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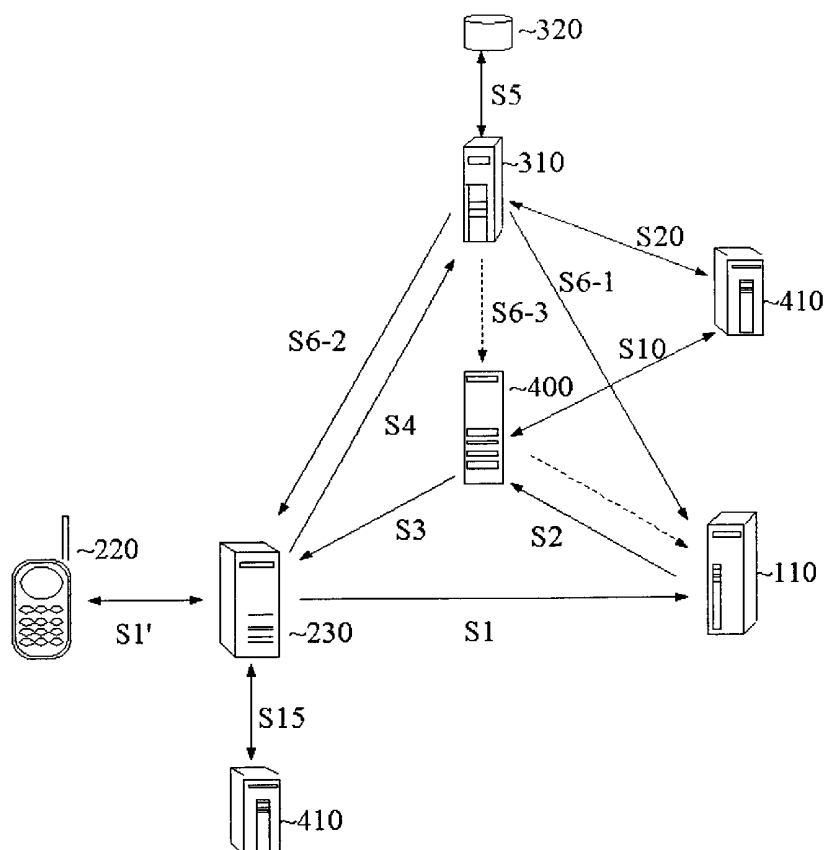
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(54) Title: ONLINE DIRECT SETTLEMENT SYSTEM AND THE METHODS THEREOF



(57) Abstract: Disclosed is a direct on-line settlement system and a method thereof for resolving the problems posed in the conventional settlement method using a credit card or a bank account transfer. The direct on-line settlement system according to the invention performs settlement by receiving a request for settlement including information on commodity to be purchased and information on settlement through a purchaser's terminal. The direct on-line settlement system according to the invention is characterized in that the information on settlement is not transmitted to a seller's terminal while the information on commodity is transmitted to the settlement system through the seller's terminal.

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ONLINE DIRECT SETTLEMENT SYSTEM AND THE METHODS THEREOF

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a settlement method in electronic commerce using a credit card or a bank account transfer, and in particular, to a system and a method guaranteeing safe transactions without exposing settlement information of a purchaser who wishes to purchase goods or a service and request approval of the transaction by accessing a credit card affiliated seller and a financial settlement server through his/her terminal.

Description of the Related Art

Under the conventional off-line settlement system using a credit card, a purchaser directly hand in his/her own credit card to a seller of a credit card affiliated seller once after purchasing goods or a service. The seller subsequently transmits to the credit card settlement system information on the credit card, including the credit card number and its valid period, etc., as well as an amount to be settled. If the settlement is approved by the credit card settlement system based on the transmitted information, the transaction is established.

However, such a conventional off-line transactional method poses several problems. For instance, a transaction initiated by an alleged credit card owner

who has acquired or stolen the credit card can be proceeded with if the credit card holder's ID is not checked. Further, dual settlements by a credit card affiliated seller frequently occur. The most inconvenient aspect of the off-line transactions using a credit card is that the transactions are always proceeded with face to face between a purchaser and a seller. This is attributable to the method adopted by the conventional system necessitating confirmation of an approval of the transaction with the seller's naked eyes by exchanging a credit card with a receipt signed by the purchaser.

With popularization of on-line transactions, movements have arisen to realize the credit card settlement on line. For instance, if a purchaser wishes to order a commodity or a service on a remote basis through Internet or telephone, the purchaser notifies a credit card affiliated seller of his/her personal information including the credit card number. The seller then notifies a credit card settlement system of the received information through a credit card exclusive terminal in the store. Once the transaction is approved by the credit card settlement system, the seller delivers the purchased commodity to the purchaser to complete the transaction.

However, this method also poses a problem of exposing the settlement information including the information on a credit card to a seller or a payment gateway (P.G.). Here, the P.G. refers to a third party who encodes the information inputted by a purchaser and transmits the encoded information to a settlement system. Since a seller can request a settlement based on the settlement information inputted by a purchaser, the seller may settle a single

transaction on a multiple basis by misusing the personal information on the purchaser including the credit card number. The seller may also leak the purchaser's personal information to a third party. Therefore, unless a trust has been established between a purchaser and a seller, the purchaser would not let
5 the seller know his/her personal information including the credit card number and its password. For these reasons, on-line settlement using a credit card has failed to be popular.

Another method was recently introduced to settle transactions using a credit card by means of a wireless terminal. According to this method, a seller
10 carrying a wireless settlement system, in which a credit card exclusive terminal is connected to a wireless communication device, visits each purchaser for off-line transactions. If the seller inputs a purchaser's credit card in the credit card exclusive terminal on the spot, the terminal is accessed to a remote settlement server by means of the wireless communication device, which has a function of
15 wireless transmission and reception to acquire an approval for the transaction. This method is mainly used for delivery services.

However, this method imposes a burden on a seller who needs to carry a wireless communication device as well as a settlement terminal. Therefore, another problem arises if a selling system is different from a delivery system,
20 e.g., if a deliverer requests settlement of a transaction on behalf of a seller. Above all, the most basic problem in this method lies in that it is not an on-line settlement system in a real sense that precludes a personal contact between a seller and a purchaser. Moreover, this method also poses the problem of

exposing the information on a purchaser to a seller.

Another problem in the conventional credit card settlement method is found in redundant intermediary steps to be taken between a request for settlement by a purchaser and an approval by a settlement system. An outstanding example is a value-added network (VAN), which performs authentication of a user after comparing the user information, either on a purchaser or on a seller, with the pre-stored data. Undergoing this user authenticating process is unavoidable because of the structure of the credit card settlement terminal used by the credit card affiliated sellers as a part of the credit card settlement system. These redundant intermediary steps serve to increase transactional commissions while preventing reduction of credit card commissions.

The conventional settlement method using a bank account transfer also poses the similar problems as in case of the settlement method using a credit card. All in all, the common problems of all the conventional settlement methods are that, in case of a transaction made through personal contacts, the merits of on-line transactions are not fully utilized because the seller requests an approval for the transaction or an account transfer to a credit card company or a bank. In case of a transaction made without personal contacts, information on the credit card of the purchaser is directly exposed to the seller. In other words, the problem of exposing a credit card number or a bank account number is in a trade-off relationship with an absolutely on-line and non-personal contact-based method. No method has yet been developed to satisfy both conditions. Furthermore, the conventional settlement terminal equipped by the credit card

affiliated sellers cannot exclude the complicated intermediary steps due to its inherent structure.

SUMMARY OF THE INVENTION

5 It is, therefore, an object of the present invention to provide an on-line settlement system and a method thereof that enable a purchaser and a seller to transact and settle the commodity order by using a credit card or a bank account transfer without exposing information on the credit card or the bank account of the purchaser to the seller.

10 It is another object of the present invention to provide an on-line settlement system and a method thereof using a wireless terminal, in particular, among the terminals of a purchaser.

It is still another object of the present invention to provide a settlement system, which can drastically eliminate redundant intermediary steps in the course of transactions by substituting the method of using credit card exclusive terminals with ordinary terminals such as Internet-browsable PCs or wireless terminals such as mobile phones.

15

It is still another object of the present invention to provide an on-line credit card settlement system and a method thereof that are applicable not only to Internet shopping but also to home shopping or communication shopping.

20

It is still another object of the present invention to provide a direct on-line settlement system and a method thereof that enable a purchaser and a seller to transact by using a bank account transfer as well as a credit card.

To achieve the above objects, there is provided an on-line settlement system for receiving a request for settling a commodity order including the commodity information and the settlement information through a purchaser's terminal so as to settle the order, characterized in that the information on the purchased commodity is transmitted through a seller's terminal without exposing the settlement information to the seller. Therefore the seller is not provided with the settlement information, but only the information on approval of the transaction in addition to the commodity information.

The on-line settlement system according to the present invention is characterized in that: a purchaser's terminal accesses the on-line settlement system to transmit information on the commodity to be purchased; a message confirming an intention for purchase includes information on the commodity to be purchased; and a seller's terminal receives information on the commodity to be purchased and an approval for settling the order.

