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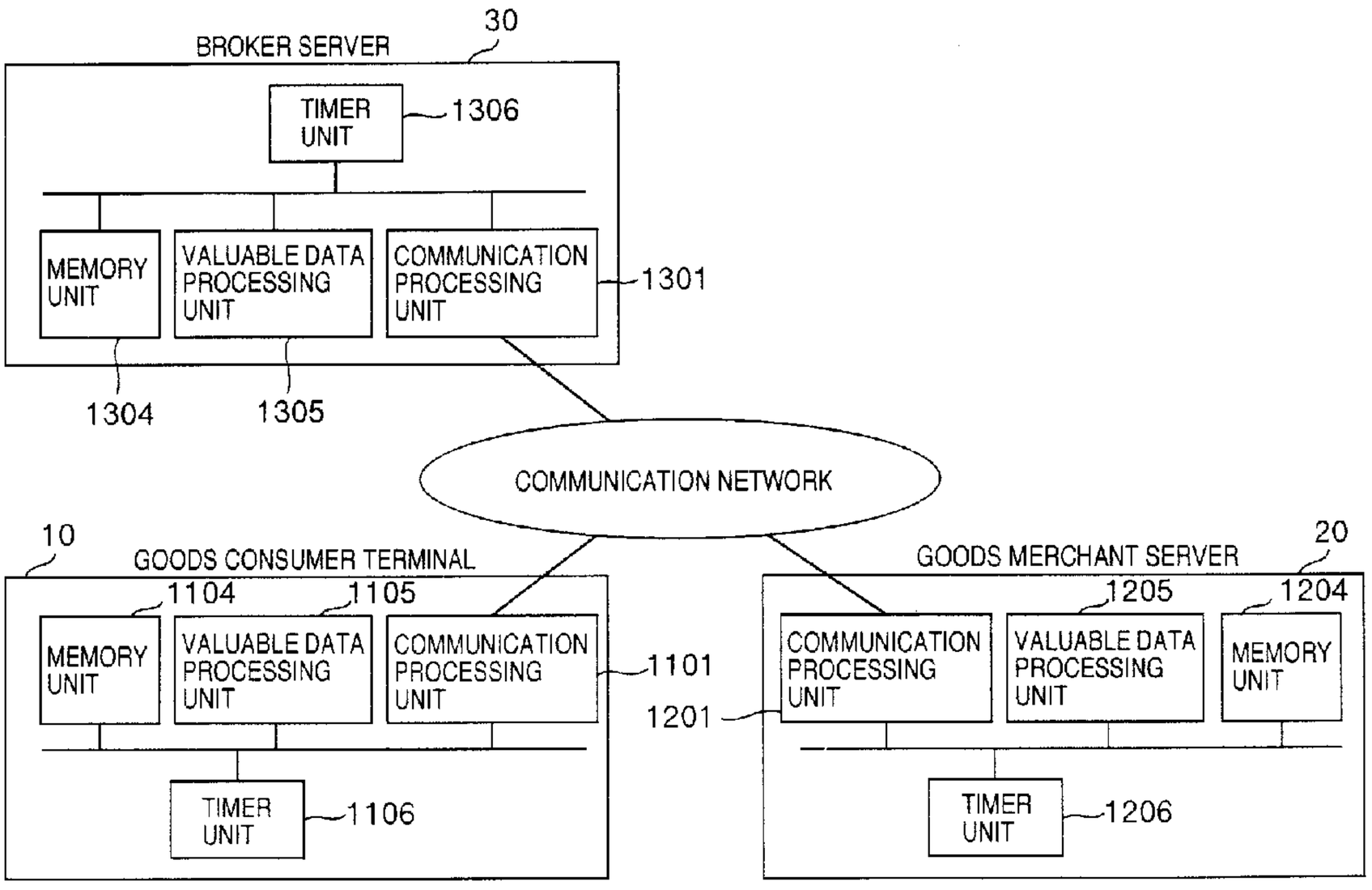


(57) Abrégé/Abstract:
An electronic trading method prevents unjust trading relative to prices or goods in an electronic trading using valuable data such as electronic money as settlement means. A broker server which temporarily stores electronic money, for example, is connected to a communication network. When electronic money is sent as a price of goods from a terminal of a goods consumer to a server of a goods merchant, the sending of electronic money is performed in two steps including sending of electronic money from the terminal of the consumer to the broker server and sending of electronic money from the broker server to the server of the merchant. The sending of electronic money from the broker server to the server of the merchant is performed when a predetermined settlement condition including a condition relative to the elapse of a designated date or reception of a receipt issued by the terminal of the consumer is brought into existence. When the consumer does not receive goods although a predetermined delivery date of goods has elapsed, the terminal of the consumer transmits a command for prohibiting settlement to the broker server. When the broker server receives the command, the broker server does not sent electronic money to the server of the merchant even if the settlement condition is brought into existence.

ABSTRACT OF THE DISCLOSURE

An electronic trading method prevents unjust trading relative to prices or goods in an electronic trading using valuable data such as electronic money as settlement means. A broker server which temporarily stores electronic money, for example, is connected to a communication network. When electronic money is sent as a price of goods from a terminal of a goods consumer to a server of a goods merchant, the sending of electronic money is performed in two steps including sending of electronic money from the terminal of the consumer to the broker server and sending of electronic money from the broker server to the server of the merchant. The sending of electronic money from the broker server to the server of the merchant is performed when a predetermined settlement condition including a condition relative to the elapse of a designated date or reception of a receipt issued by the terminal of the consumer is brought into existence. When the consumer does not receive goods although a predetermined delivery date of goods has elapsed, the terminal of the consumer transmits a command for prohibiting settlement to the broker server. When the broker server receives the command, the broker server does not sent electronic money to the server of the merchant even if the settlement condition is brought into existence.

AN ELECTRONIC TRADING METHOD

BACKGROUND OF THE INVENTION

The present invention relates to trading or transactions on a communication network and more particularly to a system capable of effecting commercial transactions using valuable data.

As the infrastructure of the information (communication) network represented by the internet is provided gradually completely, a so-called electronic trading for effecting commercial transactions on such a communication network is already put to practical use partially. The electronic trading is featured in that all or part of the following four steps for usual trading including (1) retrieval of goods or item merchant and goods or item, (2) ordering of the goods, (3) delivery of the goods and (4) settlement are performed on the network. As compared with the existing trading system, the electronic trading has advantages including wide selection of trading parties regardless of distance, high-speed trading through the network and easy trading management by electronic trading.

One of problems of the electronic trading is related to settlement means performed on the network. In the conventional trading, money is directly paid between men. The technique that such a settlement method is realized on the network is desired. As the settlement

technique in the electronic trading, electronic money and electronic checks are promising.

The electronic money is "electronic data" having the same worth as cash. In a system using the electronic money, electronic money information is stored in an exclusive IC card and electronic information is transmitted and received between two IC cards by means of exclusive terminals or apparatuses to thereby attain movement of the worth. This technique is known in the International Publication WO91/16691. In this example, the IC cards are directly authenticated each other upon movement of the electronic money. Particularly, application to small settlement or transactions capable of guarding the privacy and utilization by the younger generation are promising due to the characteristics of the electronic money including small fee upon settlement, anonymity and unnecessary supply of credit to the user.

Similarly, the electronic checks are electronic data having the same worth as ordinary checks. Electronic checks of the Financial Services Technology Consortium (FSTC) of the United State are known as an example thereof (http://www.fstc.org/index. html). In this example, a target is set to substitute the ordinary checks of paper by electronic data completely and a technique using an IC card to make an electronic signature is used.

Data having the worth of money such as the electronic money and the electronic checks is hereinafter

named "valuable data" generically.

In the electronic trading using the valuable data as payment means, however, a method in which the valuable data is simply used to perform settlement has the possibility that unjust transactions such as stealing of valuable data and goods by a goods consumer or purchaser or a goods merchant are performed. A method in which a consumer pays valuable data to a merchant through a network after mutual agreement on commercial transactions and the consumer then receives goods through a delivery system or the network has the possibility that there appears an evil-minded merchant who does not deliver the goods regardless of reception of the valuable data. On the contrary, a method in which valuable data is paid after a consumer has received goods has the possibility that there appears an evil-minded consumer who does not pay the valuable data regardless of reception of the goods.

In the latter case, it is considered that reception of payment is entrusted to a deliverer. That is, payment of the price is not made electronically by means of the network but the consumer pays the price to the deliverer upon reception of the goods. However, such a method has problems that this method cannot be applied to electronic goods such as softwares which are sent through the network, it takes time to reach a final settlement as compared with the electronic settlement, and management of the price requires much labor.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an electronic trading method which prevents unjust transactions of prices or goods in the electronic trading using valuable data as settlement means.

