobile communication terminal transmits a detailed account request IrFM including an account number selected by a user to a cash dispenser/automatic teller machine (CD/ATM) having an IrFM reception port, the CD/ATM requests a detailed account with respect to a corresponding account of a banking server, prints an inquiry result as a detailed account, and provides the detailed account to the user, such that the user simply checks the detailed account with respect to own specific account via the CD/ATM using the mobile communication terminal.

Published:
—— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
SYSTEM AND METHOD FOR PRINTING DETAILED ACCOUNT

Technical Field

The present invention relates to a system and method for printing a detailed account, and more particularly, to a system and method for printing a detailed account using a mobile communication terminal having an infrared financial message (IrFM) transmission function and a cash dispenser (CD)/automatic teller machine (ATM) having an IrFM reception function.

Background Art

When a user who uses a financial card issued by a variety of financial organs, such as banks or credit card companies inquires own overall account details using own financial card, a conventional CD/ATM provides only current balance information on a corresponding account. Thus, there are inconveniences that the user should visit a corresponding financial organ personally whenever the user checks own detailed account.

In particular, when the user holds a plurality of financial cards, there are inconveniences that the user should carry the financial cards in a wallet so as to inquiry accounts of the financial cards, and thus, the user may lose the financial cards easily.

Meanwhile, a variety of mobile communication terminals such as mobile phones, PCS terminals, and PDA phones, support a variety of banking functions, such as user’s card price inquiry and settlement, account balance inquiry, deposit transfer and remittance, and loan inquiry and redemption using an IC card chip, such as an embedded or external smart card chip or a traffic card chip in which personal financial information, such as a mobile communication terminal user’s account number for banking and a personal identification number (PIN) for user certification is stored.

However, even though the user uses a mobile communication terminal having a conventional IC card chip supporting a variety of banking functions, the user cannot print
and check own detailed account personally.

Disclosure

To solve the above-described problems, the present invention provides a system and method for printing a detailed account in which a user’s detailed account for a specific account is inquired and printed using a CD/ATM having an IrFM reception function by a mobile communication terminal user’s request having an IrFM transmission function.

According to an aspect of the present invention, there is provided a system for printing a detailed account, the system comprising a mobile communication terminal, which includes an embedded or external IC card chip in which a user’s account number for supporting a banking function and a personal identification number (PIN) for user certification are stored as personal financial information, when there is a user’s PIN certification request, performs PIN certification stored in the IC card chip by driving an internal chip driver, and prints a detailed account request IrFM including a user’s account number stored in the IC card chip to an external device via an IrFM transmission port; a CD/ATM, which displays a user’s account password input message on a banking transaction display window when receiving the detailed account request IrFM of the mobile communication terminal via an IrFM reception port, if a user’s account password is input, transmits the detailed account request message with respect to a corresponding account to a corresponding financial organ, and prints a detailed account message transmitted from the corresponding financial organ as a detailed account to a printer; and a financial organ banking server, which checks a detailed account with respect to a corresponding account and transmits a detailed account message to the CD/ATM when receiving the detailed account request message of the CD/ATM.

According to another aspect of the present invention, there is provided a method of printing a detailed account, the method comprising when a user presses a specific key of a mobile communication terminal and requests for performance of an application for printing
a detailed account, displaying a personal identification number (PIN) input screen on a
display window and inputting a PIN; when the user inputs own PIN, determining whether
or not a PIN stored in the accessed IC card chip is coincident with the PIN inputted by the
user, by driving an internal chip driver; when the PIN inputted by the user is coincident
with the PIN stored in the IC card chip, displaying an account number selection screen on
the display window so that the user selects a specific account number to be printed as a
detailed account; when the user selects a specific account number of a plurality of user’s
account numbers stored in the IC card chip, accessing the account number selected by
driving the chip driver, generating a detailed account request IrFM including the selected
user’s account number, and printing the detailed account request IrFM to a CD/ATM via an
IrFM transmission port; when receiving the detailed account request IrFM of the mobile
communication terminal via an IrFM reception port, displaying a user’s account password
input message on a banking transaction display window so that the user inputs a password
of an account requested for a detailed account; when the account password inputted by the
user is correct, transmitting the detailed account request message with respect to a
corresponding account to the corresponding financial organ banking server; transmitting a
detailed account message with respect to a corresponding account to the CD/ATM; and
printing the detailed account message transmitted from the financial organ banking server
as a detailed account to a printer.