According to one aspect of the present invention, the seller's terminal may receive the message confirming an intention for purchase from the purchaser's terminal by using the connection information for connection to the purchaser's terminal pre-stored by the purchaser in the purchaser's terminal such as an e-mail address or a telephone number of the purchaser. The on-line settlement system according to the present invention may be an on-line settlement system using a credit card or a bank account transfer. The purchaser's terminal may be a wire terminal or a wireless terminal.

According to another aspect of the present invention, the request for

settlement may include connection information for connection to the purchaser's terminal pre-stored by the purchaser in the purchaser's terminal such as a mobile telephone number of the purchaser. When using the connection information for connection to the purchaser's terminal, the on-line settlement system according to the present invention can exactly identify the purchaser in comparison with the information on the pertinent mobile telephone subscriber provided by the mobile communication company. If the connection information for connection to the purchaser's terminal is an e-mail address of the purchaser, the on-line settlement system according to the present invention can also exactly identify the purchaser in comparison with the information on the pertinent e-mail account subscriber provided by the e-mail server.

The "commodity" referred to in the present invention includes all kinds of goods and services manageable and transactable by a human.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features and advantages of the present invention will become more apparent from the following description when taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a diagram illustrating a preferred embodiment of the present invention;

Fig. 2 is a diagram illustrating an on-line settlement system using a wire terminal;

Fig. 3 is a diagram illustrating the on-line settlement system using a wireless

terminal;

Fig. 4 is a diagram illustrating the on-line settlement system according to the present invention, in which a purchaser orally requests a purchase of a commodity by means of a telephone;

5 Fig. 5 is a diagram illustrating the on-line settlement system according to the present invention using a bank account transfer;

Fig. 6 is a diagram illustrating the on-line settlement system according to the present invention applied to a sales business using a catalog;

10 Fig. 7 is a diagram illustrating the on-line settlement system according to the present invention applied to an Escrow settlement method; and

Fig. 8 is a diagram illustrating a structure of a message confirming an intention for purchase according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

15 Preferred embodiments of the present invention will be described herein below with reference to the accompanying drawings. In the following description, well-known functions or constructions are not described in detail since they would obscure the invention in unnecessary detail. Moreover, the embodiments should not be used as restrictions on claims of this invention.

20 Fig. 1 is a diagram illustrating a preferred embodiment of the present invention by exemplifying characteristic features thereof.

Fig. 1 shows a purchaser 200 who purchases goods or a service (hereinafter, referred to as the "commodity") on line by using a credit card or a bank account

transfer, a seller 100 who supplies the commodity, and an approval and settlement system 300 (hereinafter, referred to as the "settlement system") for approving settlement of a commodity order.

The purchaser 200 requests a purchase of a commodity by either accessing the seller 100 on line or by calling the seller 100 on a wire or wireless phone (S1).

At this stage, the purchaser acquires information on the commodity to be purchased through either a product catalog or a home shopping broadcasting provided in advance, or through an instant telephone consultation, or through an instant browsing of the seller's internet shopping mall or off-line market. The

purchaser subsequently expresses his/her intention for purchase by designating a particular commodity and its quantity. Hereinafter, the information on the commodity to be purchased will be referred to as the "commodity information."

The commodity may be designated either by its name or by a corresponding commodity code assigned in advance by the seller.

Before or after input of the commodity information, the purchaser selects and designates a kind of a credit card to settle the commodity order. Here, to select the kind of a credit card to settle the commodity order means to select the name of a credit card issued by a particular credit card company. Specific information on the credit card such as the card number should not be included at this stage.

Also, before or after the designation of a kind of a credit card to settle the commodity order, the purchaser inputs information to be used by the seller for transmitting a message confirming an intention for purchase, e.g., an e-mail

address or a telephone number of a wireless terminal of the purchaser. Such information may also be used for identifying the purchaser at a later stage. Detailed description in that regard will be made later.

5 Once after receiving a request for purchase from the purchaser 200, the seller 100 checks whether or not he/she is able to meet the corresponding request (e.g., if any stocks are available). In the affirmative, the seller confirms receipt of the request and transmits a message confirming the purchaser's intention for purchase to the purchaser (S2). Here, the message is transmitted by means of the e-mail address or the telephone number of the wireless terminal of the purchaser. This message includes settlement system connection means for automatically connecting the purchaser 200 to the settlement system 300 as well as the commodity information. Further details in this regard will be described later.

15 The purchaser 200 who has received the message confirming an intention for purchase in step S2 confirms the commodity information included in the message and finally decides to purchase the commodity. Then, the purchaser 200 accesses the settlement system 300 of the credit card by using the settlement system connection means installed in the message window confirming an intention for purchase to request approval of the transaction and settlement of the order (S3; hereinafter, referred to the "request for settlement").

20 At this stage, the purchaser 200 inputs settlement information related to his/her own credit card.

The settlement information may include numerous kinds of information on the

purchaser or his/her credit card, such as the ID number and password of the purchaser, CVC (Card Verification Code) number and valid period or identifier of the credit card, etc. In S3, the purchaser 200 inputs at least one or more information of the above settlement information. It is possible to input the number of ID either on a partial or on an entire basis. In particular, the card identifier is a number pre-registered by the purchaser at the credit card company. If this card identifier is received by the settlement system of the credit card company, the settlement system searches from its database information including the entire number of the credit card, which is recorded in the database by being interlocked with the card identifier, to proceed with the settlement. Accordingly, the settlement system can proceed with the settlement without exposing any information on the credit card to the seller. It is also possible to encode the settlement information by means of an electronic signature based on the password or a public key.

The settlement information inputted by the purchaser is transmitted to the settlement system 300 of the credit card company (S3) but not to the seller 100. In response to the request for settlement, the settlement system 300 performs a necessary checking process to confirm whether or not the purchaser 200 is an owner of the credit card, and if the credit card is available for the corresponding transaction. If the request for settlement is effective, the settlement system 300 transmits a message approving the transaction and confirming the settlement to the seller 100 only or to both the seller 100 and the purchaser 200 (S4). Before or after taking S4, the settlement system 300 performs a

computing process therein to complete activities of each party of the direct on-line settlement system according to the present invention.

Though not illustrated in the drawings, additional steps may be taken as a post process as follows: The seller 100, who has received the message confirming approval of the transaction, delivers the purchased commodity to the purchaser 200; the seller 100 receives a bill and requests the credit card company to pay for the bill. These steps, actually taken off line, are not directly related to the request for settlement or approval made on line. Therefore, no description will be made herein with respect to those steps. However, the step taken by the seller to request the credit card settlement system to pay for the bill may be a step that can be realized in the on-line settlement system according to the present invention.

Even if the transaction shown in Fig. 1 is performed by using a bank account transfer rather than a credit card, the other steps would be the same as in case of using the credit card except that the kind of a bank account is inputted instead of the kind of a credit card in step S1, and that the account transfer settlement system in a bank or a financial institution performs a settlement by taking the bank account transfer process. In the account transfer settlement system, an account identifier may be used as settlement information to identify the account to be transferred. As in case of the settlement using a credit card, if a user pre-registers the account identifier and inputs it in step S3, the settlement system 300 of the bank searches the pre-stored account information by using the account identifier to perform an account transfer. The subsequent process is

the same as in case of using the credit card. That is, the settlement system 300 of the bank notifies that the transacted amount has been transferred from the bank account of the purchaser to the bank account of the seller (S4). According to the present invention, it is also possible to establish a virtual
5 account system, which is popular these days, to perform an account transfer.

The most outstanding characteristic of a preferred embodiment of the present invention shown in Fig. 1 lies in that the seller is not accessible to the information such as the credit card number or the bank account number of the purchaser unlike the conventional settlement system using a credit card or a
10 bank account transfer. Such information is transferred to the settlement system only but not to the seller in step S3. Therefore, there is no jeopardy of leaking the personal information of the purchaser. Since the transaction system according to the present invention adopts a direct on-line settlement method, the system will be abbreviated into a "direct settlement" hereinafter.

15 Another characteristic of the present invention lies in an absolute on-line transaction, which does not require any personal contact. In other words, the purchaser and the seller need not meet physically or off-line contact with each other on a same spot because the present invention precludes the conventional process of handing in a credit card, acquiring an approval of the transaction by
20 means of the credit card, and exchanging a receipt on the spot.

Accordingly, the settlement system according to the present invention is a novel transaction system that has resolved the problems of leaking information and requiring a personal contact in the conventional settlement system using a

credit card or a bank account transfer as described above.

Though described later with reference to the preferred embodiments of the present invention, the purchaser in Fig. 1 includes all the purchasers using either a wire terminal or a wireless terminal, while the seller in Fig. 1 includes all kinds of service providers who advertise and sell commodities through public network, such as an Internet shopping service provider, an on-line auction service provider, a catalog service provider, a home shopping service provider, wire or wireless digital contents data provider, as well as off-line service providers who are capable of delivering commodities by taxi or courier and settling the commodity orders with a credit card or a bank account transfer, such as a restaurant business operator. In short, the seller in Fig. 1 includes all kinds of business that can preclude a personal contact in the course of transaction while conducting the business on line and off line. In particular, the seller in Fig. 1 includes all kinds of business providers who rely on an agency in establishing a commodity database server or another kind of web server for their own business.