The above object is achieved by the following electronic trading method in the electronic trading system in which a plurality of information processing apparatuses including means for storing valuable data are connected to one another through a communication network.

In accordance with one aspect of the present invention there is provided a data process method for an electronic trading system including a first information processing apparatus for requiring purchase of goods, a second information processing apparatus for using a provider to provide the goods and a third information processing apparatus for mediating at least one of the goods and valuable data of the goods, said first, second, and third information processing apparatuses being connected via a communication network, comprising the steps of: transmitting request information for identifying the required goods and first guarantee information which guarantees the first information processing apparatus paying the valuable data from the first information processing apparatus to the third information processing apparatus; transmitting the

request information from the third information apparatus to the second information processing apparatus;

transmitting second guarantee information, which guarantees the required goods being sent, from the second information processing apparatus to the third information processing apparatus; and mediating trading between the first information processing apparatus and the second information processing apparatus by receiving the first guarantee information and the second guarantee information, in the third information processing apparatus.

In accordance with another aspect of the present invention there is provided an electronic trading mediation apparatus for mediating at least one of the goods and valuable data from a first information processing apparatus which requires purchase of goods and a second information processing apparatus which uses a provider to provide the goods through a communication network, comprising: a communication processing unit connected to the network, for receiving request information to identify the required goods and first guarantee information which guarantees payment of the valuable data from the first information processing apparatus, transmitting the request information to the second information processing apparatus, and receiving second guarantee information which guarantees the

required goods being sent from the second information processing apparatus; and a valuable data processing unit connected to said communication processing unit, for mediating trading between the first information processing apparatus and the second information processing apparatus by receiving the first guarantee information and the second guarantee information.

In accordance with yet another aspect of the present invention there is provided a goods consumer apparatus for requiring purchase of goods connected to a goods merchant apparatus and an electronic trading mediation apparatus for mediating at least one of goods and valuable data through a communication network, comprising: a first processing unit for making request information which identifies the required goods and first guarantee information which guarantees paying the valuable data; and a second processing unit connected to the communication network and said first processing unit, for transmitting the request information and the first guarantee information to the second information processing apparatus; wherein the electronic trading mediation apparatus mediates trading between the goods merchant apparatus and the goods consumer apparatus upon receipt of the first guarantee information and second guarantee information which guarantees sending the goods.

In accordance with still yet another aspect of the present invention there is provided a goods merchant apparatus connected to a goods consumer apparatus for requiring purchase of goods and an electronic trading mediation apparatus for mediating at least one of goods and valuable data through a communication network, comprising: a receiving unit connected to the communication network, for receiving request information which identifies the required goods which is transmitted via the electronic trading mediation apparatus; a processing unit connected to said receiving unit, for making second guarantee information which guarantees sending the goods; and a transmitting unit connected to said processing unit and the communication network, for transmitting the second guarantee information to the electronic trading mediation apparatus; wherein the electronic trading mediation apparatus mediates trading between the goods merchant apparatus and the goods consumer apparatus upon receipt of the first guarantee which guarantees paying the valuable data and second guarantee information which guarantees sending the goods.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a schematic diagram illustrating a system of the present invention;

Figs. 2A to 2C show contents of data used in each information processing apparatus;

Fig. 3 shows a list of communication messages transmitted and received between the information processing apparatuses;

Fig. 4 is a detailed flow chart showing processing in a consumer terminal of the present invention;

Fig. 5 is a detailed flow chart showing processing in a broker server of the present invention;

Fig. 6 is a detailed flow chart showing claim processing 6009 of a consumer; and

Fig. 7 is a detailed flow chart showing processing in a merchant server of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

An embodiment of the present invention is now described. In the embodiment, goods or items are limited to electronic articles and electronic money is used as an example. Trading or transactions processed by information processing apparatuses are described by way of example. Further, in the embodiment, a term of the information processing apparatuses is used as a general term of servers and terminals.

Fig. 1 is a block diagram schematically

illustrating an electronic trading system including a terminal 10 of a consumer (hereinafter referred to as a consumer terminal), a server 20 of a merchant (hereinafter referred to as a merchant server) and a server 30 of a broker (hereinafter referred to as a broker server) which constitute information processing apparatuses according to the present invention and the internal configuration and the mutual relation of the respective information processing apparatuses. Fig. 1 illustrates only three information processing apparatuses which are a minimum unit constituting the electronic trading system of the embodiment, while the electronic trading system includes a large number of apparatuses actually. The broker server is sufficiently reliable and does not depart from the apparatus configuration and the processing procedure defined in the embodiment.

Figs. 2A to 2C show structures of data used in the information processing apparatuses.

Fig. 3 shows a list of communication messages transmitted and received between the information processing apparatuses.

Fig. 4 is a flow chart showing a processing procedure in the consumer terminal 10 definitely. Fig. 6 is a flow chart showing a procedure of a consumer claim processing 6009 in detail. Figs. 5 and 7 are flow chart showing processing procedures in the broker server 30 and the merchant server 20 definitely, respectively.

<Description of Configuration of the Information Processing Apparatus>

Referring now to Fig. 1, the configuration of the information processing apparatuses is described.

The consumer terminal 10, the merchant server 20 and the broker server 30 have the same configuration basically and each include a communication processing unit (1101, 1201, 1301) connected to a communication network for transmitting and receiving data from other information processing apparatuses, a valuable data (electronic money) processing unit (1105, 1205, 1305) for inputting and outputting data through a display unit and an input unit to a user and controlling input, preservation and output of electronic money, a memory unit (1104, 1204, 1304) and a timer unit (1106, 1206, 1306). The timer unit preserves time data and the time data is increased at a constant rate with an elapse of time.

The valuable data (electronic money) processing unit 1205 of the merchant server 20 can be omitted depending on an embodiment. Detailed description will be made later.

<General Description of Communication Processing Flow>

The processing flow in the case where data is transmitted and received between the information processing apparatuses through the communication network is as follows. First of all, the information processing apparatus on the transmission side loads transmission data and an address of the information processing

apparatus on the reception side from the memory unit to the communication processing unit. Then, the communication processing unit transmits the transmission data to the information processing apparatus on the reception side designated by the address. The communication processing unit of the information processing apparatus on the reception side receives the data and stores the data in the memory unit. It is desirable that the cryptography is utilized to transmit and receive data so that confidence of data, prevention of modification of data and authentication of a communication party are made. The technique of confidence, prevention of modification and authentication of data is described in, for example, Kazuo Ohta, Kaoru Kurosawa and Osamu Watanabe, "Science of Information Security", Kodansha Blue Books, 1995, pp. 104-113, 144-153.

<Description of Contents of Data>

Referring now to Figs. 2A to 2C, contents of data preserved in the information processing apparatuses are described.

<Description of Trading and Ordering Information 3110>

The trading and ordering information 3110 is composed of a plurality of data items described below and is preserved in the memory unit 1104 of the consumer terminal 10. The contents of the data items are now described with reference to Fig. 2A.

The trading ID 3111 is an identifier for specifying trading uniquely on the communication network.

The trading ID consists of, for example, a combination of a number assigned to the consumer terminal 10 uniquely and an identifier of the consumer terminal 10. A consumer terminal identifier 31115 is an identifier for specifying the consumer terminal uniquely on the communication network. A merchant server identifier 3112 is an identifier for specifying the merchant server uniquely on the communication network. Contents of goods 3113 are ordering contents of goods. Names, types and number of goods are described in this item 3113. A delivery date 3114 is a term on which the consumer terminal 10 receives goods. Settlement conditions 3115 are conditions required when the broker server 30 performs settlement. That is, when the settlement condition is brought into existence, the broker server 30 performs settlement. There are two kinds of settlement conditions including a condition relative to reception of data and a condition relative to a term. The former includes reception of a receipt of goods and the latter includes a fixed term, a periodic term (20-th day of every month or the like) and a predetermined term after the broker server 30 has received electronic money.

<Description of Broker Information 3210>

The broker information 3210 is composed of a plurality of data items described below and is preserved in the memory unit 1304 of the broker server 30. Contents of the data items are now described with reference to Fig. 2B.

An amount of received electronic money 3211 represents an amount of electronic money transmitted from the consumer terminal 10 to the broker server 30. A consumer terminal identifier 3212 is an identifier for specifying the consumer terminal 10 which has transmitted the electronic money uniquely on the network. Contents of trading and ordering information 3110 are the same as those of Fig. 2A. That is, the trading and ordering information 3110 transmitted from the consumer terminal 10 through the network to the broker server 30 is utilized as it is.

<Description of Merchant Information 3310>

The merchant information 3310 is preserved in the memory unit 1204 of the merchant server 20. Contents thereof are the same as those of the broker information 3210 transmitted from the broker server 30.

