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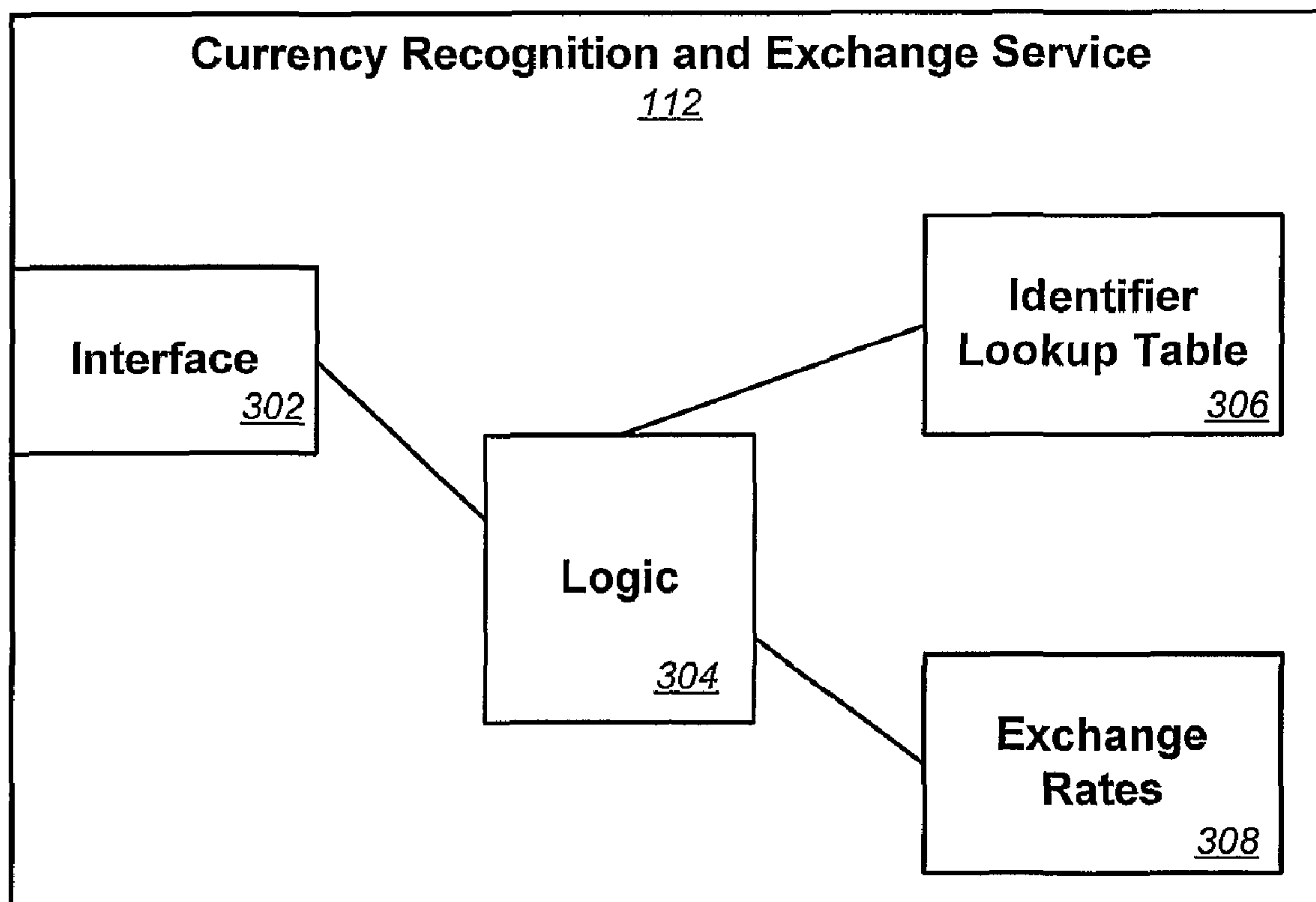
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(57) Abrégé/Abstract:

Methods, systems, and Automated Teller Machines (ATMs) are disclosed which provide ATM currency conversion capabilities. In one embodiment, a financial account number associated with a financial account maintained by a customer at a financial institution is received, a foreign currency type associated with the financial account is determined, and a choice is presented to the customer at the ATM to conduct a financial transaction in the foreign currency type. A currency selection is received from the customer and at least a portion of the financial transaction is conducted at the ATM in the selected currency.



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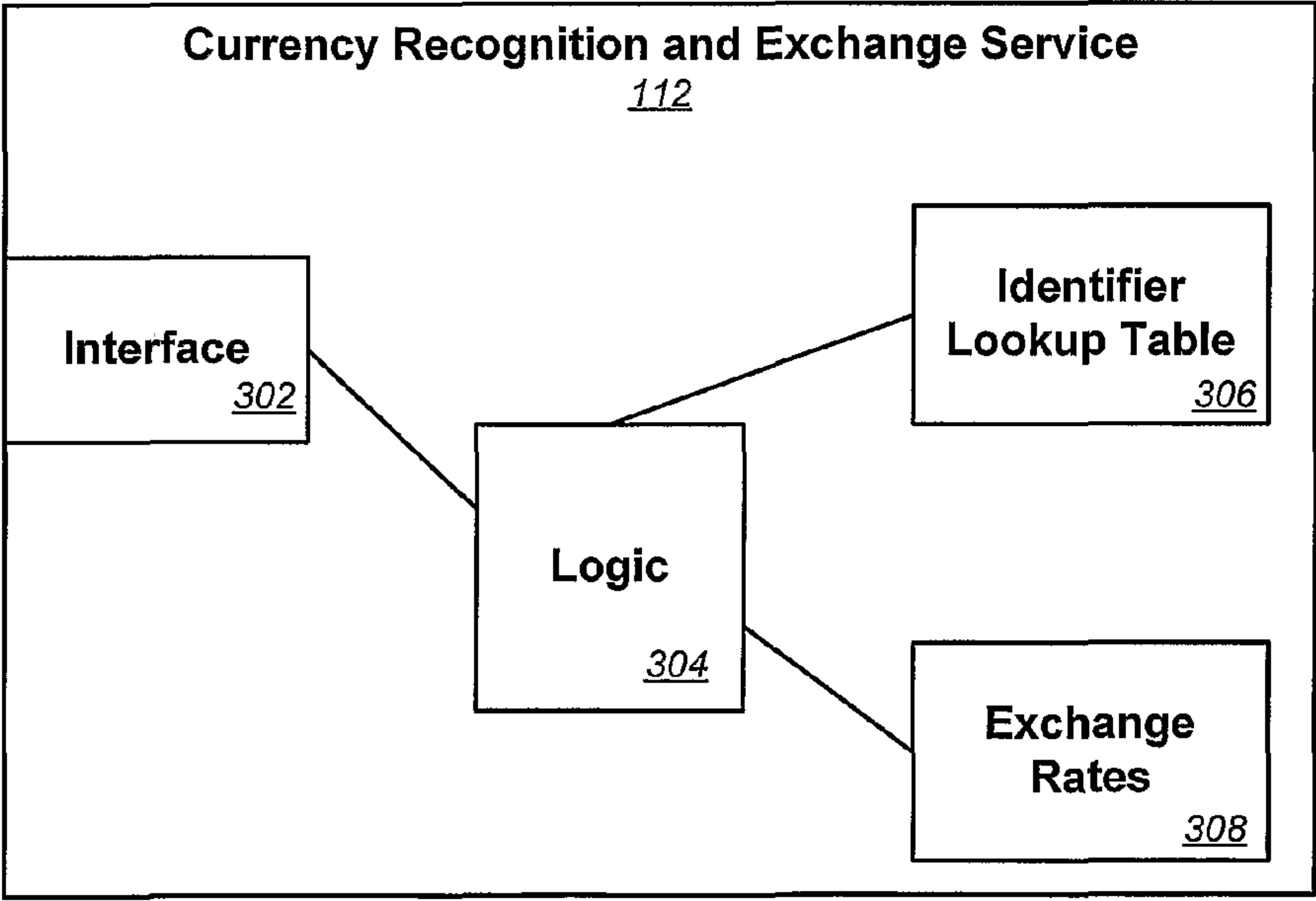
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(54) Title: ATM MACHINE AND METHODS WITH CURRENCY CONVERSION CAPABILITIES



(57) Abstract: Methods, systems, and Automated Teller Machines (ATMs) are disclosed which provide ATM currency conversion capabilities. In one embodiment, a financial account number associated with a financial account maintained by a customer at a financial institution is received, a foreign currency type associated with the financial account is determined, and a choice is presented to the customer at the ATM to conduct a financial transaction in the foreign currency type. A currency selection is received from the customer and at least a portion of the financial transaction is conducted at the ATM in the selected currency.

