TITLE

ELECTRONIC TICKET MANAGEMENT APPARATUS AND ELECTRONIC TICKET MANAGEMENT METHOD

TECHNICAL FIELD

[0001] The present disclosure relates to an electronic ticket management apparatus and an electronic ticket management method.

BACKGROUND

[0002] Recently, the spread of electronic payment services utilizing information communication technology has progressed. For example, in a system disclosed in Patent Literature 1 (Japanese Unexamined Patent Publication No. 2005-135330), an electronic ticket serving as a taxi ticket is created and payment is performed by the electronic ticket. A payment process can be simplified using the electronic ticket.

SUMMARY

[0003] The above-described advantage is in a payment process using an electronic ticket, but it is difficult to say that the use of an electronic ticket is generally widespread in the present situation.

[0004] Therefore, an objective of the present disclosure is to provide an electronic ticket management apparatus and an electronic ticket management method useful in promoting the use of an electronic ticket.

[0005] The present inventors have paid attention to the fact that there is a desire to smoothly transfer an electronic ticket between users and have considered that the use of the electronic ticket is promoted if the electronic ticket can be preferably transferred from one user (a first user) to another user (a second user). Therefore, the present inventors have found an apparatus which transfers an electronic ticket in which an

upper limit amount of use is set by the second user according to a request from the first user. The electronic ticket management apparatus can easily transfer an electronic ticket in which the upper limit amount of use is set via the electronic ticket management apparatus to the second user.

[0006] Here, in the step of transferring the electronic ticket, it is difficult to specify an amount of money to be actually used by the second user in many cases. Thus, it is necessary for the first user to set an upper limit amount of use to a high value with a margin. Thereby, the first user who is a payer hesitates to transfer the electronic ticket and the use of the electronic ticket may not be sufficiently promoted.

[0007] In this regard, the present inventors have conducted intensive studies to find the fact that the above-described program can be solved by the electronic ticket management apparatus having the following configuration.

[0008] That is, an electronic ticket management device according to an aspect of the present disclosure includes a storage unit configured to store electronic ticket information including an upper limit amount of use, an authorized user, and a payer of an electronic ticket; a transfer management unit configured to acquire a transfer request from the payer and change the authorized user of the electronic ticket information accumulated in the storage unit to a person designated in the transfer request; a transaction management unit configured to restrictively permit a transaction using the electronic ticket if the authorized user uses the electronic ticket within the upper limit amount of use; and a payment processing unit configured to perform a payment process so

that a difference amount between the upper limit amount of use of the electronic ticket to be used in the transaction and an actually used amount of money in the transaction is returned to the payer of the electronic ticket if the transaction management unit permits the transaction using the electronic ticket.

[0009] In this electronic ticket management apparatus, the authorized user is changed on the basis of the transfer request from the payer. When the authorized user uses the electronic ticket within the upper limit amount of use, the use of the electronic ticket is permitted and the difference amount between the upper limit amount of use and the used amount of money is returned to the payer. Thus, when the used amount of money of the authorized user is smaller and the upper limit amount of use of the electronic ticket is larger, a larger amount is returned to the payer. Consequently, even if the upper limit amount of use is set to be high in a step of setting the upper limit amount of use or an amount of money of a purchase of the authorized user is small, the payer of the electronic ticket does not suffer a disadvantage. Thereby, it is possible to promote a transfer of an electronic ticket and consequently it is possible to promote the use of an electronic ticket.

[0010] Also, in the electronic ticket management apparatus, the electronic ticket information may further include information for specifying a field of application of the electronic ticket, and the transaction management unit may further restrictively permit the transaction using the electronic ticket if a purpose of use is within a range of the field of application when the authorized user uses the electronic ticket within the upper limit amount of use. Thereby, the

field of application of the use of electronic ticket is limited, so that it is possible to reduce a burden on management of the electronic ticket.

[0011] Also, the electronic ticket management apparatus may further include a field-of-application management unit configured to acquire a designated purpose of use from the payer and set information for specifying the field of application of the electronic ticket information accumulated in the storage unit in content designated in the designated purpose of use. Thereby, the payer can prevent the electronic ticket from being used in an unintended field of application. Thereby, convenience for the payer can be improved and the use of an electronic ticket can be further promoted.

[0012] Also, in the electronic ticket management apparatus, the electronic ticket information may further include a valid period of the electronic ticket, and the transaction management unit may further restrictively permit the transaction using the electronic ticket if a date and time of use are within the valid period when the authorized user uses the electronic ticket within the upper limit amount of use. Thereby, a period in which the electronic ticket is used is limited and therefore it is possible to reduce a burden of managing the electronic ticket. Also, for example, if the valid period can be set by the payer, the payer can prevent the electronic ticket from being used in an unintended period. That is, the use of the electronic ticket in a period intended by the payer can be prompted. Thereby, convenience for the payer is improved and the use of an electronic ticket is further promoted.

[0013] Also, in the electronic ticket management apparatus, the

payment processing unit may perform a pre-payment by the upper limit amount of use at a preceding stage of the payment process and perform a correction process according to the actually used amount of money in the payment process. By performing the pre-payment by the upper limit amount of use, it is possible to cause a purchasing power of the electronic ticket and a payment completion amount to be in conjunction with each other and to further perform payment along an actual state.

[0014] Also, in the electronic ticket management apparatus, the payment processing unit may perform a post-payment by the used amount of money in the payment process. Thereby, it is only necessary to perform a payment once after a used amount of money of the electronic ticket is established and the payment can be simplified.

[0015] An electronic ticket management method according to an aspect of the present invention is an electronic ticket management method to be performed by an electronic ticket management apparatus, the electronic ticket management method including: storing electronic ticket information including an upper limit amount of use, an authorized user, and a payer of an electronic ticket; acquiring a transfer request from the payer and changing the authorized user of the electronic ticket information to a person designated in the transfer request; restrictively permitting a transaction using the electronic ticket if the authorized user uses the electronic ticket within the upper limit amount of use; and performing a payment process so that a difference amount between the upper limit amount of use of the electronic ticket to be used in the transaction and an actually used amount of money in the transaction is returned to the payer of the electronic ticket if the transaction using the

electronic ticket is permitted in the permitting step.

[0016] According to the present disclosure, it is possible to provide an electronic ticket management apparatus and an electronic ticket management method useful in promoting the use of an electronic ticket.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 is a diagram schematically illustrating a schematic configuration of an electronic ticket management system according to the present embodiment.

FIG. 2 is a block diagram illustrating a functional configuration of the electronic ticket management apparatus.

FIG. 3A is a table illustrating a customer management table.

