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(54) **FINANCIAL SERVICE PROVIDING SYSTEM AND SIMPLE-PAYMENT COMPANY SERVER FOR SAME**

(52) **U.S. Cl.**  
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(57) **ABSTRACT**

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The present technology relates to a financial service provision system and a simple payment company server therefor. A financial service provision system of the present technology is a financial service provision system for providing a financial service of attracting funds from customer-linked accounts to manage customer financial company accounts, and comprises: a simple payment company server including a first parent account system including one or more first parent accounts; a financial company server including a second parent account system including one or more second parent accounts; a bank firm system which manages the transfer of funds between the customer-linked account and the first parent account system or between the customer-designated account designated by the customer and the first parent account system; and a securities firm system which manages the transfer of funds between the second parent account system and the customer financial company account, in which, when the customer requests a deduction in balance, the balance of the customer financial company account is deducted by processing the balance of the customer through the bank firm system and the securities firm system according to the transaction amount or through a payment instruction to the financial company server.

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*G06Q 40/04* (2006.01)

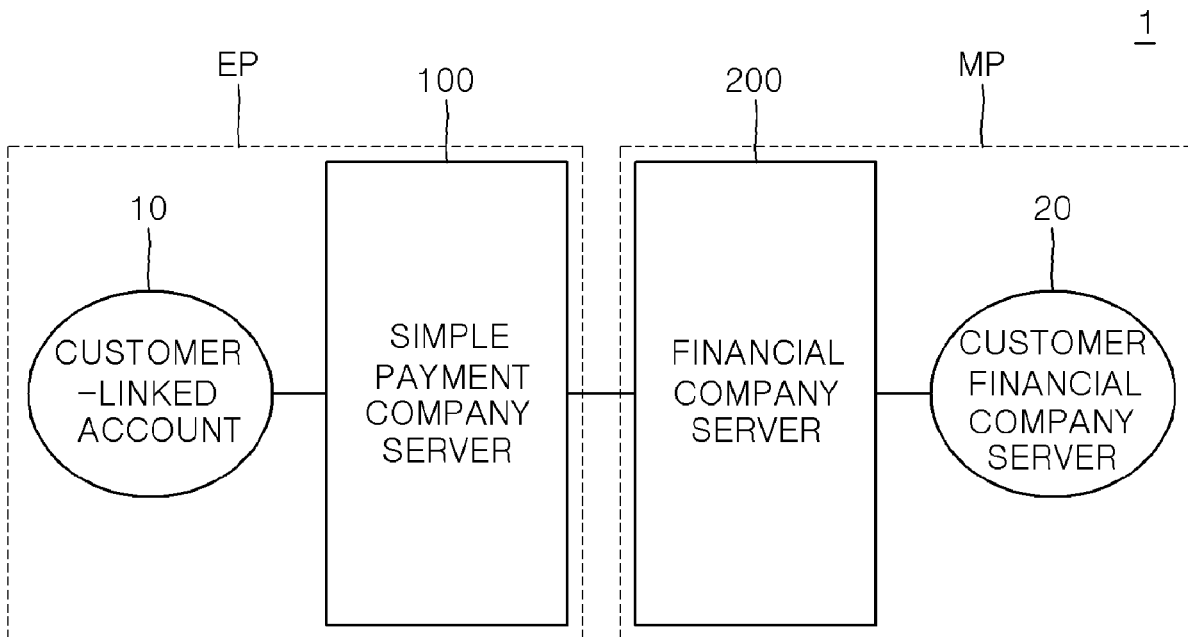


FIG. 1

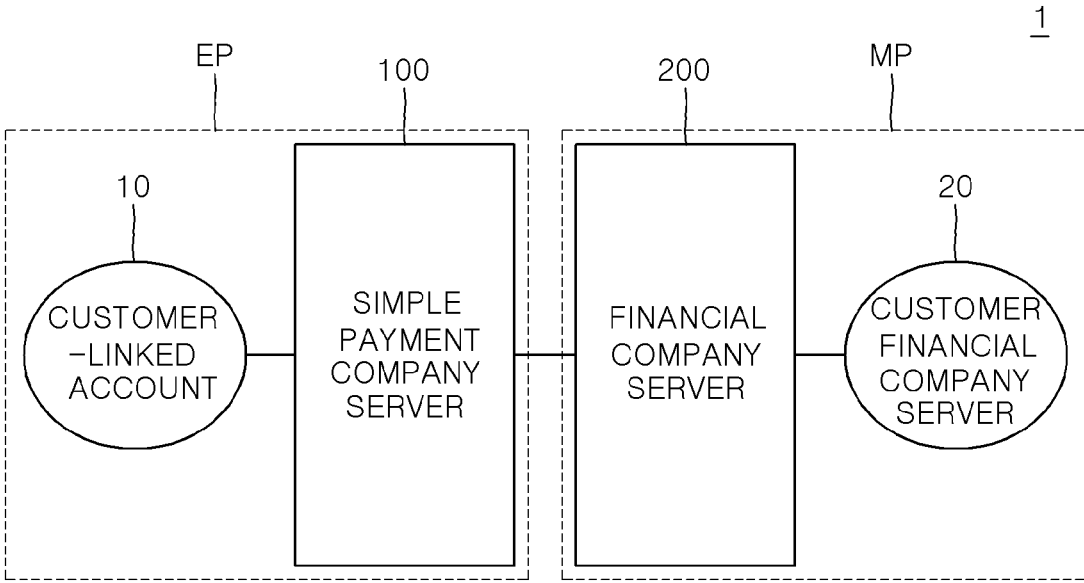


FIG. 2

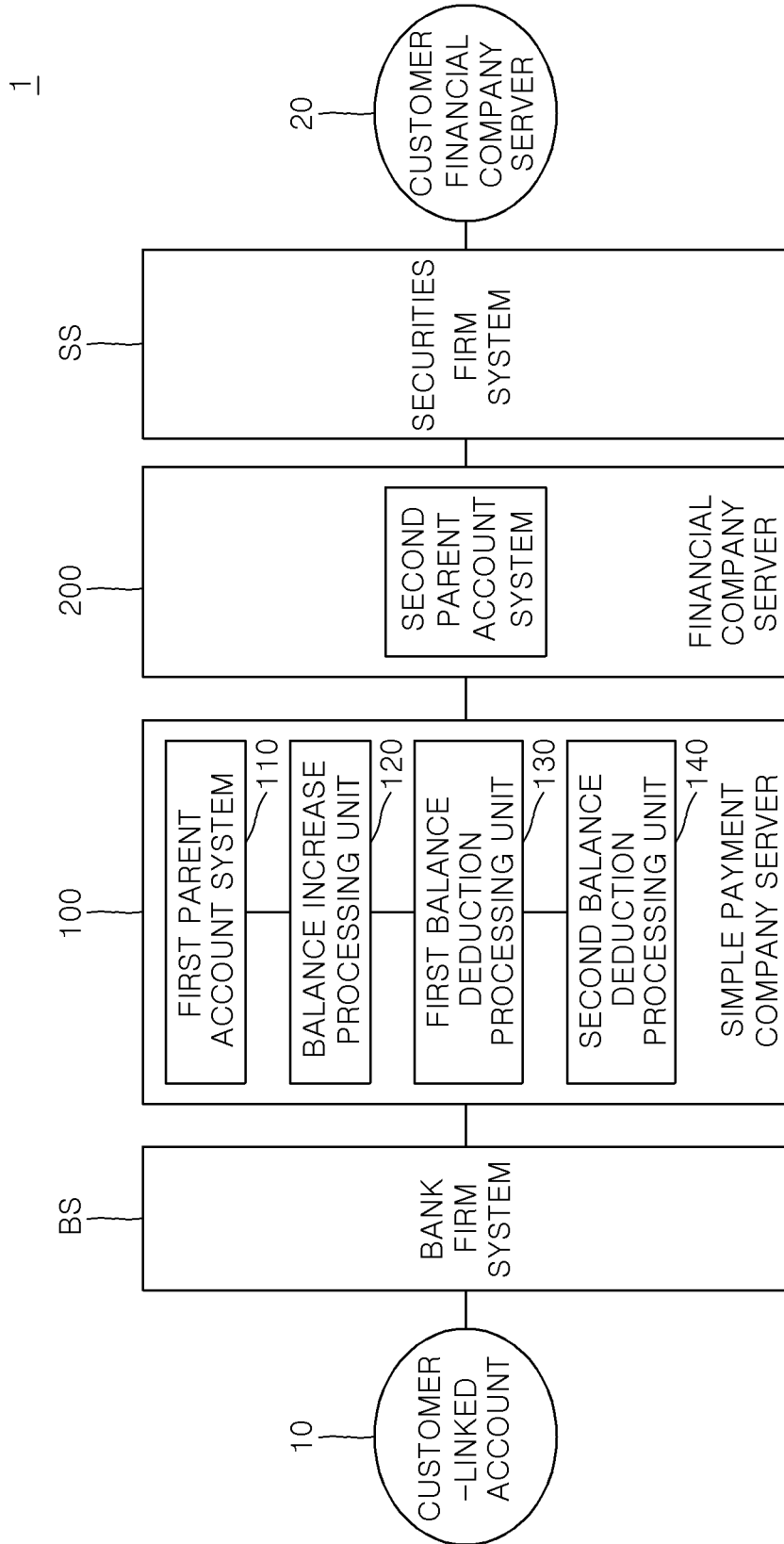


FIG. 3A

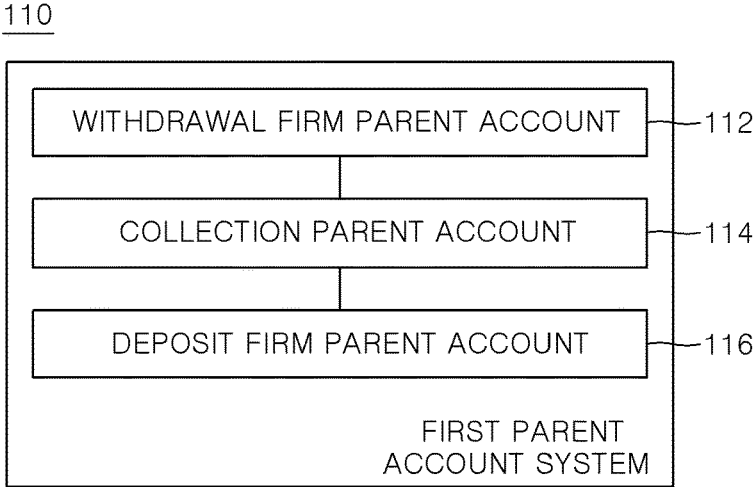


FIG. 3B

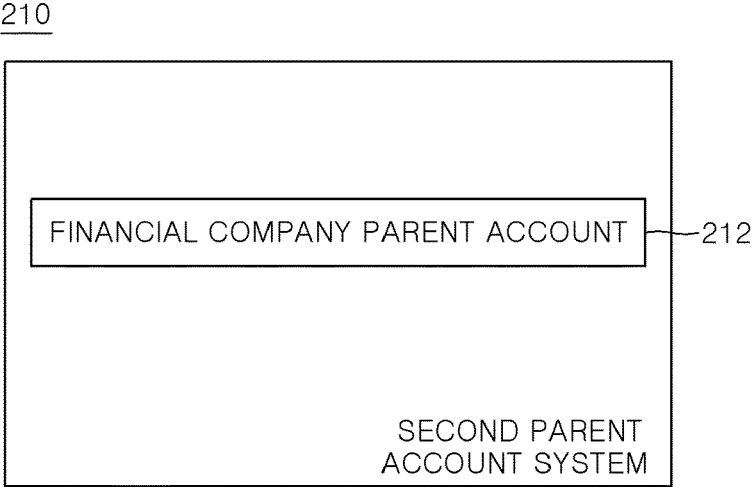


FIG. 4A

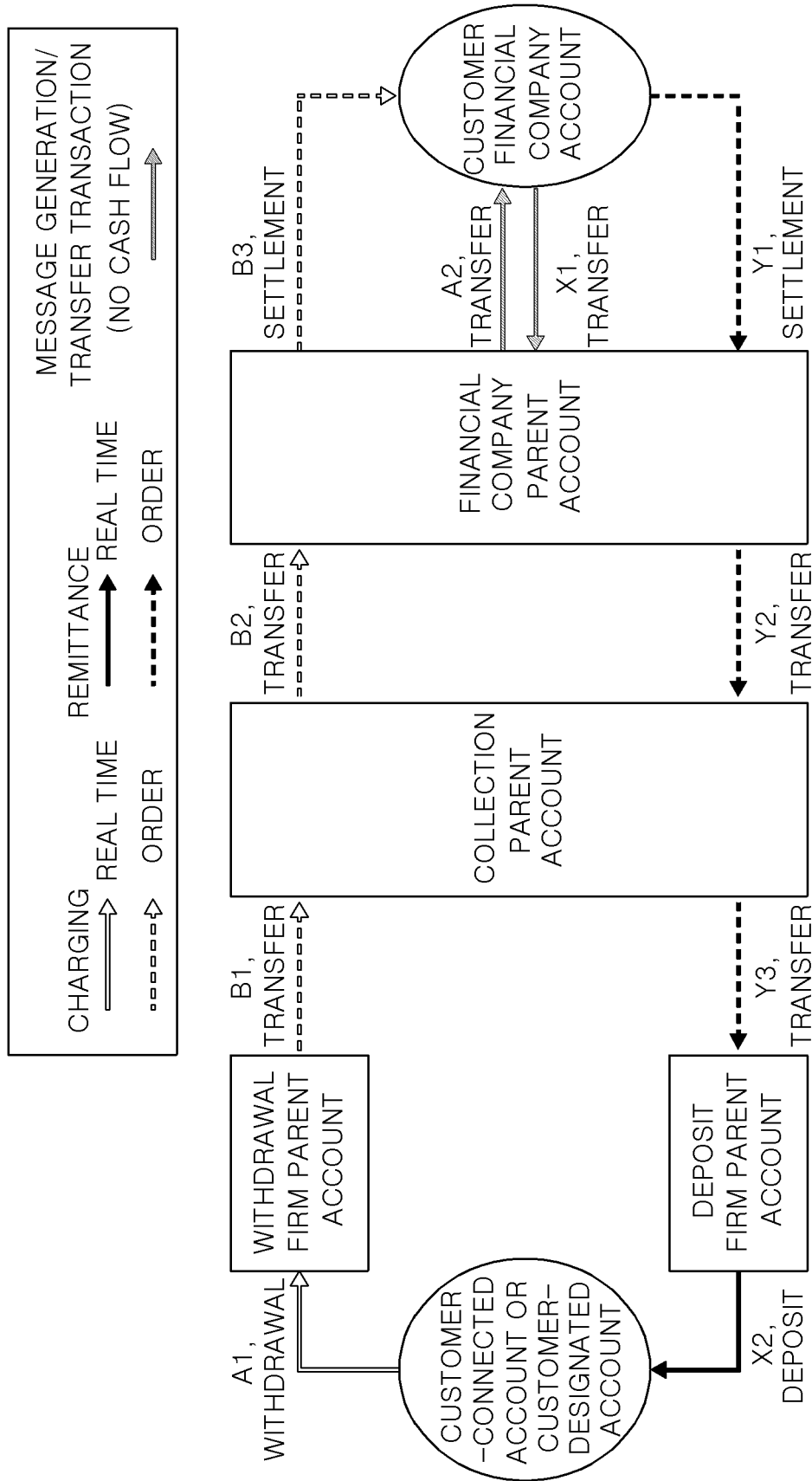


FIG. 4B

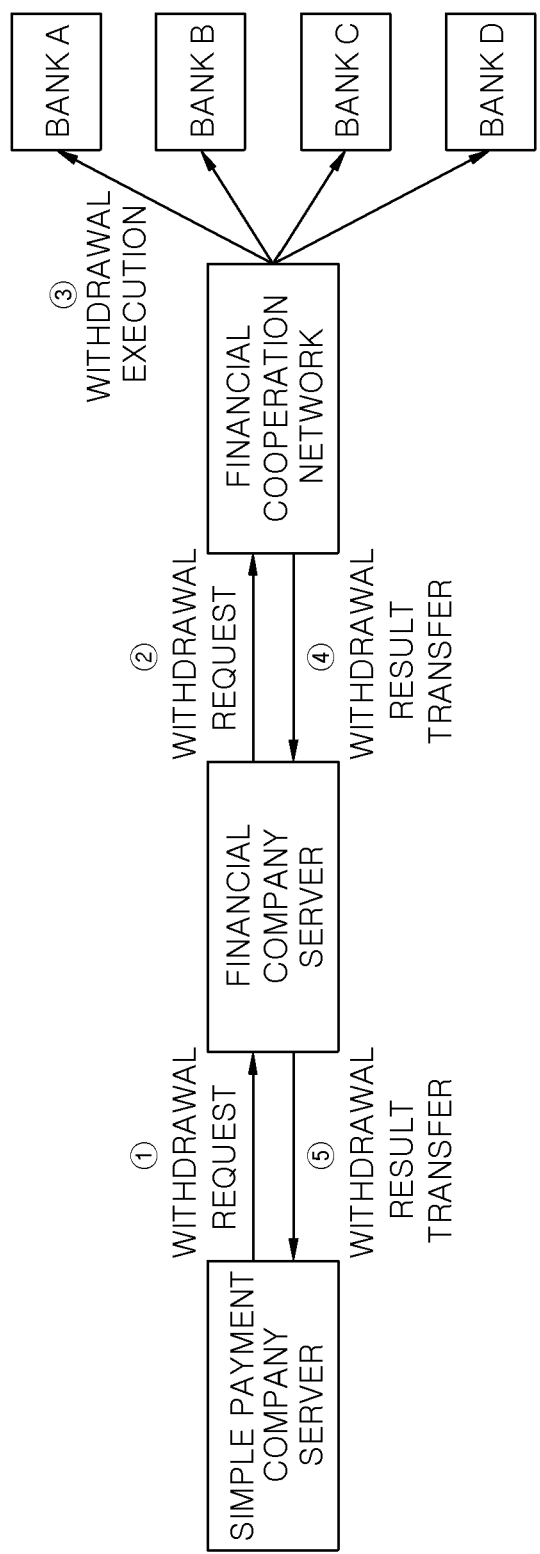


FIG. 4C

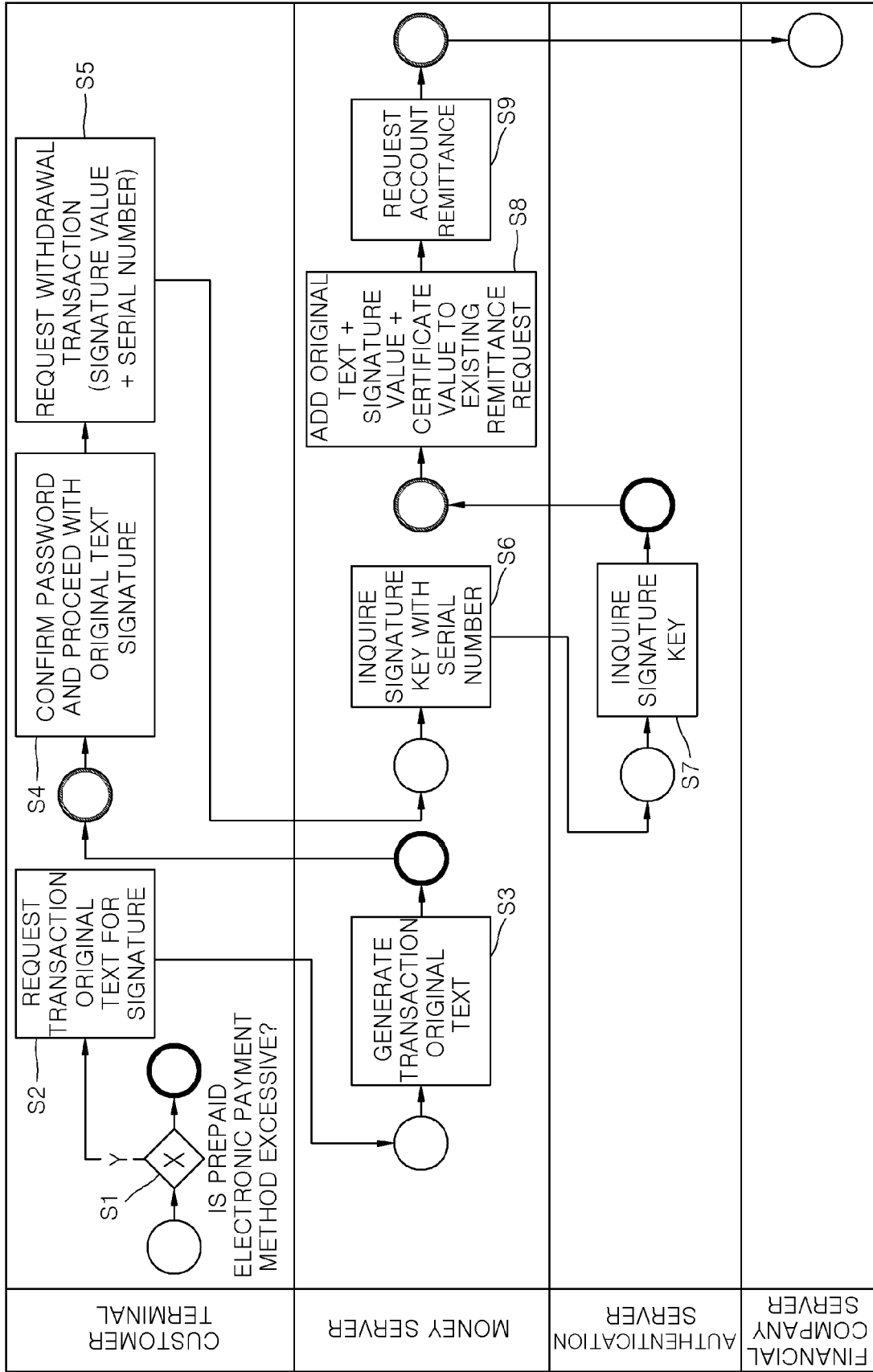


FIG. 5

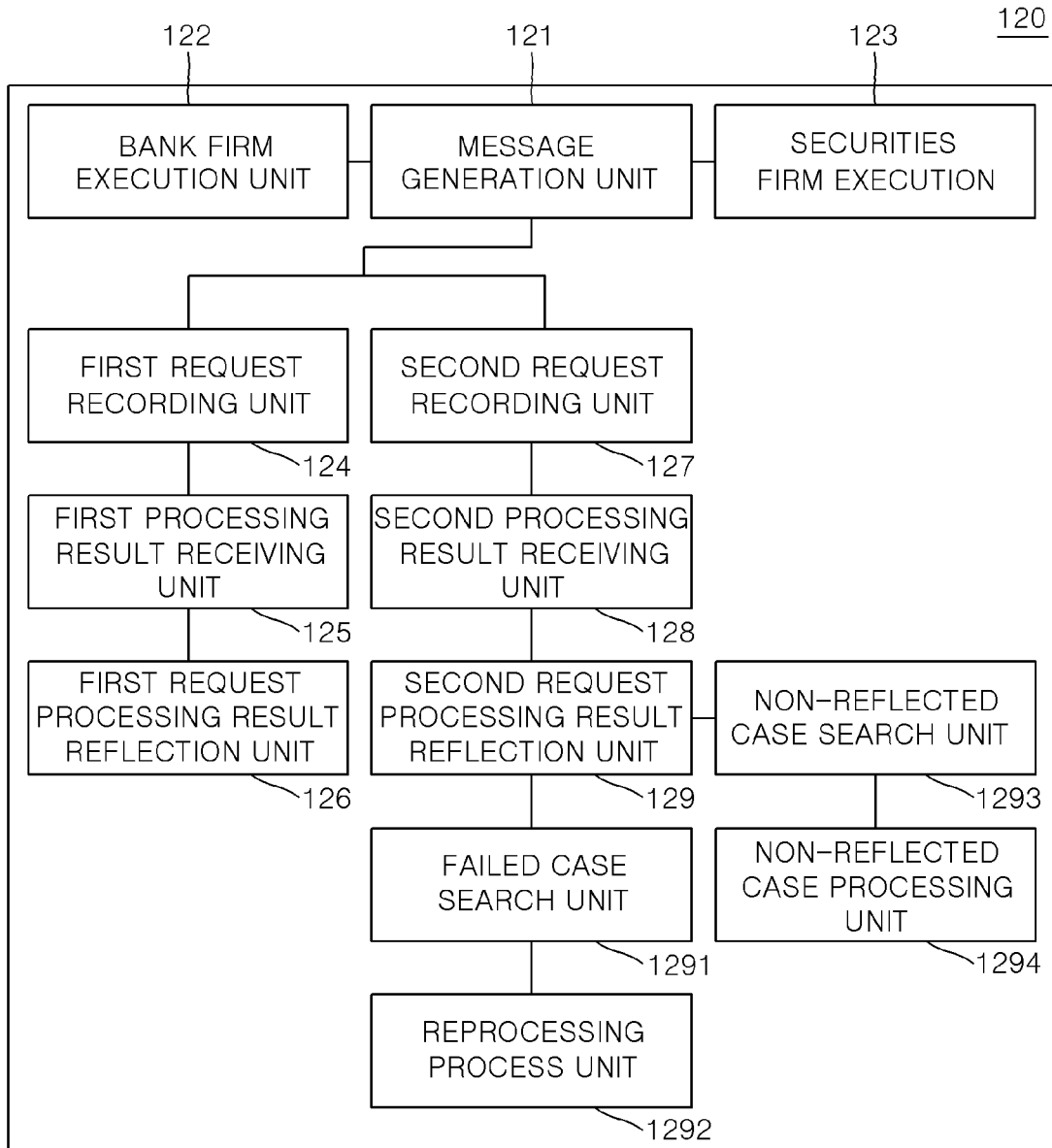




FIG. 6

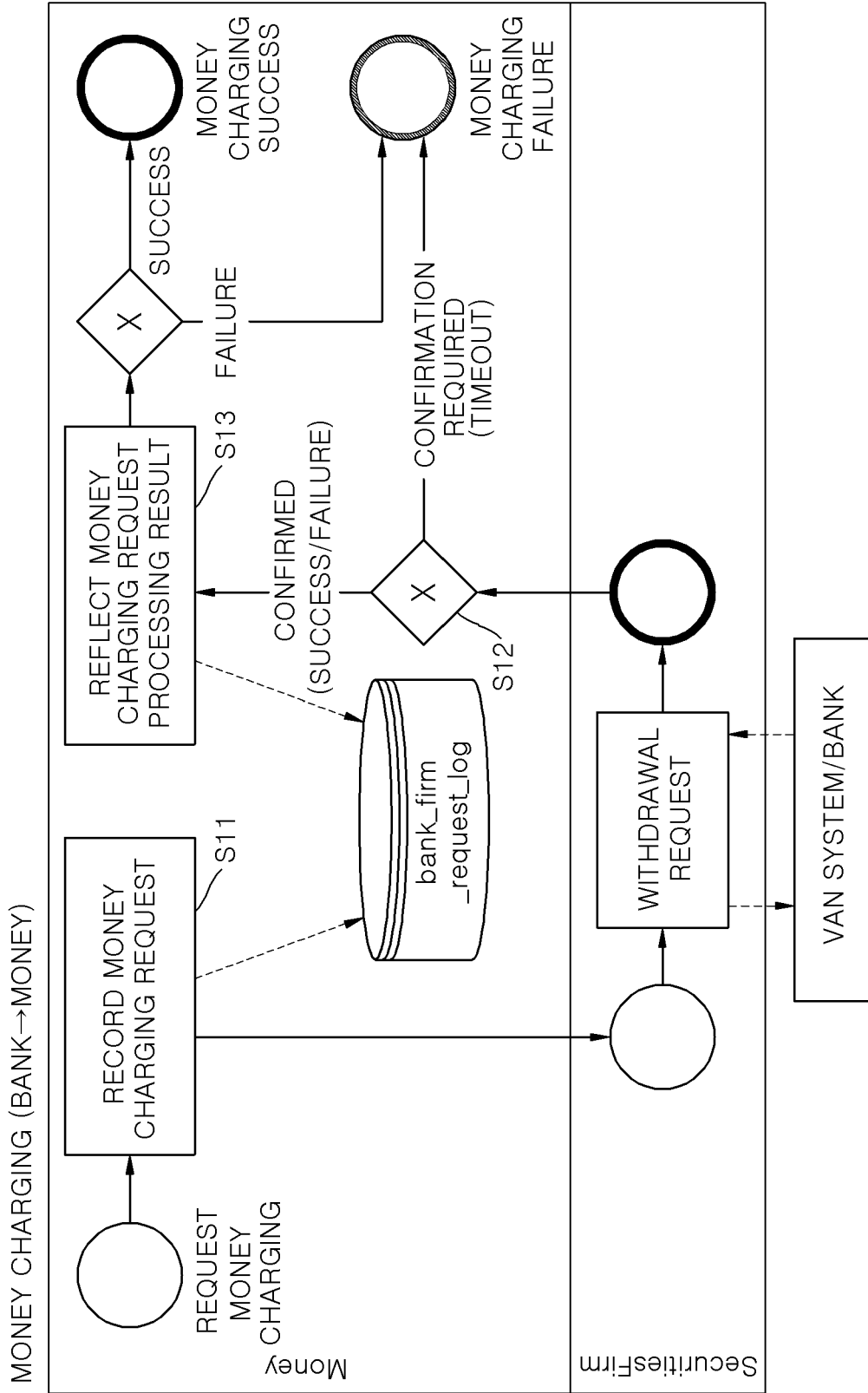


FIG. 7

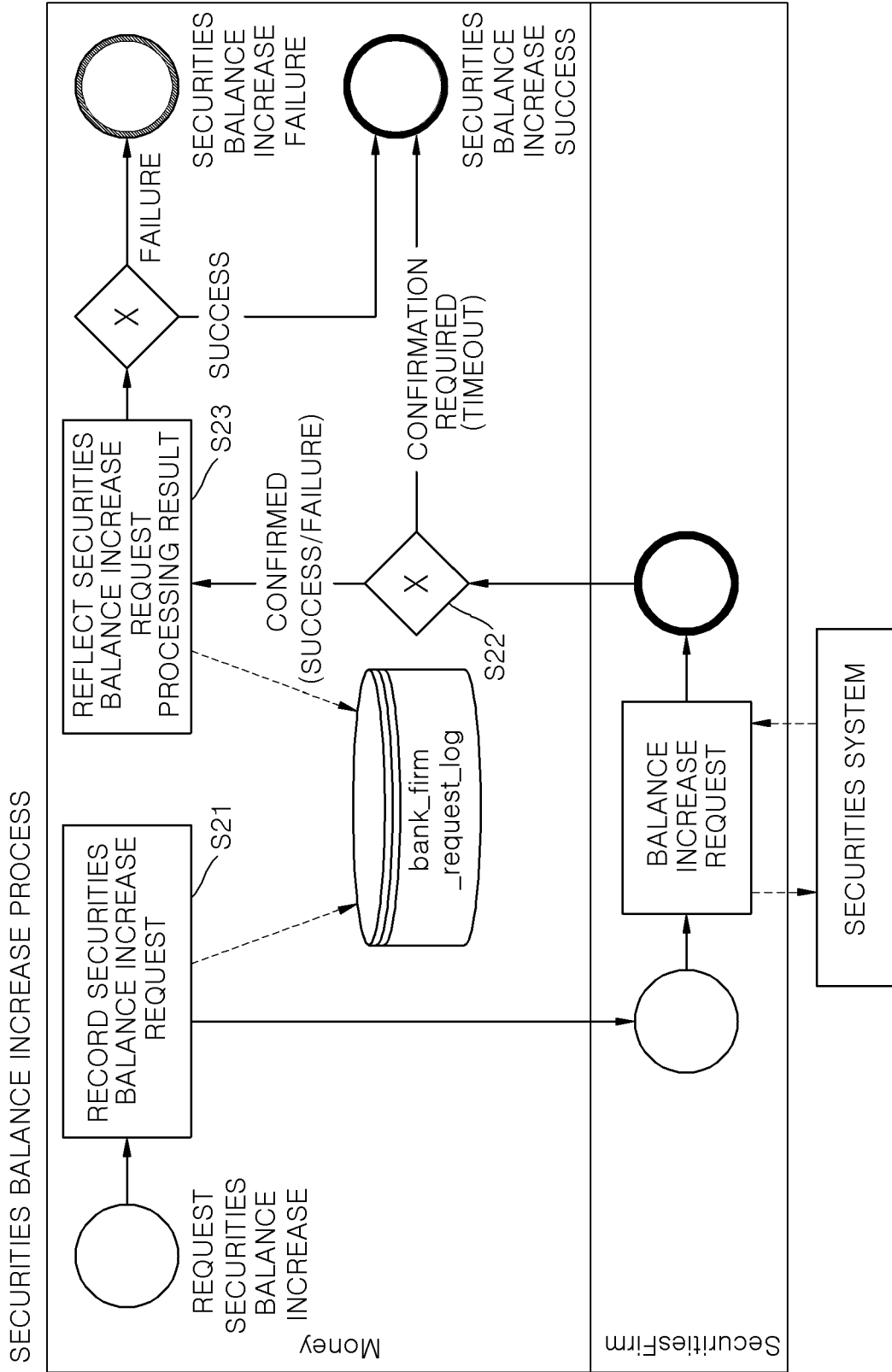
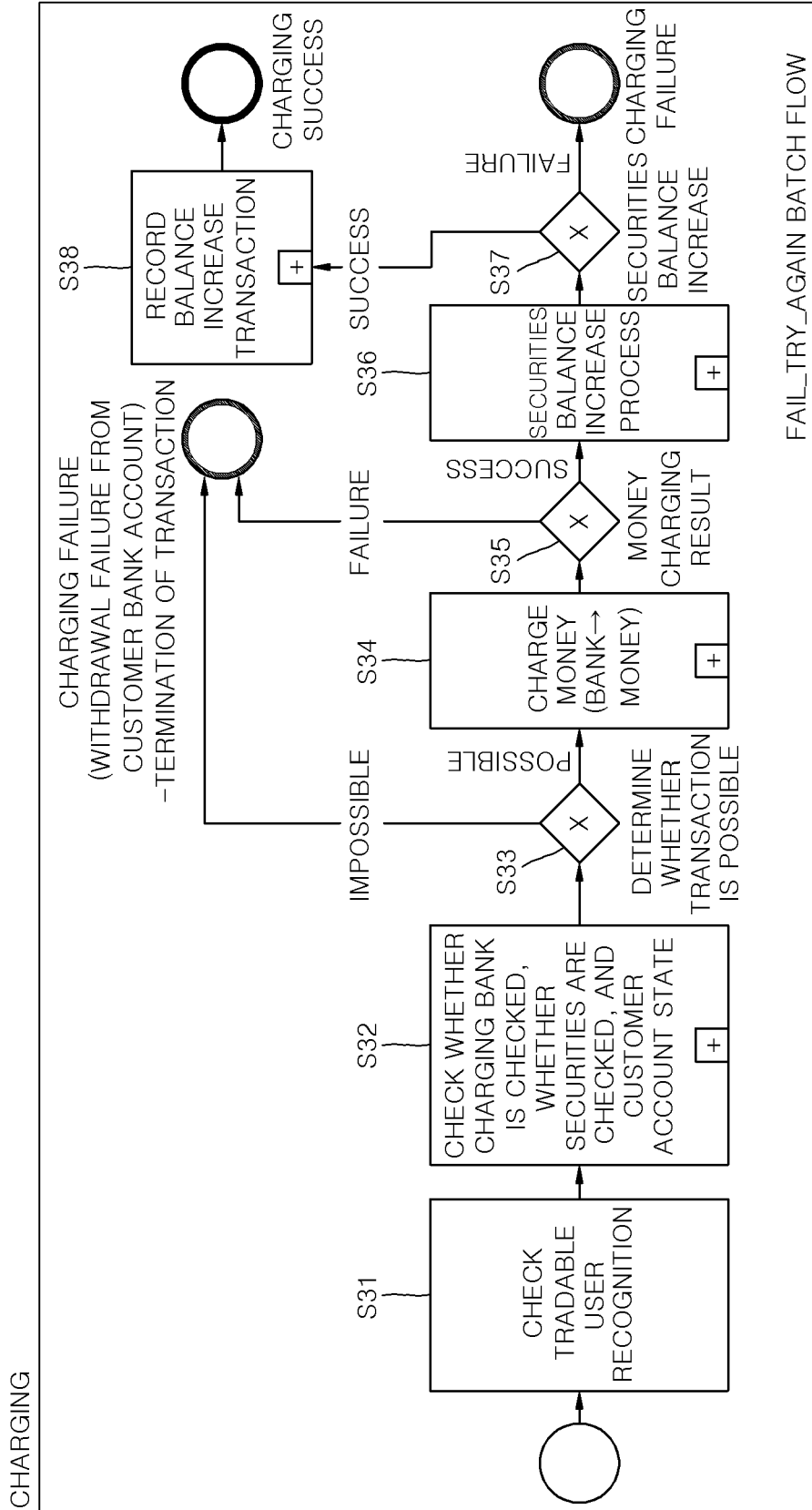