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## ATM MACHINE AND METHODS WITH CURRENCY CONVERSION CAPABILITIES

### CROSS-REFERENCE TO RELATED APPLICATION

5 [0001] This application claims the benefit of U.S. Provisional Application Nos. 60/580,985, filed June 17, 2004, and 60/588,169, filed July 14, 2004, and claims the benefit of U.S. Patent Application No. 11/\_\_\_\_, filed June 15, 2005, the complete disclosures of which are herein incorporated by reference.

### 10 BACKGROUND

[0002] Automated Teller Machines (ATMs) are used by customers to conveniently perform transactions related to financial accounts. One of the most common transaction involves the withdrawal of money from a checking or savings account. The customer enters the desired withdrawal amount and if the transaction is approved, receives the requested amount. The withdrawal amount is deducted from the customer's account. ATM's may also be used for credit card transactions and credit card cash advances, money transfers, payments (e.g., payment of a bill, such as a cellular phone bill or other bill), balance inquiries, item purchase items (e.g., stamps), electronic purse transactions, and other types of transactions involving the making and receiving of payments.

20 [0003] ATM transactions are conducted using the native currency of the ATM. Thus, an ATM located in the United States conducts transactions in U.S. dollars, while an ATM located in France conducts transactions in Euros. If the customer is using an ATM located in the same country as the customer, the transaction amounts (e.g., the withdrawal amount) are presumably well understood by the customer. However, in instances in which a customer is using an ATM in a foreign country, the customer often does not know how the ATM's native currency corresponds to the customer's native currency amount. Additionally, the exchange rate that will be used to perform the settlement on the transaction is not known to the customer. Even if the customer can make an educated guess about the exchange rate, the conversion must be performed manually by the customer. Thus, a customer usually does not know the exact amount of the transaction in the customer's native currency (e.g., the

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withdrawal amount deducted from his or her account) until a statement is received from the financial institution.

#### BRIEF SUMMARY

5 [0004] Methods, systems, and Automated Teller Machines (ATMs) are disclosed which provide ATM currency conversion capabilities. In one embodiment, a financial account number associated with a financial account maintained by a customer at a financial institution is received at an ATM. A foreign currency type associated with the financial account is determined and a choice is presented to the customer at the ATM to conduct a financial  
10 transaction in the foreign currency type. A currency selection is received from the customer. At least a portion of the financial transaction at the ATM is conducted in the selected currency.

[0005] In some instances, the foreign currency type associated with the financial account may be determined by obtaining an identifier portion of the financial account number (e.g.,  
15 the bank identification number (BIN) portion). The country associated with the financial account may be determined using the identifier portion. By way of example, the identifier portion may be compared to a lookup table associating financial institution identification numbers to a country. Other methods of determining foreign currency type may also be used.

[0006] The currency selection received may be a selection indicating the foreign currency  
20 type. In one embodiment, the transaction may be a withdrawal, and conducting at least a portion of the financial transaction may comprise receiving a withdrawal amount in the foreign currency type. The method may then further comprise obtaining an exchange rate to convert the foreign currency type to a native currency type associated with the ATM and converting the withdrawal amount to the native currency type.

25 [0007] Alternately, conducting at least a portion of the financial transaction may comprise receiving a withdrawal amount in a native currency type associated with the ATM. The exchange rate to convert the native currency type to the foreign currency type is obtained and the withdrawal amount is converted to the foreign currency type. The converted withdrawal amount is displayed to the customer.

30 [0008] In a second embodiment, a method is disclosed which comprises receiving, at an ATM network, a request from an ATM to obtain a currency exchange rate from a first



currency to a second currency. The currency exchange rate is obtained and provided to the ATM. The method may also further comprise receiving an identifier from the ATM identifying a financial institution associated with a financial account, using the identifier to determine a currency type associated with the financial account, and providing the currency type to the ATM.

[0009] In a third embodiment, a system to provide currency conversion information to an ATM is disclosed. The system may comprise an interface, communicatively coupled to an ATM, data, and logic, communicatively coupled to the interface and the data. The interface is configured to receive an identifier portion of a financial account from an ATM. The data associates financial institution identification numbers to at least one of a country and a currency. The logic determines a currency type associated with the financial account using the data and the interface transmits the currency exchange rate to the ATM.

[0010] In a fourth embodiment, an ATM is disclosed. The ATM comprises a user interface to receive a financial transaction selection from a customer. The user interface also receives a selection from the customer to conduct a transaction in a foreign currency type different than a native currency type associated with the ATM. Logic processes at least a part of the financial transaction in the foreign currency.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Illustrative embodiments in accordance with the invention are illustrated in the drawings in which:

[0012] FIG. 1 illustrates a system that may be used to provide currency conversion capabilities in an ATM;

[0013] FIG. 2 is a block diagram illustrating an exemplary communication coupling to a currency recognition and exchange service that may be used to provide currency conversion capability in an ATM;

[0014] FIG. 3 is a block diagram illustrating an exemplary embodiment of the Currency Recognition and Exchange Service in Fig. 1 and Fig. 2;

[0015] FIG. 4 is a block diagram of an exemplary ATM that may be used to conduct financial transactions in a currency not native to the ATM;

[0016] FIG. 5 is a flow diagram illustrating an exemplary method for conducting a transaction at an ATM; and

[0017] FIG. 6 is a flow diagram illustrating an exemplary withdrawal transaction.

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## DETAILED DESCRIPTION

[0018] In the following description, for the purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the present invention. It will be apparent, however, to one skilled in the art that the present invention may be practiced without some of these specific details. In other instances, well-known structures and devices are shown in block diagram form.

[0019] FIG. 1 illustrates a system that may be used to provide currency conversion capabilities in an ATM. The system includes ATMs 102, 104. ATM 102 has a direct communication coupling to ATM network 108, while ATM 104 is communicatively coupled to ATM network 108 via a server at a financial institution 106 associated with the ATM 104. The ATM network 108 may be used to obtain information and authorization for an ATM 102, 104 to perform transactions requested by a customer of the ATM 102, 104. Thus, ATM network 108 is able to communicate with a financial institution 110 associated with the ATM customer's financial account. By way of example, ATM network 108 may be a network, such as the NYCE® network, the Pulse® network, the STAR® network, and the like. ATM network 108 may be used to verify a customer's authentication information (e.g., financial account and personal identification number (PIN)) and to provide authorization to an ATM 102, 104 to perform a transaction, such as a withdrawal of funds from a financial account or a transfer of funds from a first financial account to a second financial account. ATM network 108 may also be used to obtain information on the customer's financial account, such as the account balance. The information and authorization may be provided directly to some ATMs 102 and may be provided to other ATMs 104 via a financial institution server 106. In some instances, the customer's financial account may be maintained at the financial institution 106 associated with the ATM 104. In these instances, financial institution 106 may provide the authorization and other information needed by the ATM 104 without using ATM network 108. It should be appreciated that the system may include many more ATMs 102, 104 and financial institutions 106, 110 than illustrated in FIG. 1.