FIG. 3B is a table illustrating an electronic ticket management table.

FIG. 4A is a table illustrating an issued ticket management table.

FIG. 4B is a table illustrating a purchase management table.

FIG. 4C is a table illustrating a confirmed payment table.

FIG. 5 is a sequence diagram illustrating a procedure of executing an electronic ticket management method.

FIG. 6 is a diagram schematically illustrating an image of electronic ticket management using an app.

FIG. 7 is a sequence diagram illustrating a procedure of executing an electronic ticket management method according to a modified example.

DETAILED DESCRIPTION

[0018] Hereinafter, embodiments will be described in detail with reference to the drawings. In the description, the same elements or

elements having the same function are denoted by the same reference signs and redundant description thereof will be omitted.

[0019] [Electronic ticket management system]

As illustrated in FIG. 1, an electronic ticket management system 1 includes an electronic ticket management apparatus 2, a communication network 3, portable terminals 4 and 5, a card company terminal 6, and a use company terminal 7. The communication network 3 is, for example, the Internet, and the electronic ticket management apparatus 2, the portable terminals 4 and 5, the card company terminal 6, and the use company terminal 7 are connected to the communication network 3.

[0020] The portable terminal 4 or 5 is, for example, a portable phone such as a smartphone or a feature phone, or a communication terminal such as a tablet type terminal. Software (an app) for using an electronic ticket is downloaded to the portable terminals 4 and 5. The app is executed and therefore communication is performed among the portable terminals 4 and 5 and the electronic ticket management apparatus 2 and users of the portable terminals 4 and 5 can use an electronic ticket. Also, the electronic ticket use may not be necessarily implemented by the above-described app, and the use of the electronic ticket using the above-described app will be described hereinafter.

[0021] The portable terminals 4 and 5 execute the app to perform an issuance request of the electronic ticket, browsing of the issued electronic ticket, a change of a field of application or the like of the electronic ticket, a transfer/acquisition of the electronic ticket, a transaction using the electronic ticket (a purchase of a product or

service), etc. In the present embodiment, the portable terminal 4 is a terminal used by a first user (a transferor who is a payer) who purchases an electronic ticket and transfers the electronic ticket to another person. Also, the portable terminal 5 is a terminal used by a second user (a transferee) who acquires the electronic ticket from the first user and uses the acquired electronic ticket. Because the first user and the second user are people capable of purchasing a product or the like using any electronic ticket, the first user and the second user may be collectively referred to as a "consumer."

[0022] Also, the portable terminals 4 and 5 having different reference signs are described for convenience, but there is no difference in a function for using an electronic ticket in the portable terminals 4 and 5. Also, one portable terminal 4 and one portable terminal 5 are illustrated in FIG. 1, but the number of portable terminals 4 and the number of portable terminals 5 may be two or more and are not limited thereto.

[0023] The card company terminal 6 is a terminal of a credit card company which issues a credit card and manages transaction by the credit card. The card company terminal 6 communicates with the electronic ticket management apparatus 2 to perform a card payment related to a purchase of an electronic ticket for purchasing a product or a service. The use company terminal 7 is a terminal of a transaction destination (a use company) which receives a payment of the transaction using the electronic ticket. Because the transaction destination is one who sells a product or the like, the transaction destination may be referred to as a "seller." For example, if a user getting in a taxi uses an electronic ticket, the use company terminal 7 is a terminal of a taxi

company. The use company terminal 7 communicates with the electronic ticket management apparatus 2 to perform a payment process in a transaction using an electronic ticket. Each of the card company terminal 6 and the use company terminal 7 is provided for one company, and one or more card company terminals 6 or one or more use company terminals 7 may be provided for each company.

[0024] [Electronic ticket management apparatus]

The electronic ticket management apparatus 2 is a server which issues an electronic ticket and manages a transaction using the electronic ticket. The electronic ticket management apparatus 2 includes a processor 201, a memory 202, a storage 203, a network adaptor 204, and a bus 205 which connects them. The processor 201 executes a program in cooperation with at least one of the memory 202 and the storage 203 to input/output data via the network adaptor 204. Thereby, various functions of the electronic ticket management apparatus 2 are implemented. Also, a configuration of the electronic ticket management apparatus 2 shown here is an example. Any configuration may be made as hardware as long as the electronic ticket management apparatus 2 can implement a function to be described below.

[0025] FIG. 2 is a diagram illustrating each function of the electronic ticket management apparatus 2 as a virtual component (hereinafter referred to as a "functional block"). These functional blocks are only a plurality of blocks into which the function of the electronic ticket management apparatus 2 is divided, and this does not mean that the hardware is divided into such blocks.

[0026] As illustrated in FIG. 2, the electronic ticket management apparatus 2 includes a communication unit 21, a customer information update unit 22, an issuance unit 23, a field-of-application management unit 24, a ticket information output unit 25, a transfer management unit 26, a transaction management unit 27, a payment processing unit 28, a customer management table TBL211, an electronic ticket management table TBL212, an issued ticket management table TBL213 (a storage unit), a purchase management table TBL214, and a confirmed payment table TBL215.

[0027] The communication unit 21 communicates with the portable terminals 4 and 5, the card company terminal 6, and the use company terminal 7 (hereinafter, each of the portable terminals 4 and 5, the card company terminal 6, and the use company terminal 7 may be referred to as the "portable terminal 4, 5, or the like") to perform a transmission/reception of information. That is, the communication unit 21 receives a predetermined request or the like from the above-described portable terminal 4, 5, or the like, and outputs the request or the like to another functional block within the electronic ticket management apparatus 2. Also, the communication unit 21 receives an input of the predetermined request or the like from another functional block within the electronic ticket management apparatus 2 and transmits the request or the like to the above-described portable terminal 4, 5, or the like.

[0028] The customer information update unit 22 receives a customer information update request from the portable terminal 4 or 5 or the use company terminal 7 via the communication unit 21 and updates the

customer management table TBL211. FIG. 3A is a table indicating the customer management table TBL211. As illustrated in FIG. 3A, the customer management table TBL211 stores customer information in which a user ID, a name, a user type, a notification destination, and a card number of each customer are associated with each other.

[0029] The customer is a person who performs a transaction using an electronic ticket by communicating with the electronic ticket management apparatus 2. That is, the customer is a consumer who purchases a product or a service using an electronic ticket (i.e., a user using the portable terminal 4 or 5) and a seller is a consumer who receives a payment of the product or the service through the electronic ticket (i.e., the use company using the use company terminal 7). The user ID is an identifier for uniquely specifying the user. The name is a name of the user. The user type is a type of the user and is denoted by, for example, "1" or "2." When the user type is denoted by "1," this indicates that the user is a seller. When the user type is denoted by "2," this indicates that the user is a consumer. The notification destination is a contact destination of the user and is used when communication with the electronic ticket management apparatus is performed. For example, a mail address or a phone number is registered as the notification destination. The card number is a credit card number of the user. The card number is used in a payment process. Also, the name and the card number may not be necessarily set in the customer management table TBL211.