<Contents of Communication Message>

Referring now to Fig. 3, contents of communication messages transmitted and received between the information processing apparatuses are described. All of the communication messages have two portions including a data portion and an identification portion (MSGIDn) used when the information processing apparatus identifies messages. Respective messages are now described in detail for each of the information processing apparatuses constituting transmission sources.

<Communication Message Transmitted by Consumer Terminal 10>

An ordering message 4101 is transmitted for the purpose of ordering goods. The data portion of this message includes the trading ID 3111, electronic money, the identifier 31115 of the consumer terminal, the identifier 3112 of the merchant server and the trading and ordering information 3110.

A consumer claim message 4102 is transmitted for the purpose of prohibiting settlement when the consumer terminal 10 does not receive goods although the delivery date 3114 has elapsed. The data portion of this message includes the trading ID 3111. The broker server 30 prohibits the merchant server 20 from performing settlement of trading corresponding to the trading ID 3111.

A receipt message 4103 is transmitted when the consumer terminal 10 receives goods. The data portion of this message includes the trading ID 3111. Further, data conversion for preventing forgery of data by a third party or repudiation of transmission of the person in question is applied to the data portion of this message. Concretely, there is a method of adding an electronic signature applying the public key cryptography (Kazuo Ohta, Kaoru Kurosawa and Osamu Watanabe, "Science of Information Security", Kodansha Blue Books, 1995, pp. 104-113, 144-153). The information processing apparatuses handle the message as a receipt of goods

relative to the trading ID 3111.

<Communication Message Transmitted by the Broker Server 30>

An ordering notification message 4201 is transmitted to the merchant server 20 in order to notify that goods are ordered and electronic money is transmitted from the consumer terminal 10. The data portion of this message includes the trading ID 3111, an amount of electronic money received by the broker server 30 with respect to the trading, the identifier of the consumer terminal and the trading and ordering information 3110.

A settlement message 4202 is transmitted to the merchant server 20 in order to complete settlement. The data portion of this message includes the trading ID 3111 and an amount of electronic money received by the broker server 30 with respect to the trading.

A rejection-of-ordering notification message 4203 is transmitted in order to notify the rejection of ordering to the consumer terminal 10 and return electronic money to the consumer terminal 10 when the merchant server 20 rejects ordering of goods. The data portion of this message includes the trading ID 3111 and an amount of electronic money received by the broker server with respect to the trading.

A goods transfer message 42035 is used in order to transfer (transmit) goods which the broker server 30 receives from the merchant server 20 to the consumer terminal 10. This message is transmitted to the consumer

terminal 10 when the broker server 30 receives a transfer-of-goods request message 43025 (described later) from the merchant server 20.

A receipt request message 4204 is transmitted in order to request the merchant server 20 to transmit a receipt. The data portion of this message includes the trading ID 3111.

An electronic money return message 4205 is transmitted in order to return electronic money to the consumer terminal 10 when the merchant server 20 does not transmit goods to the consumer terminal 10. The data portion of this message includes the trading ID 3111 and an amount of electronic money received by the broker server 30 with respect to the trading.

<Communication Message Transmitted by the Merchant server 20>

An ordering rejection message 4301 is transmitted in order that the merchant server 20 rejects ordering of goods. The data portion of this message includes the trading ID 3111.

A goods message 4302 is transmitted in order to transmit goods to the consumer terminal 10. The data portion of this message includes the trading ID 3111 and electronic goods. The transfer-of-goods request message 43025 is transmitted by the merchant server 20 when transfer of goods to the consumer terminal 10 is requested to the broker server. The data portion of this message includes the trading ID 3111 and goods. In the

embodiment, the merchant server 20 transmits goods to the consumer terminal 10, although when the merchant server cannot receive the receipt message 4103 from the consumer terminal 10, the transfer-of-goods request message 43025 is transmitted.

A receipt transfer message 4303 is transmitted in order to transfer a receipt to the broker server 30. The data portion of this message includes the receipt message 4103 received from the consumer terminal 10.

<Description of Processing in Information Processing Apparatuses>

Referring now to flow charts shown in Figs. 4, 5, 6 and 7, processing operation of the information processing apparatuses is described in detail. In Figures, communication messages represented by broken line are not necessarily transmitted. The consumer terminal 10, the broker server 30 and the merchant server 20 are described in order of description.

<Description of Processing in Consumer Terminal 10>

A processing flow in the consumer terminal 10 is shown in Fig. 4. Processing is performed with reference to the trading and ordering information 3110 shown in Fig. 2A in the following description.

First of all, the consumer terminal 10 prepares the ordering message 4101 on the basis of a purchase request of goods and transmits the request to the broker server 30 through the communication network (step 5001). This process corresponds to an ordering process of goods

in the general commercial trading.

The consumer terminal 10 then determines whether the consumer terminal receives the rejection-of-ordering notification message 4203 from the broker server 30 or not (step 5002). When the consumer terminal receives the rejection-of-ordering notification message 4203, the consumer terminal 10 stops processing. That is, the trading is stopped.

When the rejection-of-ordering notification message 4203 is not received, the consumer terminal determines on the basis of time data from the timer unit 1106 whether the delivery date 3114 elapses or not (step 5003). When the delivery date has elapsed, step 5006 is executed.

When the delivery date does not elapse, it is determined whether goods are received or not (step 5004). More particularly, it is determined whether any of the goods message 4302 or the goods transfer message 42035 is received or not. When the message is not received, the step 5002 and the subsequent steps are repeated. When the message is received, step 5005 is executed.

When any of the goods message 4302 or the goods transfer message 42035 is received, the receipt message 4103 is transmitted to the merchant server 20 designated by the merchant server identifier 3112 (step 5005). Then, the consumer terminal 10 finishes processing.

In step 5003, when the elapse of the delivery date 3114 is confirmed, the consumer claim message 4102

is transmitted to the broker server 30 (step 5006). This message is issued to thereby request the broker server 30 to prohibit the settlement of electronic money transmitted as the price of goods.

Then, the consumer terminal waits for reception of the electronic money return message 4205 from the broker server 30 (step 5007). After the electronic money return message 4205 is received, the consumer terminal 10 stops processing.

<Description of Processing in Broker Server 30>

The processing flow in the broker server 30 is now described with reference to Fig. 5.

First of all, the broker server 30 waits for reception of the ordering message 4101 (step 6002).

When the ordering message 4101 is received, the broker server 30 prepares the broker information 3210 and the ordering notification message 4201 on the basis of the received ordering message (step 6003). The broker information 3210 is stored in the memory 1304 and the ordering notification message 4201 is transmitted to the merchant server 20.

The broker sever 30 determines whether the ordering rejection message 4301 is received or not (step 6004).

When the ordering rejection message 4301 is not received, the broker server 30 determines whether the consumer claim message 4102 is received or not (step 6005).

When the consumer claim message 4102 is not received, the broker server 30 determines whether the transfer-of-goods request message 43025 is received or not (step 60055).

When the transfer-of-goods request message is not received, the broker server determines whether the settlement condition 3115 is brought into existence or not (step 6006).

When the settlement condition is brought into existence, the broker server 30 transmits the settlement message 4202 to the merchant server 20 (step 6007). The broker server 30 then finishes processing.

In step 6004, when the ordering rejection message 4301 is received, the rejection-of-ordering notification message 4301 is transmitted to the consumer terminal 10 (step 6008). The rejection-of-ordering notification message 4301 includes the same amount of electronic money as the amount of received electronic money 3211 included in the broker information 3210. The consumer terminal 10 which is a destination to which goods are transmitted is specified by the consumer terminal identifier 3212 in the broker information 3210. After execution of step 6008, the broker server 30 stops processing. That is, the trading is stopped.

In step 6005, when the consumer claim message 4102 is received, the consumer claim processing is performed (step 6009). Detailed operation in step 6009 is described later. In step 60055, when the transfer-of-

goods request message 43025 is received, the broker server 30 prepares the goods transfer message 42035 on the basis of the transfer-of-goods request message 43025 and transmits the message 42035 to the consumer terminal 10 (step 6010). Then, the broker server transmits the settlement message 4202 (step 6007).

The consumer claim processing 6009 is now described in detail with reference to Fig. 6.

The receipt request message 4204 is transmitted to the merchant server 20 (step 7001). The merchant server 20 is specified by the merchant server identifier 3112 in the broker information 3210.

Then, reception of the receipt transfer message 4303 from the merchant server 20 is waited (step 7002). When the message is received, step 7003 is executed. When the message is not received, step 70025 is executed.

When the elapsed time in the waiting state for the reception exceeds a predetermined threshold, it is determined to be the time-out and step 7004 is executed (step 70025). When the elapsed time does not exceed the threshold, the processing after step 7002 is repeated. The threshold is previously stored in the memory 1304 of the broker server 30.