FIG. 8



FAIL\_TRY\_AGAIN BATCH FLOW

FIG. 9

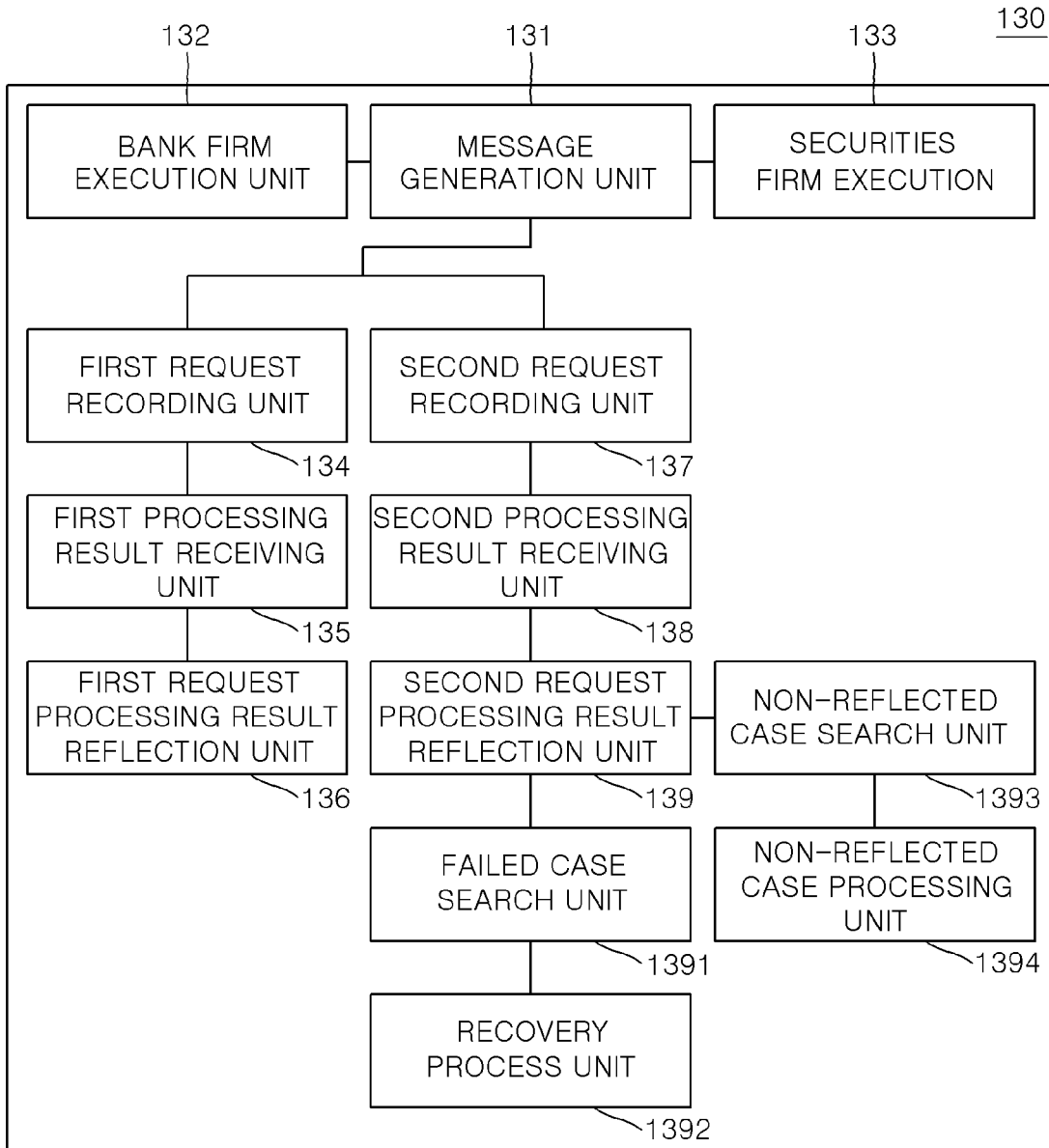


FIG. 10

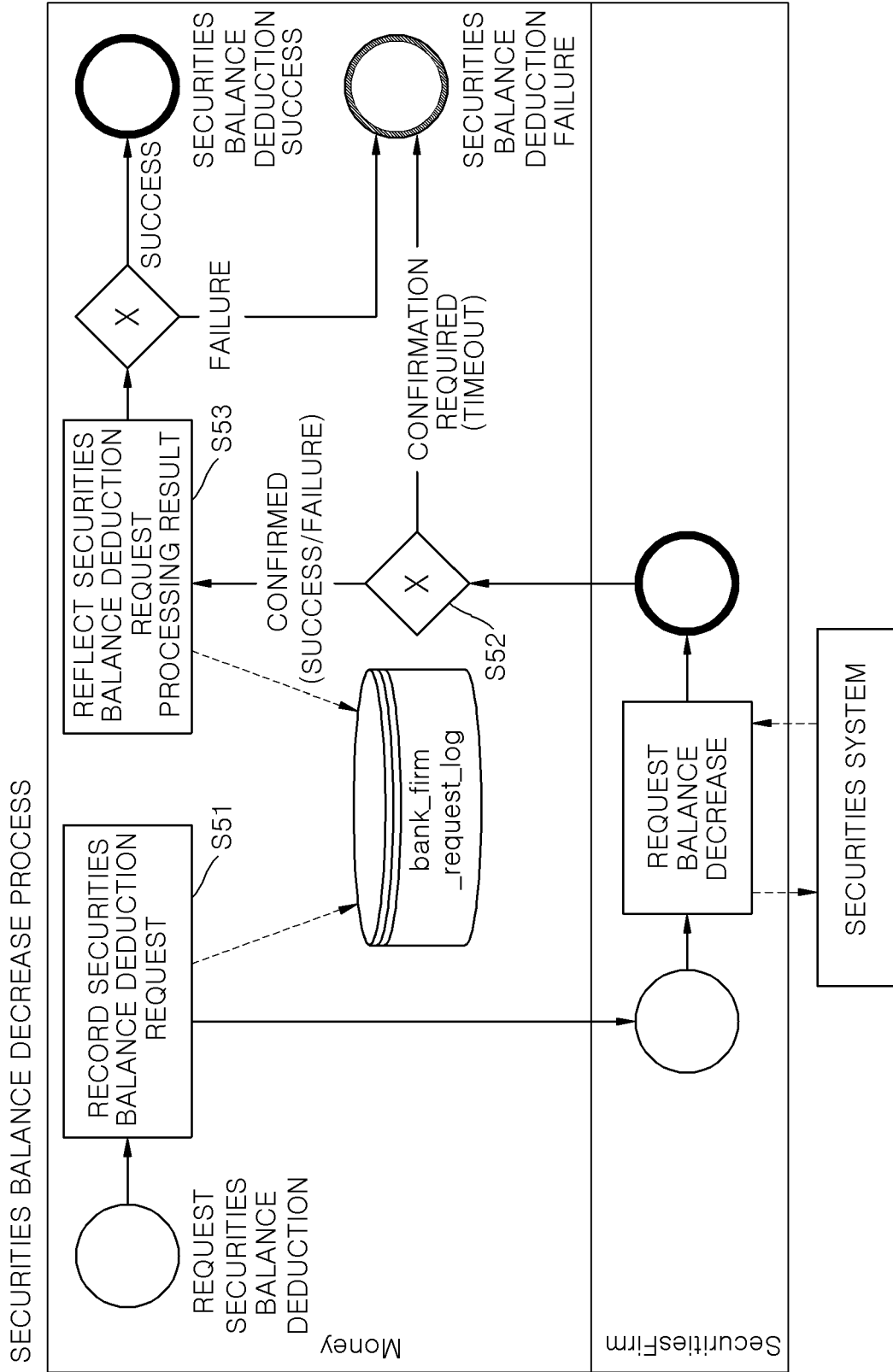


FIG. 11

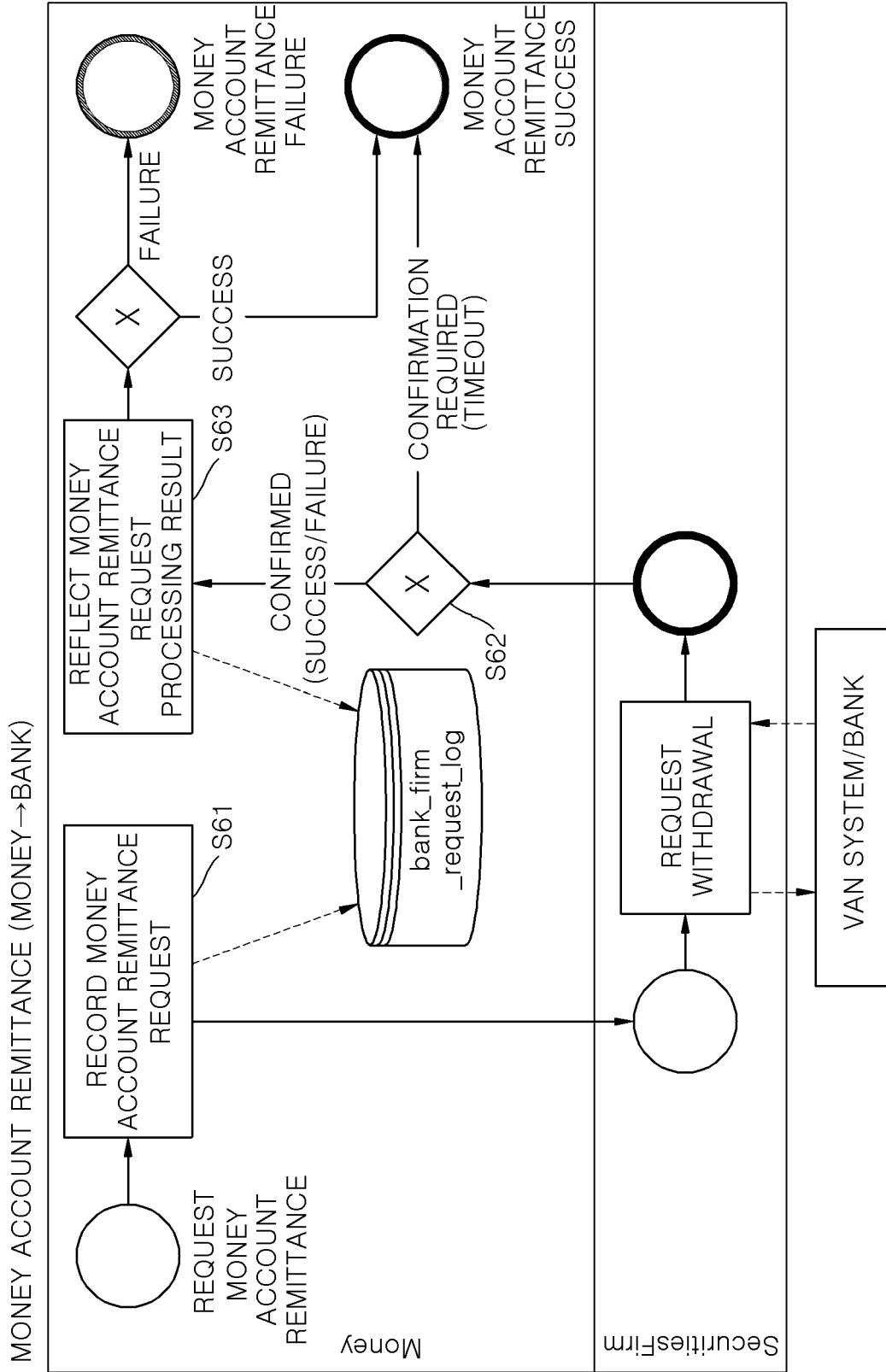


FIG. 12

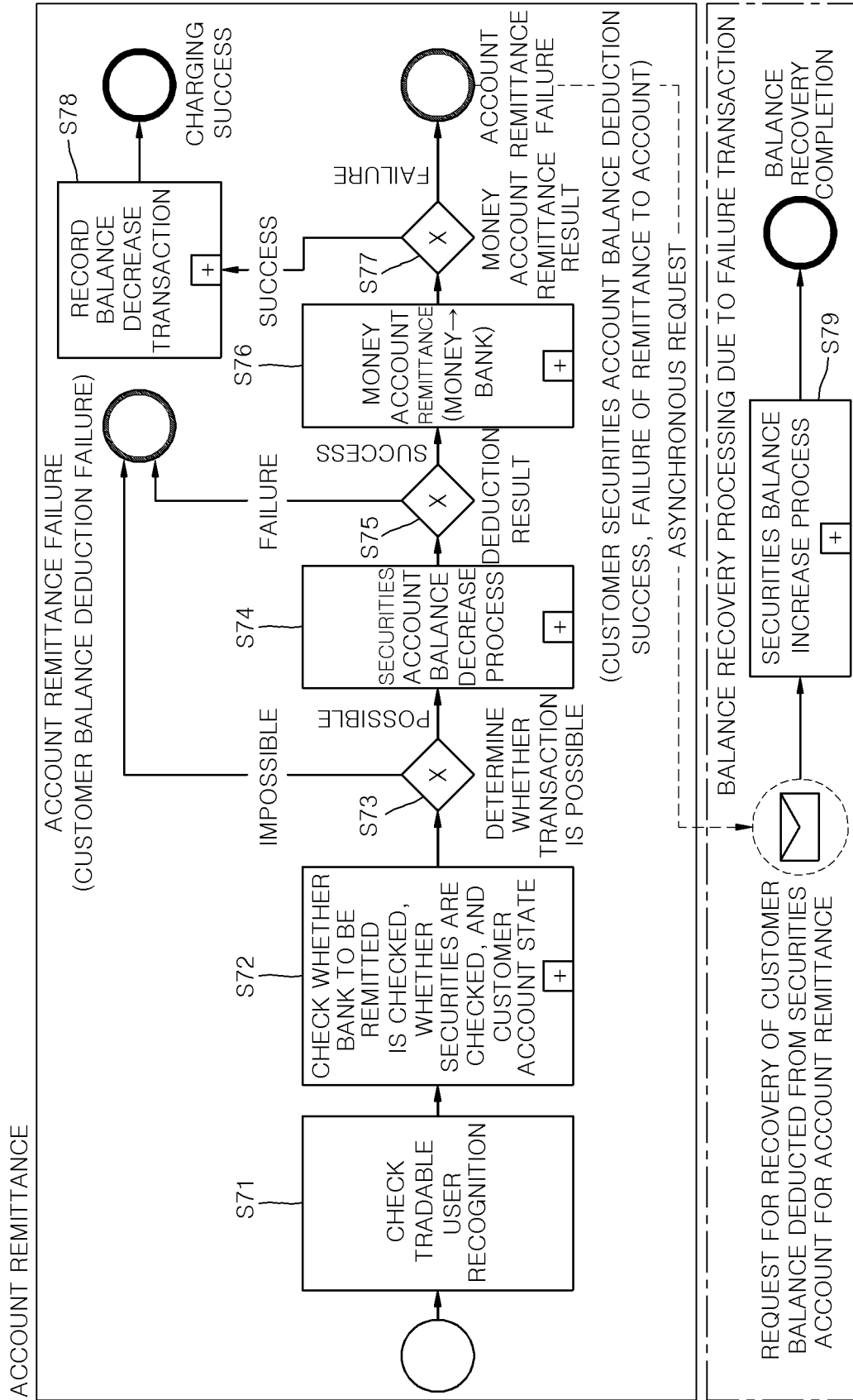


FIG. 13

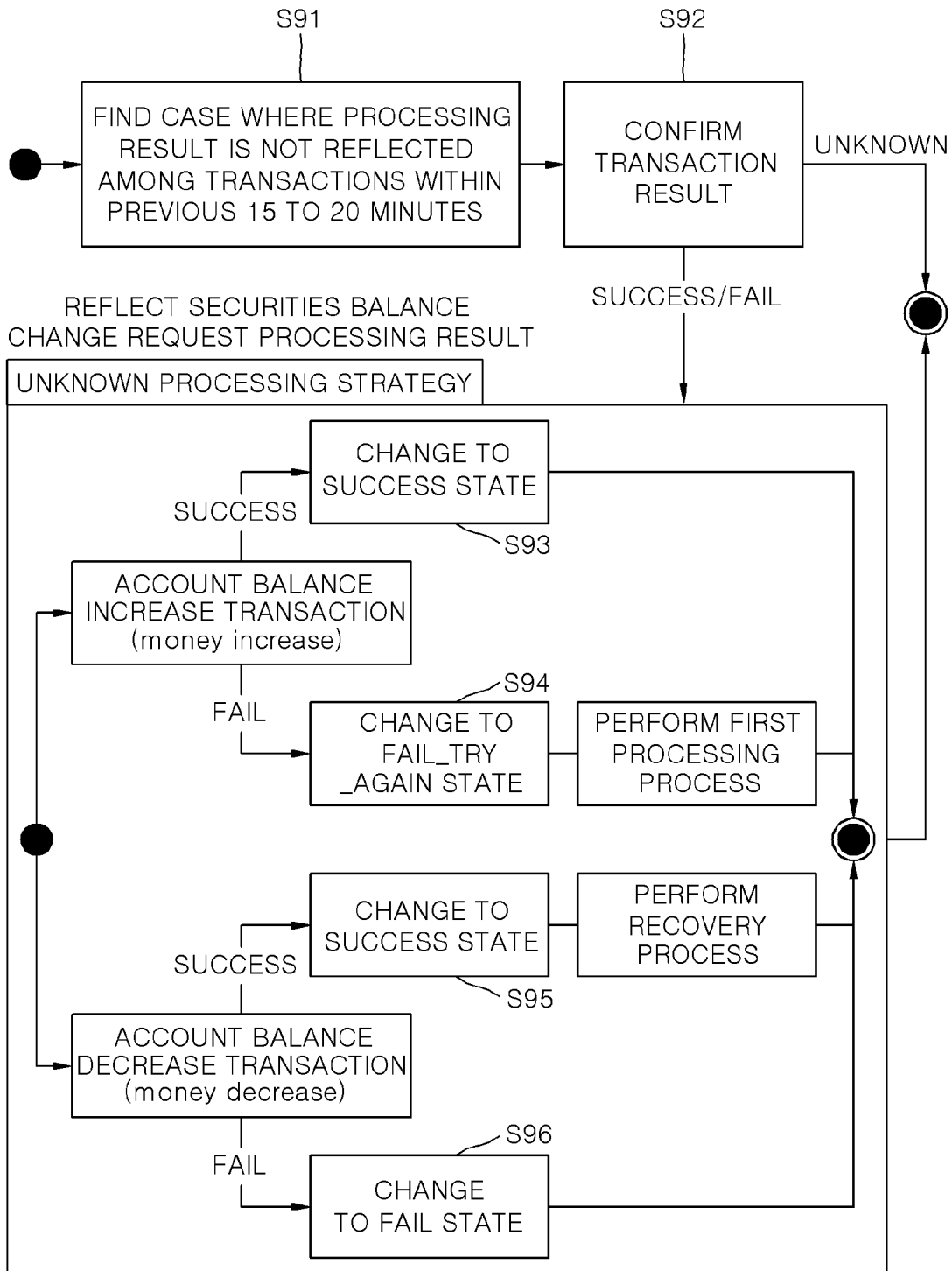




FIG. 14

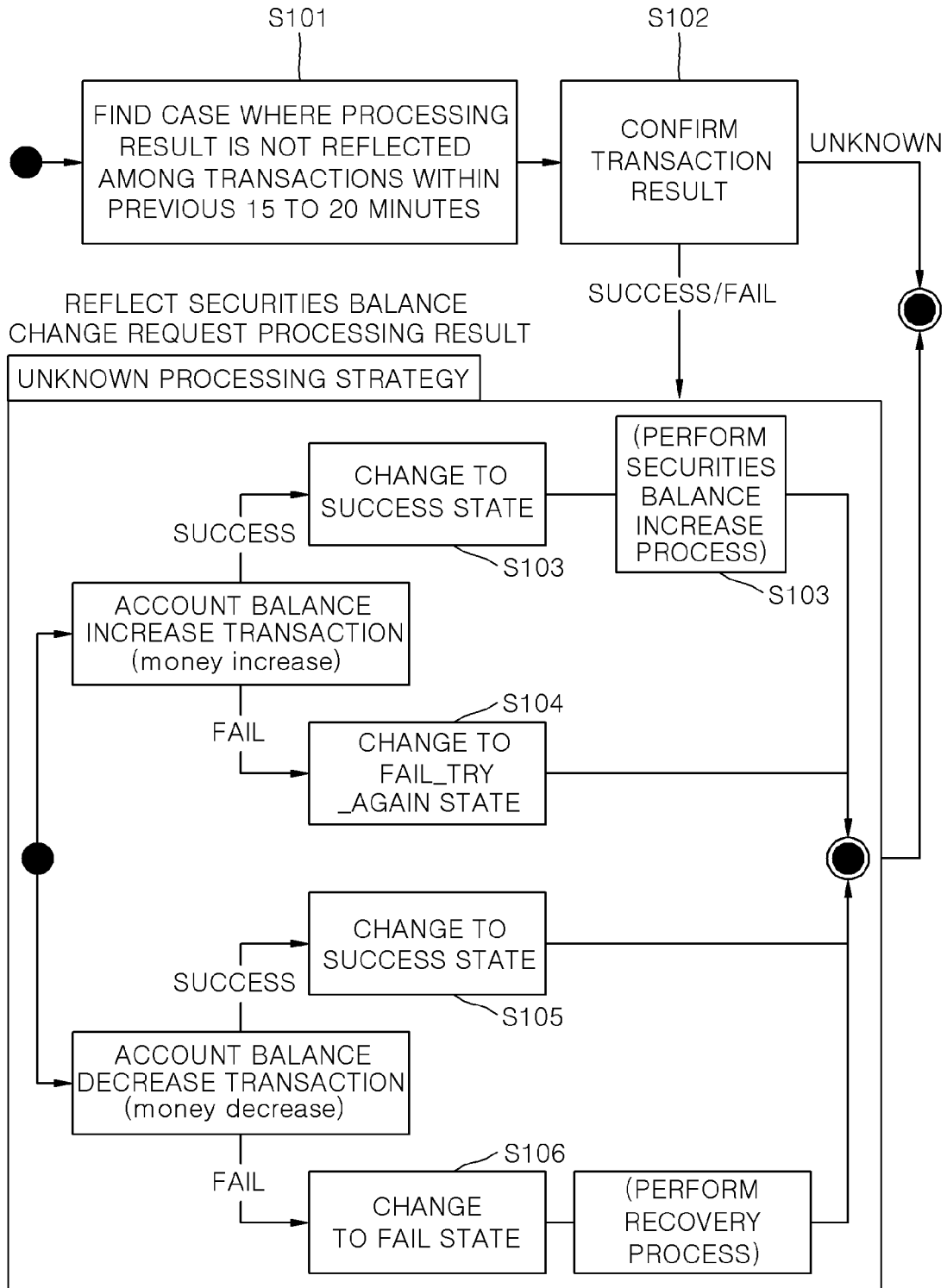


FIG. 15

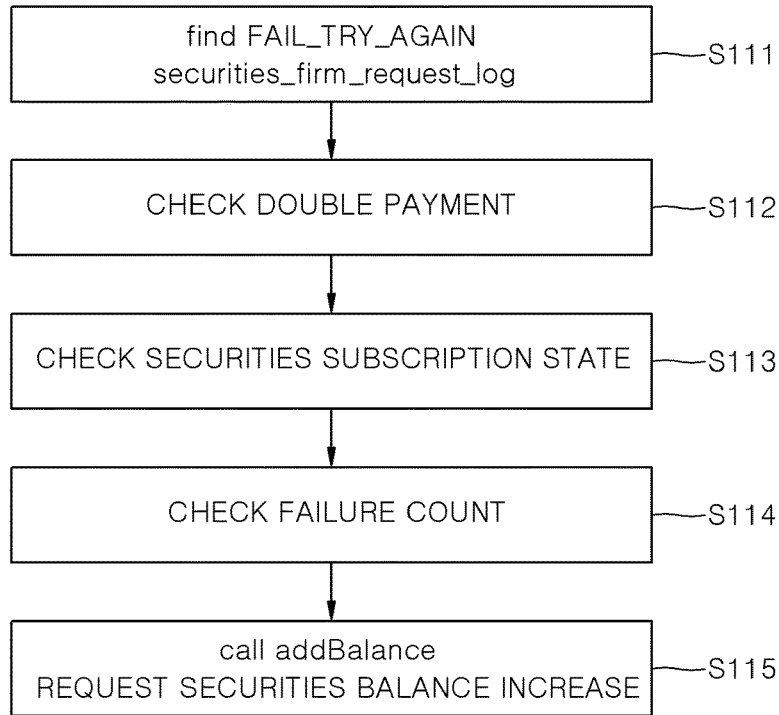


FIG. 16

140

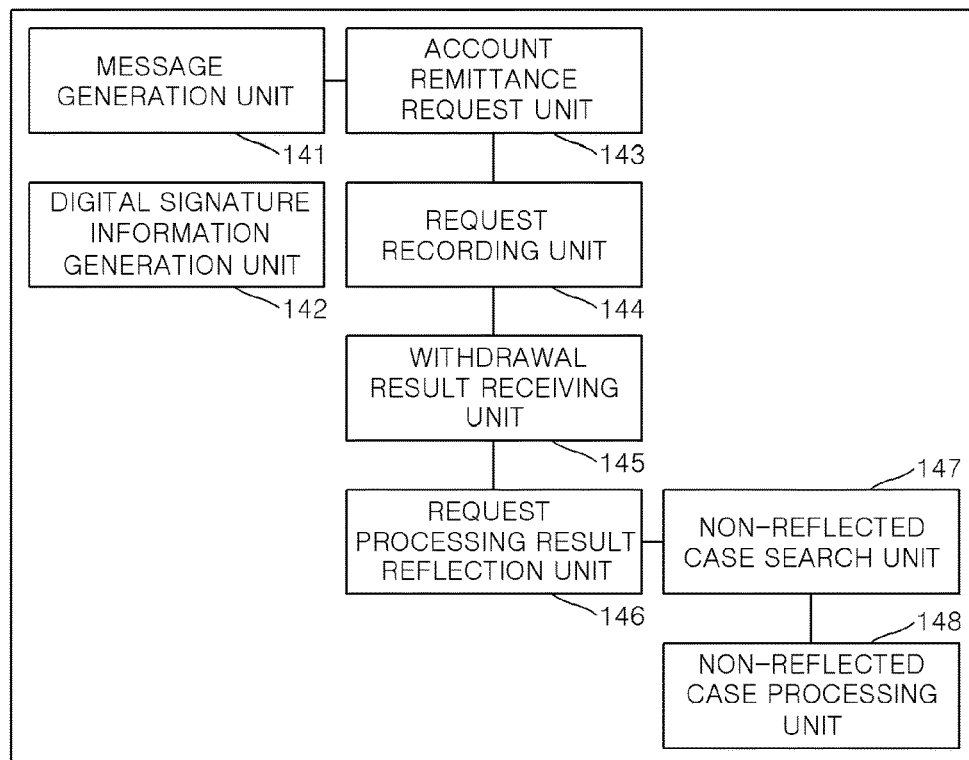
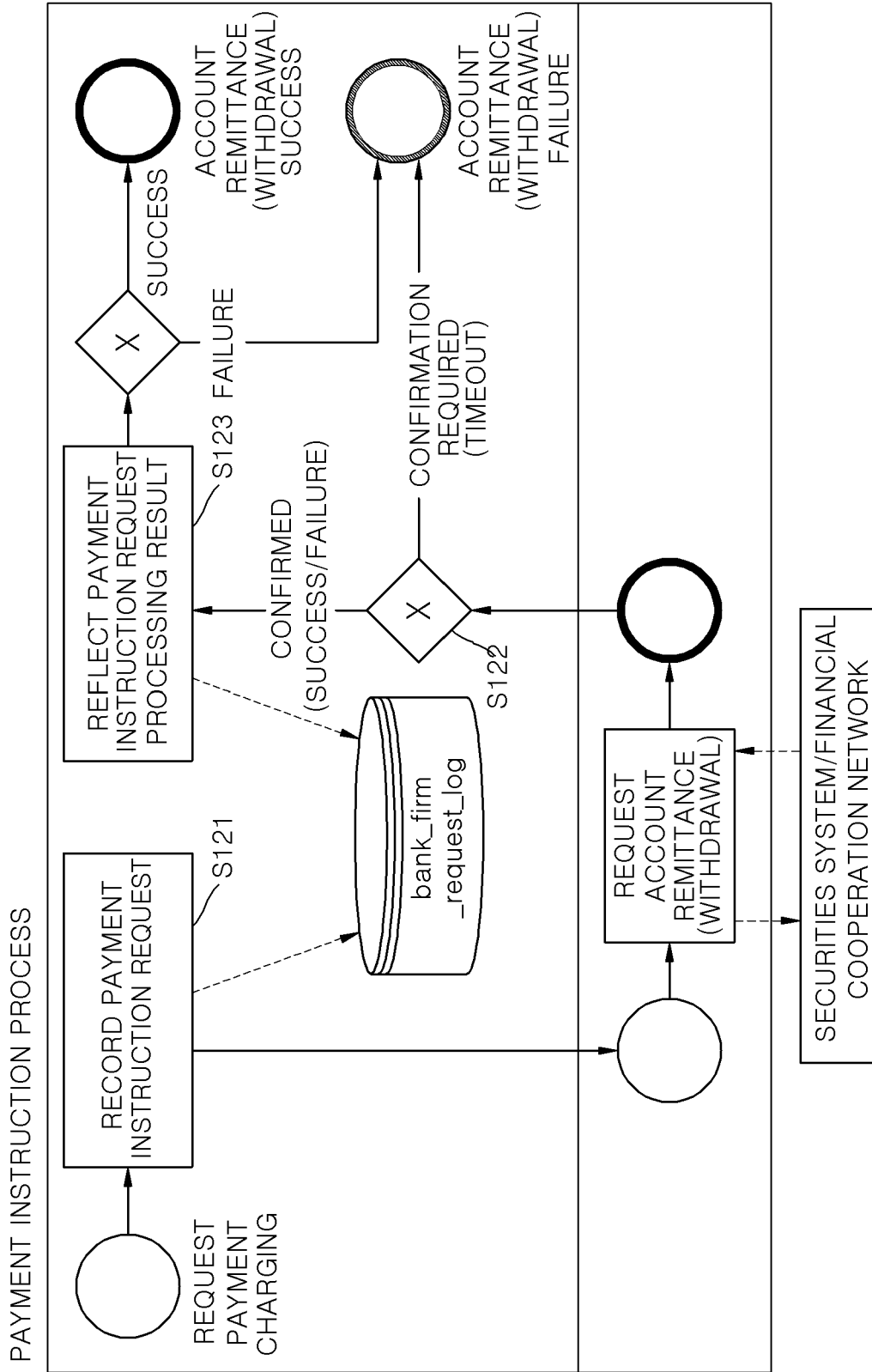


FIG. 17



**FINANCIAL SERVICE PROVIDING SYSTEM  
AND SIMPLE-PAYMENT COMPANY SERVER  
FOR SAME**

TECHNICAL FIELD

**[0001]** The present invention relates to a financial service provision system and a simple payment company server therefor, and more particularly, to a financial service provision system in which a prepaid electronic payment means method and a comprehensive securities account method are linked, and a simple payment company server therefor.

BACKGROUND ART

**[0002]** Prepaid electronic payment means is a certificate issued by electronically storing transferable monetary value or information about the certificate, and is means used to purchase and pay for goods and services from and to a third party other than an issuer and to pay for the goods and services.

**[0003]** As the fintech market grows, companies are also launching their own prepaid electronic payment means services one after another. Kakao Pay Money, Toss Money, T-money, and the like are the launching prepaid electronic payment means services. The companies are working hard to preoccupy the market.

**[0004]** The prepaid electronic payment means have a set usage limit. According to the relevant laws, the usage limit is currently KRW 2 million. When remitting, the amount exceeding KRW 2 million may not be remitted, and the holding amount may not exceed KRW 2 million. Recently, discussions on increasing this limit are ongoing, but it is the same in that the limit is set.

**[0005]** Meanwhile, even if the limit increases, there is a burden on consumers to deposit a large amount of money because the deposited amount is not protected by the Depositor Protection Act. In addition, no interest is accrued on funds deposited in the prepaid electronic payment means. The prepaid electronic payment means does not generate so-called cash flows. This is one of the reasons that the prepaid electronic payment fails to attract consumers.

**[0006]** Meanwhile, a comprehensive securities account may be considered.

**[0007]** The comprehensive securities account may solve several problems of the above-described prepaid electronic payment means. The comprehensive securities account refers to a financial product, which can be deposited and withdrawn at any time, allows merchant banks to manage money deposited by customers on notes, debt, bonds, and the like, and pay the profits to the customers, and have no restrictions on the above usage limits and are subject to the Depositor Protection Act. Consumers may also receive deposit fees.

**[0008]** However, the comprehensive securities account is not as convenient to use as the prepaid electronic payment means. Accordingly, the comprehensive securities account has limitations in not addressing the need for a simple payment method. This is because transfer service is provided by logging in with an accredited certificate and following the prescribed procedure, just like a normal bank transaction. The procedure is complicated and inconvenient to use, so it does not conform to the trend of the global fintech market.

**[0009]** Research is required to develop a model that can be used for both the convenience of payment of the prepaid

electronic payment means and the benefits of cash flow management such as the comprehensive securities account.

**[0010]** The inventors of the present invention have completed the present invention after long research and trial and error in order to solve these limitations.

DISCLOSURE

Technical Problem

**[0011]** An embodiment of the present invention provides a financial service provision system in which a prepaid electronic payment means method and a comprehensive securities account method are linked to each other, and a simple payment company server therefor.

**[0012]** Meanwhile, other objects not specified in the present invention may be additionally considered within the scope that can be easily inferred from the following detailed description and effects thereof.

Technical Solution