[0030] The customer information update unit 22 adds, deletes, and edits customer information as a process of updating the customer

management table TBL211. That is, when a customer information update request is received from the portable terminal 4, 5, or the like for which no customer information is stored, the customer information update unit 22 adds customer information related to a terminal to the customer management table TBL211. In this case, the customer information update request includes information indicating the name, the user type, the notification destination, and the card number. The customer information update unit 22 creates the customer information by associating the information included in the customer information update request with an arbitrarily determined user ID and adds the customer information to the customer management table TBL211.

[0031] Also, when the customer information update request including a request for deleting the customer information is received from the portable terminal 4, 5, or the like, the customer information update unit 22 deletes the customer information related to the portable terminal 4, 5, or the like. Also, when the customer information update request including a request for editing the customer information is received from the portable terminal 4, 5, or the like, the customer information update unit 22 edits the customer information related to the portable terminal 4, 5, or the like. The editing of the customer information is, for example, a change of a name, a notification destination, a card number, or the like. When the update process is completed, the customer information update unit 22 may transmit a completion notification to the portable terminal 4, 5, or the like via the communication unit 21.

[0032] The issuance unit 23 receives an electronic ticket issuance

request from the portable terminal 4 via the communication unit 21 and issues an electronic ticket. In further detail, when the electronic ticket issuance request is received and a completion notification of a pre-payment process is further received from the payment processing unit 28 (details thereof will be described below), the issuance unit 23 issues the electronic ticket. The electronic ticket issuance request includes information (a ticket ID) for specifying an electronic ticket desired to be issued, an upper limit amount of use of the electronic ticket, a valid period of the electronic ticket, and a user ID. The issuance unit 23 refers to the electronic ticket management table TBL212 and issues an electronic ticket on the basis of information included in the electronic ticket issuance request. Specifically, the issuance unit 23 stores (adds) an electronic ticket in which predetermined information is associated to the issued ticket management table TBL213.

[0033] FIG. 3B is a table indicating the electronic ticket management table TBL212. As illustrated in FIG. 3B, the electronic ticket management table TBL212 associates ticket IDs, purposes for which money is spent, use company IDs, and settable amounts for all electronic tickets and stores an association result. The ticket ID is an identifier for uniquely specifying a type of an electronic ticket. Also, a predetermined ticket ID (for example, "99999") may be an identifier of an electronic ticket in which a purpose for which money is spent, a use company ID, a settable amount, etc. are "free." When the purpose for which money is spent or the like is "free," this indicates that the user can freely specify the purpose for which money is spent or the like

(details will be described below). The purpose for which money is spent is how an electronic ticket is used. The use company ID is an identifier for uniquely specifying a use company (a seller) which may serve as a use destination of an electronic ticket. A plurality of IDs may be set as the use company ID. The settable amount is a range of an amount capable of being set as the upper limit amount of use of an electronic ticket. Also, the settable amount may not necessarily be set in the electronic ticket management table TBL212.

[0034] FIG. 4A is a table illustrating the issued ticket management table TBL213. As illustrated in FIG. 4A, the issued ticket management table TBL213 stores (accumulates) electronic ticket information in which an issued ticket ID, a ticket ID, an upper limit amount of use, a valid period, a payer ID, an authorized user ID, and a use completion flag of the electronic ticket issued by the issuance unit 23 are associated with each other.

[0035] The issued ticket ID is an identifier for uniquely specifying an issued electronic ticket. The ticket ID is an identifier for uniquely specifying a type of an electronic ticket. The upper limit amount of use is an upper limit amount of use set in an electronic ticket. The valid period is a valid period of an electronic ticket (a period in which the electronic ticket is available). Also, the valid period is set to a date in FIG. 4A, but the valid period may be set to a time. The payer ID is an identifier for uniquely specifying a person who performs a payment related to a purchase of an electronic ticket. The authorized user ID is an identifier for uniquely specifying a person capable of purchasing a product or the like using an electronic ticket. The use completion flag

is a flag indicating whether an electronic ticket is used and is set to "1" if the electronic ticket is used and set to "0" if the electronic ticket is not used.

[0036] As is apparent from the electronic ticket management table TBL212 illustrated in FIG. 3B, the purpose for which money is spent and the use company ID (hereinafter, the purpose for which money is spent and the use company ID may be collectively referred to as a "field of application") are associated with the ticket ID. That is, the electronic ticket information of the issued ticket management table TBL213 includes a ticket ID which is information for specifying a field of application of an electronic ticket.

[0037] The issuance unit 23 specifies a ticket ID, an upper limit amount of use, a valid period, a payer ID, and an authorized user ID of an electronic ticket to be issued on the basis of the information of the electronic ticket management table TBL212 and the information included in the electronic ticket issuance request. That is, if the ticket ID included in the electronic ticket issuance request is in the electronic ticket management table TBL212, the issuance unit 23 specifies the ticket ID as a ticket ID of an electronic ticket which is issued. Also, if the upper limit amount of use included in the electronic ticket issuance request is in a settable amount range in the electronic ticket management table TBL212, the upper limit amount of use is specified as an upper limit amount of use of the electronic ticket which is issued.

[0038] Also, the issuance unit 23 specifies the valid period included in the electronic ticket issuance request as a valid period of the electronic ticket which is issued. Further, the issuance unit 23 specifies the user

ID included in the electronic ticket issuance request as a payer ID and an authorized user ID of the issued electronic ticket. When the electronic ticket is issued, the issuance unit 23 specifies a use completion flag of the issued electronic ticket as "0." The issuance unit 23 stores (adds) an electronic ticket in which an arbitrarily set issued ticket ID is associated with the above-described specified information in the issued ticket management table TBL213. The issuance unit 23 may transmit a completion notification to the portable terminal 4 via the communication unit 21 if an issuance process is completed.