In step 7002, when the receipt transfer message 4303 is received, the validation of the receipt message 4103 in the receipt transfer message 4303 is determined (step 7003). For example, when the electronic signature is added to the receipt message 4103, the validation of

the electronic signature is verified. As a method of the verification, there is known an example in which the public key cryptographic system described in, for example, Kazuo Ohta, Kaoru Kurosawa and Osamu Watanabe, "Science of Information Security", Kodansha Blue Books, 1995, pp. 104-113, 144-153 is applied.

In determination step 7003, when the receipt message is justifiable, the settlement processing is executed (step 6007). When the receipt message is not just, the electronic money return processing (step 7004) to the consumer terminal 10 is executed.

In reception of the receipt from the merchant server 20, when the receipt is not just or when the time out occurs, the electronic money return message 4205 is transmitted to the consumer terminal 10 to thereby return electronic money to the consumer terminal 10 (step 7004). Thereafter, the broker server 30 stops processing. That is, when the merchant cannot offer the evidence (receipt) that goods are exactly transmitted to the consumer, electronic money which is temporarily received as the price of goods is returned to the consumer and the trading is stopped. When the just receipt is offered, the settlement is performed.

<Description of Processing in Merchant server 20>

The processing flow in the merchant server 20 is now described with reference to Fig. 7.

The merchant server 20 waits for reception of the ordering notification message 4201 transmitted by the

broker server 30 (step 8001).

When the merchant server 20 receives the ordering notification message 4201, the merchant server 20 determines whether the amount 3211 of received electronic money in the ordering notification message 4201 is equal to the total price of goods or not (step 8002). For example, there is a determination method in which a data base for goods is preserved in the memory 1204 of the merchant server 20 and contents (price of goods) in the data base for goods and the price of the amount of received electronic money are compared with each other. When the amount is not equal to the total price of goods, the ordering rejection message 4301 is transmitted to the broker server 30 (step 8008). That is, the consumer terminal 10 is regarded to transmit the price for goods (electronic money) of an unjust amount of money and the merchant server 20 requests the broker server 30 to stop the trading.

When it is determined that the ordering notification message 4201 is valid, the merchant server 20 transmits the goods message 4302 to the consumer terminal 10 (step 8003). When the elapsed time after transmission of the goods message 4302 exceeds a predetermined threshold, it is determined that the time out occurs and the transfer-of-goods request processing (step 8009) is executed (step 80035). When the elapsed time does not exceed the threshold, the reception determination processing (step 8004) of the receipt

message 4103 is executed.

In step 80035, when it is determined that the time out occurs, the transfer-of-goods request message 43025 is transmitted to the broker server 30 (step 8009). This message is to request the broker server 30 to transfer data of goods. When the broker server 30 receives this message, the data of goods in the message is taken out to be transmitted to the consumer terminal 10.

In step 8004, it is determined whether the receipt message 4103 is received or not. When the receipt message is received, step 8005 is executed. When the receipt message is not received, the step 80035 and the subsequent steps are repeated.

In step 8005, the receipt transfer message 4303 is prepared on the basis of the received receipt message 4103 and is transmitted to the broker server 30. However, it is not necessarily required to transmit the receipt transfer message 4303 except the case where the settlement conditions 3115 which are data items in the merchant information 3310 include reception of the receipt.

The merchant server 20 determines whether the receipt request message 4204 is received or not (step 8006). When the receipt request message 4204 is not received, the settlement message reception determination processing (step 8007) is performed. When the receipt request message 4204 is received, the receipt message

transfer processing is performed (step 8010).

It is determined whether the settlement message 4202 is received or not (step 8007). When the settlement message 4202 is received, the merchant server 20 determines that the trading is completed and finishes the processing. When the settlement message 4202 is not received, the step 8006 and the subsequent steps are repeated.

In step 8006, when the receipt request message 4204 is received, the receipt transfer message 4303 is transmitted to the broker server 30 and thereafter the settlement message reception determination processing (step 8007) is performed (step 8010).

As described above, When the consumer terminal 10 does not receive goods, the consumer terminal 10 issues a claim to the broker server 30 and prohibits the settlement to thereby prevent that the merchant obtains the price of goods without sending of goods. Further, the consumer terminal 10 can transmit the price of goods to the broker server 30 before arrival of goods to thereby prevent that the consumer obtains goods without payment of the price of goods. Furthermore, the merchant server 20 can request the broker server 30 to transfer goods to the consumer terminal 10 to thereby prevent that the consumer terminal 10 issues an unjust claim without sending of the receipt although the consumer terminal 10 receives goods.

Various modifications and applications can be

made in the present invention without departing from the spirit and scope thereof. For example, valuable data for several cases of trading may be collected to be transferred from the broker server 30 to the merchant server 20. To this end, for example, the valuable data is removed from the settlement message 4202 and is transferred as another process. The valuable data is not limited to be transferred to the merchant server 20 and may be transferred to a fourth information processing apparatus. It is considered that the fourth information processing apparatus includes a server for managing a financial agency, for example.

Further, in the sending order to the broker server 30, it is not necessary to send valuable data in advance of goods. After the merchant sends data of goods to the broker server, the consumer may send valuable data to the broker server.

The program for performing the processing shown in Fig. 4 is stored in the memory unit 1104 of the consumer terminal 10, while the program can be stored in a portable memory medium such as an optical disk or a floppy disk and can be transferred to the memory unit 1104 to be executed. The same thing is applied to the processing shown in Figs. 5, 6 and 7.

As described above, according to the present invention, there is provided the broker server and the valuable data transmitted from the goods consumer to the goods merchant is held in the broker server temporarily.

When the settlement condition is brought into existence, the valuable data can be transmitted to the goods merchant to thereby prevent unjust obtainment of the price or goods in the electronic trading.

CLAIMS:

1. A data process method for an electronic trading system including a first information processing apparatus for requiring purchase of goods, a second information processing apparatus for using a provider to provide the goods and a third information processing apparatus for mediating at least one of the goods and valuable data of the goods, said first, second, and third information processing apparatuses being connected via a communication network, comprising the steps of:

transmitting request information for identifying the required goods and first guarantee information which guarantees the first information processing apparatus paying the valuable data from the first information processing apparatus to the third information processing apparatus;

transmitting the request information from the third information apparatus to the second information processing apparatus;

transmitting second guarantee information, which guarantees the required goods being sent, from the second information processing apparatus to the third information processing apparatus; and

mediating trading between the first information processing apparatus and the second information processing apparatus by receiving the first guarantee

information and the second guarantee information, in the third information processing apparatus.

2. A data processing method according to Claim 1, wherein:

said first guarantee information represents valuable data for the required goods; and

said mediating step includes a sub-step of transmitting the valuable data from the third information processing apparatus to the second information processing apparatus.

3. A data processing method according to Claim 1, wherein:

said second guarantee information represents electronic goods which is the required goods; and

said mediating step includes a sub-step of transmitting the electronic goods from the third information processing apparatus to the first information processing apparatus.

4. A data processing method according to Claim 1, wherein:

said second guarantee information represents receipt data of the goods, which is transmitted from the first information processing apparatus to the second information processing apparatus; and

in said mediating step, the third information processing apparatus mediates if the third information processing apparatus receives the receipt data.

5. A data processing method according to Claim 4, wherein:

said first guarantee information represents valuable data for the required goods; and

in said mediating step, the third information processing apparatus transmits the valuable data to the second information processing apparatus if the third information processing apparatus receives the receipt data.

6. A data processing method according to Claim 1, further comprising:

holding deadline information which shows delivery date of the goods in the first information processing apparatus; and

transmitting information which shows non-delivery of the goods from the first information processing apparatus to the third information processing apparatus if the goods is not received.

7. A data processing method according to Claim 1, further comprising:

transmitting an identifier of the second information processing apparatus from the first

information processing apparatus to the third information processing apparatus; and

wherein said request information is transmitted from the third information processing apparatus to the second information processing apparatus in accordance with the identifier.

8. A data processing method according to Claim 1, wherein said request information represents goods content data containing at least of the name of the goods and number of the goods.

9. An electronic trading mediation apparatus for mediating at least one of the goods and valuable data from a first information processing apparatus which requires purchase of goods and a second information processing apparatus which uses a provider to provide the goods through a communication network, comprising:

a communication processing unit connected to the network, for receiving request information to identify the required goods and first guarantee information which guarantees payment of the valuable data from the first information processing apparatus, transmitting the request information to the second information processing apparatus, and receiving second guarantee information which guarantees the required goods being sent from the second information processing apparatus; and

a valuable data processing unit connected to said communication processing unit, for mediating trading between the first information processing apparatus and the second information processing apparatus by receiving the first guarantee information and the second guarantee information.

10. An electronic trading mediation apparatus according to Claim 9, wherein:

said first guarantee information represents valuable data for the required goods; and

said valuable data processing unit controls said communication processing unit to transmit the valuable data to the second information processing apparatus.