[0020] ATM network 108 is communicatively coupled to Currency Recognition and Exchange Service 112. Currency Recognition and Exchange Service 112 may be a service that is used to provide information on a currency associated with an ATM customer's financial account. Additionally, Currency Recognition and Exchange Service 112 may be used to provide exchange rates to an ATM 102, 104 via ATM network 108. In some embodiments, Currency Recognition and Exchange Service 112 may be used to provide currency exchange information for more than one ATM network 108. Alternately, Currency Recognition and Exchange Service 112 may be a component of ATM network 108. In some embodiments, Currency Recognition and Exchange Service 112 may provide the currency and exchange information dynamically. For instance, the information may be provided when it is requested by financial institution 106 or ATM network 108 on behalf of ATM 102, 104. Alternately, Currency Recognition and Exchange Service 112 may periodically provide currency recognition and exchange information to a server residing on ATM network 108, ATM 102/104, and/or financial institutions 106, 110. By way of example, the information may be transferred as one or more files using file transfer protocol (ftp). The file transfer may be initiated by either the Currency Recognition and Exchange Service 112 or at the initiative of the component on the system receiving the files (e.g., financial institution 106, server on ATM network, etc.).

[0021] FIG. 2 illustrates a second exemplary communication coupling between financial institution 106 and Currency Recognition and Exchange Service 112. In this embodiment, financial institution 106 is communicatively coupled to Currency Recognition and Exchange Service 112 via a communications network 202, such as a wide area network (WAN). Thus, financial institution 106 may obtain currency recognition and exchange rate information from Currency Recognition and Exchange Service 112 without using ATM network 108. As previously described, financial institution 106 may obtain the information dynamically, as requested by ATM 104, or may locally store information which is periodically transmitted to the financial institution 106 from Currency Recognition and Exchange Service 112 (e.g., via ftp file(s)).

[0022] It should be appreciated that various other configurations than those illustrated in FIGs. 1 and 2 may be used to provide currency recognition information and exchange information to ATMs 102, 104. For instance, either or both ATMs 102, 104 may be in direct communications with Currency Recognition and Exchange Service 112. Alternately, Currency Recognition and Exchange Service 112 may be a component of ATM 102, 104 or



may be software executing on a financial institution server 106, 110. In these embodiments, Currency Recognition and Exchange Service 112 may periodically obtain exchange rate information and currency recognition information from one or more sources of this information.

5 [0023] FIG. 3 illustrates one exemplary embodiment of a Currency Recognition and Exchange Service 112. Currency Recognition and Exchange Service 112 includes a communications interface 302. Communications interface may be communicatively coupled to a server residing on ATM network 108, one or more financial institutions 106, 110 and/or one or more ATMs 102, 104. In some embodiments, Currency Recognition and Exchange  
10 Service 112 may be used to provide currency recognition and/or exchange information to an ATM 102, 104 at the request of another component, such as ATM network 108 or financial institution 106. Alternately, the information may be provided directly to an ATM 102, 104. As will be described in further detail below, interface 302 may be used to receive financial institution identifier portions of financial account identifiers and to communicate a  
15 determined currency associated with the financial account. Interface 302 may also further be used to communicate exchange rates to convert from a first currency to a second currency.

[0024] Currency Recognition and Exchange Service 112 further includes logic 304, identifier lookup table 306, and exchange rate information 308. Logic 304 is communicatively coupled to interface 302, identifier lookup table 306, and exchange rate  
20 information 308. By way of example, logic 304 may be machine-executable instructions, such as a software program. Logic 304 may be used to determine a currency type associated with a financial account using data, such as identifier lookup table 306. Additionally, logic 304 may be used to determine exchange rates by using the exchange rate information 308.

[0025] Identifier lookup table 306 and exchange rate information 308 may be stored in one  
25 or more databases. The database(s) may be any type of structure that may be used to store information, such as relational databases, internal software lists, text files, spreadsheet files, and the like. Identifier lookup table 306 may contain information associating financial institution identification numbers (e.g., BINs) with a country and/or currency. Other unique identification numbers, such as the ATM card number or customer's financial account may  
30 also or alternately be associated with a country and/or currency. Exchange rate information 308 may store information on exchange rates that may be used to convert from a first currency to a second currency. In embodiments in which the lookup table maps financial



institution identification numbers to a country, additional information may be stored which maps countries to currencies. In some embodiments, the identifier lookup table 306 may map a range of financial institution identification numbers to a country and/or currency. In these embodiments, the information in the database(s) may further include an exception table (not shown) to map financial institution identification numbers to a currency and/or country different than the one indicated in the associated range of the lookup table.

[0026] In the configuration described above, different components were described as being communicatively coupled to other components. A communicative coupling is a coupling that allows communication between the components. This coupling may be by means of a bus, cable, network, wireless mechanism, program code call (e.g., modular or procedural call) or other mechanism that allows communication between the components. Thus, it should be appreciated that logic 304, identifier lookup table 306, and exchange rate information 308 may reside on the same or different physical devices. It should also be appreciated that in alternate embodiments, Currency Recognition and Exchange Service 112 may contain additional or fewer components than illustrated in FIG. 3.

[0027] As previously described, in alternate embodiments, currency recognition information, such as identifier lookup table 306, and exchange rate information 308 may be periodically provided to a server residing on ATM network 108, financial institution 106, and/or ATMs 102, 104. For instance, files may be periodically transferred or otherwise made available to one or more of these components 108, 106, 102, 104. It should be appreciated that in these embodiments, appropriate logic (e.g., program code) may also reside on the component 108, 106, 104, and/or 102 having the currency recognition and exchange information. The component logic may function similar to logic 304 and may use the transferred data to perform currency recognition and provide exchange rate information at the request of an ATM 102, 104, or additional logic resident to the ATM 102, 104.

[0028] FIG. 4 illustrates an exemplary block diagram of an ATM 102 that may be used to provide currency conversion information to customers. ATM 102 includes a user interface 400. User interface 400 may comprise multiple components, such as card reader 402, display 404, keypad 406, and printer 408. Card reader 402 may be used to receive a customer's ATM card and obtain a financial account number from the ATM card. Display 404 may be used to prompt the customer for responses needed to perform a transaction and to display information to the customer. Keypad 406 may be used to receive input from the customer, such as a



personal identification number (PIN) associated with the customer's financial account, transaction selections, dollar amounts for transactions (if applicable), and other information related to a customer's transaction with the ATM. Additionally, as will be described in further detail below, display 404 may be used to display a currency type selection for the transaction and keypad 406 may be used to receive the customer's currency type selection. User interface 400 may also include a printer 408 that may be used to print a receipt of the transaction, and in some embodiments, the customer's remaining account balance.

**[0029]** ATM 102 may further include logic 410 and communications interface 412. Logic 410 may be used to process a financial transaction requested by a customer of the ATM 102. By way of example, the financial transaction may be a withdrawal request, a balance transfer request, a deposit request, a purchase request (e.g., to purchase stamps, telephone calling cards, etc. using funds available in the customer's financial account), or other type of request that may be performed at an ATM. Logic 410 may receive information from user interface 400 and use communications interface 412 to communicate with ATM network 108.

**[0030]** Communications interface 412 is communicatively coupled to a server on ATM network 108. Logic 410 may use communications interface 412 to request authentication of a customer's financial account number received from user interface 400. In some embodiments, the authentication request transmitted to the ATM network 108 may also include a PIN which was received from the customer. Additionally, logic 410 may use communications interface 412 to request authorization of a transaction initiated by the customer. Other information used to perform a financial transaction may also be requested and received using communications interface 412.

**[0031]** As will be described in further detail below, logic 410 may also be used to process at least a part of a financial transaction requested by the customer in a foreign currency which is associated with the customer's financial account and different from a native currency associated with the ATM 102. For instance, logic 410 may prompt the customer to select either the native currency associated with the ATM 102 or a foreign currency type which was determined to be associated with the customer's financial account (the customer's native currency). If the user selects the foreign currency type, logic 410 may use communications interface 412 to obtain exchange rate information. Exchange rate information may be provided by Currency Recognition and Exchange Service 112 via ATM network 108, ATM network 108, or from information accessible to ATM 102. In an alternate embodiment, the



information may be stored locally at ATM 102. Logic 410 may use the exchange rate information to convert from the native currency to the foreign currency and display details of the transaction (e.g., withdrawal amount or other financial amounts) in the currency which is foreign to the ATM, but native to the customer. Alternately, logic 410 may not be provided with exchange rate information and may instead use communications interface 412 to obtain converted transaction amounts.