**[0013]** According to an embodiment of the present invention, a financial service provision system for providing a financial service of attracting funds from customer-linked accounts to manage customer financial company accounts, the financial service provision system including: a simple payment company server that provides a simple payment service, including a first parent account system including one or more first parent accounts, a financial company server that includes a second parent account system including one or more second parent accounts, a bank firm system that manages a transfer of funds between the customer-linked account and the first parent account system or between a customer-designated account designated by a customer and the first parent account system, and a securities firm system that manages a transfer of funds between the second parent account system and the customer financial company account, in which, when the customer requests balance deduction, the balance deduction of the customer financial company account may be processed through the bank firm system and the securities firm system, or processed through a payment instruction to the financial company server according to the transaction amount.

**[0014]** The financial service provision system may further include a first balance deduction processing unit that performs processing of remitting the funds to the customer-designated account using the bank firm system and processing of deducting the balance of the customer financial company account using the securities firm system when a customer requests the balance deduction within a predetermined usage limit, and a second balance deduction processing unit that performs processing of transferring the payment instruction to the financial company server to deduct the balance of the customer financial company account when a customer requests the balance deduction exceeding the predetermined usage limit.

**[0015]** The first parent accounts may include a withdrawal firm parent account, a collection parent account, and a deposit firm parent account, and the second parent accounts may include a financial company parent account.

**[0016]** The first balance deduction processing unit may include a message generation unit that generates a balance deduction request-related message, a bank firm execution unit that executes the bank firm system based on the message

to transfer the funds from the deposit firm parent account to the customer-designated account, and a securities firm execution unit that executes the securities firm system based on the message to deduct the balance of the financial company account of the customer through an transfer transaction between the financial company parent account and the customer financial company account.

**[0017]** The first balance deduction processing unit may further include a first request recording unit that records a request in a securities firm-request log based on the generated message, a first processing result receiving unit that receives a balance deduction processing result according to the execution of the securities firm system, and a first request processing result reflection unit that reflects the received processing result in the securities firm-request log.

**[0018]** The first balance deduction processing unit may further include a second request recording unit that records a request in a bank firm-request log based on the generated message, a second processing result receiving unit that receives a transfer of funds processing result according to the execution of the bank firm system, and a second request processing result reflection unit that reflects the received processing result in the bank firm-request log.

**[0019]** The first balance deduction processing unit may further include a failed case search unit that searches for a failed request of which the processing result is recorded as failure in the bank firm-request log, and a recovery process unit that performs a recovery process of recovering the deducted balance of the customer financial company account on the failed request.