11. An electronic trading mediation apparatus according to Claim 9, wherein said valuable data processing unit controls said communication processing unit to transmit the electronic goods to the first information processing apparatus.

12. An electronic trading mediation apparatus according to Claim 9, wherein:

said second guarantee information represents receipt of data of the goods, which is transmitted from the first information processing apparatus to the second information processing apparatus; and

said valuable data processing unit mediates trading between the first information processing apparatus and the second information processing apparatus if said communication processing unit receives the receipt data.

13. An electronic trading mediation apparatus according to Claim 12, wherein:

said first guarantee information represents valuable data for the required goods; and

said valuable data processing unit controls said communication processing unit to transmit the valuable data to the second information apparatus if said communication processing unit receives the receipt data.

14. An electronic trading mediation apparatus according to Claim 9, wherein:

said communication processing unit receives deadline information which shows delivery date of the goods held in the first information processing apparatus; and

said valuable data processing unit stops mediating trading between the first information processing apparatus and the second information processing apparatus, based on the received information.

15. An electronic trading mediation apparatus according to Claim 9, wherein:

said communication processing unit receives an identifier of the second information processing apparatus from the first information processing apparatus, and transmits the request information to the identified second information processing apparatus by the identifier.

16. An electronic trading mediation apparatus according to Claim 9, wherein said request information represents goods content data containing at least one of name of the goods and number of the goods.

17. A goods consumer apparatus for requiring purchase of goods connected to a goods merchant apparatus and an electronic trading mediation apparatus for mediating at least one of goods and valuable data through a communication network, comprising:

a first processing unit for making request information which identifies the required goods and first guarantee information which guarantees paying the valuable data; and

a second processing unit connected to the communication network and said first processing unit, for transmitting the request information and the first guarantee information to the second information processing apparatus;

wherein the electronic trading mediation apparatus mediates trading between the goods merchant

apparatus and the goods consumer apparatus upon receipt of the first guarantee information and second guarantee information which guarantees sending the goods.

18. A goods merchant apparatus connected to a goods consumer apparatus for requiring purchase of goods and an electronic trading mediation apparatus for mediating at least one of goods and valuable data through a communication network, comprising:

a receiving unit connected to the communication network, for receiving request information which identifies the required goods which is transmitted via the electronic trading mediation apparatus;

a processing unit connected to said receiving unit, for making second guarantee information which guarantees sending the goods; and

a transmitting unit connected to said processing unit and the communication network, for transmitting the second guarantee information to the electronic trading mediation apparatus;

wherein the electronic trading mediation apparatus mediates trading between the goods merchant apparatus and the goods consumer apparatus upon receipt of the first guarantee which guarantees paying the valuable data and second guarantee information which guarantees sending the goods.

FIG.1

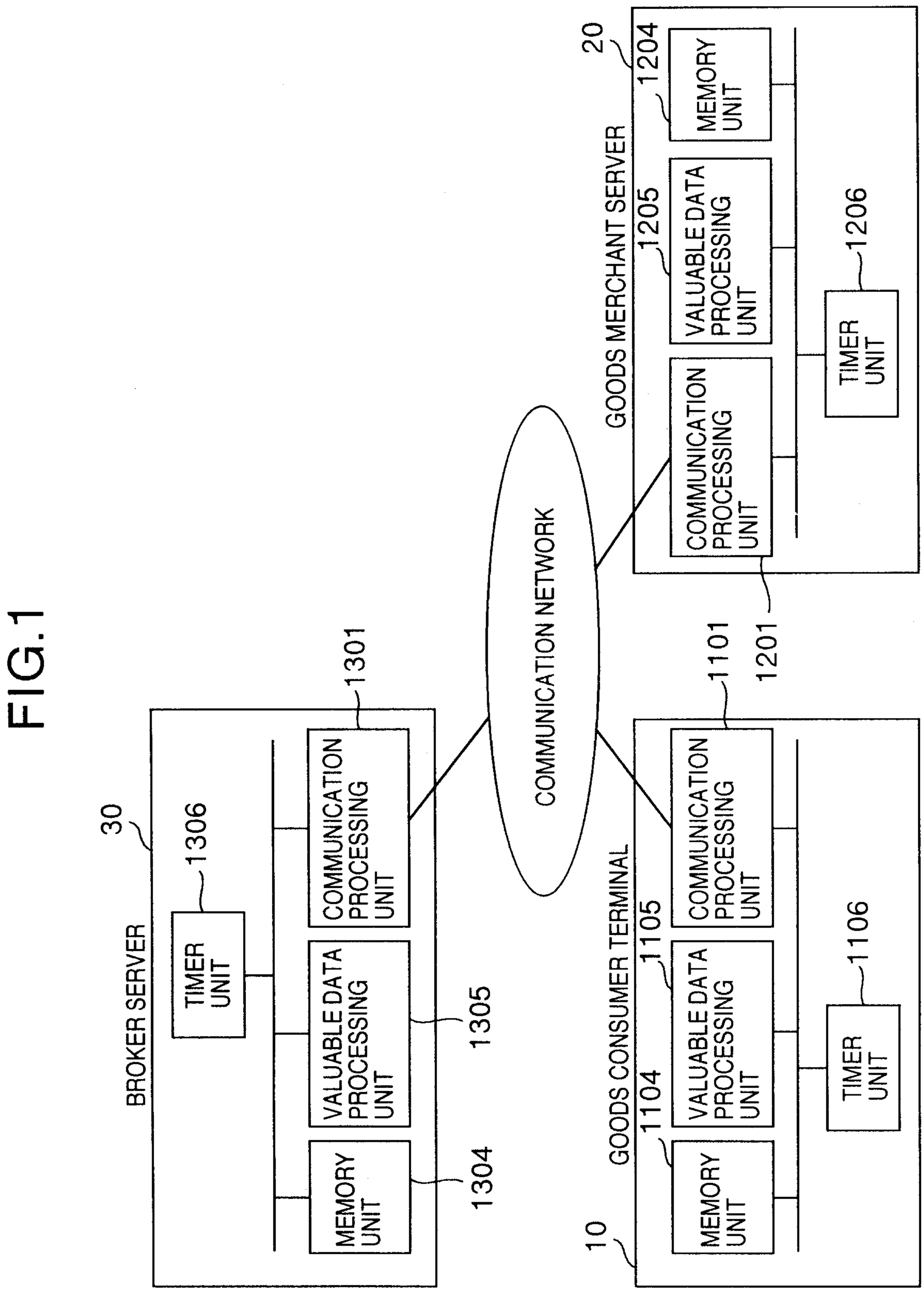

BROKER SERVER
30
TIMER UNIT
1306
COMMUNICATION PROCESSING UNIT
1301
VALUABLE DATA PROCESSING UNIT
1305
MEMORY UNIT
1304
COMMUNICATION NETWORK
GOODS CONSUMER TERMINAL
10
MEMORY UNIT
1104
VALUABLE DATA PROCESSING UNIT
1105
COMMUNICATION PROCESSING UNIT
1101
1201
TIMER UNIT
1106
GOODS MERCHANT SERVER
20
MEMORY UNIT
1204
VALUABLE DATA PROCESSING UNIT
1205
COMMUNICATION PROCESSING UNIT
TIMER UNIT
1206

FIG.2A

3110 31115 3112 3113 3114 3115

3111

TRADING AND ORDERING INFORMATION					
TRADING ID	CONSUMER TERMIMAL IDENTIFIER	MERCHANT SERVER IDENTIFIER	CONTENTS OF GOODS	DELIVERY DATE	SETTLEMENT CONDITIONS
365	teramura. x. co. jp	rshop. shop. co. jp	NATURAL IMAGES 1,2	RECEPTION TIME OF BROKER +2 DAYS	RECEPTION TIME OF BROKER +10 DAYS

FIG.2B

3210 3211 3212 3110

BROKER INFORMATION		
AMOUNT OF RECEIVED ELECTRONIC MONEY	CONSUMER TERMINAL IDENTIFIER	TRADING AND ORDERING INFORMATION
¥ 3,000	teramura. x. co. jp	TRADING AND ORDERING INFORMATION 1