[0039] According to the designation of a purpose of use from the first user who is a payer of the issued electronic ticket, the field-of-application management unit 24 sets (changes) information for specifying the field of application of the electronic ticket, i.e., the ticket ID, stored in the issued ticket management table TBL213. Specifically, the field-of-application management unit 24 receives the designation of the purpose of use from the portable terminal 4 of the first user who is the payer via the communication unit 21. In the designation of the purpose of use, an issued ticket ID for specifying an electronic ticket for which the ticket ID is changed and a changed ticket ID are included. Also, the upper limit amount of use and/or the valid period after the change of the ticket ID may be included in the designation of the purpose of use. The field-of-application management unit 24 refers to the issued ticket management table TBL213 and changes the ticket ID of the electronic ticket specified by the issued ticket ID included in the designation of the purpose of use to the ticket ID included in the

designation of the purpose of use. Also, if the upper limit amount of use or the like is included in the designation of the purpose of use, the upper limit amount or the like may be changed with the ticket ID.

[0040] The field-of-application management unit 24 may change such a ticket ID only when a ticket ID of a target electronic ticket is a predetermined ID. Specifically, the field-of-application management unit 24 may perform the above-described change of the ticket ID only for the electronic ticket of the ticket ID "99999" for which the field of application is "free." When the change of the ticket ID is completed, the field-of-application management unit 24 may transmit a completion notification to the portable terminal 4 via the communication unit 21.

[0041] The ticket information output unit 25 outputs information related to an electronic ticket for which the user is at least one of the payer and the authorized user according to a browsing request from the user. Specifically, the ticket information output unit 25 receives a browsing request from the portable terminal 4 or the portable terminal 5 via the communication unit 21. The browsing request includes an issued ticket ID for specifying an electronic ticket desired to be browsed. The ticket information output unit 25 refers to the issued ticket management table TBL213 and specifies electronic ticket information related to the issued ticket ID included in the browsing request. Further, the ticket information output unit 25 refers to the electronic ticket management table TBL212 and specifies a purpose for which money is spent and a use company ID associated with the ticket ID of the specified electronic ticket information. The ticket information output unit 25 transmits information related to the specified electronic

ticket to the portable terminal 4 or the portable terminal 5 which is a transmission source of the browsing request via the communication unit 21.

[0042] The transfer management unit 26 acquires a transfer request from the first user who is a payer of the issued electronic ticket and changes the authorized user of the electronic ticket to a person designated in the transfer request. Specifically, the transfer management unit 26 receives the transfer request from the portable terminal 4 of the first user who is the payer via the communication unit 21. The transfer request includes an issued ticket ID for specifying an electronic ticket for which an authorized user is changed and a user ID for specifying the second user who is a changed authorized user (i.e., a transferee). The transfer management unit 26 refers to the issued ticket management table TBL213 and changes an authorized user ID of an electronic ticket specified by the issued ticket ID included in the transfer request to a user ID of the second user included in the transfer request. The transfer management unit 26 may transmit a notification indicating that the change (a rewriting) of the authorized user is completed to the portable terminal 4 of the first user and the portable terminal 5 of the second user via the communication unit 21.

[0043] The transaction management unit 27 manages a transaction using the electronic ticket by the user. The transaction management unit 27 restrictively permits the transaction using the electronic ticket if the authorized user uses the electronic ticket within an upper limit amount of use. If the authorized user uses the electronic ticket within the upper limit amount of use, the transaction management unit 27

further restrictively permits the transaction using the electronic ticket when the purpose of use is within a range of a field of application of the electronic ticket (i.e., the purpose for which money is spent and a use company ID) and a use date and time are within a valid period of the electronic ticket.

[0044] Specifically, the transaction management unit 27 receives a payment request from the use company terminal 7 via the communication unit 21. The payment request is output by the use company terminal 7 according to a payment request from the second user who performs a transaction using an electronic ticket using a seller related to the use company terminal 7 as a transaction destination. The above-described payment request includes a used amount of money of the electronic ticket and a product/service name of the transaction. The above-described payment request includes a user ID for specifying the seller related to the use company terminal 7, the used amount of money and the product/service name included in the payment request, and the use date and time at which the transaction using the electronic ticket was performed. Also, the use date and time at which the transaction was performed are, for example, a date and time at which the use company terminal 7 received the payment request from the second user.

[0045] The transaction management unit 27 receiving the payment request performs authentication of the use company terminal 7 transmitting the payment request. Specifically, the transaction management unit 27 refers to the customer management table TBL211 and confirms that a user ID included in the payment request is in the

customer management table TBL211 and that a user type associated with the user ID of the customer management table TBL211 is "1" (that the user is a seller). When the authentication is completed, the transaction management unit 27 stores an authentication result in the purchase management table TBL214 in association with information included in the payment request.

[0046] FIG. 4B is a table illustrating the purchase management table TBL214. As illustrated in FIG. 4B, the purchase management table TBL214 stores purchase information in which a use company ID, a used amount of money, a product/service name, a use date and time, and a payment code are associated with each other for each transaction using an electronic ticket. The use company ID is an identifier for uniquely specifying a use company (a seller) in a transaction using the electronic ticket. The used amount of money is an amount of money paid by the electronic ticket in the transaction. The product/service name is a product or service name related to the transaction. The use date and time are a date and time at which the transaction was performed. The payment code is an identifier for uniquely specifying the transaction.

[0047] The transaction management unit 27 specifies the user ID, the used amount of money, the product/service name, and the use date and time included in a payment request and stores the purchase information in which the specified information is associated with an arbitrarily set payment code (purchase information for which a payment code is issued) in the purchase management table TBL214. After the storage, the transaction management unit 27 transmits a code issuance notification indicating that the payment code is issued to the use

company terminal 7 via the communication unit 21. The code issuance notification includes an issued payment code.

[0048] The use company terminal 7 receiving the code issuance notification transmits the code issuance notification to the portable terminal 5 of the second user. Also, the transmission of the code issuance notification to the portable terminal 5 by the use company terminal 7 may be implemented by displaying the payment code on an app to present the payment code to the second user or by displaying the payment code as a graphic such as a QR code, a barcode, or a color code to present the payment code to the second user, or may be implemented using near field communication. Alternatively, the transmission of the code issuance notification may be performed by orally delivering the payment code from the user of the use company terminal 7 to the second user. The second user confirming the payment code inputs the payment code from the portable terminal 5. The input of the payment code by the second user may be implemented by a manual input to a code input field of the app or may be implemented by reading a graphic such as a QR code according to a camera function provided in the portable terminal 5. The transaction management unit 27 acquires the payment code input in the portable terminal 5 and a user ID for specifying the second user inputting the payment code via the communication unit 21.

[0049] The transaction management unit 27 acquiring the payment code or the like from the portable terminal 5 performs a process of determining a validity of the transaction. In a validity determination process, the transaction management unit 27 performs processes of code

confirmation, authorized user confirmation, and confirmation of an amount of money or the like. The transaction management unit 27 determines that the transaction using the electronic ticket is valid if a predetermined condition is satisfied in all of the above-described processes.