In order to smoothly and exclusively proceed with the direct settlement according to the present invention, it is also possible to install a direct settlement exclusive gateway on a network so that the exclusive gateway can control the data flow between the purchaser, the seller and the settlement system (in case of a wireless settlement system, including a network business provider) and provide a function of pushing necessary short message service (SMS) as well as an exclusive agent solution. In that case, the existing seller,

purchaser and the settlement system operator do not need to establish any additional system apart from downloading and installing agent exclusive software. Thus, the settlement system can be used in a more convenient manner. A more detailed description will now be provided with reference to
5 the direct on-line settlement system including an exclusive gateway according to preferred embodiments of the present invention. However, the exclusive gateway is not a critical constitutional element of the direct on-line settlement system according to the present invention but an optional element for the convenience of the system.

10 Prior to initiate a transaction, a seller or a purchaser expresses his/her intention to use the direct on-line settlement service according to the present invention to a financial institution or a credit card company, and pre-registers necessary information such as the credit card number, information on the bank account to be used for account transfer, the credit card identifier, or the account identifier,
15 etc. Other necessary information may also be pre-registered on a partial basis so as to release the burden of inputting the same information for each transaction. However, it is mandatory to establish a system not to transfer the settlement information of the purchaser to the seller.

Here, the "commodity information" refers to a concept including one or more
20 objective data related to a commodity, which is an object of the commodity, such as a name of the commodity, a code of the commodity, quantity of the commodity(ies) to be purchased, a name of the credit card affiliated store, an identifier of the credit card affiliated store assigned by the credit card company,

an amount of purchase, an amount of monthly installment, if the credit is monthly paid. The “settlement information” refers to a concept of including one or more subjective data that confirm and classify the subject of transaction, which are information on the credit card or bank account of the purchaser, valid
5 period of the credit card, the CVC number, the credit card identifier, the account identifier, residence ID number, ID and password of the purchaser, etc.

Fig. 2 is a diagram illustrating an on-line settlement system, in which a purchaser purchases a commodity at an Internet shopping mall by means of a wire terminal and the credit is settled by a credit card.

10 Fig. 2 shows a similar construction to Fig. 1. Referring to Fig. 2, the system comprises a seller’s server 110 including a database server of a shopping mall system where the seller operates an Internet shopping mall or the like, a client’s PC (a wire terminal of the purchaser) 210, a settlement system 310 for performing settlement of the order and approval of the transaction, an
15 authentication server 320(optional) for authenticating the user (purchaser) based on the database, and a direct settlement gateway 400(optional).

The following is a detailed description of the transaction steps between the systems illustrated in Fig. 2. The purchaser first subscribes a credit card company, and transmits his/her personal information to obtain a credit card.

20 At this stage, the purchaser may also express his/her intention to use the direct on-line settlement system and submit a variety of information necessary for authenticating the user. As this step has already been description with reference to Fig. 1, no further description will be made herein. The seller

should also register his/her own store to be affiliated with the credit card company so as to use the direct on-line settlement system according to the present invention. No further description will be made herein in this regard as well.

5 To initiate a transaction, the purchaser's terminal 210 accesses the seller's server 110 by means of the purchaser's terminal 210, and browses a variety of information on commodities presented by the seller's server 110 in step S1. The purchaser then inputs a name and quantity of a commodity to be purchased. Thereafter, the purchaser expresses his/her intention to settle the credit by using
10 the direct on-line settlement system according to the present invention. The purchaser subsequently selects a kind of the credit card to be used for settling the order (e.g., BC card, LG card, etc.). At this stage, the purchaser may also input additional information on the matters to be decided before requesting settlement of the order, such as whether the credit is to be settled at once or on a
15 monthly basis, etc.

The purchaser should also input communication lines, e.g., an e-mail address in case of a wire terminal, through which a message confirming an intention for purchase can be returned. When wishing to have the commodity delivered at an address other than the pre-registered address, the purchaser may additionally
20 input the pertinent address and time of delivery, etc. It is beyond question that the purchaser 210 may freely input other additional information according to his/her wish.

The seller's server 110 receiving the information inputted by the purchaser

determines whether or not it is capable of respond to the above order of commodity based on the pre-designed algorithm, e.g., whether any stocks are available, or other conditions can be satisfied. In the affirmative, the seller's server 110 transmits a message confirming an intention for purchase to the pre-stored communication lines of the purchaser through the direct settlement gateway 400 (S2, S3).

This message confirming an intention for purchase may include a variety of information such as the kind of the credit card to be used for settling the order, information on the commodity, price of the commodity, address and time for delivery as well as an original transaction identifier assigned to the commodity for the corresponding request for purchase. The transaction identifier may be composed to enhance accuracy of the future process by interlocking therewith all the information on commodities that have been delivered to the purchaser and an approval for the transaction to be transmitted later. In general, the seller's server 110 assigns the transaction identifier. However, the direct settlement gateway 400 may assign the transaction identifier, and informs the purchaser's terminal 210, seller's server 110 and the settlement system 310 of the credit card company of the identifier. This transaction identifier may be used as a kind of address of data of communication between the transacting subjects.

The message confirming an intention for purchase may be composed to include connection means to the credit card settlement system 310. Here, the connection means refers to the means for automatically connecting the message

requesting the settlement for purchase to the settlement system in a wire or wireless manner after the purchaser checks the message. For instance, the connection means may be identified as a button or an icon, which may be represented graphically in the message. The purchaser 210 can automatically
5 transmit a message requesting settlement, which includes commodity information and settlement information, to the settlement system 310 by clicking the connection means, for example. The method of constructing the connection means will be described later. The connection means needs not necessarily be identified by an icon or in a visual shape. For instance, the
10 purchaser who checked the message confirming an intention for purchase may connect the message to the settlement system 310 by using a voice message or etc.

The message confirming an intention for purchase may be indirectly transmitted to the purchaser's terminal 210 through the direct settlement
15 gateway 400. The direct settlement gateway 400 is a module for exclusively processing the direct settlement according to the present invention, and is an optional constitutional element of the direct on-line settlement system employed to utilize the merits of the present invention. For example, the direct settlement gateway 400 may perform transmission of the message
20 confirming an intention for purchase on behalf of the seller's server 310, if entrusted to do so. If necessary, the direct settlement gateway 400 may also perform the function of encoding or decoding the data communicated between the terminal and the settlement system. In case of authenticating the user, the

direct settlement gateway 400 may perform the authentication by using the password or the electronic signature of the user based on the public key.

Accordingly, the direct settlement gateway 400 performs all the exclusive functions necessary to carry out the processes of the present invention, and operates as a communication gateway. The direct settlement gateway 400 can also perform the function of mixing the message confirming an intention for purchase with the connection means. In that case, the direct settlement gateway 400 performs the mixing function by attaching a URL of the settlement system of the credit card company or the financial institution to the message confirming an intention for purchase. The construction of the message confirming an intention for purchase will be described later.

As described above, the direct settlement gateway 400 is not necessarily required to realize the present invention. Rather, the purchaser's terminal 210, the seller's server 110 and the settlement system 310 may be constructed to directly perform the necessary functions.

The purchaser's terminal 210 who has received the message confirming an intention for purchase checks whether or not the information contained in the message is correct. In the affirmative, the purchaser's terminal 210 accesses the settlement system 310 of the credit card company to transmit an approval for the transaction and a request for settlement of the order (S4). At this stage, the purchaser inputs the settlement information mentioned above. The request for approval and settlement to be transmitted to the settlement system 310 basically includes the commodity information and the settlement information.

The commodity information, which was inputted in step S1 of requesting a transaction by the purchaser, and included in the message confirming an intention for purchase as an expression of accepting the transaction by the seller, is subsequently transmitted to the settlement system 310 through the purchaser's terminal (S4). However, the settlement information, which is not exposed at the previous steps, is now transmitted to the direct settlement system from the purchaser's terminal together with the commodity information without being exposed to the seller's server 110 (S4), after receiving an acceptance of the transaction from the seller's server 110. The message confirming an intention for purchase, which is an expression of accepting the transaction by the seller as well as a confirmation to purchase the commodity by the purchaser, includes the connection means for connecting the purchaser's terminal 210 to the settlement system 310. The purchaser is automatically connected to the settlement system through the connection means, and needs not input the commodity information again once after having been connected to the settlement system.

After receiving the request for settlement of the order, the settlement system 310 checks the purchaser and the seller based on the inputted information either directly or by accessing a third server 320 (S5). For instance, the settlement system 310 checks whether: the purchaser is identical to the pre-registered card subscriber; the purchaser has a credibility; the corresponding credit card is capable of meeting the request for purchase; and whether the seller is affiliated to the credit card company and entitled to the transaction. This process of

checking is the same or similar to the ordinary process of checking performed by the credit card companies in general before approval.

After identifying the purchaser and checking the transactability based on the pre-stored algorithm, the settlement system 310 approves the transaction and settles the credit. The settlement system 310 also transmits the approval of the transaction as well as a message confirming the settlement to the seller at a pre-stored communication line thereof (S6-1). After receiving the message confirming the settlement, the seller delivers the commodity to the purchaser.