Description of Drawings

Fig. 1 shows a structure of a system for printing a detailed account according to an
embodiment of the present invention; and

Fig. 2 is a flowchart showing a method of printing a detailed account according to
another embodiment of the present invention.
<Explanation of Reference numerals designating the Major Elements of the Drawings>

10: mobile communication terminal  
11: IC card chip  
12: chip driver  
13: IrFM transmission port  
20: CD/ATM  
21: IrFM reception port  
22: display window  
23: key manipulation unit  
24: printer  
30: financial organ banking server

Best Mode

Hereinafter, exemplary embodiments of the present invention will be described with reference to the accompanying drawings.

Referring to Fig. 1, a mobile communication terminal 10 includes an embedded or external IC card chip 11 in which a user’s account number for supporting a banking function and a personal identification number (PIN) for user certification are stored as personal financial information.

The mobile communication terminal 10 mounts an application for performing a function of printing a detailed account. When a user presses a specific function key of the mobile communication terminal 10 and requests for performance of the application for printing a detailed account, the mobile communication terminal 10 displays a PIN input screen on a display window.

In this case, when the user inputs own PIN, the mobile communication terminal 10 determines whether or not a PIN stored in the accessed IC card chip 11 is coincident with the PIN inputted by the user, by driving an internal chip driver 12. When the PINs are coincident with each other, the mobile communication terminal 10 generates a detailed account request IrFM including a user’s account number stored in the IC card chip 11 and prints the detailed account request IrFM to a financial organ banking server 30 via an IrFM transmission port 13.

The mobile communication terminal 10 mounts an application for adding and
updating an account number required for printing a detailed account. When the user presses a specific function key of the mobile communication terminal 10 and requests for performance of the application for adding and updating the account number, the mobile communication terminal 10 displays a PIN input screen on a display window.

In this case, when the user inputs own PIN, the mobile communication terminal 10 determines whether or not the PIN stored in the accessed IC card chip 11 is coincident with the PIN inputted by the user, by driving an internal chip driver 12. When the PINs are coincident with each other, the mobile communication terminal 10 transmits an account number adding and updating request message to the financial organ banking server 30 via a wireless communication network including a wireless base station and a packet data switch network (PDSN) and adds a newly added and updated account number transmitted from the corresponding financial organ banking server 30 to the IC card chip 11 by driving the chip driver 12 and updates and stores the added account number.

When receiving the detailed account request IrFM of the mobile communication terminal 10 via an IrFM reception port 21, first, a CD/ATM 20 displays a user's account number input message on a banking transaction display window 22.

When the user inputs a user's account password by manipulating a key manipulation unit 23, the CD/ATM 20 transmits the detailed account request message with respect to a corresponding account to a corresponding financial organ and prints a detailed account message transmitted from the corresponding financial organ as a detailed account to a printer 24.

When receiving the detailed account request message of the CD/ATM 20, the financial organ banking server 30 checks a detailed account with respect to a corresponding account and transmits a detailed account message to the CD/ATM 20.

The system for printing a detailed account having the above structure according to the present invention is operated using a method of printing a detailed account shown in Fig. 2.
Referring to Fig. 2, in step S10, when a user presses a specific key of a mobile communication terminal 10 using the mobile communication terminal 10 including an IC card chip 11, such as an embedded or external smart card chip or a traffic card chip storing personal financial information for supporting a banking function so as to check a detailed account with respect to a specific account number, the mobile communication terminal 10 performs an application for printing the detailed account and displays a PIN input screen on a display window (not shown), and the user inputs own personal identification number (PIN).

Subsequently, in step S20, when the user inputs own PIN for user certification by manipulating a number key button of the mobile communication terminal 10 on the PIN input screen displayed on the display window, the mobile communication terminal 10 determines whether or not a PIN stored in the accessed IC card chip 11 is coincident with the PIN inputted by the user, by driving an internal chip driver 12.

In this case, when the PIN inputted by the user is not coincident with the PIN stored in the IC card chip 11, the mobile communication terminal 10 displays a PIN discord message or a PIN re-input message on the display window.

Meanwhile, in step S30, when the PIN inputted by the user is coincident with the PIN stored in the IC card chip 11, the mobile communication terminal 10 displays an account number selection screen on the display window so that the user selects a specific account number to be printed as a detailed account.