[0050] In a code confirmation process, the transaction management unit 27 determines whether the payment code acquired from the portable terminal 5 is a correct payment code for which the payment request is generated. Specifically, the transaction management unit 27 determines whether the acquired payment code is a payment code stored in the purchase management table TBL214. The transaction management unit 27 determines that the predetermined condition is satisfied in the code confirmation process only when it is determined that the payment code is a correct payment code for which the payment request is generated.

[0051] In an authorized user confirmation process, the transaction management unit 27 determines whether the second user can be an authorized user. Specifically, the transaction management unit 27 determines whether the electronic ticket in which the acquired user ID of the second user is the authorized user ID is stored in the issued ticket management table TBL213. The transaction management unit 27 determines that a predetermined condition is satisfied in the authorized user confirmation process only when the second user is determined to be the authorized user. In this case, the transaction management unit 27 specifies the electronic ticket in which the user ID of the second user is the authorized user ID.

[0052] In a process of confirming an amount of money or the like, the transaction management unit 27 determines whether a used amount of money in the transaction is within an upper limit amount of use of the electronic ticket, whether the purpose of use of the transaction is within a range of a field of application of the electronic ticket, and whether a use date and time of the transaction are within a valid period of the electronic ticket. Specifically, the transaction management unit 27 refers to the purchase management table TBL214 and specifies the use company ID, the used amount of use, the product/service name, and the use date and time corresponding to the payment code acquired from the portable terminal 5. The purpose of use is specified by the use company ID and the product/service name.

[0053] The transaction management unit 27 refers to the issued ticket management table TBL213 and determines whether an electronic ticket in which the upper limit amount of use is greater than the above-described used amount of money, the field of application matches the purpose of use, and the valid period includes the use date and time is among electronic tickets specified in the authorized user confirmation process. Here, as described above, the ticket ID is stored as information for specifying the field of application of the electronic ticket in the issued ticket management table TBL213 and the purpose for which money is spent and the use company ID as a field of application of the electronic ticket are stored in association with the ticket ID in the electronic ticket management table TBL212. Consequently, the transaction management unit 27 determines whether there is an electronic ticket in which the field of application matches the

purpose of use by comparing the purpose for which money is spent and the use company ID in the field of application of the electronic ticket specified in the authorized user confirmation process with the product/service name and the use company ID in the purpose of use corresponding to the payment code.

[0054] The transaction management unit 27 determines that the predetermined condition is satisfied in the process of confirming an amount of money or the like only when the above-described electronic ticket is present. In this case, the transaction management unit 27 specifies one electronic ticket satisfying the condition of the process of confirming the amount of money or the like. Also, if a plurality of electronic tickets satisfy the condition, the transaction management unit 27 may preferentially specify, for example, an electronic ticket in which an upper limit amount of use is small. Also, an input of information for specifying an electronic ticket to be used is received from the second user, and one electronic ticket may be specified according to the input.

[0055] When it is determined that the predetermined condition is satisfied in all of the code confirmation process, the authorized user confirmation process, and the process of confirming the amount of money or the like, the transaction management unit 27 determines that the transaction is valid according to a use of the specified electronic ticket in the process of confirming the amount of money or the like and permits a transaction. In this case, the transaction management unit 27 refers to the issued ticket management table TBL213 and changes a use completion flag of the electronic ticket specified in the process of confirming the amount of money or the like to "1." After the change

of the use completion flag, the transaction management unit 27 outputs a corrected payment request to the payment processing unit 28. The corrected payment request includes an issued ticket ID for specifying an electronic ticket for which the use completion flag is changed and a payment code related to the transaction.

[0056] If the transaction management unit 27 permits the transaction using the electronic ticket, the payment processing unit 28 performs a payment process so that a difference amount between the upper limit amount of use of the electronic ticket to be used in the transaction and an amount of money actually used in the transaction is returned to the payer of the electronic ticket. Specifically, the payment processing unit 28 performs a pre-payment by the upper limit amount of use at a preceding stage of the above-described payment process (in further detail, a preceding stage in which the electronic ticket is issued) and performs a correction process according to the used amount of money of the transaction in the above-described payment process.

[0057] In the pre-payment process, the payment processing unit 28 first receives an electronic ticket issuance request from the portable terminal 4 via the communication unit 21. The electronic ticket issuance request includes information indicating an upper limit amount of use of an electronic ticket scheduled to be issued and a user ID of the first user. After the customer management table TBL21 is referred to and a card number of the first user is specified, the payment processing unit 28 communicates with the card company terminal 6 via the communication unit 21 and performs a payment (a pre-payment) by an upper limit amount of use of the electronic ticket scheduled to be issued using a

credit card of the user. When a pre-payment process is completed, the payment processing unit 28 outputs a notification of completion of the pre-payment process to the issuance unit 23.

[0058] In the correction process (the payment process), the payment processing unit 28 first receives a corrected payment request from the transaction management unit 27 and acquires an issued ticket ID and a payment code included in the corrected payment request. The payment processing unit 28 refers to the issued ticket management table TBL213 to specify an upper limit amount of use of the electronic ticket indicated by the acquired issued ticket ID and refers to the purchase management table TBL214 to specify a used amount of money in a transaction indicated by the acquired payment code. The payment processing unit 28 specifies an amount obtained by subtracting the used amount of money from the specified upper limit amount of use as a returned amount for the first user who is the payer. After referring to the customer management table TBL211 to specify the card number of the first user, the payment processing unit 28 communicates with the card company terminal 6 via the communication unit 21 and performs repayment by the above-described returned amount using the credit card of the user. Alternatively, the payment processing unit 28 may perform a process of correcting an amount of money of the pre-payment to the above-described used amount of money. According to this correction process, the payment amount related to the transaction is finally equal to the used amount of money in the transaction.

[0059] When the correction process (the payment process) is completed, the payment processing unit 28 transmits a payment completion

notification to the authorized user (the second user) and the payer (the first user) of the electronic ticket indicated by the issued ticket ID included in the corrected payment request and transmits the payment completion notification to the use company (the seller) of the transaction indicated by the payment code. Finally, the payment processing unit 28 updates the confirmed payment table TBL215.

[0060] FIG. 4C is a table illustrating the confirmed payment table TBL215. As illustrated in FIG. 4C, the confirmed payment table TBL215 stores confirmed payment information in which a payer ID, a payment code, and a payment amount related to a payment process performed by the payment processing unit 28 are associated. The payer ID is an identifier for uniquely specifying a payer of an electronic ticket related to a payment. The payment code is an identifier for uniquely specifying a transaction. The payment amount is a final payment amount in the transaction. The payment processing unit 28 associates the payer ID, the payment code, and the payment amount (i.e., a used amount of money in the transaction) to each other and stores an association result as the confirmed payment information in the confirmed payment table TBL215.

