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Nonaka

(54) **ELECTRONIC SETTLEMENT SYSTEM, ELECTRONIC SETTLEMENT SERVER, NEGOTIABLE-VALUE PROVIDING APPARATUS, MOBILE COMMUNICATION TERMINAL, AND ELECTRONIC SETTLEMENT METHOD**

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(86) PCT No.: **PCT/JP2008/051686**

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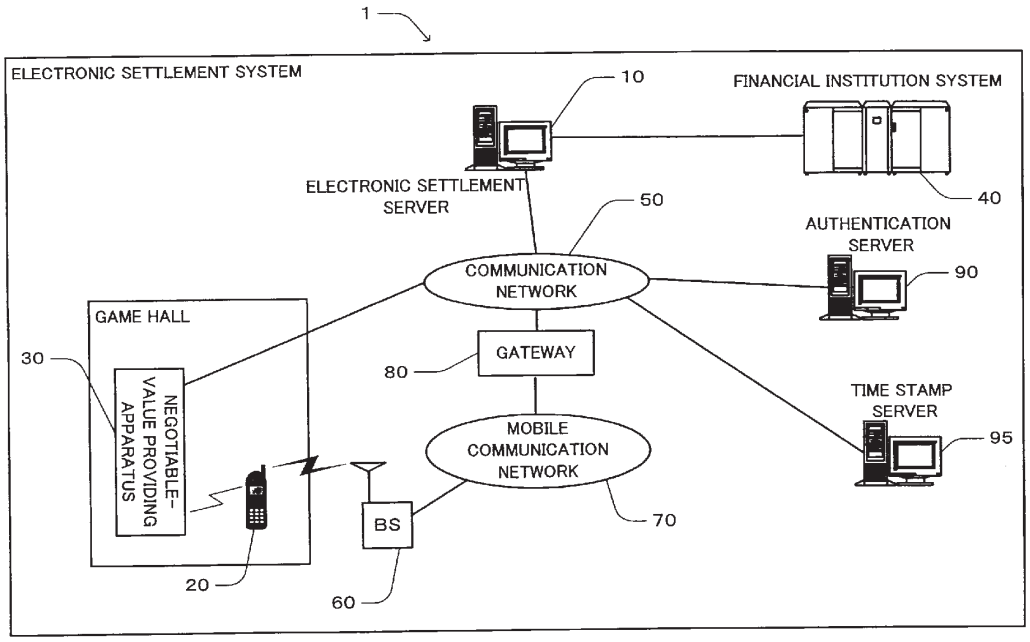
G06Q 50/00 (2006.01)

(52) **U.S. Cl.** **705/44**; 705/39

(57) **ABSTRACT**

The present invention provides an electronic settlement system which is similar to cash settlement and which is available even in a game hall. The present invention provides an electronic settlement system including an electronic settlement server, a mobile communication terminal, and a negotiable-value providing apparatus. In the electronic settlement system, the mobile communication terminal acquires, from the negotiable-value providing apparatus, an equipment ID identifying the negotiable-value providing apparatus. The mobile communication terminal then generates a settlement request message containing a user ID identifying a user, a transfer amount corresponding to consideration for a negotiable value, and the equipment ID. The mobile communication terminal then transmits the message to the electronic settlement server. According to the result of a check of the user's credit status, the electronic settlement server instructs the negotiable-value providing apparatus to provide a negotiable value corresponding to the transfer amount. The electronic settlement server further requests a transfer of an amount corresponding to the transfer amount from the user's account to a predetermined account. Upon receiving the instruction to provide the negotiable value from the electronic settlement server, the negotiable-value providing apparatus provides the user with rental balls, rental medals, or the like corresponding to the transfer amount.