[0032] The above description described an ATM 102 that communicates with an ATM network 108 to obtain authentication, authorization, and other transaction information. It should be appreciated that in alternate embodiments, communications interface 412 may communicate with a financial institution 106 to obtain information used to process a transaction, including currency recognition information and exchange rate information. It should also be appreciated that in alternate embodiments, ATM 102 may comprise fewer or additional components than described above. For instance, user interface 400 may not include a keypad 406, but instead may include a touch pad to receive information from a customer.

[0033] FIG. 5 is a flow diagram illustrating an exemplary method that may be used to conduct a transaction at an ATM. The method may begin when a customer inserts an ATM card (e.g., debit card, credit card) into a card reader. The card reader obtains a financial account identifier associated with a financial account maintained by the customer at a financial institution from the ATM card. The customer may also provide a PIN associated with the financial account.

[0034] The ATM may then transmit one or more packet(s) to an ATM network 108 or a financial institution 106 associated with the ATM to authenticate the financial account identifier and PIN. Additionally, the ATM may also request financial account currency information for a currency type associated with the customer's financial account. The ATM may include this request in the authentication packet or may submit a second packet requesting the currency type information. Alternately, the currency type information may be provided to the ATM by either ATM network 108 or associated financial institution 106 without an explicit request from the ATM.

[0035] The customer's account identifier and PIN are then authenticated. If the ATM request was sent to a financial institution 106 associated with the ATM, the authentication may be performed by the financial institution 106 if the customer's financial account is



maintained at the same or affiliated financial institution. Otherwise, ATM network 108 may be used to perform the authentication by communicating with the customer's financial institution 110 to authenticate the customer's financial account and associated PIN.

[0036] Additionally, ATM network 108 or financial institution 106 may determine a  
5 currency type associated with the financial account. The determination may be made by transmitting a request to a Currency Recognition and Exchange Service 112 or by accessing currency type information stored locally or otherwise made available to ATM network 108/financial institution 106. By way of example, an identifier lookup table 306 may be used to match a financial institution identifier portion (e.g., BIN) of the financial account to a  
10 currency type or country. In some embodiments, an exception table may also be consulted to determine whether an exception exists to the mapping rules in the lookup table for the customer's financial account. For instance, the financial institution identifier portion may fall in a range of identifiers normally assigned to U.S. financial institutions, but the particular identifier may be an exception and be assigned to a Canadian financial institution.

[0037] The ATM network 108 or associated financial institution 106 then provides 506 the  
15 authentication and currency type information to the ATM. This information may be provided in one or more transmittal packets. In some instances, the customer account information may not be authenticated, either because of an invalid PIN, account inactivation, or other problem. In these instances, the ATM network 108 or financial institution 106 may only transmit a  
20 rejection of the authentication information without associated currency type and the method may end with a notification provided to the customer that the account information could not be authenticated. In some embodiments, a determination of currency type may not be made until after the account information provided by the customer has been authenticated.

[0038] If 508 the currency type associated with the customer's financial account is the same  
25 as the ATM's native currency, the ATM may proceed 512 with the customer transaction using the native ATM currency type. Otherwise, if the customer account is associated with a foreign currency type different from the ATM's native currency type, the customer may be presented 510 with a currency selection choice. For instance, if the customer's financial account is maintained in the United States, but the customer is using an ATM in Great  
30 Britain, the ATM may present 510 the customer a choice to conduct the transaction in Great Britain Pounds (the ATM's native currency) or U.S. Dollars.



[0039] If 514 the customer does not select the foreign currency, the ATM proceeds 512 with the customer transaction using the native ATM currency. Otherwise, if the foreign currency is selected, at least a part of the customer's transaction at the ATM is conducted in the foreign currency. This process will be described in detail with reference to FIG. 6, which  
5 illustrates a withdrawal transaction. However, as will be appreciated, other types of transactions may also be conducted using the foreign currency.

[0040] In alternate embodiments, the process of conducting a financial transaction at an ATM may be different than described in reference to FIG. 5. For example, the customer may provide the financial account identifier to the ATM in a manner different than by inserting  
10 500 a card into a card reader. By way of example, the customer may enter the financial account identifier using a keypad or other mechanism. As another example, in alternate embodiments, the ATM may not request 504 currency type information, but instead may itself determine the currency type associated with the financial account by accessing information local to the ATM or otherwise made available to the ATM. As a third example,  
15 currency type information may not be requested 504 or provided 506 to the ATM, but instead the customer may be presented with a variety of predetermined choices for the currency type to use to conduct a financial transaction. It should also be appreciated that in alternate embodiments, the method of performing a financial transaction at an ATM may not include all the blocks illustrated in FIG. 5. For instance, the customer may not be presented with a  
20 currency selection choice 510, but instead the transaction may be automatically conducted in the foreign currency type.

[0041] Referring to FIG. 6, a method of conducting a financial transaction in a foreign currency type different than the ATM's native currency type will now be described. FIG. 6 illustrates an exemplary withdrawal transaction, including credit card withdrawals. However,  
25 with minor modifications that may easily be made, the principles of the method may be applied to other types of financial transactions conducted at an ATM, such as balance inquiries, transfer of funds, purchases made at the ATM (e.g., for stamps, telephone calling cards, etc.), bill payment, electronic purse transactions, or other types of transactions that may be performed at an ATM.

[0042] The method may begin by the customer requesting 600 a withdrawal transaction be  
30 performed at the ATM. If the customer account information has not been authenticated, a method similar to that described with reference to FIG. 5 may be performed with the



customer selecting 514 to at least partially conduct the financial transaction in a foreign currency type different than the ATM's native currency type. The ATM may then receive 602 a withdrawal amount from the customer in the foreign currency. For example, a customer at an ATM located in Great Britain may enter a withdrawal amount in U.S. Dollars.

5 [0043] The ATM may then obtain 504 an exchange rate to convert from the foreign currency to the native currency. The exchange rate may be obtained from an ATM network 108, a financial institution 106 associated with the ATM, Currency Recognition and Exchange Service 112, or exchange rate information stored locally or otherwise accessible to ATM. As previously described, in some embodiments, exchange rate information may be  
10 obtained by ATM network 108 or financial institution 106 from Currency Recognition and Exchange Service 112.

[0044] After the exchange rate has been obtained 604, the ATM may then convert 606 the withdrawal amount to the ATM's native currency. Alternately, the ATM may provide the withdrawal amount to ATM network 108, financial institution 106, or Currency Recognition  
15 and Exchange Service 112 and the conversion may be performed by one of these components 108, 106, 112. By way of example, ATM network 108 or financial institution 106 may obtain the exchange rate from Currency Recognition and Exchange Service 112 or from locally stored or otherwise accessible information, perform the conversion, and provide the converted amount to the ATM or the conversion may be performed by Currency Recognition  
20 and Exchange Service 112.

[0045] The converted withdrawal amount is then displayed 608 or otherwise presented to the customer. Optionally, the exchange rate used to perform the conversion may also be displayed 610 or provided to the customer. In some embodiments, the conversion 606 may result in a withdrawal amount that is not supported by the ATM. For instance, the conversion  
25 may result in denominations that may not be withdrawn from the ATM (e.g., withdrawal of change, or smaller bills). In these embodiments, the converted withdrawal amount may be modified to a denomination supported by the ATM. The modification may be made by rounding to the nearest denomination, rounding to the next highest supported denomination, or rounding down to the next lowest supported denomination. Thus, the modified withdrawal  
30 amount may be presented 608 instead of or in addition to the initially converted amount. Alternately, the customer may be presented with a choice to select whether to increase the withdrawal amount (round up) or decrease the withdrawal amount (round down). In some



embodiments, the modified withdrawal amount may be converted to the foreign currency type (the customer's native currency) and displayed or otherwise provided to the customer so that the customer is made aware of the exact corresponding transaction amount in the customer's native currency. This information may be presented to the customer as part of the presentation of the modified converted withdrawal amount, or may be provided to assist the customer in making the choice whether to increase or decrease the amount.

[0046] After being presented 608 with the converted withdrawal amount, which may have been modified from the initial conversion amount, the customer may then be asked to confirm 612 that he or she wants to proceed with the transaction. If the customer does not wish to proceed after the information has been presented, the transaction may be canceled 614 or the customer may be presented with a choice to enter a different withdrawal amount 602. Otherwise, the method may proceed with authorization 616 of the withdrawal amount.