The message confirming the settlement may also be transmitted to the purchaser (S6-2) at the e-mail address or through a wireless terminal thereof. In the direct on-line settlement system according to the present invention, transmitting the message confirming the settlement to the purchaser is not an obligatory step but an optional step to enhance credibility on the request for settlement made by the purchaser.

The step of transmitting the message confirming the settlement to the seller may be taken through the direct settlement gateway 400 (S6-3). In case of simultaneously transmitting the message confirming the settlement to a plurality of sellers, it is advantageous for the settlement system to entrust the exclusive gateway with transmission of the message rather than to directly perform the transmission so as to lessen the load of the settlement system and enhance the rate and accuracy of the data transmission.

While Fig. 2 illustrates the case of transacting with an Internet shopping mall and performing settlement of credit by using a wire terminal, the embodiment

in Fig. 2 is also applicable to using a wireless terminal as well as to any kind of business described above. Also, it is beyond the questions that the embodiment in Fig. 2 is applicable to a bank account transfer with a slight modification within the technical scope of the present invention. Also, in step 5 S1 where the purchaser initially browses the seller's commodities and requests a purchase of a commodity, the purchaser uses a wire terminal such as a PC. However, the purchaser may use a wireless terminal when receiving a message confirming an intention for purchase, and *vice versa*. The kind of terminal to be used is determined in step S1 by simply selecting a communication line, 10 through which the message confirming an intention for purchase is to be transmitted.

The various modifications described with reference to Fig. 2 are also applicable to other preferred embodiments to be described hereinafter.

Fig. 3 is a diagram illustrating another preferred embodiment of the on-line settlement system according to the present invention, in which the purchaser 15 can instantly requests a purchase and settles the credit with his/her credit card by using a wireless terminal 220.

The most difference with the case of using the wire terminal 210 as shown in Fig. 2 is that the wireless terminal 220 requires a gateway 230 for connecting 20 the wireless terminal 220 to a wire network so as to be connected to an Internet protocol such as http or to the seller connected to a wire network or to the credit card settlement system. The gateway 230 converts the digital data inputted from the wireless terminal so as to be transmitted to a wire network server, or

converts the data inputted from the wire network server so as to be transmitted to the wireless terminal. Currently available types of such gateway are a WAP (wireless application protocol) gateway and an ME (mobile explorer) gateway of Microsoft Corporation. In particular, the ME gateway does not separately require a physical gateway because the same function is performed by a relay server of a mobile communication company on behalf of the ME gateway. However, such kind of gateway (hereinafter, referred to as a “wireless relay gateway”) is merely an embodiment and optional module of the present invention. Once a novel wireless terminal and a relevant new protocol are introduced, the system is appropriately modifiable.

In construction of the system in Fig. 3, the steps or system modules bearing the same drawing reference numerals as those in Fig. 2 perform the same or similar function or steps. When compared with the embodiment in Fig. 2, the embodiment in Fig. 3 has additional elements of a purchaser's wireless terminal 220, a wireless relay gateway 230 for interfacing signals of the wireless terminal with wire network servers, and a communication step S1' between the wireless terminal 220 and the wireless relay gateway 230. A server 410 of a mobile communication company may be added in step S1' for confirming the user of the wireless terminal. A further description in this regard will be made later.

The embodiment in Fig. 3 is operated as follows. The purchaser's wireless terminal 220 accesses the seller's server 110 (S1) through the wireless relay gateway 230 (S1'). Thereafter, as in case of the steps shown in Fig. 2, the

purchaser searches commodity information and selects a desired commodity. The purchaser then inputs a kind of his/her credit card to be used for settlement. At this stage, the purchaser may also input the telephone number of the wireless terminal 220 or e-mail address, which will be used for confirming the purchaser or as a communication line for transmitting a message confirming an intention for purchase.

Once the commodity information, the kind of the credit card and the mobile telephone number of the purchaser are inputted to the seller's server 110, the seller's server 110 checks whether or not the transaction is approvable. In the affirmative, the seller's server 110 transmits the approval and a message confirming an intention for purchase to the direct settlement gateway 400 and to the purchaser's wireless terminal 220 through the wireless relay gateway 230 (S2 and S3).

Here, the direct settlement gateway 400 may perform a step of identifying the purchaser based on the inputted connection information, e.g., the telephone number of the purchaser's wireless terminal, by accessing the mobile communication company server 410 (S10). In this step, the direct settlement gateway 400 may inquire the mobile communication company server 410 to identify the purchaser so as to confirm the origin of the request for purchase of the commodity, and transmit the message confirming an intention for purchase to the purchaser.

As an alternative, the direct settlement gateway 400 may take a step of identifying the purchaser under the condition that the mobile communication

company server 410 is connected to the wireless relay gateway 230 (S15).

This alternative has an advantage of filtering improper request for purchase from step S1. However, the mobile communication company server 410 merely identifies the purchaser but does not transmit the information on the purchaser to the seller's server 110 or to the direct settlement gateway 400 in steps S10 and S15.

The purchaser checks the transmitted message confirming an intention for purchase. If the message is acceptable, the purchaser accesses the settlement system 310 of the credit card company by using the connection means provided within the message confirming an intention for purchase, while inputting the settlement information (S4).

Upon receiving the commodity information and the settlement information, the settlement system 310 of the credit card company takes a step of identifying the purchaser either directly or by accessing a third server 320 (S5) in order to decide an approval of the transaction and a settlement of the order. At this stage, in addition to the checking step in Fig. 2, the settlement system 310 obtains information on the purchaser by accessing the mobile communication company server 410 (S20). The settlement system 310 uses the obtained information on the purchaser as additional data in the identifying step S5 for accurate identification of the purchaser. For instance, the settlement system 310 compares the telephone number of the wireless terminal user obtained from the mobile communication company with that of the wireless terminal of the purchaser.

After taking the same steps as described with reference Fig. 2, the settlement system 310 transmits an approval of the transaction to the seller only or both to the seller and the purchaser (S6-1 and S6-2). In case of transmitting the approval to the purchaser's wireless terminal at this stage, it is possible to pass through the wireless relay gateway 230 as described above (S1'). In case of transmitting the approval to the seller's server, it is possible to pass through the direct settlement gateway 400 as described above. Further, as described with reference to Fig. 2, a PC in a wire network may be used in step S3 of receiving the message confirming an intention for purchase, while a wireless terminal is used for access in step S1.

Fig. 4 is a diagram illustrating the on-line settlement system according to the present invention, in which a purchaser orally requests a purchase of a commodity by means of a telephone when the seller is a communication sales service provider or a home shopping service provider.

In the embodiment shown in Fig. 4, all the steps are the same or similar to the aforementioned embodiments except steps S11 and S12. Accordingly, an operation of the embodiment in Fig. 4 will be described hereinafter by focusing on steps S11 and S12. In the communication sales or home shopping, transactions are established through a telephone. Thus, in step S11, the purchaser calls the seller at the seller's communication line, and notifies the commodity information, the kind of a credit card to be used for settlement (in case of a bank account transfer, the kind of a bank account to be used for account transfer) as well as his/her communication lines, e.g., the telephone

numbers of the wire and wireless terminal or an e-mail address.

The seller receiving the request for purchase manually inputs the information related to the request for purchase in the seller's system 110 or its equivalent (e.g., an ARS system) by using an input apparatus 240 such as a keyboard (S12).

5 The subsequent steps of S2 to S7 for confirming an intention for purchase by transmitting a relevant message to the purchaser 220 will be omitted here because those steps are the same or similar to as described with reference to Fig. 3.

10 Although the wireless terminal 220 is illustrated in Fig. 4, a wire terminal may also be used for requesting a purchase. In that case, the purchaser may receive a message at his/her e-mail address. The purchase-related information inputted by using the input apparatus 240 in step S12 may be inputted in the direct settlement gateway 400 without passing through the seller's system 110 so as to proceed with the following steps. An example of that case is that a
15 seller operating the business in a small size entrusts the direct settlement gateway 400 with a reception of the request for purchase and a transmission of the message confirming an intention for purchase due to no equipment of its own system 110.

20 Fig. 5 is a diagram illustrating the on-line settlement system according to another embodiment of the present invention using a bank account transfer.

The difference of the embodiment in Fig. 5 from the embodiments in Figs. 3 and 4 lies in that: an account transfer proxy system 330 is employed instead of the settlement system 310 in Fig. 4 used for a credit card; a request for account

transfer is inputted (S8) in a bank exclusive system 340 to perform necessary account transfer; and upon receiving the result of the account transfer, the account transfer proxy system 330 notifies the purchaser alone or both the purchaser and the seller of a settlement of the order (S6-1 and S6-2). The functions of the other system modules are the same or quite similar to those in Figs. 3 and 4. Thus, no further description will be made herein. Although Fig. 5 exemplifies a case of using a wireless terminal for an account transfer, it is obvious to those skilled in the art that a wire terminal can also be used for the account transfer. As described above, the account transfer system in Fig. 5 is applicable to the embodiments in Figs. 1 to 4 by substituting the settlement system for the account transfer proxy system.

Fig. 6 illustrates another embodiment of the present invention having a construction different from the aforementioned embodiments.