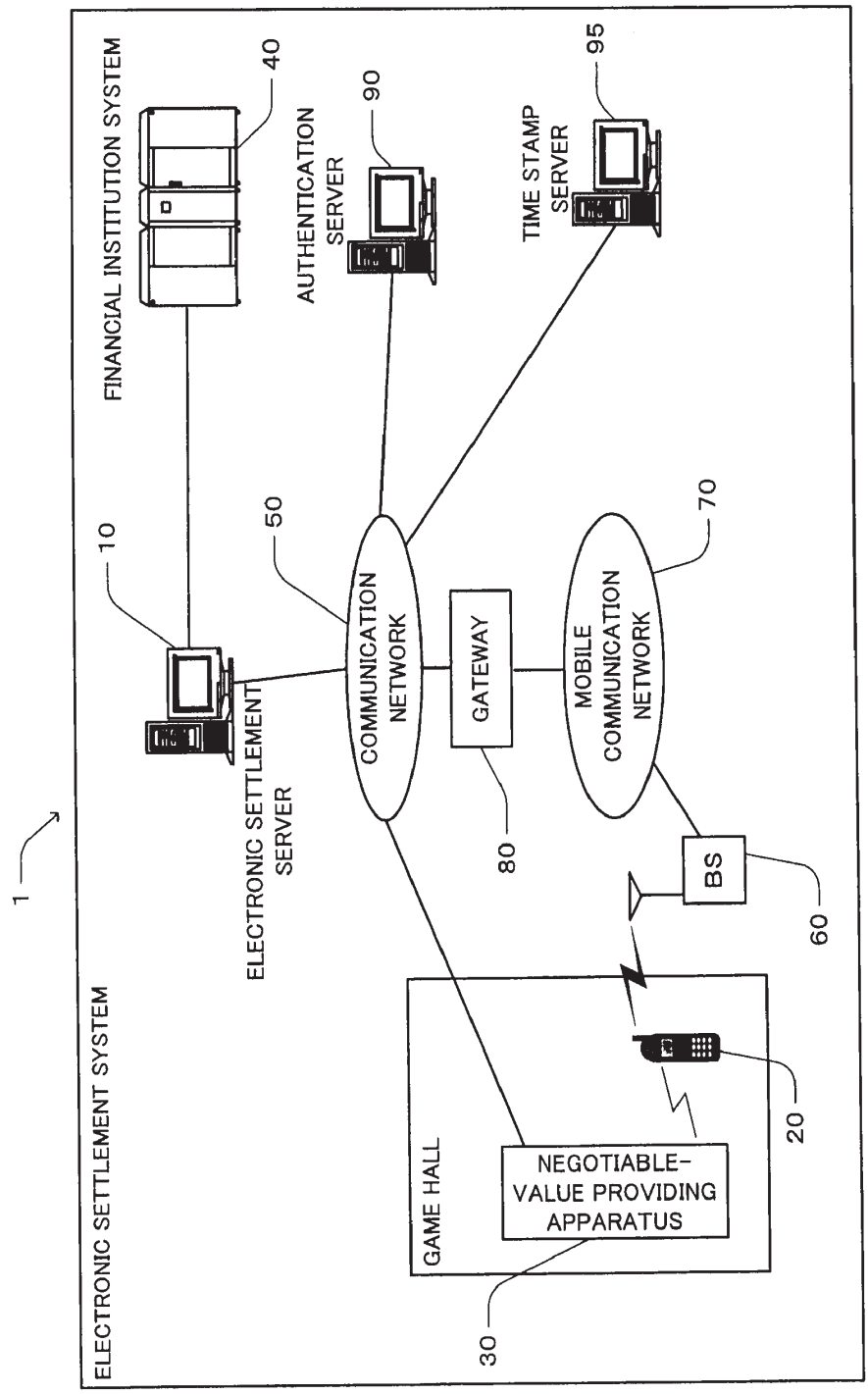

1
ELECTRONIC SETTLEMENT SYSTEM
FINANCIAL INSTITUTION SYSTEM
40
AUTHENTICATION SERVER
90
TIME STAMP SERVER
95
10
ELECTRONIC SETTLEMENT SERVER
50
COMMUNICATION NETWORK
GATEWAY
80
MOBILE COMMUNICATION NETWORK
70
BS
60
GAME HALL
NEGOTIABLE-VALUE PROVIDING APPARATUS
30
20