[0047] After the withdrawal amount has been authorized 616, the funds are provided to the customer 618. Optionally, the customer may also be provided with a receipt 620. The receipt may indicate one or more transaction details, such as the ATM native currency amount withdrawn, the corresponding foreign currency amount (the customer's native currency), and the exchange rate used. In some embodiments, the receipt may also contain the customer's current account balance in the customer's native currency after the funds were withdrawn.

[0048] Although the customer has concluded his or her interaction with the ATM, at some point in time, a settlement may need to be performed 622 to transfer funds from the financial institution at which the customer maintains the financial account and the financial institution or other entity responsible for providing the funds to the customer via the ATM.

[0049] It should be appreciated that the method of conducting a withdrawal transaction may be performed differently than illustrated in FIG. 6. For instance, the customer may not be prompted to confirm the withdrawal amount. Alternately or additionally, the withdrawal amount may be converted to the native currency as part of the authorization 616 process. As another example, in other embodiments, the ATM may receive 602 the withdrawal amount from the customer in the ATM's native currency and the withdrawal amount may be converted to the foreign currency. The customer may then be asked to confirm the amount or the ATM may only display the foreign currency amount (and possibly the exchange rate)



using a display and/or on a receipt provided to the customer. Other variations are also contemplated.

[0050] In the foregoing description, for the purposes of illustration, methods were described in a particular order. It should be appreciated that in alternate embodiments, the methods may be performed in a different order than that described. It should also be appreciated that the methods described above may be performed by hardware components or may be embodied in sequences of machine-executable instructions, which may be used to cause a machine, such as a general-purpose or special-purpose processor or logic circuits programmed with the instructions to perform the methods. These machine-executable instructions may be stored on one or more machine readable mediums, such as CD-ROMs or other type of optical disks, floppy diskettes, ROMs, RAMs, EPROMs, EEPROMs, magnetic or optical cards, flash memory, or other types of machine-readable mediums suitable for storing electronic instructions. Alternatively, the methods may be performed by a combination of hardware, firmware, and software.

[0051] While illustrative and presently preferred embodiments of the invention have been described in detail herein, it is to be understood that the inventive concepts may be otherwise variously embodied and employed, and that the appended claims are intended to be construed to include such variations, except as limited by the prior art.

WHAT IS CLAIMED IS:

- 1                   1.       A method comprising:  
2                   receiving, at an Automated Teller Machine (ATM) a financial account  
3                   number associated with a financial account maintained by a customer at a financial  
4                   institution;  
5                   determining a foreign currency type associated with the financial account;  
6                   at the ATM, presenting to the customer a choice to conduct a financial  
7                   transaction in the foreign currency type;  
8                   receiving a currency selection from the customer; and  
9                   conducting at least a portion of the financial transaction at the ATM in the  
10                  selected currency.
- 1                   2.       The method of claim 1, wherein determining the foreign currency type  
2                   associated with the financial account comprises:  
3                   obtaining an identifier portion of the financial account number; and  
4                   determining a country associated with the financial institution using the  
5                   identifier portion.
- 1                   3.       The method of claim 2, wherein determining the country comprises  
2                   comparing the identifier portion to a lookup table, the lookup table associating financial  
3                   institution identification numbers to a country.
- 1                   4.       The method of claim 3, wherein determining the currency type further  
2                   comprises comparing the identifier portion to an exception table associating financial  
3                   institution identification numbers to a country different than the one indicated in the lookup  
4                   table.
- 1                   5.       The method of claim 2, wherein obtaining an identifier portion  
2                   comprises determining a bank identification number (BIN) portion of the financial account  
3                   number.



1                   6.       The method of claim 1, wherein determining the foreign currency type  
2 associated with the financial account comprises:

3                   obtaining an identifier portion of the financial account number; and  
4                   determining a currency associated with the financial institution using the  
5 identifier portion.

1                   7.       The method of claim 6, wherein determining the currency comprises  
2 comparing the identifier portion to a lookup table, the lookup table associating financial  
3 institution identification numbers to a currency.

1                   8.       The method of claim 1, wherein receiving the currency selection  
2 comprises receiving a selection indicating the foreign currency type.

1                   9.       The method of claim 8, wherein conducting at least a portion of the  
2 financial transaction comprises receiving a withdrawal amount in the foreign currency type.

1                   10.      The method of claim 9, wherein conducting at least a portion of the  
2 financial transaction further comprises:  
3                   obtaining an exchange rate to convert the foreign currency type to a native  
4 currency type associated with the ATM;  
5                   converting the withdrawal amount to the native currency type.

1                   11.      The method of claim 10, further comprising presenting the converted  
2 withdrawal amount to the customer.

1                   12.      The method of claim 11, further comprising displaying the exchange  
2 rate to the customer.

1                   13.      The method of claim 11, further comprising receiving a confirmation  
2 from the customer to proceed with the transaction.

1                   14.      The method of claim 11, further comprising presenting an account  
2 balance in the foreign currency type indicating the balance of the financial account after the  
3 withdrawal.

1                   15.      The method of claim 10, further comprising modifying the converted  
2 withdrawal amount to be a denomination amount supported by the ATM for withdrawal.

1           16.     The method of claim 15, wherein modifying the converted withdrawal  
2 amount comprises rounding the converted withdrawal amount to the nearest denomination  
3 amount supported by the ATM for withdrawal.

1           17.     The method of claim 15, wherein modifying the converted withdrawal  
2 amount comprises receiving a modification choice from the customer to one of increase the  
3 withdrawal amount or decrease the withdrawal amount.

1           18.     The method of claim 15, further comprising displaying the modified  
2 withdrawal amount to the customer.

1           19.     The method of claim 18, further comprising:  
2           converting the modified withdrawal amount to the foreign currency type;  
3           presenting the converted modified withdrawal amount to the customer.

1           20.     The method of claim 8, wherein conducting at least a portion of the  
2 financial transaction further comprises:

3           receiving a withdrawal amount in a native currency type associated with the  
4 ATM;

5           obtaining an exchange rate to convert the native currency type to the foreign  
6 currency type;

7           converting the withdrawal amount to the foreign currency type; and  
8           displaying the converted withdrawal amount to the customer.

1           21.     The method of claim 20, further comprising displaying the exchange  
2 rate to the customer.

1           22.     The method of claim 20, further comprising receiving a confirmation  
2 from the customer to proceed with the transaction.

1           23.     A method comprising:

2           receiving, at an Automated Teller Machine (ATM) network, a request from an  
3 ATM to obtain a currency exchange rate to convert from a first currency to a second  
4 currency;

5           obtaining the currency exchange rate;

6           providing the currency exchange rate to the ATM.



1           24.     The method of claim 23, further comprising:  
2           receiving, at the ATM network, an identifier from the ATM, the identifier  
3 identifying a financial institution associated with a financial account;  
4           using the identifier to determine a currency type associated with the financial  
5 institution;  
6           providing the currency type to the ATM.

1           25.     The method of claim 24, wherein using the identifier comprises  
2 comparing the identifier to a list of identifiers in a lookup table.

1           26.     The method of claim 23, wherein obtaining the currency exchange rate  
2 comprises obtaining the currency exchange rate from a currency recognition and exchange  
3 service.

1           27.     A system to provide currency conversion information to an Automated  
2 Teller Machine (ATM) comprising:  
3           an interface, communicatively coupled to an ATM, to receive at least an  
4 identifier portion of a financial account from an ATM;  
5           data associating financial institution identification numbers to at least one of a  
6 country and a currency; and  
7           logic, communicatively coupled to the interface and the data, to determine a  
8 currency type associated with the financial account using the data;  
9           wherein the interface is further to transmit the determined currency type to the  
10 ATM.

1           28.     The system of claim 27, further comprising currency exchange  
2 information, wherein the interface is further to receive, from the ATM, an amount in a first  
3 currency, the logic is to convert the amount to a second currency using the exchange rate  
4 information, and the interface is to transmit the converted amount to the ATM.