Fig. 6 is a diagram illustrating the on-line settlement system according to the present invention applied to a sales business using a catalog. The purchaser pre-selects a commodity from a catalog, and input a commodity name or code together with the settlement information by using his/her own wire or wireless terminal 220, which would be transmitted to the settlement system (310). Before or after taking this process, the purchaser notifies an intention for purchase to the settlement system of the credit card (S4). Thus, this part of non-contact between the purchaser's terminal 220 and the seller's system 110 on line is the great difference from the aforementioned embodiments. Such difference derives from the nature of the sales business using catalogs, i.e., no

necessity of acquiring an approval for transaction from the seller by the purchaser because the seller has distributed the commodity catalogs to the consumers under an assumption that the seller is always open to the supply of commodities.

5 The inputted commodity information and the settlement information are transmitted to the settlement system 310 of the credit card company (S4). The settlement system then takes a checking process before approval of the settlement (S5). The settlement system 310 subsequently notifies an approval to the purchaser only or to both the purchaser and the seller (S6-1 and S6-2).

10 Thereafter, the seller delivers the commodity to the purchaser to complete the transaction.

Fig. 7 illustrates another embodiment of the present invention.

The embodiment in Fig. 7 lies in that, while the steps S1 to S5 are identical to the aforementioned embodiments, the settlement or account transfer is not
15 completed before step S6. In step S7, the settlement system 310 notifies the seller's server 110 that the settlement will be completed in future. The seller then delivers the commodity to the purchaser 210. The purchaser 210 checks the delivered commodity, and requests the settlement system 310 to complete the settlement in step S8 if the commodity is considered to meet his/her
20 expectation. If the request for settlement is finalized by the purchaser 210, the settlement system performs a settlement and notifies the seller that the settlement has been finalized in step S9. This method is generally referred to as an Escrow settlement method. Fig. 7 illustrates an application of the

present invention to the Escrow settlement method.

Fig. 8 is a diagram illustrating a structure of a message confirming an intention for purchase as described above. The message confirming an intention for purchase 800 should include the purchaser's communication line 810, at which the message is to arrive, i.e., an e-mail address or a telephone number of the wire or wireless terminal of the purchaser, as well as the commodity information 820 to be transmitted to the settlement system while being confirmed by the purchaser. The message should also include a settlement information input column 830 to be transmitted to the settlement system. The settlement information input column 830 should be the one formalized by the seller and the credit card company through mutual agreement on what kind of information is to be inputted therein. The message should also contain the connection means 840 for connecting the message to the settlement system 310. The information contained the connection means is normally the communication line (e.g., a URL) of the credit card company or the financial institution that has been pre-selected by the purchaser.

The purchaser who has received the message confirming an intention for purchase confirms the commodity information, inputs the settlement information, and request settlement of the order by accessing the settlement system of the financial institution. Then, the URL of the financial institution included in the connection means 840 is inputted in an input terminal of the transmission section of the purchaser's terminal so as to automatically set the connection and transmit the above information. Since this construction can be

easily coded by those skilled in the art, no specific example of coding will be provided herein.

5 The seller's terminal employed by the present invention may include request input means for receiving the commodity information, message generation means for generating a message confirming an intention for purchase, message synthesizing means for adding the connection means to the message confirming an intention for purchase, and message transmission means for transmitting the synthesized message confirming an intention for purchase by using the purchaser's terminal. On the other hand, the purchaser needs to store
10 information on the request. Therefore, the purchaser's terminal may include means to store information on the request for purchase in addition to the browsing means and data input means. It is also as described above that the seller's terminal may assign an original identifier to each request for purchase.

15 The message synthesizing means, the transmission means and the original identifier assigning means needs not necessarily be performed by the seller's terminal but may be represented by the direct settlement gateway according to the present invention. Therefore, the seller's terminal in this invention should be considered to include the concept of the direct settlement gateway in this case.

20 According to the present invention, it is possible to distribute an encoding key for performing an encoded communication among the purchaser, the seller and the settlement system as well as an electronic authentication key for mutual authentication so as to prevent hacking and forgery/alteration of the information

in the course of data communication among the above three subjects. It is also possible to use an electronic authentication method for identifying the other party on line. As encoding communication methods, unified key encoding methods (e.g., DES, RC5, SEED) or a public key encoding method (e.g., RSA) are available. As an electronic authentication method, a method of communicating with an authentication (e.g., X509) after receiving an electronic signature from a third authentication institute for his/her own public key.

The conventional settlement system fails to present a non-contact transaction method without exposing the information on a credit card because the non-contact method requires an exposure of the information on the credit card when requesting a purchase to the seller (e.g., the transaction method used by amazon.com) or a confirmation of the settlement of the order with the purchaser's naked eyes through personal contact with the seller after the settlement has been approved. These two issues are in a trade-off relationship, which has become a bar to activating the electronic transactions through Internet.

The present invention resolved the problem of exposing the information on a credit card of the purchaser that has been chronic in the settlement method of using a credit card or a bank account transfer. The present invention also eliminated the personal contact between a consumer and a seller in on-line transactions, thereby fully availing the merit of on-line settlement system that can be performed without any personal contact.

Further, the present invention enhanced transactional credibility and accuracy

in a complicated settlement of credit by providing an organic system interlocked among the purchaser, the seller and the settlement system of a credit card company while constricting exposure of the information. For instance, the seller's message confirming an intention for purchase is a seller's expression of approving the request for transaction from the purchaser. The expression of approval includes commodity information so as to be confirmed by the purchaser, and connection means that can automatically connect the expression of approval to the settlement system. Thus, the interconnective relationship is organically established in the present invention

The present invention introduced a new concept to mobile Internet electronic transactions to be activated in the future by providing a system and a method that can easily handle a complicated settlement process by using a wireless terminal in particular.

Further, the present invention drastically eliminated redundant intermediary steps by providing a system and a method, in which an Internet browsable PC or a wireless terminal can be used instead of the conventional credit card exclusive terminal, thereby serving to enhance convenience for both consumers and sellers.

The present invention provides a direct on-line settlement system and a method thereof that utilized the above characteristics in settlement of credit using not only a credit card but also a bank account transfer.

According to the preferred embodiments of the present invention, the purchaser's terminal may be a PC, a mobile communication terminal, PDA or

any kinds of wire and wireless terminals to be developed in the future. Also, the seller's terminal may be a wireless terminal so long as it is capable of processing information on purchase.

5 While the invention has been shown and described with reference to certain preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention as defined by the appended claims.

What Is Claimed Is:

1. A commodity order settlement system for settling an order of a commodity on line, characterized in that

5 the settlement is performed by receiving a request for settlement including information on commodity and information on settlement transmitted by a purchaser's terminal, the information on commodity being transmitted through a seller's terminal, but the information on settlement not being transmitted to the seller's terminal.

10

2. The commodity order settlement system of claim 1, wherein the purchaser inputs the information on settlement in the purchaser's terminal after receiving the information on commodity transmitted through the seller's terminal.

15

3. The commodity order settlement system of claim 1, wherein the purchaser's terminal accesses the settlement system by using connection means provided by a message confirming an intention for purchase, which is transmitted by the seller's terminal and includes the information on commodity
20 to be purchased

4. The commodity order settlement system of claim 3, wherein the purchaser's terminal receives the message confirming an intention for purchase

from the seller's terminal by using connection information in the purchaser's terminal that is provided by the purchaser in advance.

5 5. The commodity order settlement system of claim 1, wherein the settlement system is a credit card settlement system.

6. The commodity order settlement system of claim 1, wherein the settlement system is an account transfer settlement system.

10 7. The commodity order settlement system of claim 1, wherein the purchaser's terminal comprises at least one of a wire terminal and a wireless terminal.

15 8. The commodity order settlement system of claim 1, wherein the seller's terminal comprises:

order input means for receiving the information on commodity to be purchased by the purchaser;

message generation means for generating a message confirming an intention for purchase to finally confirm the intention for purchase by returning the information on commodity;

20 message synthesizing means for adding connection means to the message confirming an intention for purchase; and

message transmission means for transmitting the synthesized message

confirming an intention for purchase by using the purchaser's terminal.

9. The commodity order settlement system of claim 8, wherein the seller's terminal further comprises storing means for storing the commodity order.

10. The commodity order settlement system of claim 8, wherein the seller's terminal further comprises a purchase identifier assigning means for assigning an unique identifier to the commodity order.

11. The commodity order settlement system of any one of claims 8 to 10, wherein at least two or more of a group comprising the order input means, the message generation means, the message synthesizing means and the message transmission means are connected to one another through network.

12. The commodity order settlement system of claim 1, wherein the request for settlement comprises the connection information in the purchaser's terminal that is provided by the purchaser in advance, and the settlement system identifies the purchaser by using said connection information in the purchaser's terminal.

13. The commodity order settlement system of claim 1, wherein the commodity comprises any kind of tangible or intangible objects that have

economic values and are transactable.

14. The commodity order settlement system of claim 3, wherein the message confirming an intention for purchase transmitted to the seller's terminal is relayed by a relay gateway positioned between the seller's terminal and the purchaser's terminal.

15. A commodity order settlement method for settling a commodity order on line, the method performed by a settlement system comprising the steps of:
receiving a request for settlement including information on commodity and information on settlement provided by a purchaser's terminal;
settling the commodity order in accordance with the request for settlement; and
transmitting a message confirming the settlement to a seller's terminal,
wherein the information on commodity has passed through the seller's terminal, but the information on settlement is not transmitted to the seller's terminal.