FIG.1

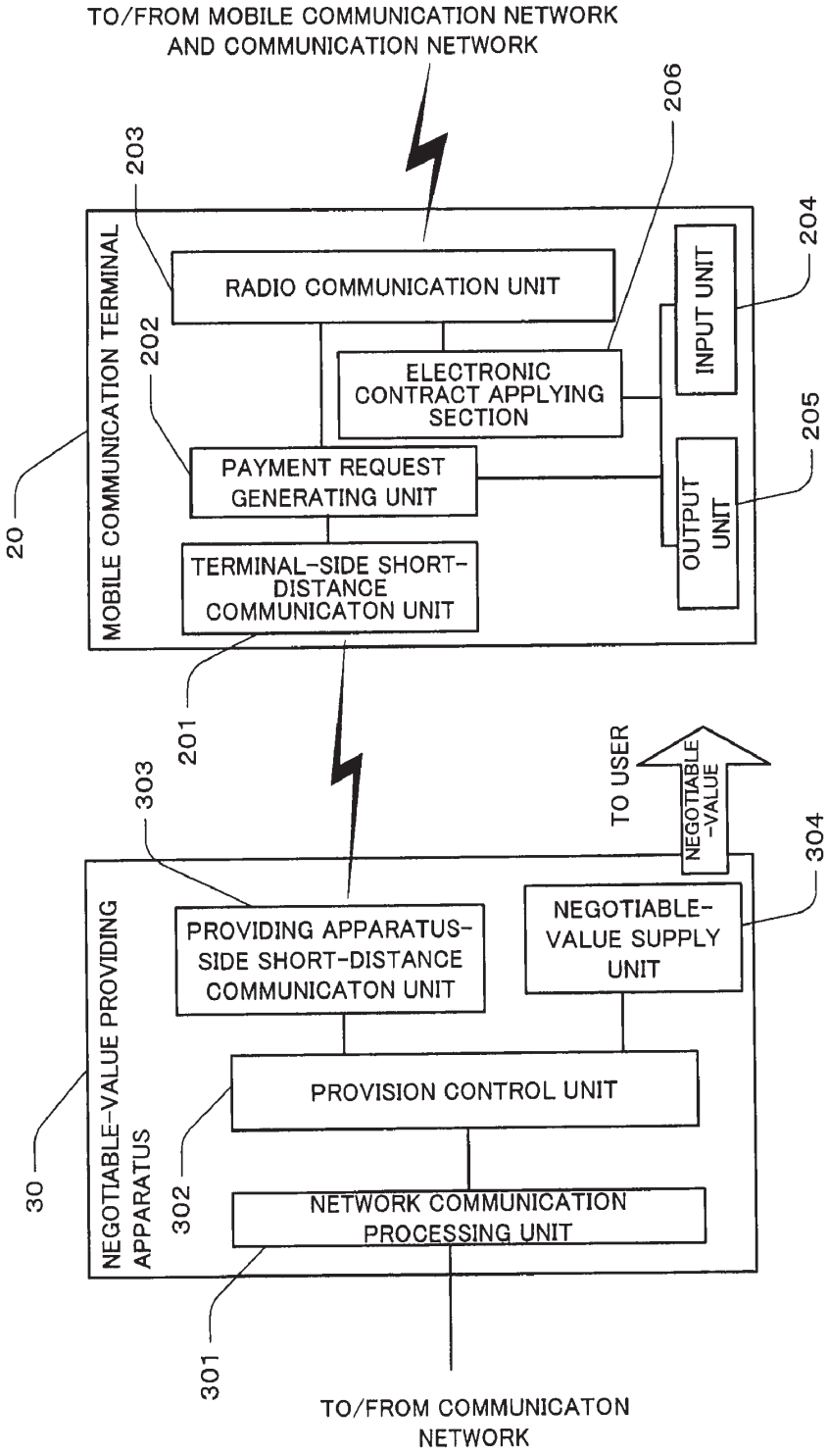

TO/FROM MOBILE COMMUNICATION NETWORK AND COMMUNICATION NETWORK
206
203
MOBILE COMMUNICATION TERMINAL
RADIO COMMUNICATION UNIT
204
INPUT UNIT
202
ELECTRONIC CONTRACT APPLYING SECTION
205
PAYMENT REQUEST GENERATING UNIT
OUTPUT UNIT
20
TERMINAL-SIDE SHORT-DISTANCE COMMUNICATON UNIT
201
TO USER
NEGOTIABLE-VALUE
303
304
PROVIDING APPARATUS-SIDE SHORT-DISTANCE COMMUNICATON UNIT
NEGOTIABLE-VALUE SUPPLY UNIT
NEGOTIABLE-VALUE PROVIDING APPARATUS
PROVISION CONTROL UNIT
30
302
NETWORK COMMUNICATION PROCESSING UNIT
301
TO/FROM COMMUNICATON NETWORK