[0061] [Electronic ticket management procedure]

Next, a procedure of managing an electronic ticket by the electronic ticket management apparatus 2 will be described using FIG. 5 as an example of a method of managing an electronic ticket. In FIG. 5, an example in which an electronic ticket is issued in response to a request of the first user (steps S101 to S107), an authorized user of the electronic ticket is changed to the second user in response to a request

of the first user (steps S109 to S115), and a payment process is performed according to a use of the electronic ticket by the second user (step S117 to S139) is illustrated. Also, because steps S117 and S125 among the described steps are not processes in the electronic ticket management apparatus 2 but are processes necessary in description of the electronic ticket management, they will be described together.

[0062] First, an electronic ticket issuance request transmitted from the portable terminal 4 of the first user is received in the issuance unit 23 and the payment processing unit 28 via the communication unit 21 (step S101). The electronic ticket issuance request includes a ticket ID of an electronic ticket desired to be issued, an upper limit amount of use of the electronic ticket, a valid period of the electronic ticket, and a user ID.

[0063] Next, the payment processing unit 28 performs a pre-payment process (step S103). That is, after referring to the customer management table TBL211 to specify a card number of the first user, the payment processing unit 28 communicates with the card company terminal 6 via the communication unit 21 and performs a payment (a pre-payment) by an upper limit amount of use of the electronic ticket scheduled to be issued. When the pre-payment process is completed, the payment processing unit 28 outputs a notification of completion of the pre-payment process to the issuance unit 23.

[0064] Next, the issuance unit 23 receiving the electronic ticket issuance request from the portable terminal 4 and the notification of completion of the pre-payment process from the payment processing unit 28 issues an electronic ticket and the electronic ticket is stored

(accumulated) in the issued ticket management table TBL213 (step S105: an accumulation step). That is, the issuance unit 23 specifies a ticket ID, an upper limit amount of use, a valid period, a payer ID, and an authorized user ID of the issued electronic ticket on the basis of information of the electronic ticket management table TBL212 and information included in the electronic ticket issuance request, and stores the electronic ticket in which the specified information is associated with an arbitrarily set issued ticket ID in the issued ticket management table TBL213. After the issuance of the electronic ticket, the issuance unit 23 transmits an issuance completion notification to the portable terminal 4 (step S107).

[0065] In the electronic ticket issuance process shown in the above-described steps S101 to S107, a management image of an electronic ticket using an app is illustrated in FIG. 6A. In FIG. 6A, an example in which a transaction destination (a use company) in a transaction using the electronic ticket is a taxi company (the same is true for FIGS. 6B and 6C to be described below). In the example illustrated in FIGS. 6A, 6B and 6C, a dedicated app for using the electronic ticket for which the taxi company is a transaction destination is downloaded to the portable terminal 4 of the first user, the portable terminal 5 of the second user, and the use company terminal 7 of the taxi company.

[0066] FIG. 6A illustrates an electronic ticket management image using an app when the first user who is the payer purchases an electronic ticket. The first user activates a dedicated app of the taxi company from the portable terminal 4, inputs information for designating an

electronic ticket to be purchased, an upper limit amount of use, etc., and inputs a purchase instruction (see an app display image of "before purchase" of FIG. 6A). On the basis of the input, the above-described electronic ticket issuance request is transmitted to the electronic ticket management apparatus 2. When a pre-payment of the electronic ticket and the issuance process are completed, the first user can confirm information related to the issued electronic ticket using the dedicated app (see an app display image of "after purchase" of FIG. 6A).

[0067] Returning to FIG. 5, a process of changing the authorized user will be described. After the issuance of the electronic ticket, an electronic ticket transfer request is transmitted from the portable terminal 4 of the first user who is the payer performing the above-described pre-payment, and the transfer management unit 26 receives the transfer request via the communication unit 21 (step S109). The transfer request includes an issued ticket ID for specifying an electronic ticket for which an authorized user is changed and a user ID for specifying the second user who is the authorized user (i.e., a transferee) after the change.

[0068] Next, the transfer management unit 26 changes the authorized user of the electronic ticket according to the transfer request (step S111, a change step). That is, the transfer management unit 26 refers to the issued ticket management table TBL213 and changes the authorized user ID of the electronic ticket specified by the issued ticket ID included in the transfer request to the user ID of the second user included in the transfer request. After the change of the authorized user, the transfer management unit 26 transmits a notification indicating that the change

(a rewriting) of the authorized user is completed to the portable terminal 4 of the first user and the portable terminal 5 of the second user (steps S113 and S115).

[0069] After the notification indicating that the change of the authorized user shown in the above-described steps S113 and S115 is performed (or when the notification indicating that the change of the authorized user shown in the above-described steps S113 and S115 is performed), the transmission/reception of the electronic ticket may be performed between the first user and the second user using the app. FIG. 6B illustrates an electronic ticket management image using the app when an electronic ticket is transferred from the portable terminal 4 of the first user to the portable terminal 5 of the second user.

[0070] If the first user and the second user are close to each other, information indicating that the transferred electronic ticket (for which the authorized user is rewritten) may be directly transmitted from the portable terminal 4 of the first user to the portable terminal 5 of the second user through near field communication (see an app display image of "when the second user is near" of FIG. 6B). In this case, information indicating that the electronic ticket transmitted/received through the near field communication is transmitted from both the portable terminal 4 and the portable terminal 5 to the electronic ticket management apparatus 2.

[0071] Also, if the first user and the second user are far from each other, information indicating that the transferred electronic ticket (for which the authorized user is rewritten) may be transmitted from the portable terminal 4 to the electronic ticket management apparatus 2, for example,

via the communication network 3, and the information may be further transmitted from the electronic ticket management apparatus 2 to the portable terminal 5 (see an app display image of "when the second user is far" of FIG. 6B).

[0072] Returning to FIG. 5, a payment process will be described. When the second user who is a transferee performs a transaction using the electronic ticket after the transfer of the electronic ticket, a payment request is transmitted from the portable terminal 5 of the second user to the use company terminal 7 which is a transaction destination (step S117). The payment request includes a used amount of money of the electronic ticket and a product/service name of the transaction. Also, the transmission of the payment request may be implemented by near field communication or implemented by causing the use company terminal 7 to read a graphic such as a QR code, a barcode, or a color code. Alternatively, the payment request may be orally performed from the second user to the user of the use company terminal 7. The payment request is transmitted from the use company terminal 7 receiving the payment request to the electronic ticket management apparatus 2, and the payment request is received in the transaction management unit 27 via the communication unit 21 (step S119). The payment request includes a user ID for specifying a seller related to the use company terminal 7, a used amount of money and a product/service name included in the payment request, and a use date and time at which the transaction using the electronic ticket was performed.