1           29.     The system of claim 27, further comprising currency exchange  
2 information, wherein the interface is further to receive a request from the ATM for a currency  
3 exchange rate and wherein the logic is to determine the currency exchange rate using the  
4 currency exchange information, and wherein the interface is to transmit the currency  
5 exchange rate to the ATM.

1           30.     The system of claim 27, wherein the interface receives the identifier  
2     portion from the ATM via an ATM network and transmits the determined currency to the  
3     ATM via the ATM network.

1           31.     An Automated Teller Machine (ATM) comprising:  
2             a user interface to receive a financial transaction selection from a customer  
3     and to receive a currency selection from the customer to conduct a transaction in a foreign  
4     currency type different than a native currency type associated with the ATM; and  
5             logic to process at least a part of the financial transaction in the foreign  
6     currency.

1           32.     The ATM of claim 31, further comprising a communications interface,  
2     wherein the logic uses the communications interface to obtain a foreign currency type and an  
3     exchange rate to convert the foreign currency type to the native currency type.

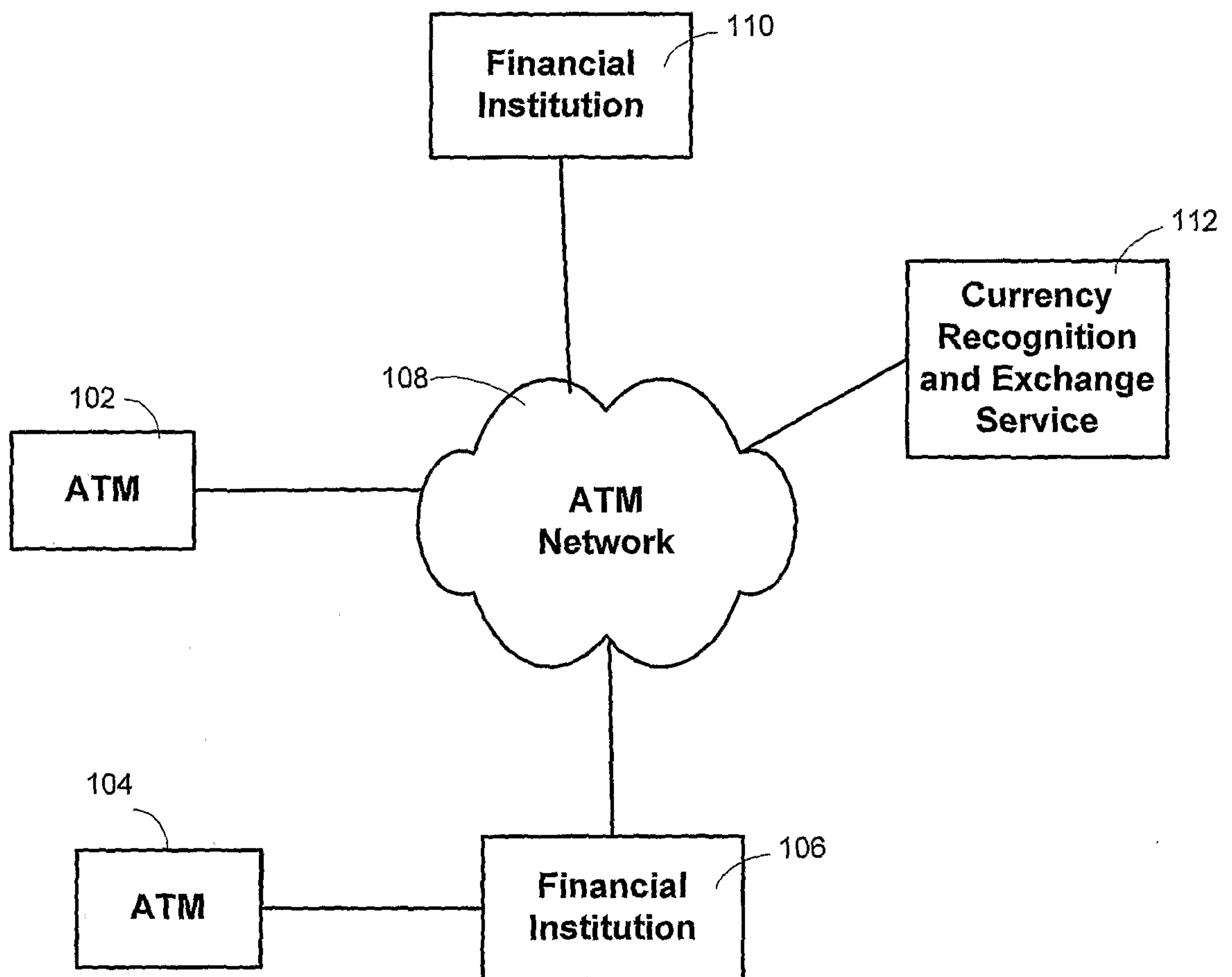
1           33.     The ATM of claim 32, wherein the communications interface  
2     communicatively couples the ATM to an ATM network.

1           34.     The ATM of claim 32, wherein the communications interface  
2     communicatively couples the ATM to a financial institution.