**[0020]** The first balance deduction processing unit may further include a non-reflected case search unit that searches for a non-reflected request of which the processing result is not reflected in the bank firm-request log, and a non-reflected case processing unit that confirms whether the transfer of the funds according to the execution of the bank firm system by the bank firm execution unit is performed on the non-reflected request, changes the state of the non-reflected request to a success state when the transfer of the funds is performed as a result of the confirmation, and changes the state of the non-reflected request to a failure state when the transfer of the funds is not performed as a result of the confirmation.

**[0021]** The second balance deduction processing unit may include a message generation unit that generates a balance deduction request-related message, a digital signature information generation unit that generates digital signature information using a certificate used for the simple payment service, and an account remittance request unit that requests account remittance (withdrawal) by transferring the payment instruction including the message and the digital signature information to the financial company server.

**[0022]** The financial company server may confirm the payment instruction using the digital signature information and perform the account remittance (withdrawal) through an external financial network.

**[0023]** The second balance deduction processing unit may further include a request recording unit that records a request in a log based on the payment instruction, a withdrawal result receiving unit that receives a withdrawal result through an external financial network from the financial company server, and a request processing result reflection unit that reflects the received withdrawal result in the log.

**[0024]** The second balance deduction processing unit may further include a non-reflected case search unit that searches for a non-reflected request of which the withdrawal result is not reflected in the log, and a non-reflected case processing unit that confirms whether the withdrawal is performed through the external financial network by the financial company server for the non-reflected request, changes a state to success for the non-reflected request when the withdrawal is performed as a result of the confirmation, and changes the state of the non-reflected request to a failure state when the withdrawal is not performed as the result of the confirmation.

**[0025]** The financial service provision system may further include a balance increase processing unit that performs processing of withdrawing the funds from the customer-linked account using the bank firm system and processing of increasing the balance of the customer financial company account using the securities firm system processing unit, and a third balance deduction processing unit that performs processing of calculating a deficit of the customer financial company account when the customer requests the balance deduction exceeding the predetermined usage limit, charging the deficit through the balance increase processing unit, and then transferring the payment instruction to the financial company server to deduct the balance of the customer financial company account.

**[0026]** According to another embodiment of the present invention, a simple payment company server for providing a financial service of attracting funds from a customer-linked account to deposit the attracted funds into a customer financial company account, in which the simple payment company server may be connected, through a network, to a financial company server that provides a simple payment service including a first parent account system including one or more first parent accounts, and that includes a second parent account system including one or more second parent accounts, when a customer requests balance deduction, a balance of the customer financial company account may be deducted through at least one of a first processing process and a second processing process according to a transaction amount, the first processing process may be performed through a bank firm system that manages a transfer of funds between the customer-linked account and the first parent account system or a transfer of funds between a customer-designated account designated by the customer and the first parent account system, and a securities firm system that manages a transfer of funds between the second parent account system and the customer financial company account, and the second processing process may be performed through a payment instruction transferred to the financial company server. According to still another embodiment of the present invention, a financial company server for providing a financial service of attracting funds from a customer-linked account to deposit the attracted funds into a customer financial company account, in which the financial company server may be connected, through a network, to a simple payment company server that provides a simple payment service, including a first parent account system that includes one or more first parent accounts, and a second parent account system that includes one or more second parent accounts, when a customer requests balance deduction, a balance of the customer financial company account may be deducted through at least one of a first processing process and a second processing process according to a

transaction amount, the first processing process may be performed through a bank firm system that manages a transfer of funds between the customer-linked account and the first parent account system or a transfer of funds between a customer-designated account designated by the customer and the first parent account system, and a securities firm system that manages a transfer of funds between the second parent account system and the customer financial company account, and the second processing process may be performed through a payment instruction received from the simple payment company server.

#### Advantageous Effects

**[0027]** According to the present technology, it is possible to provide a financial service in which a prepaid electronic payment means method and a comprehensive securities account method are linked to each other.

**[0028]** In addition, according to the present technology, it is possible to provide a simple payment method that is not limited by the usage limit of the existing prepaid electronic payment means.

**[0029]** In addition, according to the present technology, it is possible to provide new financial services capable of providing the convenience of simple payment like the existing prepaid electronic payment means and also providing various account-based services such as remittance and transfer, and generating profits from fund management through deposits.

#### DESCRIPTION OF DRAWINGS

**[0030]** FIG. 1 is a diagram illustrating a conceptual diagram of a financial service provision system according to an embodiment of the present invention.

**[0031]** FIG. 2 is a diagram illustrating an overall configuration of the financial service provision system according to the embodiment of the present invention.

**[0032]** FIGS. 3A and 3B are diagrams respectively illustrating detailed configurations of a first parent account system and a second parent account system according to an embodiment of the present invention.

**[0033]** FIG. 4A is a diagram conceptually illustrating cash flows appearing in the financial service provision system according to the embodiment of the present invention.

**[0034]** FIG. 4B is a diagram schematically illustrating a balance deduction processing process exceeding a predetermined usage limit performed in the financial service provision system according to an embodiment of the present invention.

**[0035]** FIG. 4C is a diagram illustrating in more detail a process until the financial company server receives a payment instruction from a simple payment company server according to an embodiment of the present invention.

**[0036]** FIG. 5 is a diagram illustrating a detailed configuration of a balance increase processing unit according to an embodiment of the present invention.

**[0037]** FIG. 6 is a flowchart illustrating an operation of the balance increase processing unit according to an embodiment of the present invention, centering on a bank firm.

**[0038]** FIG. 7 is a flowchart illustrating an operation of the balance increase processing unit according to the embodiment of the present invention, centering on a securities firm.

**[0039]** FIG. 8 is a diagram illustrating an overall flow of a process in which a balance of a customer financial com-

pany account is increased and processed by the balance increase processing unit according to the embodiment of the present invention.

**[0040]** FIG. 9 is a diagram illustrating a detailed configuration of a first balance deduction processing unit according to an embodiment of the present invention.

**[0041]** FIG. 10 is a flowchart illustrating an operation of the first balance deduction processing unit according to the embodiment of the present invention, centering on a securities firm.

**[0042]** FIG. 11 is a flowchart illustrating the operation of the first balance deduction processing unit according to the embodiment of the present invention, centering on the bank firm.

**[0043]** FIG. 12 is a diagram illustrating the overall flow of a process in which a balance of the customer financial company account is deducted and processed by the first balance deduction processing unit according to the embodiment of the present invention.

**[0044]** FIG. 13 is a diagram illustrating in detail operations of a non-reflected case search unit and a non-reflected case processing unit with respect to a security firm-request log according to an embodiment of the present invention.

**[0045]** FIG. 14 is a diagram illustrating in detail operations of a non-reflected case search unit and a non-reflected case processing unit with respect to a bank firm-request log according to an embodiment of the present invention.

**[0046]** FIG. 15 is a diagram illustrating in detail operations of a failed case search unit and a reprocessing process unit according to an embodiment of the present invention.

**[0047]** FIG. 16 is a diagram illustrating a detailed configuration of a second balance deduction processing unit according to an embodiment of the present invention.

**[0048]** FIG. 17 is a block diagram illustrating a process of processing a balance deduction request by the second balance deduction processing unit according to an embodiment of the present invention.

**[0049]** It is to be noted that the accompanying drawings are illustrated as references for understanding the technical idea of the present invention, and the scope of the present invention is not limited thereto.

#### BEST MODE

**[0050]** Hereinafter, the most exemplary embodiment of the present invention is described. In the drawings, the thickness and interval are expressed for convenience of explanation, and may be exaggerated compared to the actual physical thickness. In describing the present invention, well-known configurations irrelevant to the gist of the present invention may be omitted. In adding reference numerals to components throughout the drawings, it is to be noted that like reference numerals designate like components even though components are shown in different drawings.

**[0051]** FIG. 1 is a diagram illustrating a conceptual diagram of a financial service provision system according to an embodiment of the present invention.

**[0052]** As illustrated in FIG. 1, a financial service provision system 1 includes a simple payment company area EP and a financial company area MP.

**[0053]** The financial service provision system 1 may perform the same function as the existing prepaid electronic payment means through the simple payment company area EP. It is possible to use services of easy payment, remittance,

and transfer within a usage limit of the prepaid electronic payment means prescribed by the law. To this end, the simple payment company area EP includes a customer-linked account **10** and a simple payment company server **100**. The simple payment company server may draw funds from customer-linked accounts and also remit the funds to the customer-linked accounts. Although only the customer-linked account is illustrated in the drawings, funds may be transferred to a designated account to which a customer requests remittance.

**[0054]** As will be described below, the simple payment company server **100** operates by being linked to a financial company server **200**. The simple payment company server **100** and the financial company server **200** may be connected through a wired or wireless communication network. The customer-linked account **10** is a commercial bank account being used by a customer. Funds are attracted from the customer-linked account to the simple payment company server according to an embodiment of the present invention.

**[0055]** The financial service provision system **1** may perform the same function as the existing comprehensive securities account through the financial company area MP. It is possible to use account-based remittance and transfer services without limiting the usage limit of the prepaid electronic payment means. To this end, the financial company area MP includes a customer financial company account **20** and the financial company server **200**. The financial company server is responsible for deposits into and withdrawals from customer financial company accounts.

**[0056]** As will be described below, the financial company server **200** operates by being linked to the simple payment company server **100**. The customer financial company account **20** is a commercial financial company account that a customer is using. For example, when the financial company is a securities company, it may be a securities account opened in the securities company. Alternatively, when the financial company is a bank, it may be a bank account opened in the bank. The present invention is not limited to the term, and any account that is not limited to the same limit as in the prepaid electronic payment means may be used. The funds of the financial service provision system according to an embodiment of the present invention are deposited into the customer financial company account and managed.

**[0057]** The financial service provision system according to an embodiment of the present invention proposes a linking method between the simple payment company domain EP and the financial company domain MP, thereby solving the problem of a holding limit and transfer limit of the existing prepaid electronic payment means and also improving the convenience of payment. Like the existing comprehensive securities account, it is possible to use account-based services such as remittance, transfer, and firm banking, and provide management profits. In addition, the Depositor Protection Act is applied.

**[0058]** Hereinafter, a method of linking a simple payment company area and a financial company area according to the present invention will be described in more detail with reference to FIGS. **2** to **17**.

**[0059]** FIG. **2** is a diagram illustrating an overall configuration of the financial service provision system **1** according to the embodiment of the present invention.

**[0060]** FIGS. **3A** and **3B** are diagrams respectively illustrating detailed configurations of a first parent account

system **110** and a second parent account system **210** according to an embodiment of the present invention.

**[0061]** As illustrated in FIG. **2**, the financial service provision system **1** (hereinafter simply referred to as “financial system”) includes the simple payment company server **100**, the financial company server **200**, a bank firm system BS, a securities firm system SS, the customer-linked account **10**, and the customer financial company account **20**.

**[0062]** The simple payment company server **100** may include a first parent account system **110**, a balance increase processing unit **120**, a balance deduction processing unit **130**, and a second balance deduction processing unit **140**. The present invention mainly describes an embodiment in which a simple payment company server includes a balance increase processing unit and first and second balance deduction processing units, but is not limited thereto, and the balance increase processing unit and the balance deduction processing unit may be included in a financial system.

**[0063]** The financial company server **200** may include the second parent account system **210**.

**[0064]** As illustrated in FIG. **3A**, the first parent account system **110** of the simple payment company server may include a withdrawal firm parent account **112**, a collection parent account **114**, and a deposit firm parent account **116**.

**[0065]** As illustrated in FIG. **3B**, the second parent account system **210** of the financial company server may include a financial company parent account **212**. The second parent account system may further include a financial company deposit parent account (not illustrated), which will be described later.

**[0066]** It will be described in more detail with reference to FIGS. **2** to **3B**.

**[0067]** First, the withdrawal firm parent account **112** withdraws funds from the customer-linked account **10** and holds the funds. There are multiple withdrawal firm parent accounts for each domestic financial company. When 24 financial institutions are providing financial services in Korea, 24 withdrawal firm parent accounts may exist. The withdrawal firm parent account may be an account issued by each financial institution (e.g., a bank). Multiple withdrawal firm parent accounts for each financial company reduce transfer fees and increase security and stability. A name of the withdrawal firm parent account may be a name of a company operating a financial system according to an embodiment of the present invention. When a financial system operator is a simple payment company, it may be a name of the simple payment company. When the financial system operator is a financial company, it may be a name of the financial company.

**[0068]** Withdrawing funds from the withdrawal firm parent account **112** may be performed at the time when the customer requests the balance increase or in real time.

**[0069]** The collection parent account **114** draws and holds funds collected in the withdrawal firm parent account **112**. The number of withdrawal firm parent accounts is two or more, but the number of collection parent accounts is one. It may be an account issued by a financial company (e.g., a bank) that has made an agreement with a simple payment company according to an embodiment of the present invention. Multiple accounts may be prepared, if necessary, but the single collection parent account increases the efficiency of deposit management. A name of the collection parent account may be a name of a company (i.e., simple payment

company) that operates a simple payment company server according to an embodiment of the present invention.

[0070] Drawing funds to the collection parent account **114** from the withdrawal firm parent account **112** may be performed at any time regardless of the timing of the balance increase request of the customer.

[0071] The collection parent account always holds a balance, and thus, as described below, it is possible to increase or deduct the balance in real time according to the request of the customer regardless of the internal transfer operation.

[0072] The collection parent account serves as a deposit account for providing financial services according to an embodiment of the present invention. The collection parent account may be viewed as a deposit account for the role of the prepaid electronic payment means in the financial system.

[0073] The deposit firm parent account **116** deposits funds into the customer-designated account that the customer designates to receive remittances. There are multiple deposit firm parent accounts for each domestic financial company. However, in order to receive instructions from the simple payment company server of the present invention and enable deposit processing, it is preferable that the account be issued by a financial company that provides services such as firm banking. Alternatively, it may be an account issued by a financial company (e.g., a bank) that has entered into an agreement with a simple payment company according to an embodiment of the present invention. For example, there may be three deposit firm parent accounts. Multiple deposit firm parent accounts for each financial company reduce transfer fees and increase security and stability. A name of the deposit firm parent account may be a name of the simple payment company according to an embodiment of the present invention.

[0074] Depositing funds through the deposit firm parent account **116** may be performed at the time when the customer requests the balance deduction or in real time.

[0075] In addition, drawing funds to the deposit firm parent account draws funds from the collection parent account may be performed at any time regardless of the timing of the balance deduction request of the customer.

[0076] The financial company parent account **212** draws and holds the funds collected in the collection parent account **114**. The number of financial company parent accounts may be one. It may be an account issued by a company (i.e., a financial company) that operates a financial company server according to an embodiment of the present invention. Multiple accounts may be prepared, if necessary, but a single financial company parent account increases the efficiency of deposit received management. The name of the deposit firm parent account may be the name of the simple payment company according to an embodiment of the present invention. Note that the names of the collection parent account and the financial company parent account are the same.

[0077] Drawing funds to the financial company parent account **212** from the collection parent account **114** may be performed at any time regardless of the timing of the balance increase request of the customer or balance deduction request.

[0078] The financial company parent account always holds a balance, and thus, as described below, it is possible

to increase or deduct the balance in real time according to the request of the customer regardless of the internal transfer operation.

[0079] The financial company parent account serves as another deposit received account for providing financial services according to an embodiment of the present invention. The financial company parent account may be regarded as a deposit received account for a role of a comprehensive securities account in the financial system.

[0080] Meanwhile, the second parent account system may further include a financial company deposit received parent account (not illustrated) as it is a financial company area, and the financial company deposit received parent account may serve as a deposit received base of the financial company itself. The financial company deposit received parent account may be an account issued by a financial company (e.g., a bank) that has entered into an agreement with the financial company according to an embodiment of the present invention. It may be an account issued by a financial company, such as the financial company that issued the collection parent account. It is advantageous in terms of fee reduction and security. The financial company deposit received parent account may be in the name of the financial company. Meanwhile, when a financial system operator is a simple payment company, it may be a name of the simple payment company.

[0081] The bank firm system BS is a system that manages the transfer processing. The bank firm system may include a communication channel that is involved in a transfer of funds between the customer-linked account **10** and the first parent account system **110** or a transfer of funds between the customer-designated account designated by the customer and the first parent account system **110**.

[0082] In detail, the bank firm system BS may perform a transfer of funds between the customer-linked account **10** and the withdrawal firm parent account **112** or a transfer of funds between the deposit firm parent account **116** and the customer-designated account.

[0083] That is, the bank firm system manages a function of drawing funds from the customer-linked account to the first parent account system or sending funds from the first parent account system to the customer-designated account.

[0084] The securities firm system SS is also a system that manages the transfer processing. The securities firm system SS may include a communication channel that is involved in a transfer of funds between the second parent account system **210** and the customer financial company account **20**.

[0085] In detail, the securities firm system SS may perform the transfer of funds between the second parent account system **210** and the customer financial company account **20**.

[0086] That is, the securities firm system manages a function of sending funds from the second parent account system to the customer financial company account or withdrawing funds from the customer financial company account to the second parent account system.

[0087] Subsequently, referring to FIGS. 2 to 3B, the balance increase processing unit **120** performs processing of increasing the balance of the customer financial company account using the above-described bank firm system and securities firm system when the customer requests the balance increase (i.e., when requesting the charging). The first balance deduction processing unit **130** performs processing of deducting the balance of the customer financial company



account using the above-described bank firm system and securities firm system when the customer request the balance deduction (i.e., when requesting the account remittance). The second balance deduction processing unit **140** transfers a payment instruction to the financial company server **200** when the customer requests the balance deduction (i.e., when requesting the account remittance) to process the balance deduction of the customer financial company account.

**[0088]** According to an embodiment of the present invention, the balance deduction request within a predetermined usage limit is processed by the first balance deduction processing unit **130**, and the balance deduction request exceeding the predetermined usage limit is processed by the second balance deduction processing unit **140**. The predetermined usage limit may be a usage limit of the prepaid electronic payment means. According to the current law, since the usage limit is KRW 2 million, the first balance deduction processing unit may process remittance transactions of less than KRW 2 million, and the second balance deduction processing unit can process remittance transactions exceeding KRW 2 million.

**[0089]** Hereinafter, referring to FIG. 4A, first, a process of processing, by the balance increase processing unit and the first balance deduction processing unit, the balance increase and the balance deduction using the bank firm system and the securities firm system will be described in more detail.