16. The commodity order settlement method of claim 15, wherein the purchaser's terminal receives the information on commodity passed through the seller's terminal, and inputs the information on settlement to perform the request for settlement.

17. The commodity order settlement method of claim 15, wherein the seller's terminal accesses the settlement system by using connection means

provided by a message confirming an intention for purchase that is transmitted by the seller's terminal and includes information on commodity to be purchased.

18. The commodity order settlement method of claim 17, wherein the seller's terminal receives the message confirming an intention for purchase from the seller's terminal by using the connection information in the purchaser's terminal provided by the purchaser in advance.

19. The commodity order settlement method of claim 15, wherein the settlement system is a credit card settlement system.

20. The commodity order settlement method of claim 15, wherein the settlement system is an account transfer settlement system.

21. The commodity order settlement method of claim 15, wherein the seller's terminal comprises at least one of a wire terminal and a wireless terminal.

22. The commodity order settlement method of claim 15, wherein the request for settlement comprises connection information in the purchaser's terminal provided by the purchaser in advance, and the settlement system identifies the purchaser by using the connection information in the purchaser's terminal.

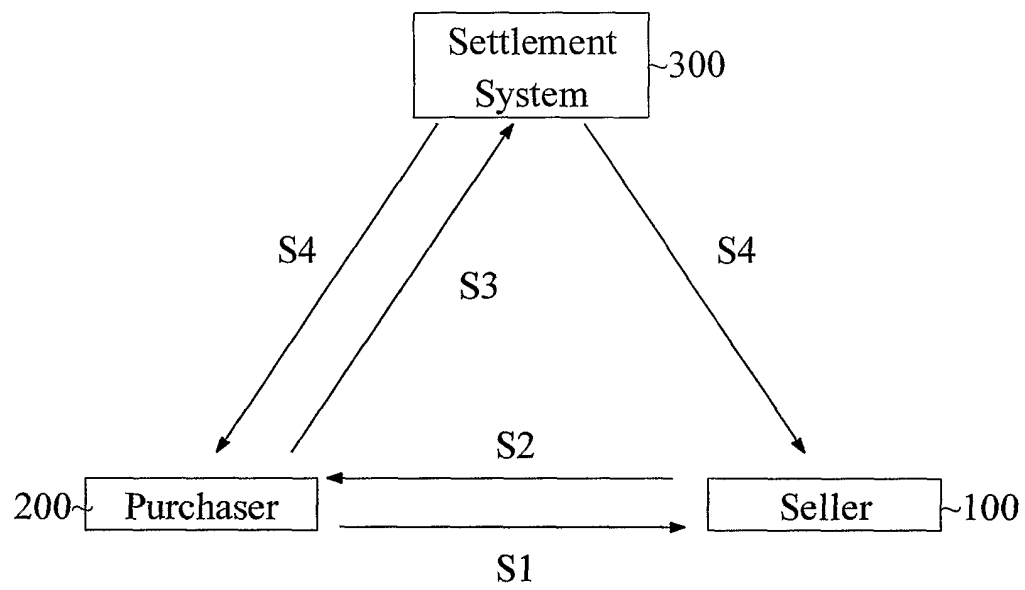
23. The commodity order settlement method of claim 15, wherein the commodity comprises any kind of tangible or intangible objects that have economic values and are transactable.

5

24. The commodity order settlement method of claim 15, wherein the step of transmitting the message confirming the settlement to the seller's terminal comprises a sub-step of passing through an intermediate gateway positioned between the settlement system and the seller's terminal.

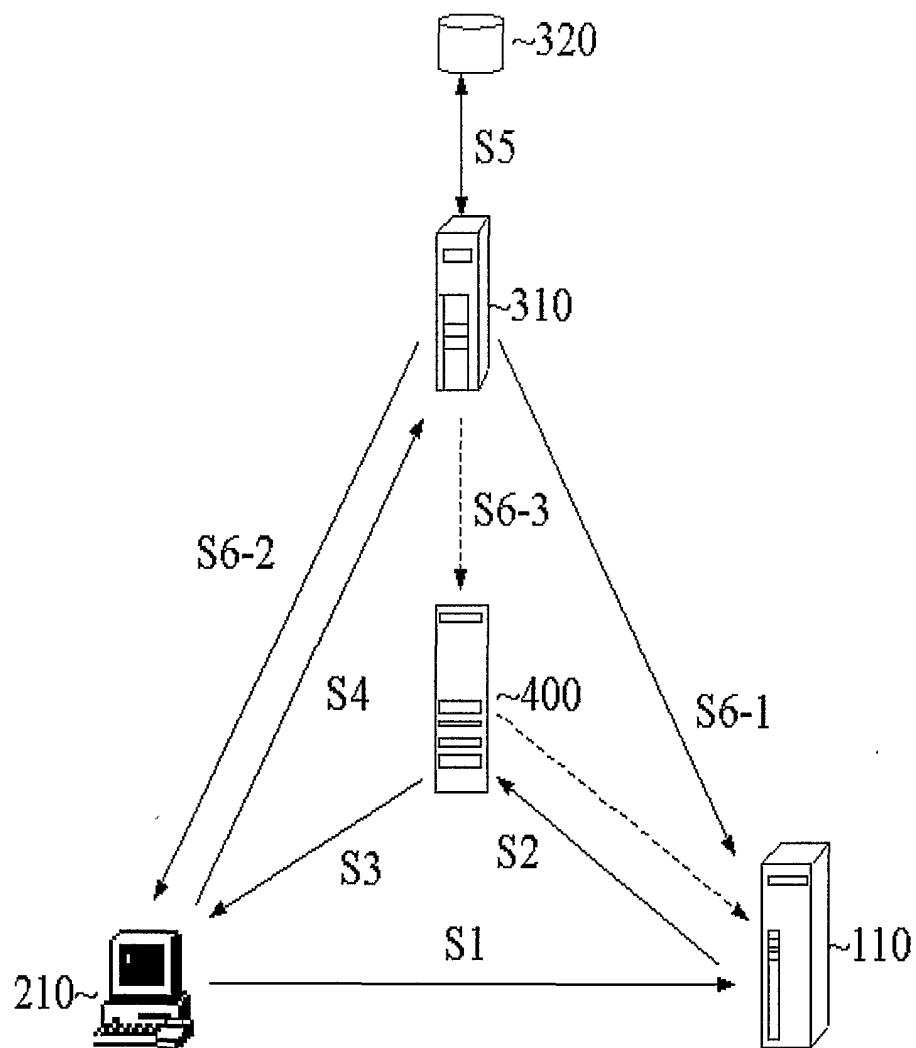
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FIG. 1



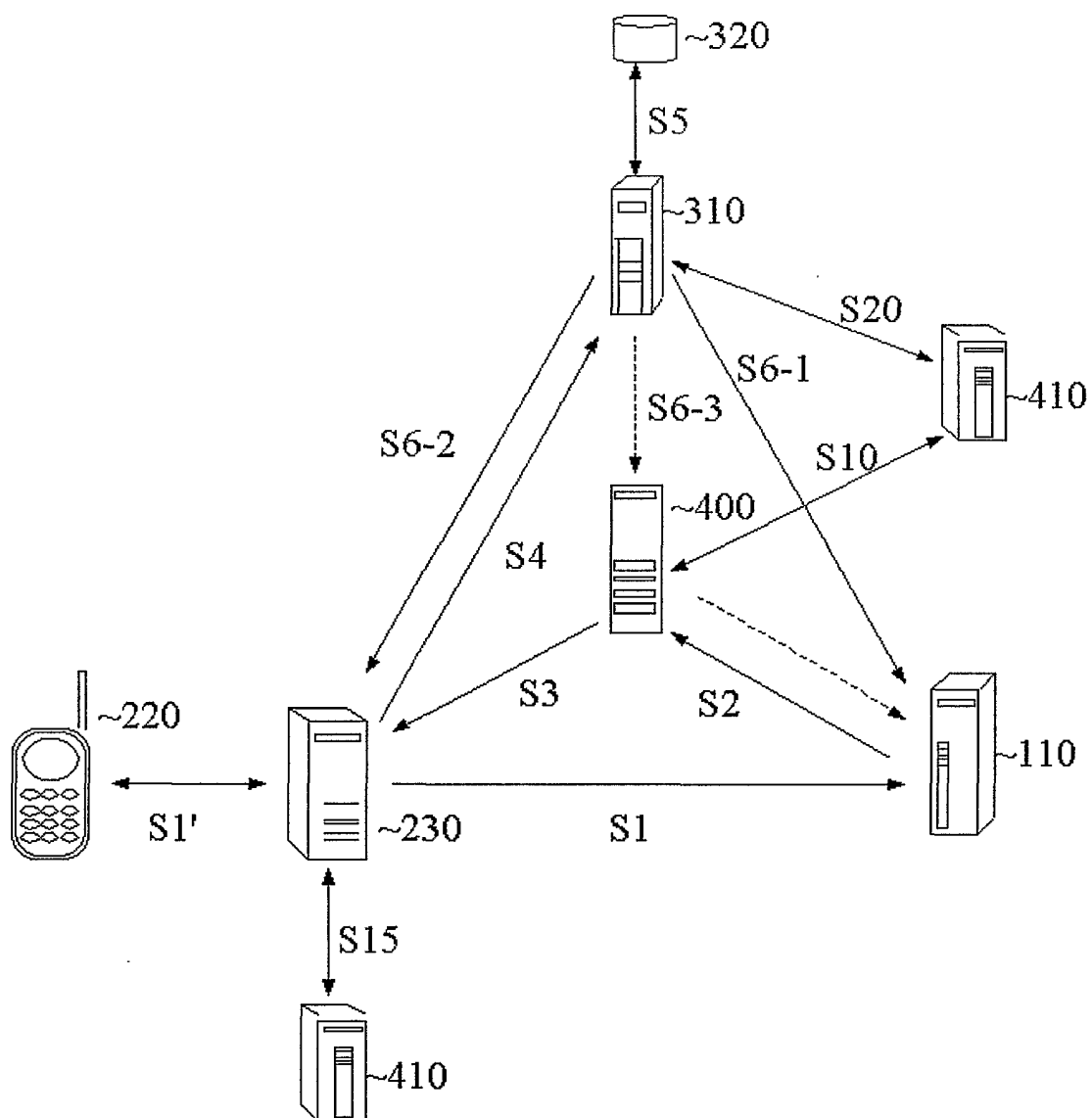
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FIG.2