[0073] Next, the transaction management unit 27 performs authentication of the use company terminal 7 in response to the payment

request (step S121). That is, the transaction management unit 27 refers to the customer management table TBL211 and confirms that the user ID included in the payment request is in the customer management table TBL211 and that the user type associated with the user ID of the customer management table TBL211 is "1" (that the user is a seller). When the authentication is completed, the transaction management unit 27 stores purchase information in which the information included in the payment request is associated with an arbitrarily set payment code in the purchase management table TBL214. After the storage, the transaction management unit 27 transmits a code issuance notification indicating that the payment code is issued to the use company terminal 7 (step S123) and the code issuance notification is further transmitted from the use company terminal 7 to the portable terminal 5 (step S125). The transmission of the code issuance notification to the portable terminal 5 by the use company terminal 7 may be implemented by displaying the payment code on the app to present the payment code to the second user or by displaying the payment code as a graphic such as a QR code, a barcode, or a color code to present the payment code to the second user, or may be implemented using near field communication. Alternatively, the transmission of the code issuance notification may be performed by orally delivering the payment code from the user of the use company terminal 7 to the second user.

[0074] The second user confirming the payment code inputs the payment code from the portable terminal 5, and the transaction management unit 27 receives the payment code and a user ID for specifying the second user inputting the payment code via the

communication unit 21 (step S127).

[0075] Next, transaction management unit 27 acquiring the payment code or the like from the portable terminal 5 determines a validity of the transaction and restrictively permits the transaction using the electronic ticket if a condition such as then upper limit amount of use is satisfied (step S129, a permission step). That is, the transaction management unit 27 performs the processes of code confirmation, authorized user confirmation, and confirmation of an amount of money or the like, and determines that the transaction using the electronic ticket is valid if the predetermined condition is satisfied in all the above-described processes to permit the transaction of the electronic ticket.

[0076] When the transaction using the electronic ticket is permitted, the transaction management unit 27 updates the electronic ticket to be a used electronic ticket (step S131). That is, the transaction management unit 27 refers to the issued ticket management table TBL213 and changes the use completion flag of the electronic ticket specified by the electronic ticket to be used in the transaction to "1." After the change of the use completion flag, the transaction management unit 27 outputs the corrected payment request to the payment processing unit 28. The corrected payment request includes an issued ticket ID for specifying the electronic ticket for which the use completion flag is changed and a payment code related to the transaction.

[0077] Next, the payment processing unit 28 performs a corrected payment process so that a difference amount between the upper limit amount of use of the electronic ticket to be used in the transaction and an amount of money actually used in the transaction is returned to the

payer of the electronic ticket (step S133, a step of performing a payment process). That is, the payment processing unit 28 refers to the issued ticket management table TBL213 to specify the upper limit amount of use of the electronic ticket indicated by the acquired issued ticket ID and refers to the purchase management table TBL214 to specify a used amount of money in the transaction indicated by the acquired payment code. The payment processing unit 28 specifies an amount obtained by subtracting the used amount of money from the specified upper limit amount of use as a returned amount for the first user who is the payer. After referring to the customer management table TBL211 to specify the card number of the first user, the payment processing unit 28 communicates with the card company terminal 6 via the communication unit 21 and performs a repayment by the above-described returned amount (or a process of correcting an amount of money of a pre-payment to a used amount of money) using the credit card of the user.

[0078] After the above-described payment process, the payment processing unit 28 transmits a payment completion notification to the portable terminal 5 of the authorized user (the second user) and the portable terminal 4 of the payer (the first user) of the electronic ticket indicated by the issued ticket ID included in the corrected payment request (steps S135 and S136). Also, the payment processing unit 28 transmits the payment completion notification to the use company terminal 7 of the seller of the transaction indicated by the payment code (step S137). Finally, the payment processing unit 28 updates the confirmed payment table TBL215 (step S139). That is, the payment

processing unit 28 associates a payer ID, a payment code, and a payment amount (i.e., a used amount of money in the transaction) with each other and stores an association result as confirmed payment information in the confirmed payment table TBL215.

[0079] Also, a method of a credit card company paying a fare to a use company (payment timing) is not limited. For example, a fare according to an amount of a pre-payment at a time of the pre-payment may be paid from the credit company to the use company and a payment (a repayment or the like) of an amount according to a corrected payment may be performed between the credit company and the use company at a time of the corrected payment. Also, the "time of the pre-payment" may be a timing at which the pre-payment is performed and may be, for example, a deadline of the credit card of the user. Also, the payment from the credit card company to the use company is not performed at the time of the pre-payment and only an amount of a payment may be paid from the credit card company to the use company at the time of the corrected payment.

[0080] In FIG. 6C, an electronic ticket management image using an app when the second user performs a transaction using a transferred electronic ticket is illustrated. The second user inputs an amount of money corresponding to a taxi fare to input a payment instruction from the portable terminal 5. According to the input, a payment request is transmitted to the use company terminal 7 of a taxi company and an instruction for a payment in the use company terminal 7 is input. According to the input, the payment request is transmitted to the electronic ticket management apparatus 2. Also, the payment request

may be orally performed from the second user to a user of the use company terminal 7. The electronic ticket management apparatus 2 issues a payment code after an authentication of the taxi company, which is the use company, is performed, and the payment process is performed in the electronic ticket management apparatus 2 when the second user inputs the payment code from the app.

[0081] [Operations and effects of present embodiment]

Next, the operations and effects of the above-described electronic ticket management apparatus 2 will be described.

[0082] In the electronic ticket management apparatus 2, the authorized user of an electronic ticket is changed on the basis of a transfer request from the first user who is a payer. If the second user who is an authorized user uses the electronic ticket within an upper limit amount of use, the use of the electronic ticket is permitted and a difference amount between the upper limit of use and a used amount of money is returned to the first user. Thus, when the used amount of money of the second user is smaller and the upper limit amount of use of the electronic ticket is larger, a larger amount is returned to the first user. Consequently, even if the first user sets the upper limit amount of use to a large amount in a step of setting the upper limit amount of use or an amount of money of a purchase of the second user is low, the first user does not suffer a disadvantage. Thereby, it is possible to promote a transfer of an electronic ticket and consequently it is possible to promote the use of an electronic ticket.