FIG.2C

MERCHANT INFORMATION	3310
BROKER INFORMATION	3210

FIG.3

TRANSMISSION	RECEPTION	MESSAGE NAME	REFERENCE NUMBER	CONTENTS
CONSUMER TERMINAL	BROKER SERVER	ORDERING	4101	MSGID1, TRADING ID, CONSUMER TERMINAL IDENTIFIER, MERCHANT SERVER IDENTIFIER, TRADING AND ORDERING INFORMATION
	BROKER SERVER	CONSUMER CLAIM	4102	MSGID2, TRADING ID
	MERCHANT SERVER	RECEIPT	4103	MSGID3, TRADING ID
BROKER SERVER	MERCHANT SERVER	ORDERING NOTIFICATION	4201	MSGID4, TRADING ID, ELECTRONIC MONEY AMOUNT, CONSUMER TERMINAL IDENTIFIER, TRADING AND ORDERING INFORMATION
	MERCHANT SERVER	SETTLEMENT	4202	MSGID5, TRADING ID, CONSUMER TERMINAL IDENTIFIER
	CONSUMER TERMINAL	ORDERING REJECTION NOTIFICATION	4203	MSGID6, TRADING ID, CONSUMER TERMINAL IDENDIFIER
	CONSUMER TERMINAL	TRANSFER OF GOODS	42035	MSGID7, TRADING ID, GOODS
	MERCHANT SERVER	RECEIPT REQUEST	4204	MSGID8, TRADING ID
	CONSUMER TERMINAL	RETURN OF ELECTRONIC MONEY	4205	MSGID9, TRADING ID, ELECTRONIC MONEY
MERCHANT SERVER	BROKER SERVER	ORDERING REJECTION	4301	MSGID10, TRADING ID,
	CONSUMER TERMINAL	GOODS	4302	MSGID11, TRADING ID, GOODS
	BROKER SERVER	GOODS TRANSFER REQUEST	43025	MSGID12, TRADING ID, GOODS
	BROKER SERVER	RECEIPT TRANSFER	4303	MSGID13, TRADING ID, RECEIPT MESSAGE

FIG.4

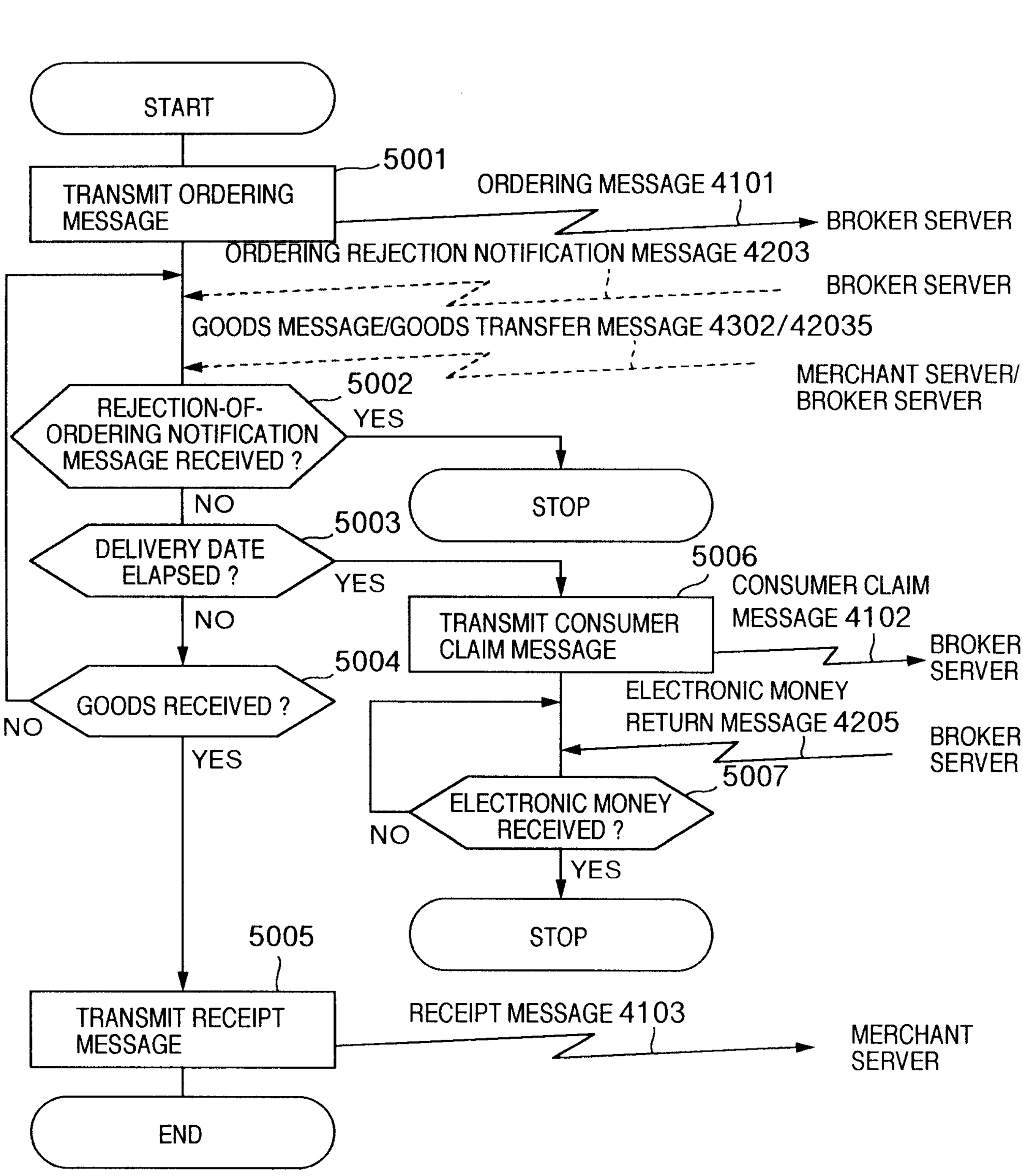

10
START
5001
TRANSMIT ORDERING MESSAGE
ORDERING MESSAGE 4101
BROKER SERVER
ORDERING REJECTION NOTIFICATION MESSAGE 4203
BROKER SERVER
GOODS MESSAGE/GOODS TRANSFER MESSAGE 4302/42035
MERCHANT SERVER/ BROKER SERVER
5002
REJECTION-OF-ORDERING NOTIFICATION MESSAGE RECEIVED ?
YES
STOP
NO
5003
DELIVERY DATE ELAPSED ?
YES
5006
CONSUMER CLAIM MESSAGE 4102
TRANSMIT CONSUMER CLAIM MESSAGE
BROKER SERVER
NO
5004
GOODS RECEIVED ?
ELECTRONIC MONEY RETURN MESSAGE 4205
BROKER SERVER
NO
YES
5007
ELECTRONIC MONEY RECEIVED ?
NO
YES
STOP
5005
TRANSMIT RECEIPT MESSAGE
RECEIPT MESSAGE 4103
MERCHANT SERVER
END