**[0090]** Meanwhile, examples of the balance deduction request of the customer may include remittance, transfer, or the like to another account. In any case, it is common in that the balance of the customer financial company account is deducted. Therefore, in the present invention, reference is made to the balance deduction request by paying attention to the balance deduction for various requests from customers. Similarly, examples of the balance increase request of the customer may include charging, or the like. In any case, in the present invention, reference is made to the balance increase request by paying attention to the balance increase for various requests from customers in that the balance of the customer financial company account is increased.

**[0091]** FIG. 4A is a diagram conceptually illustrating cash flows appearing in the financial service provision system according to the embodiment of the present invention.

**[0092]** First, the process of processing the balance increase will be described.

**[0093]** The balance increase means that funds are withdrawn from a customer-linked account and put into the customer financial company account. That is, it means charging. The charged balance is shown to customers through a smartphone app or the like. That is, the balance of the customer financial company account is shown to a user.

**[0094]** For the balance increase request, a customer may use a charging graphic user interface (GUI) implemented through the smartphone app.

**[0095]** When requesting the balance increase, a related slip is generated. The message may be generated in the smartphone app and transmitted to the simple payment company server, or the simple payment company server managing the smartphone app may receive related information and directly generate the related information. The message may include information about transaction details. For example, information about a customer account number, a charge request date, a charge request number, a charge amount, and the like may be included.

**[0096]** Referring to FIG. 4A, when the customer requests the balance increase, withdrawal is made from the customer-linked account to the withdrawal firm parent account in real time with the request (A1, withdrawal) (execution of the bank firm system). In addition, transfer processing is performed between the financial company parent account and the customer financial company account in real time (A2, transfer) (execution of the securities firm system).

**[0097]** Through processes A1 and A2, the charging may be made in real time with the balance increase request of the customer.

**[0098]** Meanwhile, after the balance increase request of the customer, an internal settlement process is performed sequentially. That is, cash flow occurs from the withdrawal firm parent account to the collection parent account (B1, transfer), cash flow occurs from the collection parent account to the financial company parent account (B2, transfer), and cash flow occurs from the financial company parent account to the customer financial company account (B3, settlement). In this way, the balance increase processing process is completed. The order of B1 to B3 is arbitrary. This is because the withdrawal firm parent account, the collection parent account, and the financial company parent account have deposit received. That is, it always holds a balance.

**[0099]** Next, the balance deduction processing process will be described. Here, the balance deduction corresponds to the balance deduction request within the predetermined usage limit.

**[0100]** The balance deduction refers to the withdrawal of funds from the customer financial company account and the remittance to the customer-designated account. That is, it means the remittance. It includes remittances (transfer to other banks, payment, etc.) for various reasons. The deducted balance is shown to the customers through the smartphone app, etc. That is, the balance of the customer financial company account is shown to a user.

**[0101]** For the balance deduction request, customers may use the remittance GUI implemented through the smartphone app.

**[0102]** When requesting the balance deduction, a related message is generated. The message may be generated in the smartphone app and transmitted to the simple payment company server, or the simple payment company server managing the smartphone app may receive related information and directly generate the related information. The message may include information about transaction details. For example, information about a customer account number, a transfer request date, a transfer request number, a transfer amount, a transfer financial institution code, a transfer financial institution account number, a recipient name, and the like may be included.

**[0103]** Referring to FIG. 4A, when the customer requests the balance deduction, transfer processing is performed between the financial company parent account and the customer financial company account in real time therewith (X1, transfer) (execution of the securities firm system). In addition, real-time deposit is performed from the deposit firm parent account to the customer-designated account in real time therewith (X2, deposit) (execution of the bank firm system).

**[0104]** Through the processes X1 and X2, the remittance may be made in real time with the balance deduction request of the customer.

[0105] Meanwhile, after the balance deduction request of the customer, the internal settlement process is performed sequentially. That is, cash flow occurs from the customer financial company account to the financial company parent account (Y1, settlement), cash flow occurs from the financial company parent account to the collection parent account (Y2, transfer), and cash flow occurs from the collection parent account to the deposit firm parent account (Y3, transfer). In this way, the process of processing the balance increase is completed. The order of Y1 to Y3 is arbitrary. This is because the deposit firm parent account, the collection parent account, and the financial company parent account have deposit received. That is, it always holds a balance.

[0106] Hereinafter, referring to FIG. 4B, the balance deduction processing process exceeding the predetermined usage limit will be described below.

[0107] It is the same that a message is generated in relation to the balance deduction request, and thus, the difference will be mainly described.

[0108] FIG. 4B is a diagram schematically illustrating a balance deduction processing process exceeding a predetermined usage limit performed in the financial service provision system according to an embodiment of the present invention.

[0109] As illustrated in FIG. 4B, when there is a balance deduction request exceeding the predetermined usage limit, the simple payment company server requests a withdrawal to the financial company server (withdrawal request). This corresponds to the process in which the financial company server receives a payment instruction from the simple payment company server.

[0110] In this case, the payment instruction transferred from the simple payment company server to the financial company server includes transaction detail information and digital signature information. For example, the payment instruction includes a customer account number, a transaction request date, a transaction request number, a transfer financial institution code, transfer a financial institution account number, a payee name, a deposit and withdrawal amount, digital signature original contents, digital signature contents, digital signature certificate contents, etc.

[0111] The financial company server uses the digital signature information transferred by the simple payment company server as a method of confirming the payment instruction. That is, the financial company server confirms the payment instruction with the digital signature information used in the simple payment company area. This increases the efficiency and user convenience of linking the simple payment company area and a securities company area. When opening the customer financial company account, there is no need to set a password for the financial company account separately, and customers may use financial services linked to the securities company area by setting a password only once to use the simple payment service. That is, when opening the customer financial company account, customers only need to enter a password for a simple payment service which is first set without setting a new password.

[0112] The financial company server confirming the payment order requests a withdrawal from the external financial network (□ withdrawal request). This corresponds to the process in which the financial company server requests account remittance from the external financial network. Although the present invention is described focusing on an

embodiment in which the external financial network is a financial cooperation network, the present invention is not limited thereto, and the withdrawal request process may be made through a financial network provided by a commercial financial company (i.e., a bank).

[0113] According to the request of the financial company server, the financial cooperation network executes the withdrawal to the customer-designated account (□ withdrawal execution). That is, it corresponds to a process in which the account remittance is performed through the financial cooperation network. Then, the withdrawal result is transferred to the financial company server (□ withdrawal result transfer). Then, the financial company server transfers the received withdrawal result to the simple payment company server (□ withdrawal result transfer), and the customer financial company account balance deduction process is completed.

[0114] Note that the parent account is not involved in the balance deduction processing process exceeding the above-described limit. That is, the first parent account system or the second parent account system is not involved, and it is sufficient for the financial company server to receive a payment instruction from the simple payment company server.

[0115] FIG. 4C is a diagram illustrating in more detail a process until the financial company server receives a payment instruction from a simple payment company server according to an embodiment of the present invention.

[0116] In FIG. 4C, reference is made to the term account remittance in that the balance deduction processing is performed after receiving a request for remittance from a customer terminal to another bank account.

[0117] Referring to FIG. 4C, the customer terminal determines whether it exceeds a predetermined usage limit when the customer requests the balance deduction (S1). The customer terminal may be a smartphone, PC, or the like on which an app providing financial services is executed.

[0118] When the predetermined usage limit is exceeded, the customer terminal requests a transaction original text for digital signature from the simple payment company server (S2). In the drawing, the simple payment company server is illustrated as a money server. For distinction from an authentication server to be described below, both the money server and the authentication server may constitute the simple payment company server. Conversely, if the predetermined usage limit is not exceeded, the process of FIG. 4A described above may be followed.

[0119] Upon receiving the request, the simple payment company server generates the transaction original text for digital signature (S3).

[0120] Subsequently, the digital signature is performed on the transaction original text by the customer terminal.

[0121] That is, the customer terminal receiving the transaction original text from the simple payment company server confirms the password input from the user and proceeds with the digital signature for the transaction original text (S4).

[0122] Since a certificate for digital signature is stored in the customer terminal, it is possible to digitally sign the transaction original text received from the simple payment company server by receiving a password from a user. In this process, it is also possible to confirm whether the terminal is valid, such as a device change.

[0123] Then, the customer terminal requests a remittance transaction while transmitting the signed result value and a

serial number of the certificate used for the signature to the simple payment company server (i.e., money server) (S5). In the drawing, it is illustrated as a remittance transaction request (signature value+serial number).

[0124] Subsequently, the money server receiving the remittance transaction request confirms the validity of the signature in order to proceed with the remittance transaction. Here, it may operate with the authentication server.

[0125] In detail, the money server inquires a signature key with the serial number (S6). The signature key is means for confirming whether the digital signature is valid, and may be shared with the authentication server in advance. Then, when the inquired signature key is notified to the authentication server, the authentication server inquires whether the signature key is valid (S7) and returns the result value to the money server. In this way, the money server that has completed the validity of the signature adds the contents of the transaction original text for the digital signature, the result value of the digital signature, and the digital signature certificate contents whose validity has been confirmed to the already generated message and requests the account remittance from the financial company server (S8 and S9). The account remittance request corresponds to the transfer of the payment instruction.

[0126] The already generated message is transaction details information, and includes a customer account number, a transaction request date, a transaction request number, a transfer financial institution code, a transfer financial institution account number, a payee name, a deposit and withdrawal amount, etc., and may be regarded as including the original digital signature contents and the digital signature certificate contents as the above-described digital signature information in addition thereto.

[0127] In this way, through the process of making the digital signature by the customer terminal, the process of confirming the validity of the digital signature by the simple payment company server, and the process of adding the digital signature information to the already generated transaction details information, the financial company server receives the payment instruction from the simple payment company server.

[0128] Hereinafter, configurations of the balance increase processing unit and the first and second balance deduction processing units that generate message generation/transfer transaction and cash flow as described above will be described in more detail with reference to FIGS. 5 to 17.

[0129] FIG. 5 is a diagram illustrating a detailed configuration of the balance increase processing unit 120 according to an embodiment of the present invention.

[0130] FIG. 6 is a flowchart illustrating an operation of the balance increase processing unit according to the embodiment of the present invention, centering on a bank firm.

[0131] FIG. 7 is a flowchart illustrating an operation of the balance increase processing unit according to the embodiment of the present invention, centering on a securities firm.

[0132] First, as illustrated in FIG. 5, the balance increase processing unit 120 may include a message generation unit 121, a bank firm execution unit 122, a securities firm execution unit 123, a first request recording unit 124, a first processing result receiving unit 125, a first request processing result reflection unit 126, a second request recording unit 127, a second processing result receiving unit 128, a second request processing result reflection unit 129, a failed case

search unit 1291, a reprocessing process unit 1292, a non-reflected case search unit 1293, and a non-reflected case processing unit 1294.

[0133] Basically, the message generation unit 121 generates a related message when the customer requests the balance increase. The bank firm execution unit 122 executes the bank firm system based on the generated message to transfer funds from the customer-linked account to the withdrawal firm parent account. The securities firm execution unit 123 executes the securities firm system based on the generated message to increase the balance of the customer financial company account through the transfer transaction between the financial company parent account and the customer financial company account.

[0134] Hereinafter, FIG. 6 is also referenced together with FIG. 5.

[0135] FIG. 6 illustrates the bank firm-centered operation in the balance increase processing, and reference is made to the term “money charge (bank→money)” in the drawing in that funds are drawn from the customer-linked account (e.g., bank) to the first parent account system (e.g., money). Here, money may refer to a part of a financial service according to an embodiment of the present invention. In addition, money may refer to a unit (for example, point or gold) of currency used in financial services according to an embodiment of the present invention (of course, it may correspond to a unit of actual currency used in each country).

[0136] The first request recording unit 124 records the request in a bank firm request log bank\_firm\_request\_log based on the generated message (S11). In the drawing, it is illustrated as the money charging request record.

[0137] Meanwhile, as described above, the bank firm execution unit 122 executes the bank firm system BS based on the message generated by the message generation unit 121 to transfer funds from the customer-linked account 10 to the withdrawal firm parent account 112. It is illustrated as a Van system/bank and a withdrawal request at the bottom of the drawing.

[0138] Subsequently, the first processing result receiving unit 125 receives a transfer of funds processing result (success/failure) according to the execution of the bank firm system (S12).

[0139] The first request processing result reflection unit 126 reflects the received processing result in the bank firm request log (S13). When the received processing result succeeds, the state is reflected as success for the recording. In the drawing, the money charging is illustrated as success. When the received processing result fails, the state is reflected as failure for the corresponding record. In the drawing, the money charging is illustrated as failure.

[0140] Meanwhile, in the process of transmitting and receiving the processing result, transmission or reception may be failed due to some problems. There may be various causes such as a problem on the transmitting side, a problem on the receiving side, a smartphone error, or an application operation error. Therefore, a case in which a transfer of funds processing result is not received within a preset time period due to such a problem may occur. It is illustrated as a timeout in the drawing. In this case, it cannot wait indefinitely, and for subsequent processing, it may be regarded as success or failure, but according to an embodiment of the present invention, it may be regarded as money charging failure. Since no process that can be reversed in the

procedure has been performed, it is regarded as failure to simplify the entire procedure.

[0141] As will be described below, when the money charging fails, the balance increase process is no longer performed and ends. The process of increasing the balance ends because the withdrawal from the customer-linked account (for example, a bank) fails.

[0142] Conversely, when the money charging succeeds, the balance increase process continuously proceeds.

[0143] Hereinafter, FIG. 7 is referred to.

[0144] FIG. 7 illustrates a securities firm-centered operation when processing the balance increase, and reference is made to the term “securities balance increase process” in the drawing in that the balance of the customer financial company account (e.g., a securities account) is increased by drawing funds from the second parent account system (e.g., a securities system).

[0145] The second request recording unit 127 records the request in a securities firm request log securities\_firm\_request\_log based on the generated message (S21). In the drawing, it is illustrated as the securities balance increase request record.

[0146] Meanwhile, as described above, the securities firm execution unit 123 executes the securities firm system SS based on the message generated by the message generation unit 121 to increase the balance of the customer financial company account through the transfer transaction between the financial company parent account 212 and the customer financial company account 20. The securities system and the balance increase request are illustrated at the bottom of the drawing.

[0147] Subsequently, the second processing result receiving unit 128 receives the balance increase processing result according to the execution of the securities firm system (S22).

[0148] The second request processing result reflection unit 129 reflects the received processing result in the securities firm request log (S23). When the received processing result succeeds, the state is reflected as success for the recording. In the drawing, the securities balance increase is illustrated as success. When the received processing result fails, the state is reflected as failure for the corresponding record. In the drawing, the securities balance increase is illustrated as failure.

[0149] Meanwhile, a case in which the balance increase processing result is not received within a predetermined time due to any problems as described above may occur. It is illustrated as a timeout in the drawing. In this case, for subsequent processing, it may be regarded as success or failure, and according to an embodiment of the present invention, the securities balance increase may be regarded as success. Note that the above-described operations S11 to S13 are the opposite of being processed as a failure in case of timeout. In the former case, this is because no process that can return is performed. In the latter case, since the money charging process has already been performed, the securities balance increase is once processed as success to quickly return the desired result (i.e., charging has been completed normally) to a user. However, since no processing result is reflected in the corresponding request, the internal procedure for processing this is required, which can be performed by the non-reflected case search unit 1293 and the non-reflected case processing unit 1294. It will be described below with reference to FIG. 13.

[0150] As will be described below, when the securities balance increase fails, a reprocessing process is performed. Since the withdrawal has already been made from the customer-linked account, the reprocessing process is performed without ending the procedure. The reprocessing process corresponds to the process of reflecting the funds already brought in the securities account.

[0151] Conversely, when the securities balance increase succeeds, the procedure ends as charging success.

[0152] Hereinafter, the entire flow including the above-described process of FIG. 6 and process of FIG. 7 will be described.

[0153] FIG. 8 is a diagram illustrating the overall flow of a process in which a balance of a customer financial company account is increased and processed by the balance increase processing unit according to the embodiment of the present invention.

[0154] Reference is made to the term “charging” in that FIG. 8 illustrates a process of withdrawing funds from the customer-linked account (for example, a bank) and depositing the funds into the customer financial company account (for example, a securities account) through the first parent account system (for example, money).

[0155] Referring to FIG. 8, first, it is determined whether a user is valid. As an example, an operation S31 of checking whether the user is a tradable user may be performed.

[0156] Next, it is determined whether the account is valid. For example, an operation S32 of checking whether the bank linked to the customer-linked account is checked, whether the securities company linked to the customer financial company account is checked, and the state of the customer-linked account may be performed.

[0157] The user validity and account validity may be determined based on a previously generated message. The message may be generated by the message generation unit.

[0158] It is determined whether the transaction is possible (S33).

[0159] As a result of the determination, when the transaction is possible, it proceeds to an operation including the money charging process of FIG. 6 and the securities balance increasing process of FIG. 7 described above. As a result of the determination, when the transaction is impossible, the transaction is terminated. It is illustrated as the charging failure at the top of the drawing. This is a first embodiment of a charging failure, and corresponds to a withdrawal failure from a customer bank account.

[0160] Next, the money charging process is performed (S34). In the drawing, it is illustrated as the money charging (bank→money). Operation S34 corresponds to the money charging process of FIG. 6 described above. That is, the above-described operations S11 to S13 may be performed.

[0161] Operation S34 may be performed by the bank firm execution unit 122. Operations S11 to S13 may be performed by the first request recording unit 124, the first processing result receiving unit 125, and the first request processing result reflection unit 126.

[0162] The money charging result is determined (S35).

[0163] As a result of the determination, when the money charging succeeds, the transaction continuously proceeds. As a result of the determination, when the money charging fails, the transaction is terminated. It is illustrated as the charging failure at the top of the drawing. This is a second embodiment of the charging failure, and corresponds to the withdrawal failure from the customer bank account.

[0164] Subsequently, the securities balance increase process is performed (S36). Operation S36 corresponds to the securities balance increase process in FIG. 7 described above. That is, the above-described operations S21 to S23 may be performed.

[0165] Operation S36 may be performed by the securities firm execution unit 123. Operations S21 to S23 may be performed by the second request recording unit 127, the second processing result receiving unit 128, and the second request processing result reflection unit 129.

[0166] The securities balance increase result is determined (S37).

[0167] As a result of the determination, when the securities balance increase succeeds, the charging succeeds and thus the transaction is terminated. In this case, a balance increase transaction recording operation S38 may be additionally performed.