[0083] Also, in the electronic ticket management apparatus 2, the electronic ticket information includes information for specifying a field

of application of the electronic ticket, and the transaction management unit 27 further restrictively permits a transaction using the electronic ticket if a purpose of use is within a range of the field of application when the authorized user uses the electronic ticket within the upper limit amount of use. Thereby, the field of application of the use of electronic ticket is limited so that it is possible to reduce a burden of managing the electronic ticket.

[0084] Also, the electronic ticket management apparatus 2 further includes a field-of-application management unit which sets (changes) information for specifying a field of application of the electronic ticket stored in the issued ticket management table TBL213, i.e., the target ID, according to a designation of the purpose of use from the first user who is the payer of an issued electronic ticket. Thereby, the first user who is the payer can prevent the electronic ticket from being used in an unintended field of application. Thereby, convenience for the payer can be improved and the use of an electronic ticket can be further promoted.

[0085] Also, in the electronic ticket management apparatus 2, the electronic ticket information further includes a valid period of the electronic ticket, and the transaction management unit 27 further restrictively permits a transaction using the electronic ticket if a date and time of use are within the valid period when the second user who is the authorized user uses the electronic ticket within the upper limit amount of use. Thereby, a period in which the electronic ticket is used is limited and therefore it is possible to reduce a burden of managing the electronic ticket. Also, because the valid period can be set by the

payer, the use of the electronic ticket in a period intended by the payer can be prompted. Thereby, convenience for the payer is improved and the use of an electronic ticket is further promoted.

[0086] Also, in the above-described electronic ticket management apparatus 2, the payment processing unit 28 may perform a pre-payment by the upper limit amount of use at a preceding stage of the payment process and perform a correction process according to an actually used amount of money in the payment process. By performing the pre-payment by the upper limit amount of use, it is possible to cause a purchasing power of the electronic ticket and a payment completion amount to be in conjunction with each other and to further perform a payment along an actual state. That is, if the electronic ticket in which the upper limit amount of use is set is issued, it is possible to purchase a product or the like by the upper limit amount of use up to the maximum amount according to a use of the electronic ticket. Thus, by performing a pre-payment for the upper limit amount of use, it is possible to cause the purchasing power of the electronic ticket (a maximum amount of purchase) to match an amount of the payment.

[0087] Embodiments have described above, but the present disclosure is not limited to the above-described embodiments. An example in which the payment processing unit 28 performs a pre-payment by an upper limit amount of use at a preceding stage of the payment process and performs a correction process according to an actually used amount of money in a payment process has been described, but the present disclosure is not limited thereto. That is, the payment processing unit 28 may perform a post-payment by the used amount of money in the

payment process without performing the above-described pre-payment. Thereby, it is only necessary to perform a payment once after a used amount of money of the electronic ticket is established and the payment can be simplified. Also, even when payment is performed only once in the payment process (the post payment), a payment by a used amount of money is performed so that an authority corresponding to a difference amount between the upper limit amount of use and the used amount of money substantially remains for the first user (is returned to the first user). That is, the difference amount between the upper limit amount of use and the used amount of money among authorities to use the electronic ticket is returned to the first user.

[0088] FIG. 7 is a sequence diagram illustrating a procedure of executing an electronic ticket management method according to the above-described modified example in which a post-payment by a used amount of money is performed. Processes illustrated in FIG. 7 basically match processes when the pre-payment illustrated in FIG. 5 is performed and steps S101, S105 to S131, and S135 to S139 of FIG. 5 correspond to steps S201, S205 to S231, and S235 to S239 of FIG. 7. On the other hand, the pre-payment process (step S103) is performed according to an electronic ticket issuance request in the process of FIG. 5, but the pre-payment process is not performed in the process of FIG. 7. Also, a payment process of performing a post-payment (step S234) is performed in FIG. 7 in place of the corrected payment process (step S133) performed in FIG. 5. As described above, payment (the post-payment) is performed only once in the payment process in the process according to a modified example illustrated in FIG. 7.

WHAT IS CLAIMED IS:

1. An electronic ticket management apparatus comprising:

a storage unit configured to accumulate electronic ticket information including an upper limit amount of use, an authorized user, and a payer of an electronic ticket;

a transfer management unit configured to acquire a transfer request from the payer and change the authorized user of the electronic ticket information accumulated in the storage unit to a person designated in the transfer request;

a transaction management unit configured to restrictively permit a transaction using the electronic ticket if the authorized user uses the electronic ticket within the upper limit amount of use; and

a payment processing unit configured to perform a payment process so that a difference amount between the upper limit amount of use of the electronic ticket to be used in the transaction and an actually used amount of money in the transaction is returned to the payer of the electronic ticket if the transaction management unit permits the transaction using the electronic ticket.

2. The electronic ticket management apparatus according to claim 1,

wherein the electronic ticket information further includes information for specifying a field of application of the electronic ticket, and

wherein the transaction management unit further restrictively permits the transaction using the electronic ticket if a purpose of use is within a range of the field of application when the authorized user uses

the electronic ticket within the upper limit amount of use.

3. The electronic ticket management apparatus according to claim 2, further comprising:

a field-of-application management unit configured to acquire a designated purpose of use from the payer and set information for specifying the field of application of the electronic ticket information accumulated in the storage unit in content designated in the designated purpose of use.

4. The electronic ticket management apparatus according to any one of claims 1 to 3,

wherein the electronic ticket information further includes a valid period of the electronic ticket, and

wherein the transaction management unit further restrictively permits the transaction using the electronic ticket if a date and time of use are within the valid period when the authorized user uses the electronic ticket within the upper limit amount of use.

5. The electronic ticket management apparatus according to any one of claims 1 to 4, wherein the payment processing unit performs a pre-payment by the upper limit amount of use at a preceding stage of the payment process and performs a correction process according to the actually used amount of money in the payment process.

6. The electronic ticket management apparatus according to any one of claims 1 to 4, wherein the payment processing unit performs a post-payment by the used amount of money in the payment process.

7. An electronic ticket management method to be performed by an electronic ticket management apparatus, the electronic ticket

management method comprising:

accumulating electronic ticket information including an upper limit amount of use, an authorized user, and a payer of an electronic ticket;

acquiring a transfer request from the payer and changing the authorized user of the electronic ticket information to a person designated in the transfer request;

restrictively permitting a transaction using the electronic ticket if the authorized user uses the electronic ticket within the upper limit amount of use; and

performing a payment process so that a difference amount between the upper limit amount of use of the electronic ticket to be used in the transaction and an actually used amount of money in the transaction is returned to the payer of the electronic ticket if the transaction using the electronic ticket is permitted in the permitting step.