FIG.5

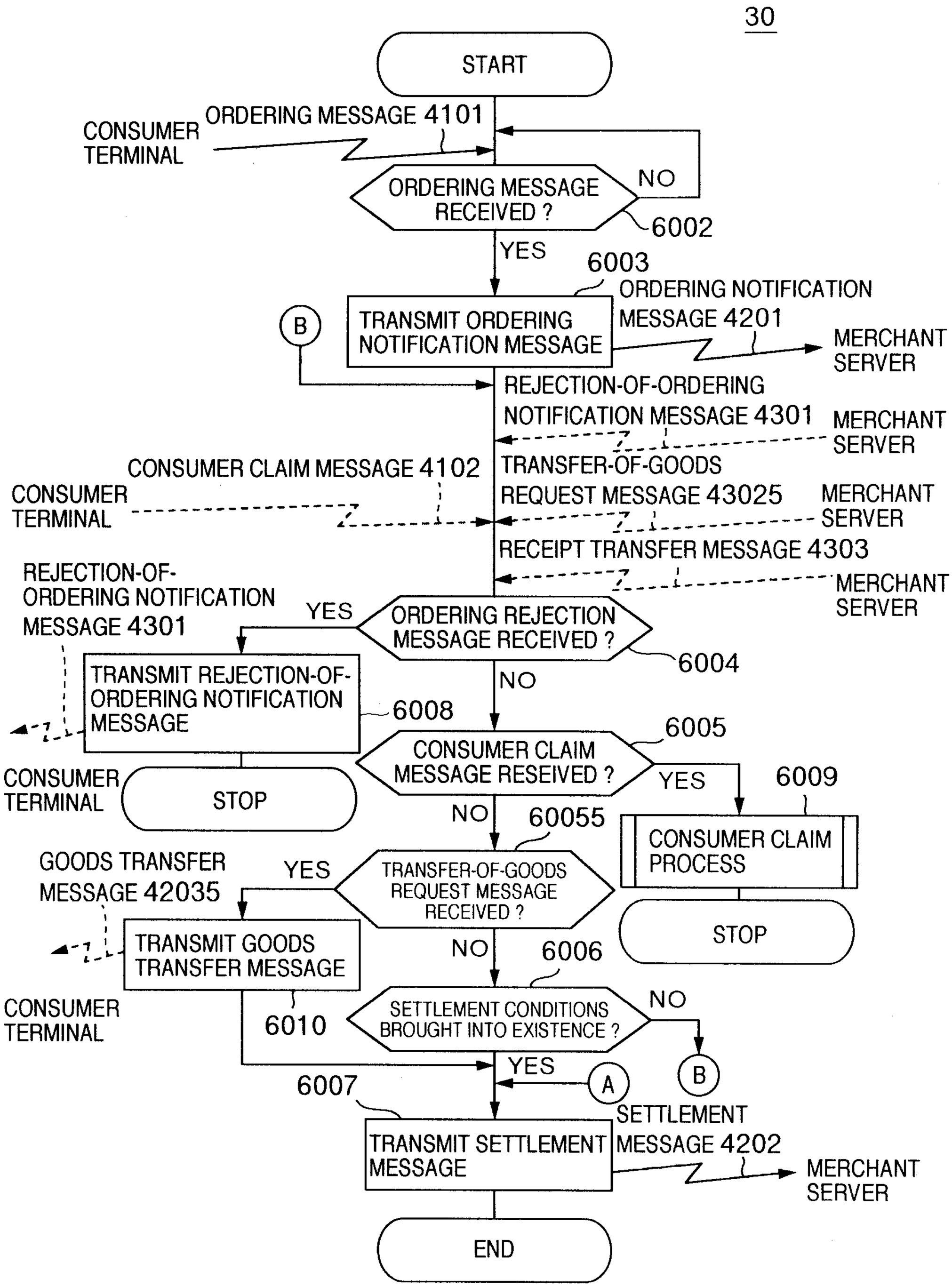

30
START
ORDERING MESSAGE 4101
CONSUMER TERMINAL
ORDERING MESSAGE RECEIVED ?
NO
6002
YES
6003
ORDERING NOTIFICATION MESSAGE 4201
TRANSMIT ORDERING NOTIFICATION MESSAGE
B
MERCHANT SERVER
REJECTION-OF-ORDERING NOTIFICATION MESSAGE 4301
MERCHANT SERVER
CONSUMER CLAIM MESSAGE 4102
CONSUMER TERMINAL
TRANSFER-OF-GOODS REQUEST MESSAGE 43025
MERCHANT SERVER
RECEIPT TRANSFER MESSAGE 4303
MERCHANT SERVER
REJECTION-OF-ORDERING NOTIFICATION MESSAGE 4301
YES
ORDERING REJECTION MESSAGE RECEIVED ?
6004
TRANSMIT REJECTION-OF-ORDERING NOTIFICATION MESSAGE
6008
NO
6005
CONSUMER TERMINAL
STOP
CONSUMER CLAIM MESSAGE RESEIVED ?
YES
6009
NO
60055
CONSUMER CLAIM PROCESS
GOODS TRANSFER MESSAGE 42035
YES
TRANSFER-OF-GOODS REQUEST MESSAGE RECEIVED ?
STOP
TRANSMIT GOODS TRANSFER MESSAGE
NO
6006
CONSUMER TERMINAL
6010
SETTLEMENT CONDITIONS BROUGHT INTO EXISTENCE ?
NO
YES
A
B
6007
SETTLEMENT MESSAGE 4202
TRANSMIT SETTLEMENT MESSAGE
MERCHANT SERVER
END