[0168] As a result of the determination, when the securities balance increase fails, the charging fails and thus the transaction is terminated. However, the reprocessing process may be performed. Since the success is achieved through the reprocessing process to be described below, the guidance to the user may be charging success. As described above, since the withdrawal has already been made from the customer-linked account, the reprocessing process is performed without immediately terminating the transaction. This is a third embodiment of the charging failure, and corresponds to a case in which withdrawals have been made from the customer bank account but failed to be reflected in the securities account. When it ends in this state, the reprocessing process may be performed until the deposit into the securities account succeeds. It is illustrated as FAIL\_TRY\_AGAIN BATCH FLOW in the drawing. The reprocessing process will be described below.

[0169] FIG. 9 is a diagram illustrating a detailed configuration of the first balance deduction processing unit 130 according to an embodiment of the present invention.

[0170] FIG. 10 is a flowchart illustrating an operation of the first balance deduction processing unit according to the embodiment of the present invention, centering on the securities firm.

[0171] FIG. 11 is a flowchart illustrating the operation of the first balance deduction processing unit according to the embodiment of the present invention, centering on the bank firm.

[0172] Note that, unlike the above-described FIGS. 6 and 7, the securities firm is first illustrated.

[0173] First, as illustrated in FIG. 9, the first balance deduction processing unit 130 may include a message generation unit 131, a bank firm execution unit 132, a securities firm execution unit 133, a first request recording unit 134, a first processing result receiving unit 135, a first request processing result reflection unit 136, a second request recording unit 137, a second processing result receiving unit 138, a second request processing result reflection unit 139, a failed case search unit 1391, a recovery process unit 1392, a non-reflected case search unit 1393, and a non-reflected case processing unit 1394.

[0174] Basically, the message generation unit 131 generates a related message when the customer requests the balance deduction. The bank firm execution unit 132 executes the bank firm system based on the generated message to transfer funds from the deposit firm parent account to the customer-designated account. The securities

firm execution unit 133 executes the securities firm system based on the generated message to deduct the balance of the customer financial company account through the transfer transaction between the financial company parent account and the customer financial company account.

[0175] Hereinafter, FIG. 10 is also referenced together with FIG. 9.

[0176] FIG. 10 illustrates a securities firm-centered operation when processing the balance deduction, and reference is made to the term “securities balance decrease process” in the drawing in that the balance of the customer financial company account (e.g., a securities account) is decreased by sending funds from the second parent account system (e.g., a securities system).

[0177] The first request recording unit 134 records the request in a securities firm request log securities\_firm\_request\_log based on the generated message (S51). In the drawing, it is illustrated as the securities balance deduction request record.

[0178] Meanwhile, as described above, the securities firm execution unit 133 executes the securities firm system SS based on the message generated by the message generation unit 131 to deduct the balance of the customer financial company account through the transfer transaction between the financial company parent account 212 and the customer financial company account 20. In the drawing, it is illustrated as the securities system and the balance decrease request.

[0179] Subsequently, the first processing result receiving unit 135 receives the balance deduction processing result according to the execution of the securities firm system (S52).

[0180] The first request processing result reflection unit 136 reflects the received processing result in the securities firm request log (S53). When the received processing result succeeds, the state is reflected as success for the recording. In the drawing, the securities balance increase is illustrated as success. When the received processing result fails, the state is reflected as failure for the corresponding record. In the drawing, the securities balance deduction is illustrated as failure.

[0181] Meanwhile, a case in which the balance deduction processing result is not received within a predetermined time due to any problems as described above may occur. It is illustrated as a timeout in the drawing. In this case, the securities balance deduction may be regarded as failure. Since no process that can be reversed in the procedure has been performed, it is regarded as failure to simplify the entire procedure.

[0182] As will be described below, when the securities balance deduction fails, the balance deduction process is no longer performed and ends. The balance deduction process ends because the balance deduction from the customer financial company account (for example, customer balance) has failed.

[0183] Conversely, if the securities balance deduction succeeds, the balance deduction process continuously proceeds.

[0184] Hereinafter, FIG. 11 is referred to.

[0185] FIG. 11 illustrates the bank firm-centered operation in the balance deduction processing, and reference is made to the term “money account remittance (money→bank)” in

the drawing in that funds are sent from the first parent account system (e.g., money) to the customer-designated account (e.g., bank).

[0186] The second request recording unit 137 records the request in the bank firm request log (bank\_firm\_request\_log) based on the generated message (S61). In the drawing, it is illustrated as the money account remittance request record.

[0187] Meanwhile, as described above, the bank firm execution unit 132 executes the bank firm system BS based on the message generated by the message generation unit 131 to transfer funds from the deposit firm parent account 116 to the customer-designated account 10. It is illustrated as the Van system/bank and remittance request at the bottom of the drawing.

[0188] Subsequently, the second processing result receiving unit 138 receives a transfer of funds processing result (success/failure) according to the execution of the bank firm system (S62).

[0189] The second request processing result reflection unit 139 reflects the received processing result in the bank firm request log (S63). When the received processing result succeeds, the state is reflected as success for the recording. In the drawing, the money charging is illustrated as success. When the received processing result fails, the state is reflected as failure for the corresponding record. In the drawing, money charging is shown as failure.

[0190] Meanwhile, a case in which the transfer of funds processing result is not received within a predetermined time due to any problems as described above may occur. It is illustrated as a timeout in the drawing. In this case, the money account remittance may be regarded as success. Note that the above-described operations S51 to S53 are the opposite of being processed as a failure in case of timeout. In the former case, this is because no process that can return is performed. In the latter case, since the securities balance deduction process has already been performed, the money account remittance is once processed as success to quickly return the desired result (i.e., account remittance has been completed normally) to a user. However, since no processing result is reflected in the corresponding message, the internal procedure for processing this is required, which can be performed by the non-reflected case search unit and the non-reflected case processing unit. It will be described below with reference to FIG. 14.

[0191] As will be described below, when the money account remittance fails, a recovery process is performed. The recovery of the customer balance, which is deducted from the customer financial company account (for example, securities account) for money account remittance, is requested. The recovery process corresponds to the process of returning the deducted customer balance to its original state.

[0192] Conversely, when the money account transfer succeeds, the procedure ends as the account remittance success.

[0193] Hereinafter, the entire flow including the above-described process of FIG. 10 and process of FIG. 11 will be described.

[0194] FIG. 12 is a diagram illustrating the overall flow of a process in which a balance of the customer financial company account is deducted and processed by the first balance deduction processing unit according to the embodiment of the present invention.

[0195] Reference is made to the term “account remittance” in that FIG. 12 illustrates a process of withdrawing funds

from the customer financial company account (for example, a securities account) and depositing the funds into the customer-designated account (for example, bank or securities company banks requested by a customer) through the first parent account system (for example, money).

[0196] Referring to FIG. 12, first, it is determined whether a user is valid. As an example, an operation S71 of checking whether the user is a tradable user may be performed.

[0197] Next, it is determined whether the account is valid. For example, an operation S72 of checking whether the bank linked to the customer-designated account is checked, whether the securities company linked to the customer financial company account is checked, and the state of the customer financial company account may be performed.

[0198] The user validity and account validity may be determined based on a previously generated message. The message may be generated by the message generation unit.

[0199] It is determined whether the transaction is possible (S73).

[0200] As a result of the determination, when the transaction is possible, it proceeds to an operation including the securities balance decrease process of FIG. 10 and the money account remittance process of FIG. 11 described above. As a result of the determination, when the transaction is impossible, the transaction is terminated. It is illustrated as the account remittance failure at the top of the drawing. This is the first embodiment of the account remittance failure, and corresponds to the customer balance deduction failure.

[0201] Next, the securities balance decrease process is performed (S74). Operation S74 corresponds to the securities balance decrease process in FIG. 10 described above. That is, the above-described operations S51 to S53 may be performed.

[0202] Operation S74 may be performed by the securities firm execution unit 133. Operations S51 to S53 may be performed by the first request recording unit 134, the first processing result receiving unit 135, and the first request processing result reflection unit 136.

[0203] The securities balance decrease result is determined (S75).

[0204] As a result of the determination, when the securities balance decrease succeeds, the transaction continuously proceeds. As a result of the determination, when the securities balance decrease fails, the transaction is terminated. It is illustrated as the account remittance failure at the top of the drawing. This is the second embodiment of the account remittance failure, and corresponds to the customer balance deduction failure.

[0205] Subsequently, the money account remittance process is performed (S76). In the drawing, it is illustrated as the money account remittance (bank→money). Operation S76 corresponds to the money account remittance process of FIG. 11 described above. That is, the above-described operations S61 to S63 may be performed.

[0206] Operation S76 may be performed by the bank firm execution unit 132. Operations S61 to S63 may be performed by the second request recording unit 137, the second processing result receiving unit 138, and the second request processing result reflection unit 139.

[0207] The money account remittance result is determined (S77).

[0208] As a result of the determination, when the money account remittance succeeds, the account remittance suc-

ceeds and thus the transaction is terminated. In this case, the balance decrease transaction recording operation S78 may be additionally performed.

[0209] As a result of the determination, when the money account remittance fails, the account remittance fails and thus the transaction is terminated. However, the recovery process may be performed. As described above, since the balance of the customer financial company account has already been deducted, the recovery process proceeds without immediately terminating the transaction. This is a third embodiment of the account remittance failure, and corresponds to a case where the customer securities account balance deduction succeeds but the remittance to the account fails.

[0210] The balance recovery processing process due to the account remittance failure is as follows.

[0211] The recovery of the customer balance, which is deducted from the securities account for account remittance, is requested. The recovery request is an asynchronous request, and does not have to be made in real time with the account remittance failure, and may be made at any time after the account remittance failure.

[0212] The securities balance increase process is performed based on the recovery request (S79). Operation S79 corresponds to the securities balance increase process in FIG. 7 described above. That is, the above-described operations S21 to S23 may be performed.

[0213] Operation S79 may be performed by the failed case search unit 1391 and the recovery process unit 1392. The failed case search unit searches for a request of which the processing result is recorded as a failure among the bank firm request logs. The recovery process unit performs the recovery process of recovering the balance deducted from the customer financial company account for the failed case searched by the failed case search unit.

[0214] Meanwhile, as described above, the balance increase processing unit 120 includes a non-reflected case search unit 1293 and a non-reflected case processing unit 1294. They operate on the bank firm-request log and the securities firm-request log.

[0215] The balance deduction processing unit 130 also includes a non-reflected case search unit 1393 and a non-reflected case processing unit 1394 that operate on the securities firm-request log and the bank firm-request log.

[0216] Since the operation of the non-reflected case search unit and the non-reflected case processing unit is important for logs, their operations will be described for each log.

[0217] First, the operation in the securities firm-request log will be described.

[0218] FIG. 13 is a diagram illustrating in detail operations of a non-reflected item search unit and a non-reflected case processing unit with respect to a security firm-request log according to an embodiment of the present invention.

[0219] Referring to FIG. 13, the non-reflected case search unit 1293 searches for a request of which the processing result is not reflected in the securities firm request log (S91). In the drawing, it is illustrated as finding a case where the processing result is not reflected among transaction cases within previous 15 to 20 minutes (find UNKNOWN from securities\_firm\_reuest\_log). This means that the search period of the non-reflected case search unit may be in the range of 15 to 20 minutes. In the present invention, the request of which the processing result is not reflected is referred to as the non-reflected case.

[0220] Next, it is confirmed whether the non-reflected case processing unit 1294 increases the balance (i.e., securities balance increase) according to the execution of the securities firm system SS by the securities firm execution unit 123 for the searched non-reflected case (S92). In the drawing, it is illustrated as the transaction result confirmation (confirm).

[0221] As a result of the confirmation, when the securities balance increases, the state of the non-reflected case changes to SUCCESS (S93). It is illustrated as the change to the SUCCESS state in the drawing. It may be reflected in the log by operation S23 of FIG. 7 described above.

[0222] As a result of the confirmation, when the securities balance is not increased, the state of the corresponding non-reflected case changes to FAIL (S94). It is illustrated as the change to FAIL\_TRY\_AGAIN state in the drawing. It may be reflected in the log by operation S23 of FIG. 7 described above. In this case, the reprocessing process may proceed, which will be described below with reference to FIG. 15.

[0223] The above-described operations S91 to S94 are performed in the same way in the balance deduction process. The differences are mainly described below.

[0224] The non-reflected case search unit 1393 searches for the message for which the processing result is not reflected in the securities firm request log (S91). In the drawing, it is illustrated as finding a case where the processing result is not reflected among transaction cases within previous 15 to 20 minutes (find UNKNOWN from securities\_firm\_reuest\_log).

[0225] Next, it is confirmed whether the non-reflected case processing unit 1394 increases the balance (i.e., securities balance deduction) according to the execution of the securities firm system SS by the securities firm execution unit 133 for the searched non-reflected case (S92). In the drawing, it is illustrated as the transaction result confirmation (confirm).

[0226] As a result of the confirmation, when the securities balance is deducted, the state of the corresponding non-reflected case changes to SUCCESS (S95). It is illustrated as the change to the SUCCESS state in the drawing. It may be reflected in the log by operation S23 of FIG. 10 described above. In this case, the recovery process may be performed. Since it was regarded as the failure as described above in FIG. 10, the procedure is simplified without reversing the guidance to the user who has failed. The recovery process may include a process of recovering the deducted balance of the customer financial company account. This recovery process may be substantially the same as described above with reference to FIG. 12.

[0227] As a result of the confirmation, when the securities balance is not deducted, the state of the corresponding non-reflected case changes to FAIL (S96). It is illustrated as the change to the FAIL state in the drawing. It may be reflected in the log by operation S23 of FIG. 10 described above. Note that there is a difference from being in the FAIL\_TRY\_AGAIN state in the balance increase processing process described above.

[0228] FIG. 14 is a diagram illustrating in detail operations of a non-reflected case search unit and a non-reflected case processing unit with respect to a bank firm-request log according to an embodiment of the present invention.

[0229] Referring to FIG. 14, the non-reflected case search unit 1293 searches for message for which the processing result is not reflected in the bank firm request log (S101). In

the drawing, it is illustrated as finding a case where the processing result is not reflected among transaction cases within previous 15 to 20 minutes (find UNKNOWN from bank\_firm\_reuest\_log). In the present invention, the message for which the processing result is not reflected is referred to as a non-reflected case.

[0230] Next, the non-reflected case processing unit 1294 confirms whether the transfer of funds (i.e., money charging) according to the execution of the bank firm system BS by the bank firm execution unit 122 for the searched non-reflected case is performed (S102). In the drawing, it is illustrated as the transaction result confirmation (confirm).

[0231] As a result of the confirmation, when the money charging is performed, the state of the corresponding non-reflected case changes to SUCCESS (S103). It is illustrated as the change to the SUCCESS state in the drawing. It may be reflected in the log by operation S13 of FIG. 6 described above. In this case, subsequent operations may be followed. That is, the securities balance increase process may be performed. That is, the process after operation S36 of FIG. 8 described above may be performed.

[0232] As a result of the confirmation, when the money charging is not performed, the state of the corresponding non-reflected case changes to FAIL (S104). It is illustrated as the change to the FAIL state in the drawing. It may be reflected in the log by operation S13 of FIG. 6 described above.

[0233] The above-described operations S101 to S104 are performed in the same way in the balance deduction processing process. The differences are mainly described below.

[0234] The non-reflected case search unit 1393 searches for a request of which the processing result is not reflected in the bank firm request log (S101). Similarly, in the drawing, it is illustrated as finding a case where the processing result is not reflected among transaction cases within previous 15 to 20 minutes (find UNKNOWN from bank\_firm\_reuest\_log).

[0235] Next, the non-reflected case processing unit 1394 confirms whether the transfer of funds (i.e., money account remittance) according to the execution of the bank firm system BS by the bank firm execution unit 132 for the searched non-reflected case is performed (S102). In the drawing, it is illustrated as the transaction result confirmation (confirm).

[0236] As a result of the confirmation, when the money account remittance is performed, the state of the corresponding non-reflected case changes to SUCCESS (S103). It is illustrated as the change to the SUCCESS state in the drawing. It may be reflected in the log by operation S63 of FIG. 11 described above.

[0237] As a result of the confirmation, when the money account remittance is not performed, the state of the corresponding non-reflected case changes to FAIL (S106). It is illustrated as the change to the FAIL state in the drawing. It may be reflected in the log by operation S63 of FIG. 10 described above. In this case, the recovery process may be followed, and a more detailed description thereof as described above with reference to FIG. 12 will be omitted. Note that, unlike FAIL, the recovery process is performed in the above-described balance increase processing process.

[0238] FIG. 15 is a diagram illustrating in detail operations of a failed case search unit and a reprocessing process unit according to an embodiment of the present invention. As described above, the balance increase processing unit

120 includes the failed case search unit 1291 and the reprocessing process unit 1292. In the case of the balance deduction processing unit 130, there is a difference in that it has a recovery process unit instead of a reprocessing process unit. A more detailed description of the recovery process as described above with reference to FIG. 12 will be omitted.

[0239] Referring to FIG. 15, the failed case search unit 1291 searches for a request of which processing result is recorded as failure among the securities firm request logs (S111). In the drawing, it is illustrated as find FAIL\_TRY\_AGAIN securities\_firm\_request\_log. In other words, it is finding FAIL\_TRY\_AGAIN instead of finding FAIL. It is founding the reprocessing target.

[0240] Subsequently, the reprocessing process unit 1292 performs the securities balance increase process (S115). It is illustrated as call addBalance securities balance increase request at the bottom of the drawing.

[0241] Operation S115 corresponds to the securities balance increase process in FIG. 7 described above. That is, the above-described operations S21 to S23 may be performed. Operations S21 to S23 may be performed by the second request recording unit 127, the second processing result receiving unit 128, and the second request processing result reflection unit 129.

[0242] As described above, in the balance increase processing process, since the withdrawal has already been made from the customer-linked account, even if the securities balance increase fails, the reprocessing process proceeds without immediately terminating the transaction, and the reprocessing process may be performed repeatedly until the securities account deposit succeeds.

[0243] According to the embodiment of the present invention in the above process, several operations (S112 to S114) may be further performed before performing operation S115.

[0244] In detail, after operation S111, it is possible to check whether there is a double payment in the balance (S112). In the drawing, it is illustrated as a check double payment. For example, it may be checked from whether the customer financial company account has already been charged with the same details. For example, it is possible to check whether charging has been performed twice with the same details for one charging request.