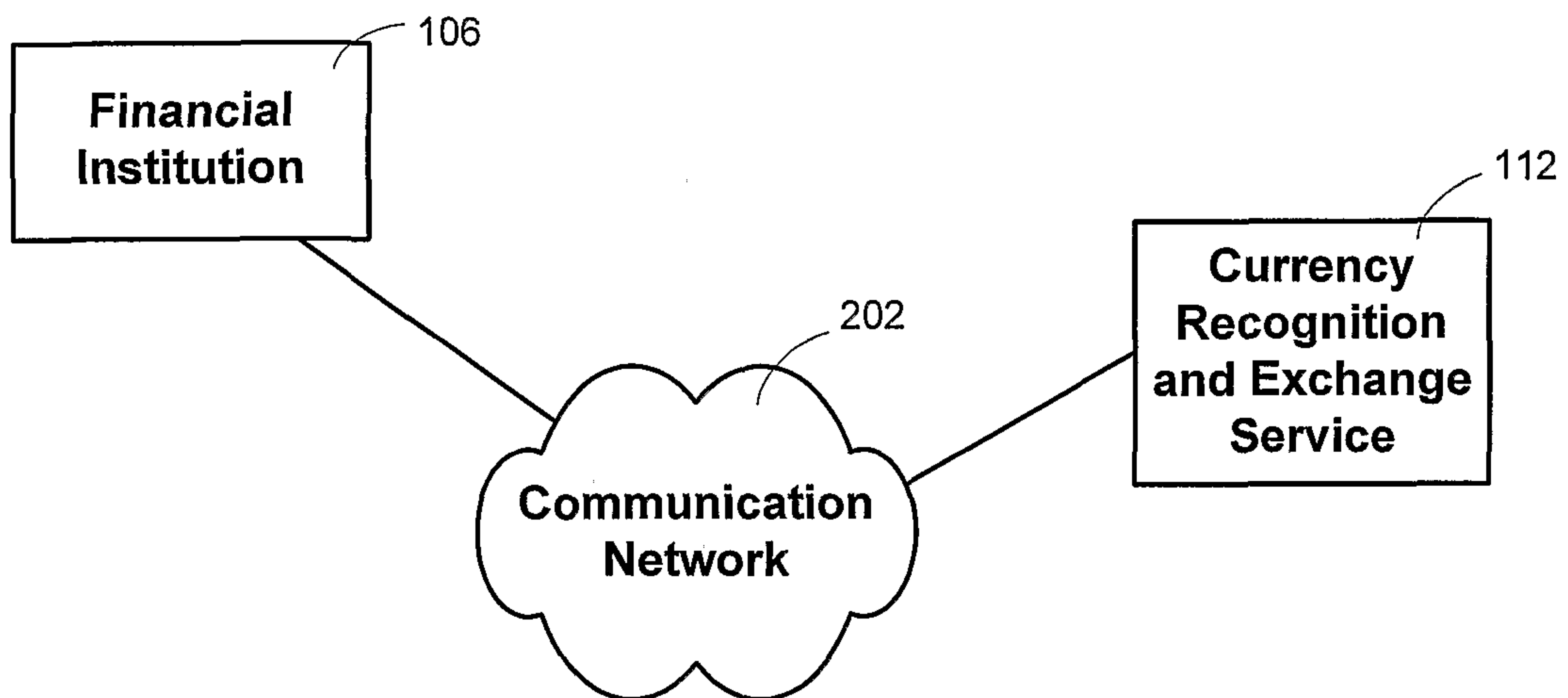
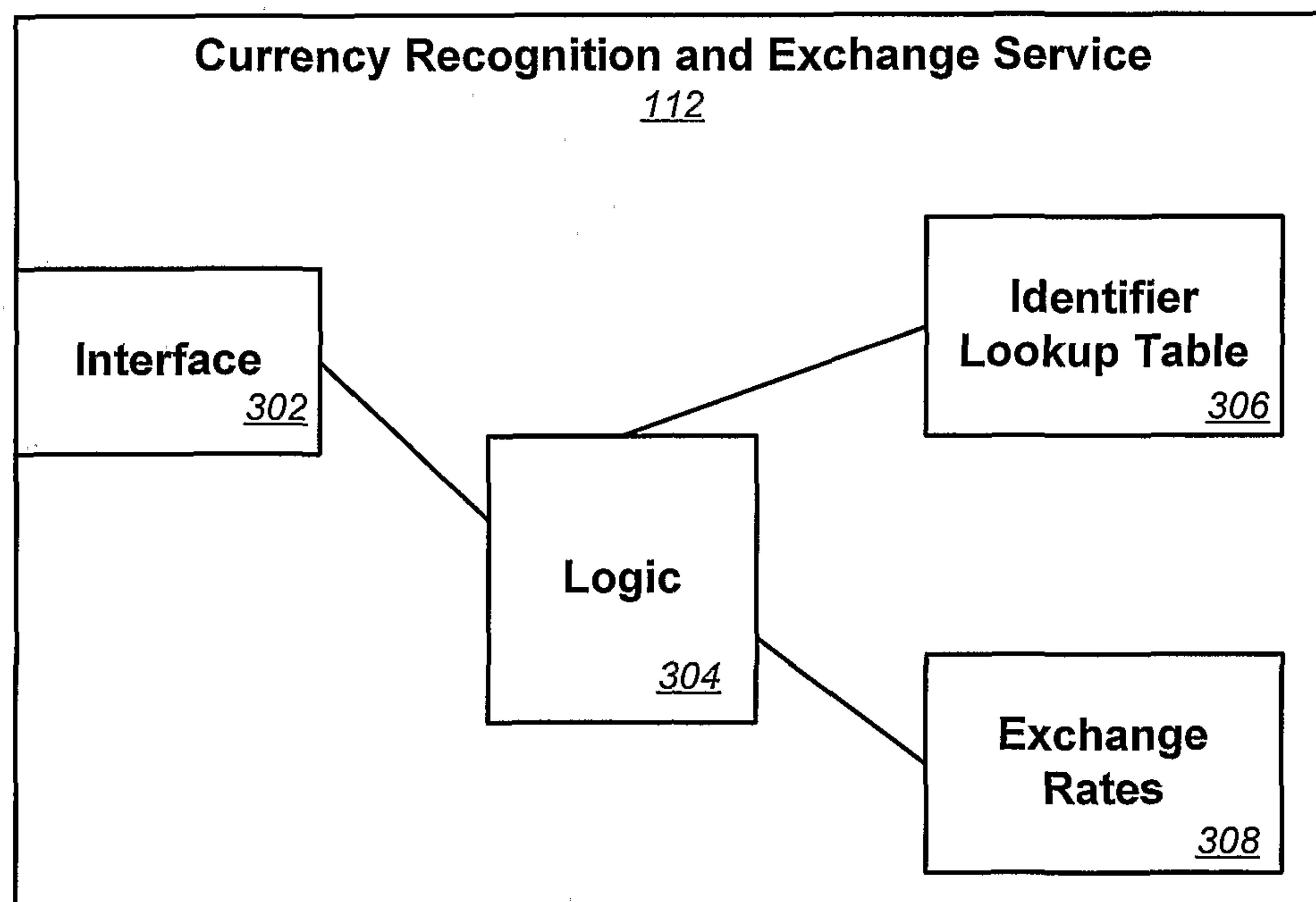
1           35.     The ATM of claim 32, wherein the communications interface  
2     communicatively couples the ATM to a currency recognition and exchange service.



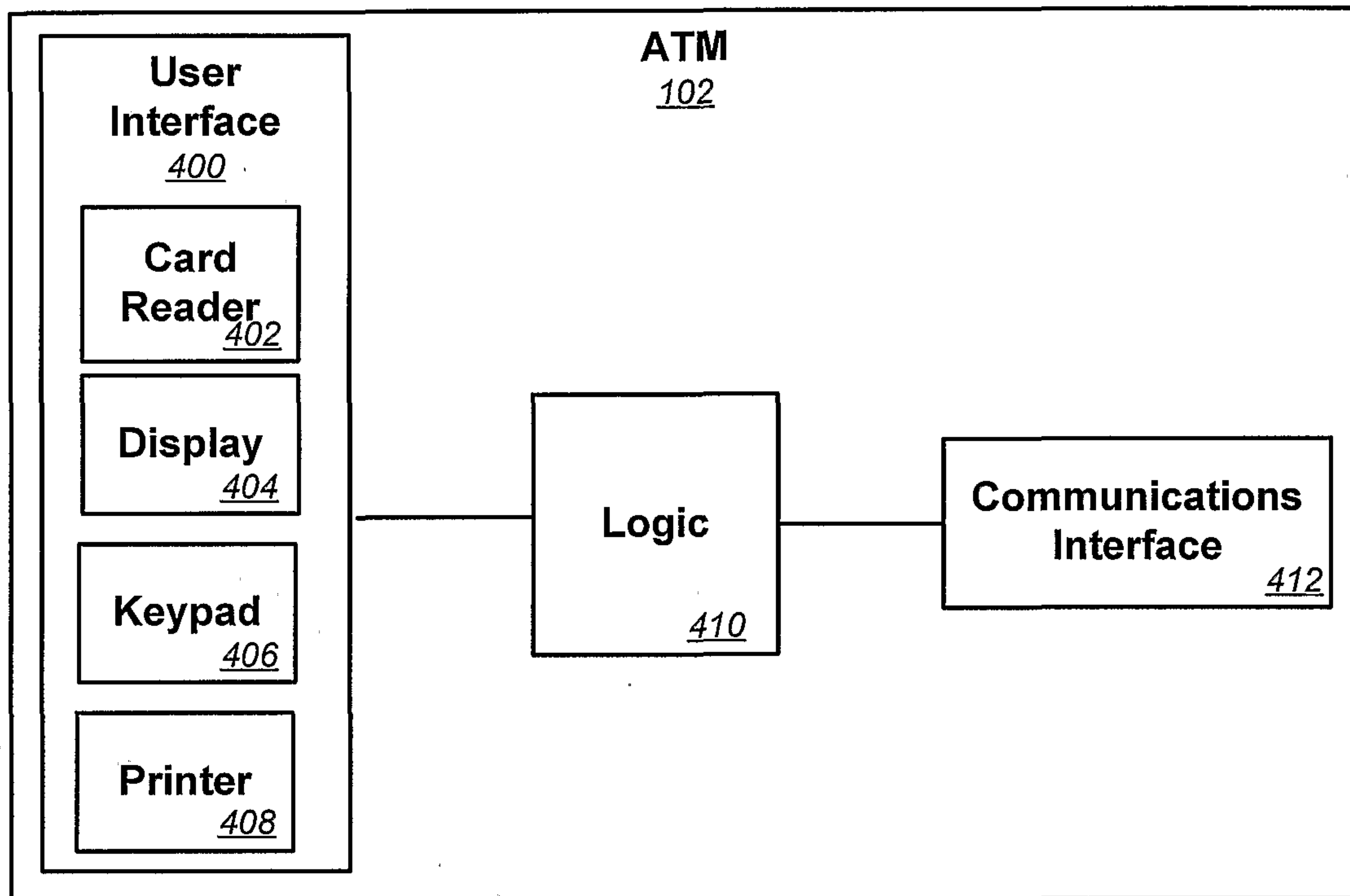
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**Fig. 1**