In this way, in step S40, in a state where a selection screen of a plurality of account numbers stored in the IC card chip 11 of the mobile communication terminal 10 is displayed on the display window, the mobile communication terminal 10 accesses a specific account number of the plurality of account numbers stored in the IC card chip 11 by driving the chip driver 12, generates a detailed account request IrFM including the selected user's account number, and transmits the detailed account request IrFM to a CD/ATM 20 via an IrFM transmission port 13.
Subsequently, in step S50, when receiving the detailed account request IrFM of the mobile communication terminal 10 via an IrFM reception port 21, the CD/ATM 20 displays a user’s account number input message on a banking transaction display window 22 so that the user inputs a password of an account requested for a detailed account.

In this case, when the account password inputted by the user is incorrect, the CD/ATM 20 displays an account password discord message or an account password re-input message on the display window 22.

Meanwhile, when the account password inputted by the user is correct, the CD/ATM 20 transmits the detailed account request message with respect to a corresponding account to the corresponding financial organ banking server 30 via a wireless communication network including a wireless base station and a PDSN.

In this case, in step S70, the financial organ banking server 30 checks a detailed account with respect to a specific account requested by the CD/ATM 30 and transmits a detailed account message with respect to a corresponding account to the CD/ATM 20. In this case, a period of the detailed account provided by the financial organ banking server 30 may be determined according to date or time of a specific day.

In step S80, when the financial organ banking server 30 transmits the detailed account message with respect to the specific account requested by the user to the CD/ATM 20, the CD/ATM 20 prints the detailed account message as a detailed account to a printer 24.

**Industrial Applicability**

As described above, in the system performing a method of printing a detailed account according to the present invention, when after certification of personal financial information stored in an IC card chip of a mobile communication terminal storing the personal financial information for supporting a banking function, the mobile communication terminal transmits a detailed account request IrFM including an account
number selected by a user to a CD/ATM having an IrFM reception port, the CD/ATM requests a detailed account with respect to a corresponding account of a banking server, prints an inquiry result as a detailed account, and provides the detailed account to the user, such that the user simply checks the detailed account with respect to own specific account via the CD/ATM using the mobile communication terminal.

In addition, in the system performing the method of printing a detailed account according to the present invention, the mobile communication terminal can add and update a plurality of user's account numbers to the IC card chip, such that inconveniences that the user should carry a plurality of financial cards in a wallet are removed and an accident of financial card loss is prevented in advance.

While the present invention has been particularly shown and described with reference to exemplary embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention as defined by the following claims.
WHAT IS CLAIMED IS:

1. A system for printing a detailed account, the system comprising:

   a mobile communication terminal (10), which includes an embedded or external IC card chip (11) in which a user’s account number for supporting a banking function and a personal identification number (PIN) for user certification are stored as personal financial information, when there is a user’s PIN certification request, performs PIN certification stored in the IC card chip (11) by driving an internal chip driver (12), and transmits a detailed account request IrFM including a user’s account number stored in the IC card chip (11) to an external device via an IrFM transmission port (13);

   a CD/ATM (20), which displays a user’s account password input message on a banking transaction display window (22) when receiving the detailed account request IrFM of the mobile communication terminal (10) via an IrFM reception port (21), if a user’s account password is input, transmits the detailed account request message with respect to a corresponding account to a corresponding financial organ, and prints a detailed account message transmitted from the corresponding financial organ as a detailed account to a printer (24); and

   a financial organ banking server (30), which checks a detailed account with respect to a corresponding account and transmits a detailed account message to the CD/ATM (20) when receiving the detailed account request message of the CD/ATM (20).

2. The system according to Claim 1, wherein the mobile communication terminal (10) mounts an application for performing a function of printing a detailed account, when a user presses a specific function key of the mobile communication terminal (10) and requests for performance of the application for printing a
detailed account, the mobile communication terminal (10) displays a PIN input screen on a display window, if the user inputs own PIN, the mobile communication terminal (10) determines whether or not a PIN stored in the accessed IC card chip (11) is coincident with the PIN inputted by the user, by driving an internal chip driver (12), if the PINs are coincident with each other, the mobile communication terminal (10) generates a detailed account request IrFM including a user's account number stored in the IC card chip (11) and transmits the detailed account request IrFM to an external device via the IrFM transmission port 13.

3. The system according to Claim 1, wherein the mobile communication terminal (10) mounts an application for adding and updating an account number required for printing a detailed account, when the user presses a specific function key of the mobile communication terminal (10) and requests for performance of the application for adding and updating the account number, the mobile communication terminal (10) displays a PIN input screen on a display window, if the user inputs own PIN, the mobile communication terminal (10) determines whether or not the PIN stored in the accessed IC card chip (11) is coincident with the PIN inputted by the user, by driving an internal chip driver (12), if the PINs are coincident with each other, the mobile communication terminal (10) transmits an account number adding and updating request message to the financial organ banking server (30) and adds a newly added and updated account number transmitted from the corresponding financial organ banking server (30) to the IC card chip (11) by driving the chip driver (12) and updates and stores the added account number.