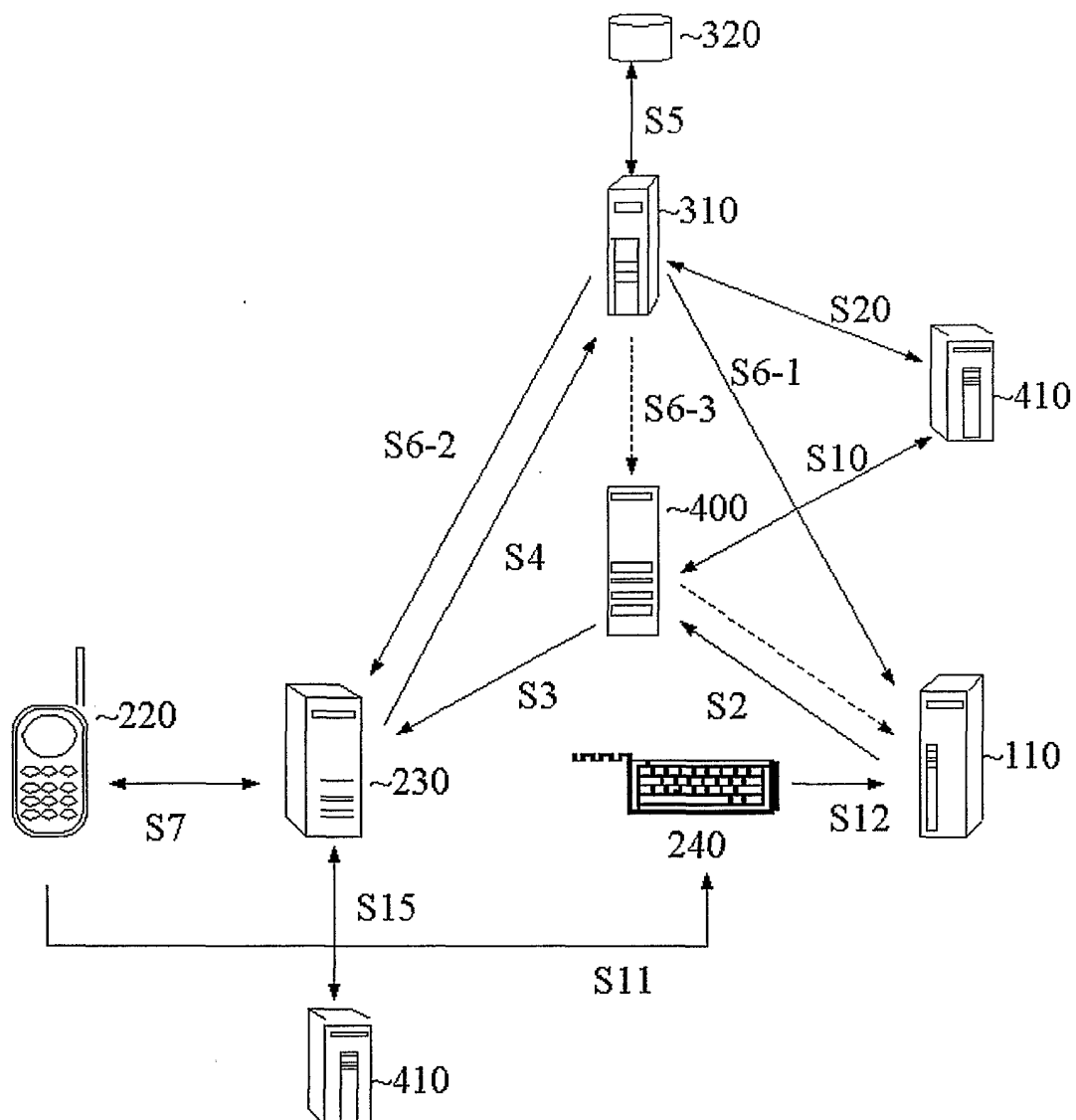
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FIG. 3



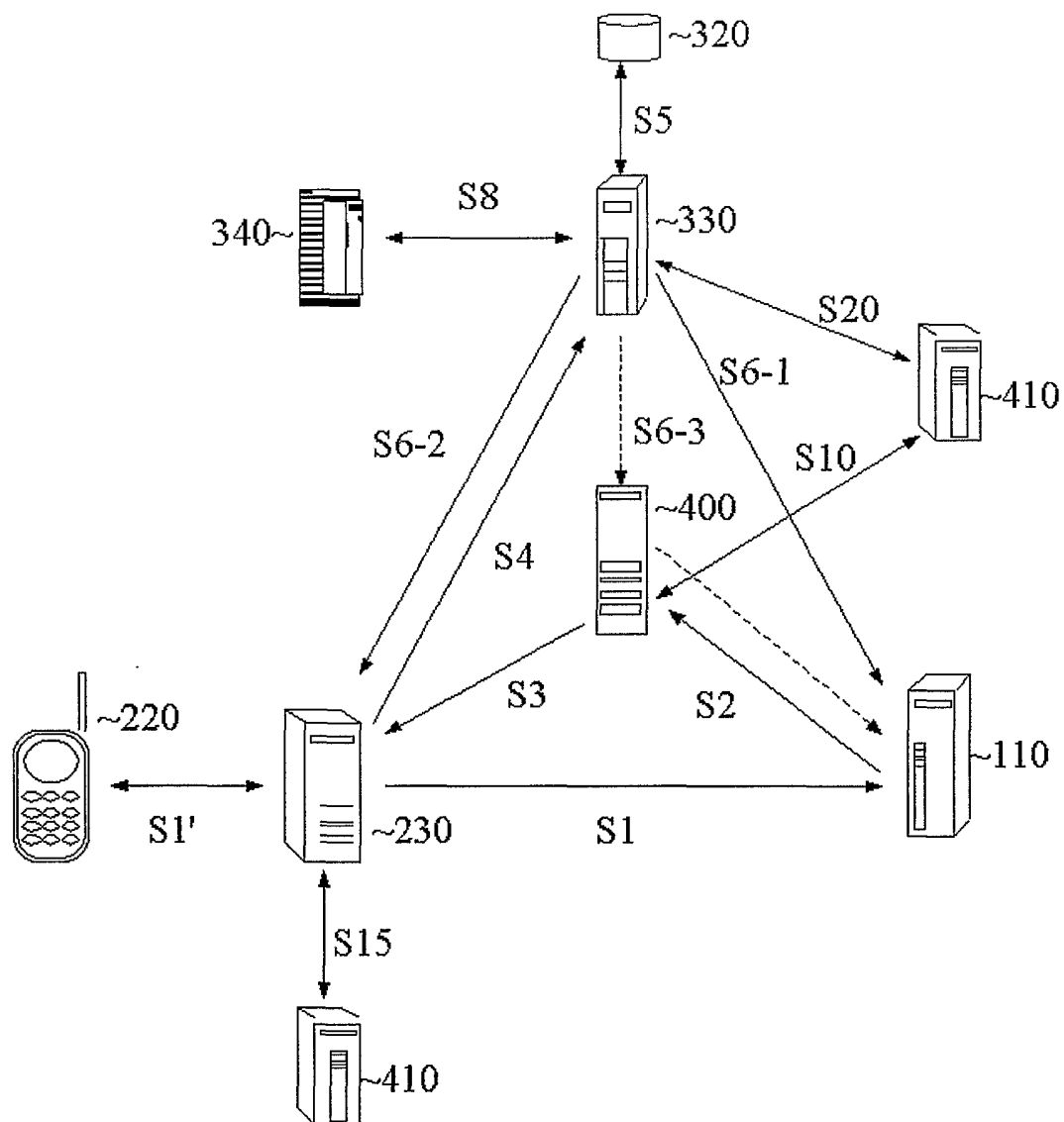
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FIG.4