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**Fig. 2****Fig. 3**



**Fig. 4**

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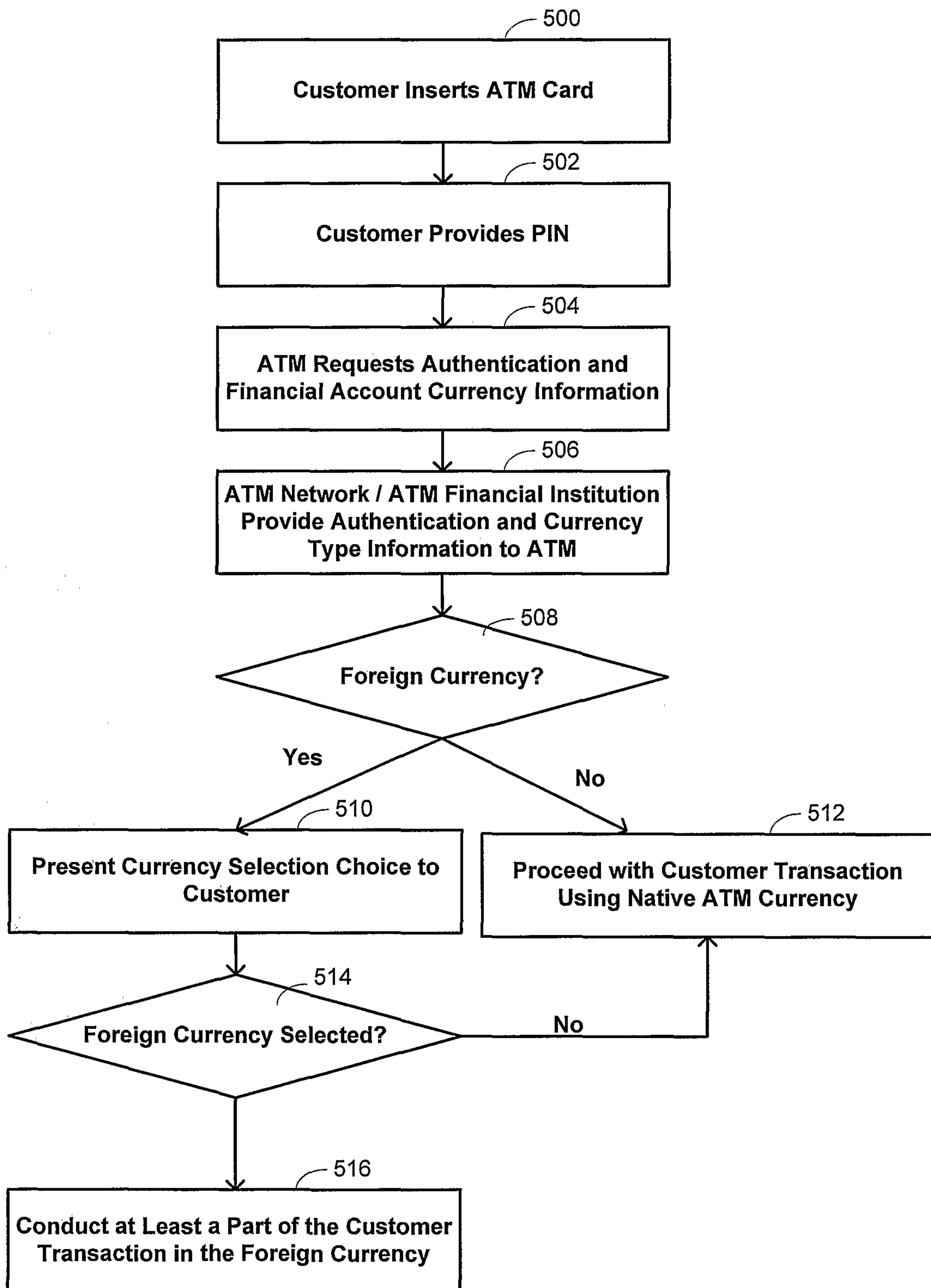


Fig. 5



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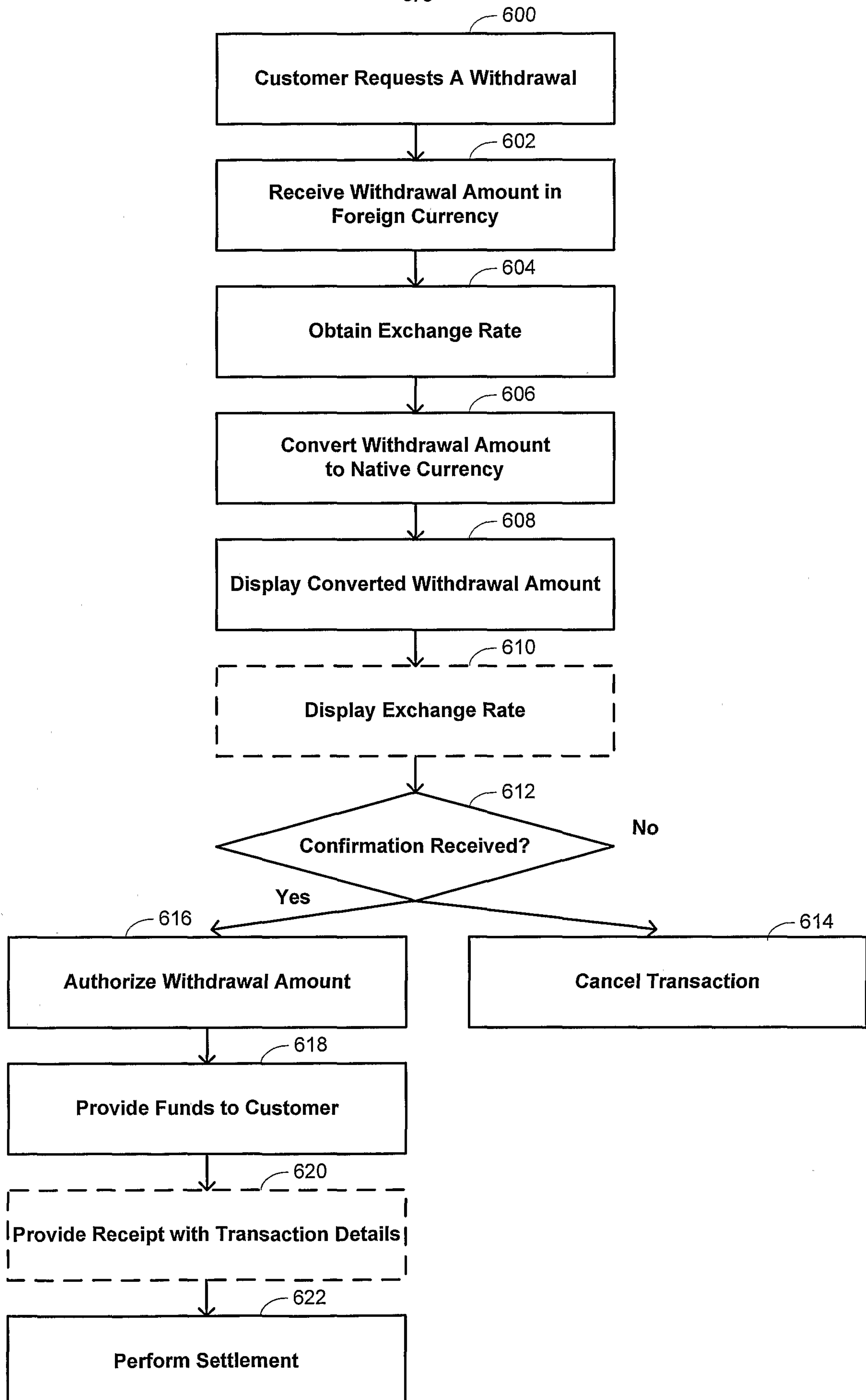


Fig. 6

# Currency Recognition and Exchange Service

112

**Interface**

302

**Identifier  
Lookup Table**

306

**Logic**

304

**Exchange  
Rates**

308