[0245] Alternatively, after operation S111, it may be checked whether the account is valid (S113). In the drawing, it is illustrated as a check securities subscription state. For example, it may be checked from whether the customer financial company account is valid.

[0246] Alternatively, after operation S111, the number of repetitions of the reprocessing process may be counted (S114). In the drawing, it is illustrated as a check failure count. For example, the number of times FAIL\_TRY\_AGAIN is recorded for one message may be counted. This is because the reprocessing process may not be repeated infinitely. For example, the maximum number of times of repetitions may be set, and it may be determined whether the number of times of failure counts exceeds the preset number of times.

[0247] When any one of the above operations is not satisfied, final failure processing may be performed, and in this case, the recovery process may be performed in which funds already brought through the previous money charging process are refunded to the customer-linked account.



[0248] Meanwhile, although the balance increase process and the balance deduction process were separately described above, they may be performed in parallel or sequentially. For example, when the balance of the customer financial company account is insufficient upon the balance deduction request, the balance deduction process may be performed after the charging through the above-described charging process. For example, when the balance deduction request of the customer is KRW 1.5 million and the balance of the customer financial company account is KRW 500,000, the process of charging KRW 1 million from the customer-linked account to the customer financial company account (i.e., after making the customer financial company account balance KRW 1.5 million) and then processing the balance deduction request by the first balance deduction processing unit described above may be performed.

[0249] In this case, it is sufficient to further include a deficit processing unit (not illustrated) that calculates the corresponding deficit and enters the charging process of FIG. 8 for the calculated deficit. The same description of the first balance deduction processing unit described above may be applied to the remaining components, and thus, a detailed description thereof will be omitted.

[0250] FIG. 16 is a diagram illustrating a detailed configuration of the second balance deduction processing unit 140 according to an embodiment of the present invention.

[0251] FIG. 17 is a block diagram illustrating a process of processing a balance deduction request by the second balance deduction processing unit 140 according to an embodiment of the present invention.

[0252] First, as illustrated in FIG. 16, the second balance deduction processing unit 140 may include a message generation unit 141, a digital signature information generation unit 142, an account remittance request unit 143, a request recording unit 144, a withdrawal result receiving unit 145, a request processing result reflection unit 146, a non-reflected case search unit 147, and a non-reflected case processing unit 148.

[0253] Basically, the message generation unit 141 generates a related message when the customer requests the balance deduction. The digital signature information generation unit 142 generates digital signature information using a certificate used for the simple payment service. The account remittance request unit 143 transfers the payment instruction including the generated message and the generated digital signature information to the financial company server 200 to request the account remittance (i.e., withdrawal).

[0254] Hereinafter, FIG. 17 is also referenced together with FIG. 16.

[0255] In FIG. 17, reference is made to the term “payment instruction process” in the drawing in that the payment instruction is transferred to the financial company server (e.g., a securities system) to reduce the balance of the customer financial company account (e.g., a securities account).

[0256] The request recording unit 144 records the request in the log based on the payment instruction (S121). In the drawing, it is illustrated as a payment instruction request record.

[0257] Meanwhile, as described above, the financial company server 200 confirms the payment instruction using the digital signature information and performs the account remittance through the external financial network. It is

shown as an account transfer (withdrawal) request and a securities system/financial cooperation network at the bottom of the drawing.

[0258] Subsequently, the withdrawal result receiving unit 145 receives the withdrawal result (success/failure) from the financial company server through the external financial network (S122).

[0259] The request processing result reflection unit 146 reflects the received withdrawal result in the log (S123). When the received processing result succeeds, the state is reflected as success for the recording. In the drawing, the account remittance (withdrawal) is illustrated as success. When the received processing result fails, the state is reflected as failure for the corresponding record. In the drawing, the account remittance (withdrawal) is illustrated as fail.

[0260] Meanwhile, a case may occur in which the remittance result is not received within a predetermined time due to any problems as described above. It is illustrated as a timeout in the drawing. In this case, for subsequent processing, it may be regarded as success or failure, and according to an embodiment of the present invention, it may be regarded as the withdrawal failure. Since no process that can be reversed in the procedure has been performed, it is regarded as failure to simplify the entire procedure.

[0261] When the withdrawal succeeds, the account remittance succeeds and thus the transaction is terminated. Conversely, even when the withdrawal fails, the transaction is terminated due to the account remittance failure.

[0262] Meanwhile, the balance deduction request processing process by the above-described second balance deduction processing unit assumes the case where the balance of the customer financial company account is sufficient, and when the balance is insufficient, the above-described charging process in FIG. 8 may be performed in parallel or in advance.

[0263] For example, when the customer exceeding the predetermined usage limit requests the balance deduction, the deficit of the customer financial company account is calculated, the calculated deficit is charged through the balance increase processing unit described above, and then the transfer of the payment instruction as described above may be performed. For example, when the balance deduction request of the customer is KRW 2.5 million and the balance of the customer financial company account is KRW 1.5 million, the process of charging KRW 1 million from the customer-linked account to the customer financial company account (i.e., after making the customer financial company account balance KRW 2.5 million) and then processing the balance deduction request by the second balance deduction processing unit described above may be performed.

[0264] In this case, it is sufficient to further include a deficit processing unit (not illustrated) that calculates the corresponding deficit and enters the charging process of FIG. 8 for the calculated deficit. The same description of the second balance deduction processing unit described above may be applied to the remaining components, and thus, a detailed description thereof will be omitted.

[0265] The term “system” used in this document may be a collection in which related elements are combined according to a certain rule in order to realize necessary functions. It may be a small collection (for example, a first parent account system, a second parent account system, a bank firm system, a securities firm system, etc.) in which the related

elements are combined in small units, or may be a large collection (for example, financial service provision system) in which all the related elements are combined. The system may include various modules that perform processing for performing financial services, such as transfer processing, on elements included in the system. A module may refer to a unit including one or a combination of two or more of, for example, hardware, software, or firmware. The module may be interchangeably used with terms such as, for example, unit, logic, logical block, component, or circuit.

**[0266]** A server according to an embodiment of the present invention may include a communication unit, a processor, and a memory. For example, the server may be a terminal, such as a computer, in which software or applications are installed. The communication unit is connected to the processor and the memory to transmit and receive data. The communication unit may be connected to another external device to transmit and receive data. Hereinafter, the expression transmitting and receiving “A” may refer to transmitting and receiving “information or data indicating A.” The communication unit may be implemented as circuitry in the server. For example, the communication unit may include an internal bus and an external bus. As another example, the communication unit may be an element that connects the server and an external device. The communication unit may be an interface. The communication unit may receive data from an external device and transmit the data to the processor and the memory. The processor processes the data received by the communication unit and the data stored in the memory. The “processor” may be a data processing device implemented in hardware having a circuitry having a physical structure for executing desired operations. For example, desired operations may include codes or instructions included in a program. For example, a data processing unit implemented in hardware may include a microprocessor, a central processing unit, a processor core, a multi-core processor, a multiprocessor, an application-specific integrated circuit (ASIC), and a field programmable gate array (FPGA). The processor executes a computer readable code (e.g., software) stored in memory and instructions invoked by the processor. The memory stores data received by the communication unit and data processed by the processor. For example, the memory may store a program (or application or software). The stored program or application may be a set of syntaxes that is coded to perform product payment and executable by a processor. According to one embodiment, the memory may include one or more of a volatile memory, a non-volatile memory, and a random access memory (RAM), a flash memory, a hard disk drive, and an optical disk drive. The memory stores the set of instructions (e.g., software or applications) that run the server. The set of instructions that run the server are executed by the processor.

**[0267]** The above-described embodiments of the present invention may be implemented by hardware components, software components, and/or combinations of hardware components and software components. For example, the devices, the methods, and the components described in the embodiments may be implemented using general purpose computers or special purpose computers such as a processor, a controller, an arithmetic logic unit (ALU), a digital signal processor, a microcomputer, a field programmable gate array (FPGA), a programmable logic unit (PLU), a microprocessor, or any other devices that may execute instructions and

respond to the instructions. A processing device may execute an operating system (OS) and software applications executed on the operating system. In addition, the processing device may access, store, manipulate, process, and generate data in response to execution of software. Although a case in which one processing device is used is described for convenience of understanding, it may be recognized by those skilled in the art that the process device may include a plurality of processing elements and/or multiple types of processing elements. For example, the processing device may include a plurality of processors or one processor and one controller. In addition, other processing configurations such as parallel processors are also possible.

**[0268]** The software may include computer programs, codes, instructions, or a combination of one or more thereof, and may configure the processing device to be operated as desired or independently or collectively command the processing device to be operated as desired. The software and/or the data may be permanently or temporarily embodied in any type of machine, component, physical device, virtual equipment, computer storage medium or device, or transmitted signal wave to be interpreted by the processing device or provide instructions or data to the processing device. The software may be distributed on computer systems connected to each other by a network to be thus stored or executed by a distributed method. The software and the data may be stored in computer-readable recording media.

**[0269]** In addition, embodiments of the present invention may be implemented in a form of program commands that may be executed through various computer means and may be recorded in a computer-readable recording medium. The computer-readable recording medium may include a program instruction, a data file, a data structure or the like, alone or a combination thereof. The program commands recorded in the computer-readable recording medium may be especially designed and configured for the embodiments or be known to those skilled in a field of computer software. Examples of the computer-readable recording medium may include magnetic media such as a hard disk, a floppy disk, or a magnetic tape, optical media such as a compact disk read only memory (CD-ROM) or a digital versatile disk (DVD), magneto-optical media such as a floptical disk, and a hardware device configured to store and execute program commands, such as a ROM, a RAM, a flash memory, or the like. Examples of the program commands include a high-level language code capable of being executed by a computer using an interpreter, or the like, as well as a machine language code made by a compiler. The above-described hardware device may be constituted to be operated as at least one software module to perform operations according to the embodiments of the present invention, and vice versa.

**[0270]** Hereinabove, although the present invention has been described by specific matters such as detailed components, exemplary embodiments, and the accompanying drawings, they have been provided only for assisting in the entire understanding of the present invention. Therefore, the present invention is not limited to the exemplary embodiments. Various modifications and changes may be made by those skilled in the art to which the present invention pertains from this description. Therefore, the spirit of the present invention should not be limited to these exemplary embodiments, but the claims and all of modifications equal or equivalent to the claims are intended to fall within the scope and spirit of the present invention.

## DESCRIPTION OF REFERENCE SIGNS

- [0271] 1: Financial service provision system
- [0272] 10: Customer-linked account
- [0273] 20: Customer financial company account
- [0274] 100: Simple payment company server
- [0275] 110: First parent account system
- [0276] 112: Withdrawal firm parent account
- [0277] 114: Collection parent account
- [0278] 116: Deposit firm parent account
- [0279] 200: Financial company server
- [0280] 210: Second parent account system
- [0281] 212: Financial company parent account
- [0282] BS: Bank firm system
- [0283] SS: Securities firm system
- [0284] 120, 130: Balance increase processing unit, First balance deduction processing unit
- [0285] 121, 131: Message generation unit
- [0286] 122, 132: Bank firm execution unit
- [0287] 123, 133: Securities firm execution unit
- [0288] 124, 134: First request recording unit
- [0289] 125, 135: First processing result receiving unit
- [0290] 126, 136: Request processing result reflection unit
- [0291] 127, 137: Second request recording unit
- [0292] 128, 138: Second processing result receiving unit
- [0293] 129, 139: Second processing result reflection unit
- [0294] 1291, 1391: Failed case search unit
- [0295] 1292, 1392: Reprocessing process unit, Recovery process unit
- [0296] 1293, 1393: Non-reflected case search unit
- [0297] 1294, 1394: Non-reflected case processing unit
- [0298] 140: Second balance deduction processing unit
- [0299] 141: Message generation unit
- [0300] 142: Digital signature information generation unit
- [0301] 143: Account remittance request unit
- [0302] 144: Request recording unit
- [0303] 145: Withdrawal result receiving unit
- [0304] 146: Request processing result reflection unit
- [0305] 147: Non-reflected case search unit
- [0306] 148: Non-reflected case processing unit
1. A financial service provision system for providing a financial service of attracting funds from customer-linked accounts to manage customer financial company accounts, the financial service provision system comprising:
- a simple payment company server that provides a simple payment service, including a first parent account system including one or more first parent accounts;
  - a financial company server that includes a second parent account system including one or more second parent accounts;
  - a bank firm system that manages a transfer of funds between the customer-linked account and the first parent account system or between a customer-designated account designated by a customer and the first parent account system; and
  - a securities firm system that manages a transfer of funds between the second parent account system and the customer financial company account,
- wherein, when the customer requests balance deduction, the balance deduction of the customer financial company account is processed through the bank firm system

- and the securities firm system, or processed through a payment instruction to the financial company server according to a transaction amount.
2. The financial service provision system of claim 1, further comprising:
- a first balance deduction processing unit that performs processing of remitting the funds to the customer-designated account using the bank firm system and processing of deducting the balance of the customer financial company account using the securities firm system when a customer requests the balance deduction within a predetermined usage limit; and
  - a second balance deduction processing unit that performs processing of transferring the payment instruction to the financial company server to deduct the balance of the customer financial company account when a customer requests the balance deduction exceeding the predetermined usage limit.
3. The financial service provision system of claim 2, wherein the first parent accounts include a withdrawal firm parent account, a collection parent account, and a deposit firm parent account, and
- the second parent accounts include a financial company parent account.
4. The financial service provision system of claim 3, wherein the first balance deduction processing unit includes:
- a message generation unit that generates a balance deduction request-related message;
  - a bank firm execution unit that executes the bank firm system based on the message to transfer the funds from the deposit firm parent account to the customer-designated account; and
  - a securities firm execution unit that executes the securities firm system based on the message to deduct the balance of the financial company account of the customer through an transfer transaction between the financial company parent account and the customer financial company account.
5. The financial service provision system of claim 4, wherein the first balance deduction processing unit further includes:
- a first request recording unit that records a request in a securities firm-request log based on the generated message;
  - a first processing result receiving unit that receives a balance deduction processing result according to the execution of the securities firm system; and
  - a first request processing result reflection unit that reflects the received processing result in the securities firm-request log.
6. The financial service provision system of claim 5, wherein the first balance deduction processing unit further includes:
- a second request recording unit that records a request in a bank firm-request log based on the generated message;
  - a second processing result receiving unit that receives a transfer of funds processing result according to the execution of the bank firm system; and
  - a second request processing result reflection unit that reflects the received processing result in the bank firm-request log.

7. The financial service provision system of claim 6, wherein the first balance deduction processing unit further includes:

- a failed case search unit that searches for a failed request of which the processing result is recorded as failure in the bank firm-request log; and
- a recovery process unit that performs a recovery process of recovering the deducted balance of the customer financial company account on the failed request.

8. The financial service provision system of claim 7, wherein the first balance deduction processing unit further includes:

- a non-reflected case search unit that searches for a non-reflected request of which the processing result is not reflected in the bank firm-request log; and
- a non-reflected case processing unit that confirms whether the transfer of the funds according to the execution of the bank firm system by the bank firm execution unit is performed on the non-reflected request, changes the state of the non-reflected request to a success state when the transfer of the funds is performed as a result of the confirmation, and changes the state of the non-reflected request to a failure state when the transfer of the funds is not performed as a result of the confirmation.

9. The financial service provision system of claim 3, wherein the second balance deduction processing unit includes:

- a message generation unit that generates a balance deduction request-related message;
- a digital signature information generation unit that generates digital signature information using a certificate used for the simple payment service; and
- an account remittance request unit that requests account remittance (withdrawal) by transferring the payment instruction including the message and the digital signature information to the financial company server.

10. The financial service provision system of claim 9, wherein the financial company server confirms the payment instruction using the digital signature information and performs the account remittance (withdrawal) through an external financial network.

11. The financial service provision system of claim 9, wherein the second balance deduction processing unit further includes:

- a request recording unit that records a request in a log based on the payment instruction;
- a withdrawal result receiving unit that receives a withdrawal result through an external financial network from the financial company server; and
- a request processing result reflection unit that reflects the received withdrawal result in the log.

12. The financial service provision system of claim 11, wherein the second balance deduction processing unit further includes:

- a non-reflected case search unit that searches for a request of which the withdrawal result is not reflected in the log; and
- a non-reflected case processing unit that confirms whether the withdrawal is performed through the external financial network by the financial company server for the non-reflected request, changes a state to success for the non-reflected request when the withdrawal is performed as a result of the confirmation, and changes the

state of the non-reflected request to a failure state when the withdrawal is not performed as the result of the confirmation.

13. The financial service provision system of claim 2, further comprising:

- a balance increase processing unit that performs processing of withdrawing the funds from the customer-linked account using the bank firm system and processing of increasing the balance of the customer financial company account using the securities firm system; and
- a third balance deduction processing unit that performs processing of calculating a deficit of the customer financial company account when the customer requests the balance deduction exceeding the predetermined usage limit, charging the deficit through the balance increase processing unit, and then transferring the payment instruction to the financial company server to deduct the balance of the customer financial company account.

14. A simple payment company server for providing a financial service of attracting funds from a customer-linked account to deposit the attracted funds into a customer financial company account,

wherein the simple payment company server is connected, through a network, to a financial company server that provides a simple payment service including a first parent account system including one or more first parent accounts, and

includes a second parent account system including one or more second parent accounts,

when a customer requests balance deduction, a balance of the customer financial company account is deducted through at least one of a first processing process and a second processing process according to a transaction amount,

the first processing process is performed through a bank firm system that manages a transfer of funds between the customer-linked account and the first parent account system or a transfer of funds between a customer-designated account designated by the customer and the first parent account system, and a securities firm system that manages a transfer of funds between the second parent account system and the customer financial company account, and

the second processing process is performed through a payment instruction transferred to the financial company server.

15. A financial company server for providing a financial service of attracting funds from a customer-linked account to deposit the attracted funds into a customer financial company account,

wherein the financial company server is connected, through a network, to a simple payment company server that provides a simple payment service, including a first parent account system that includes one or more first parent accounts, and

a second parent account system that includes one or more second parent accounts,

when a customer requests balance deduction, a balance of the customer financial company account is deducted through at least one of a first processing process and a second processing process according to a transaction amount,

the first processing process is performed through a bank firm system that manages a transfer of funds between the customer-linked account and the first parent account system or a transfer of funds between a customer-designated account designated by the customer and the first parent account system, and a securities firm system that manages a transfer of funds between the second parent account system and the customer financial company account, and

the second processing process is performed through a payment instruction received from the simple payment company server.

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