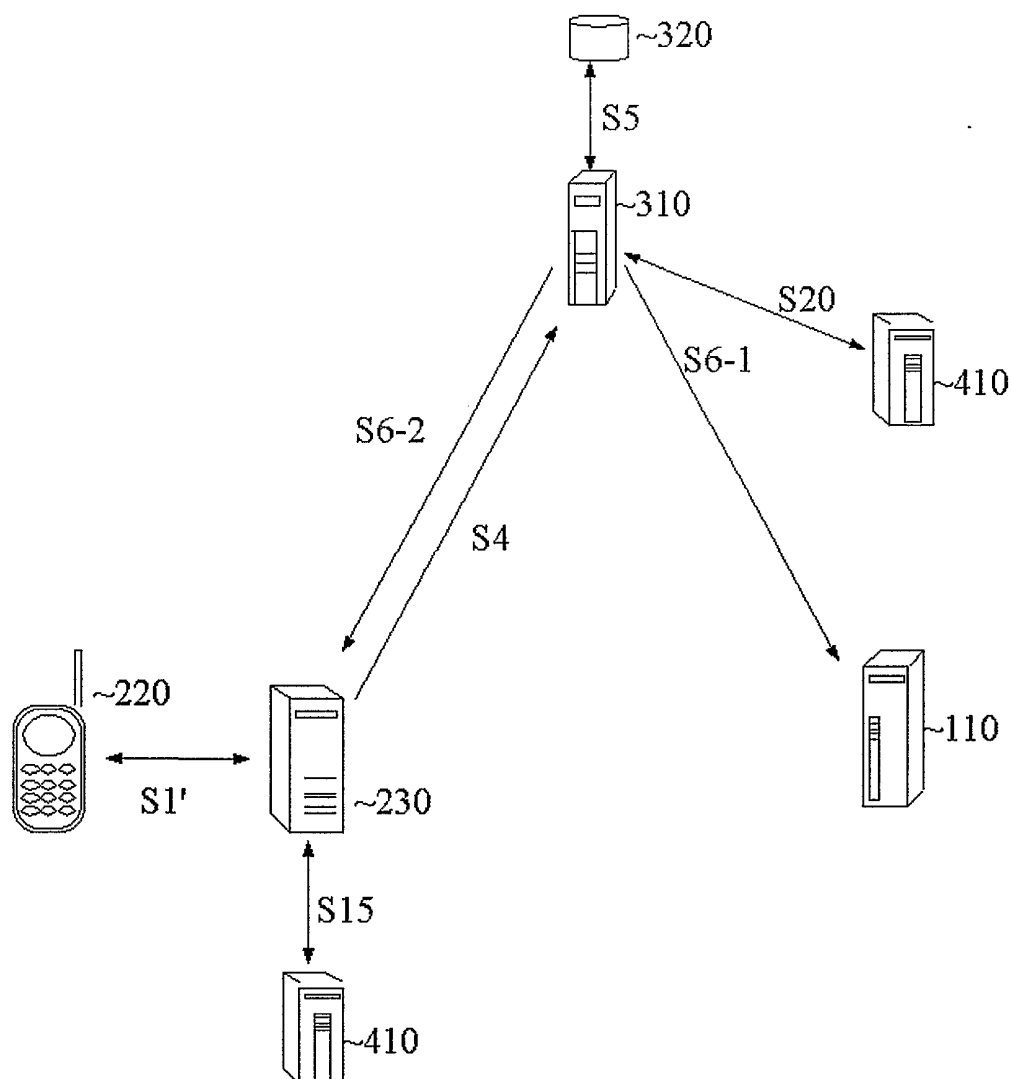
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FIG.5



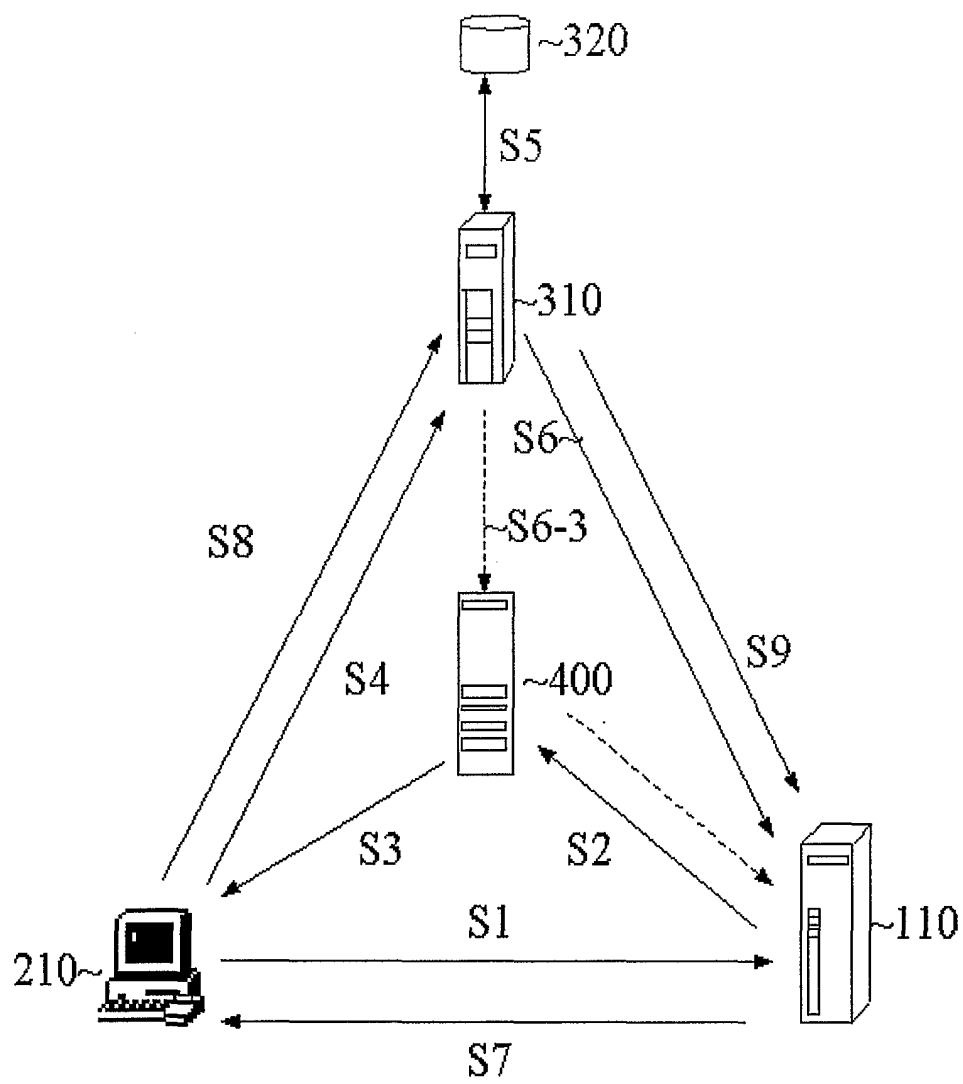
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FIG. 6



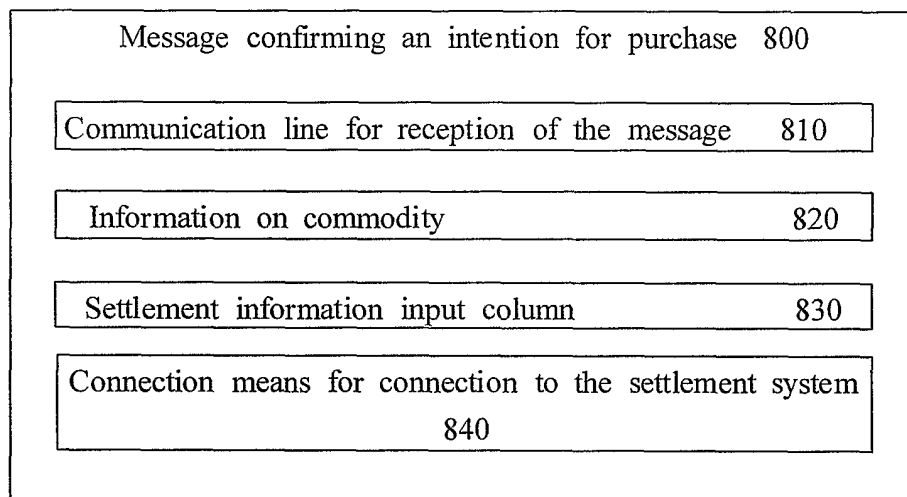
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FIG. 7



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FIG. 8



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR01/01381

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 17/60

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

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

KR, JP

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

WPI, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	KR 1998-4159A(COMWAN CO. LTD.) 30. MARCH 1998 See the whole document	1-24
A	KR 2000-14231A(ETRI) 6. MARCH. 2000 See the whole document	1-24
A	KR 2000-36542A(BARODOTCOM CO. LTD) 5. JULY 2000 See the whole document	1-24
A	JP 6-282556A(IWATA HISHASHI) 7. OCTOBER 1994 See the whole document	1-24
A	US 5864830(David armetta, David tempest) 26. JANUARY 1999 See the whole document	1-24

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

31 DECEMBER 2001 (31.12.2001)

Date of mailing of the international search report

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