4. The system according to Claim 3, wherein when receiving an account number adding and updating request message of the mobile communication terminal (10) via a wireless communication network, the financial organ banking server (30) transmits the
account number adding and updating request message including a newly added and
updated account number to the mobile communication terminal (10).

5. The system according to Claim 2 or 3, wherein

when a PIN stored in the accessed IC card chip (11) is coincident with the PIN inputted by
the user, the mobile communication terminal (10) displays an account number selection
screen on a display window by driving an internal chip driver (12), if the user selects a
specific account number by manipulating a key button, the mobile communication terminal
(10) generates a detailed account request IrFM including a user’s account number selected
of a plurality of user’s account numbers stored in the IC card chip (11) and transmits the
detailed account request IrFM to an external device via the IrFM transmission port (13).

6. The system according to Claim 1, wherein the CD/ATM (20) includes the
printer (24) which receives the detailed account request IrFM of the mobile communication
terminal (10) via an IrFM reception port (21) and prints a corresponding detailed account.

7. A method of printing a detailed account, the method comprising:

(S10) when a user presses a specific key of a mobile communication terminal (10)
and requests for performance of an application for printing a detailed account, displaying a
personal identification number (PIN) input screen on a display window and inputting a
PIN;

(S20) when the user inputs own PIN, determining whether or not a PIN stored in the
accessed IC card chip (11) is coincident with the PIN inputted by the user, by driving an
internal chip driver (12);

(S30) when the PIN inputted by the user is coincident with the PIN stored in the IC
card chip (11), displaying an account number selection screen on the display window so
that the user selects a specific account number to be printed as a detailed account;
(S40) when the user selects a specific account number of a plurality of user’s account numbers stored in the IC card chip (11), accessing the account number selected by driving the chip driver (12), generating a detailed account request IrFM including the selected user’s account number, and transmitting the detailed account request IrFM to a CD/ATM (20) via an IrFM transmission port (13);

(S50) when receiving the detailed account request IrFM of the mobile communication terminal (10) via an IrFM reception port (21), displaying a user’s account password input message on a banking transaction display window (22) so that the user inputs a password of an account requested for a detailed account;

(S60) when the account password inputted by the user is correct, transmitting the detailed account request message with respect to a corresponding account to the corresponding financial organ banking server (30);

(S70) transmitting a detailed account message with respect to a corresponding account to the CD/ATM (20); and

(S80) printing the detailed account message transmitted from the financial organ banking server (30) as a detailed account to a printer (24).
Fig. 1

[Diagram depicting a financial organ banking server connected to a mobile communication terminal through a wireless communication network.]
Fig. 2

10 mobile communication terminal

display PIN input screen

S10 PIN

PIN certification

display account number selection screen

S30 select account number

S40 transmit detailed account request IRFM

S50 input account password

S60 detailed account request message

S70 detailed account message

S80 print detailed account

20 CD/ATM

30 banking server
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 19/00

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)

IPC7 G06F 13/00, 17/60, 19/00; H04Q 7/24

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

KOREAN PATENTS AND APPLICATIONS FOR INVENTIONS SINCE 1975
KOREAN UTILITY MODELS AND APPLICATIONS FOR UTILITY MODELS SINCE 1975

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

eKIPASS, PAJ, FPD

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US 2002/0194137 A1 (Kyung-Yang, Park) Dec. 19, 2002 See the abstract and Fig. 3</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>US 2003/0074328 A1 (Schiff, Steven; Sandorffy, Joanna) April 17, 2003 See the whole document.</td>
<td></td>
</tr>
</tbody>
</table>

☐ 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 citation or other special reason (as specified)
  
  "O" document referring to an oral disclosure, use, exhibition or other means
  
  "P" document published prior to the international filing date but later than the priority date claimed
  
  "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  
  "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  
  "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
  
  "&" document member of the same patent family

Date of the actual completion of the international search 28 JULY 2004 (28.07.2004)

Date of mailing of the international search report 29 JULY 2004 (29.07.2004)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
920 Duman-dong, Seo-gu, Daejeon 302-701,
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

RYU, Dong Hyun

Telephone No. 82-42-481-5783

Form PCT/ISA/210 (second sheet) (January 2004)