FIG.6

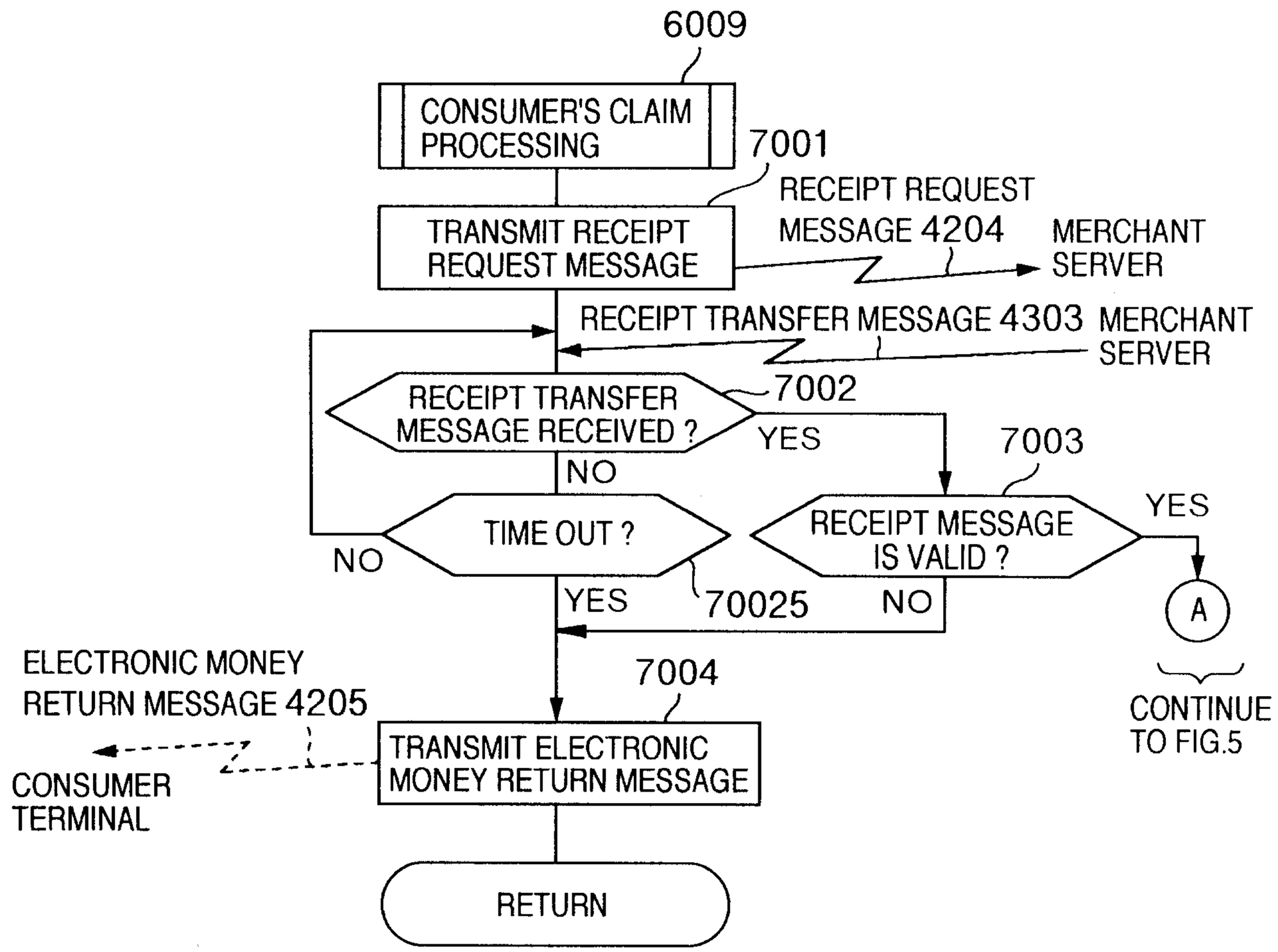
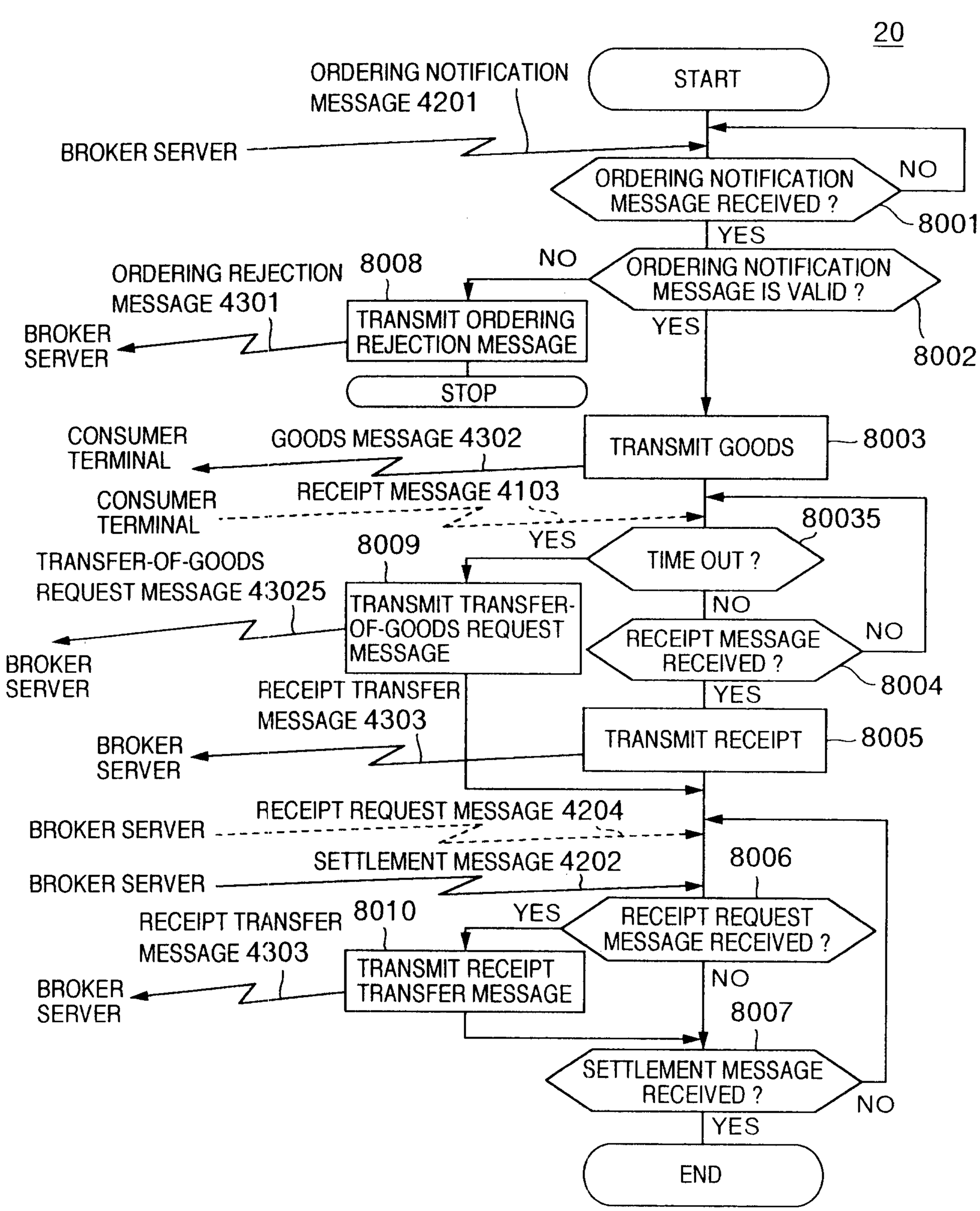
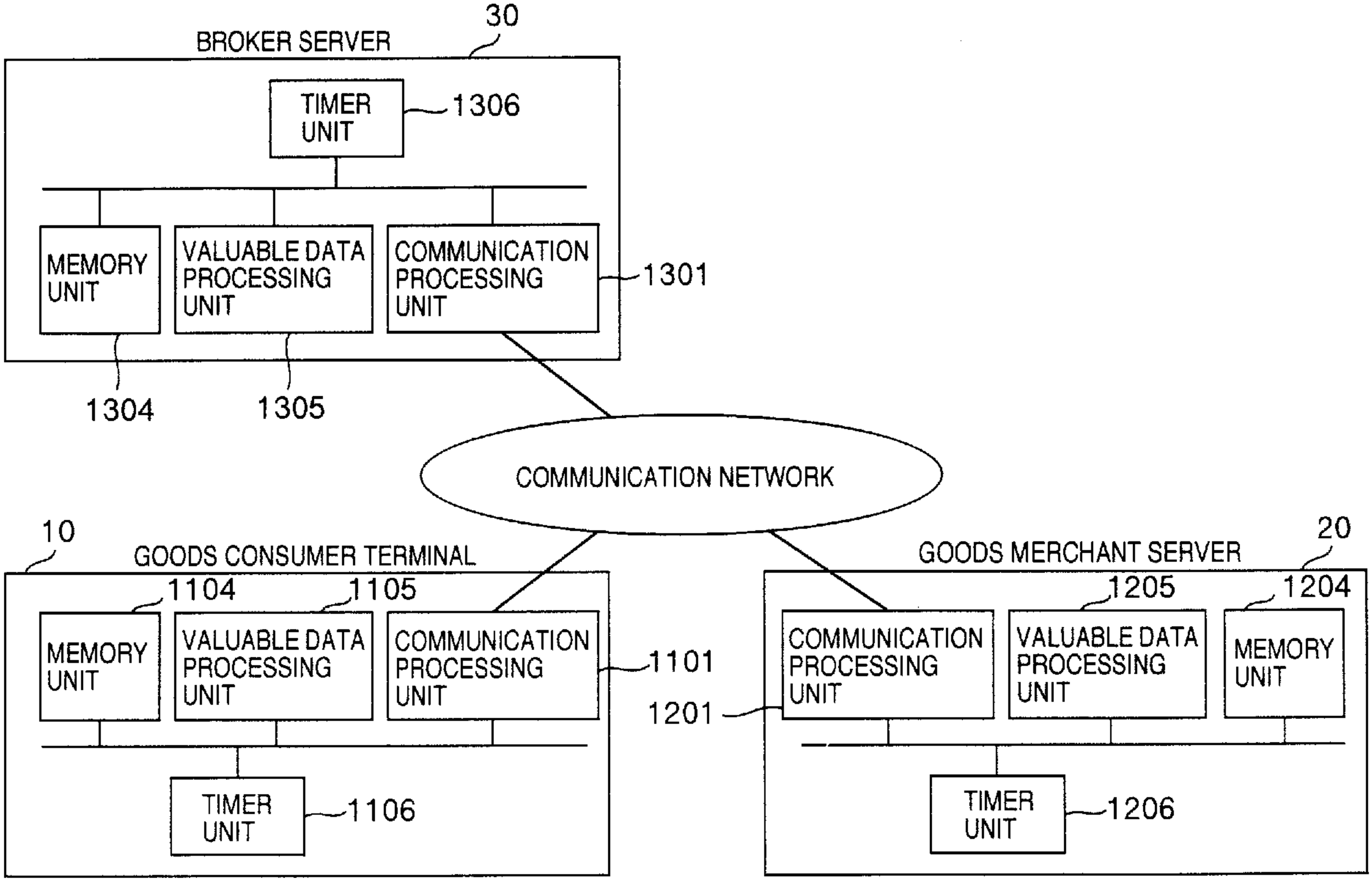

6009
CONSUMER'S CLAIM PROCESSING
7001
TRANSMIT RECEIPT REQUEST MESSAGE
RECEIPT REQUEST MESSAGE 4204
MERCHANT SERVER
RECEIPT TRANSFER MESSAGE 4303
MERCHANT SERVER
7002
RECEIPT TRANSFER MESSAGE RECEIVED ?
YES
NO
7003
TIME OUT ?
RECEIPT MESSAGE IS VALID ?
YES
NO
NO
YES
70025
A
CONTINUE TO FIG.5
ELECTRONIC MONEY RETURN MESSAGE 4205
7004
TRANSMIT ELECTRONIC MONEY RETURN MESSAGE
CONSUMER TERMINAL
RETURN

FIG.7


20
START
ORDERING NOTIFICATION MESSAGE 4201
BROKER SERVER
ORDERING NOTIFICATION MESSAGE RECEIVED ?
NO
8001
YES
ORDERING NOTIFICATION MESSAGE IS VALID ?
NO
8008
YES
8002
ORDERING REJECTION MESSAGE 4301
BROKER SERVER
TRANSMIT ORDERING REJECTION MESSAGE
STOP
CONSUMER TERMINAL
GOODS MESSAGE 4302
TRANSMIT GOODS
8003
CONSUMER TERMINAL
RECEIPT MESSAGE 4103
80035
YES
TIME OUT ?
8009
TRANSFER-OF-GOODS REQUEST MESSAGE 43025
BROKER SERVER
TRANSMIT TRANSFER-OF-GOODS REQUEST MESSAGE
NO
RECEIPT MESSAGE RECEIVED ?
NO
8004
YES
RECEIPT TRANSFER MESSAGE 4303
BROKER SERVER
TRANSMIT RECEIPT
8005
RECEIPT REQUEST MESSAGE 4204
BROKER SERVER
SETTLEMENT MESSAGE 4202
BROKER SERVER
8006
RECEIPT TRANSFER MESSAGE 4303
8010
YES
RECEIPT REQUEST MESSAGE RECEIVED ?
BROKER SERVER
TRANSMIT RECEIPT TRANSFER MESSAGE
NO
8007
SETTLEMENT MESSAGE RECEIVED ?
NO
YES
END


30
BROKER SERVER
TIMER UNIT
1306
MEMORY UNIT
VALUABLE DATA PROCESSING UNIT
COMMUNICATION PROCESSING UNIT
1301
1304
1305
COMMUNICATION NETWORK
10
GOODS CONSUMER TERMINAL
1104
1105
MEMORY UNIT
VALUABLE DATA PROCESSING UNIT
COMMUNICATION PROCESSING UNIT
1101
TIMER UNIT
1106
1201
20
GOODS MERCHANT SERVER
1205
1204
COMMUNICATION PROCESSING UNIT
VALUABLE DATA PROCESSING UNIT
MEMORY UNIT
TIMER UNIT
1206