FIG.2

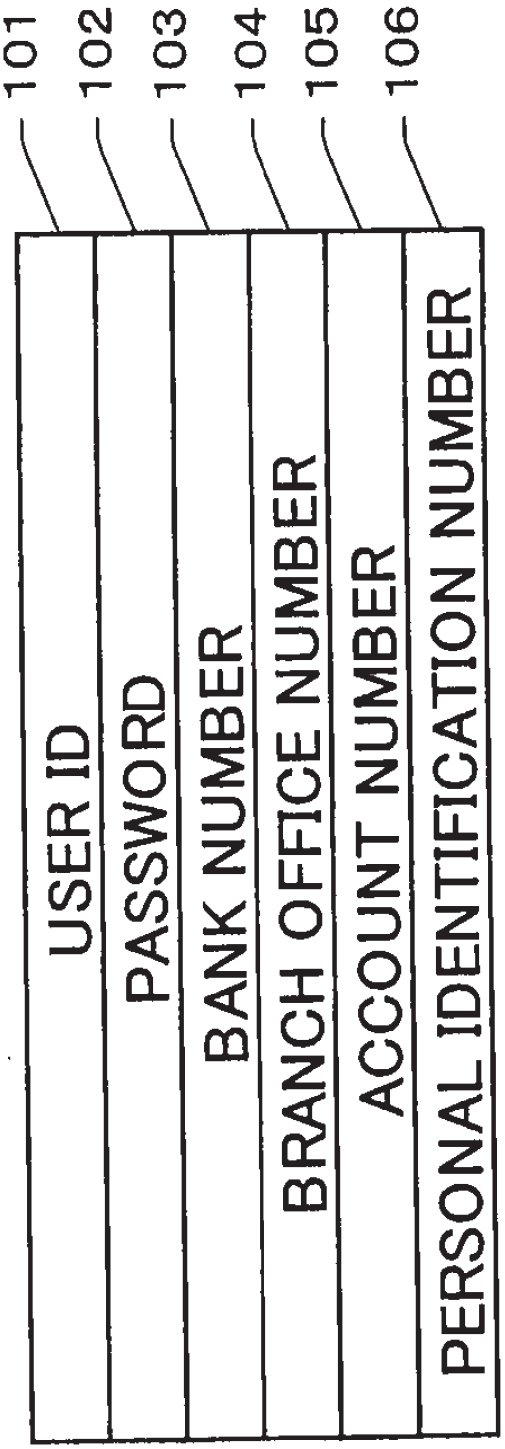

101
102
103
104
105
106
USER ID
PASSWORD
BANK NUMBER
BRANCH OFFICE NUMBER
ACCOUNT NUMBER
PERSONAL IDENTIFICATION NUMBER

FIG.3

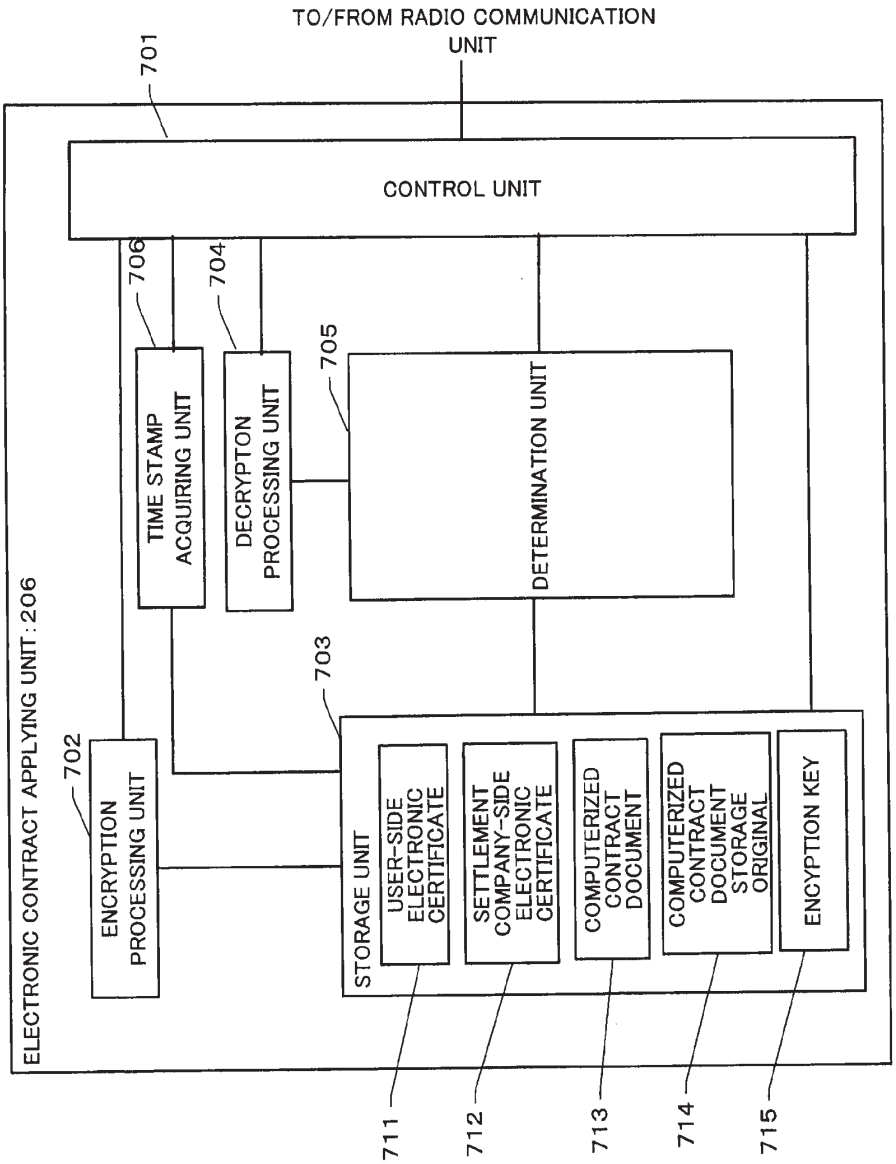

TO/FROM RADIO COMMUNICATION UNIT
701
CONTROL UNIT
706
TIME STAMP ACQUIRING UNIT
704
DECRYPTON PROCESSING UNIT
705
DETERMINATION UNIT
703
STORAGE UNIT
USER-SIDE ELECTRONIC CERTIFICATE
SETTLEMENT COMPANY-SIDE ELECTRONIC CERTIFICATE
COMPUTERIZED CONTRACT DOCUMENT
COMPUTERIZED CONTRACT DOCUMENT STORAGE ORIGINAL
ENCYPTION KEY
702
ENCRYPTION PROCESSING UNIT
ELECTRONIC CONTRACT APPLYING UNIT : 206
711
712
713
714
715

FIG.4

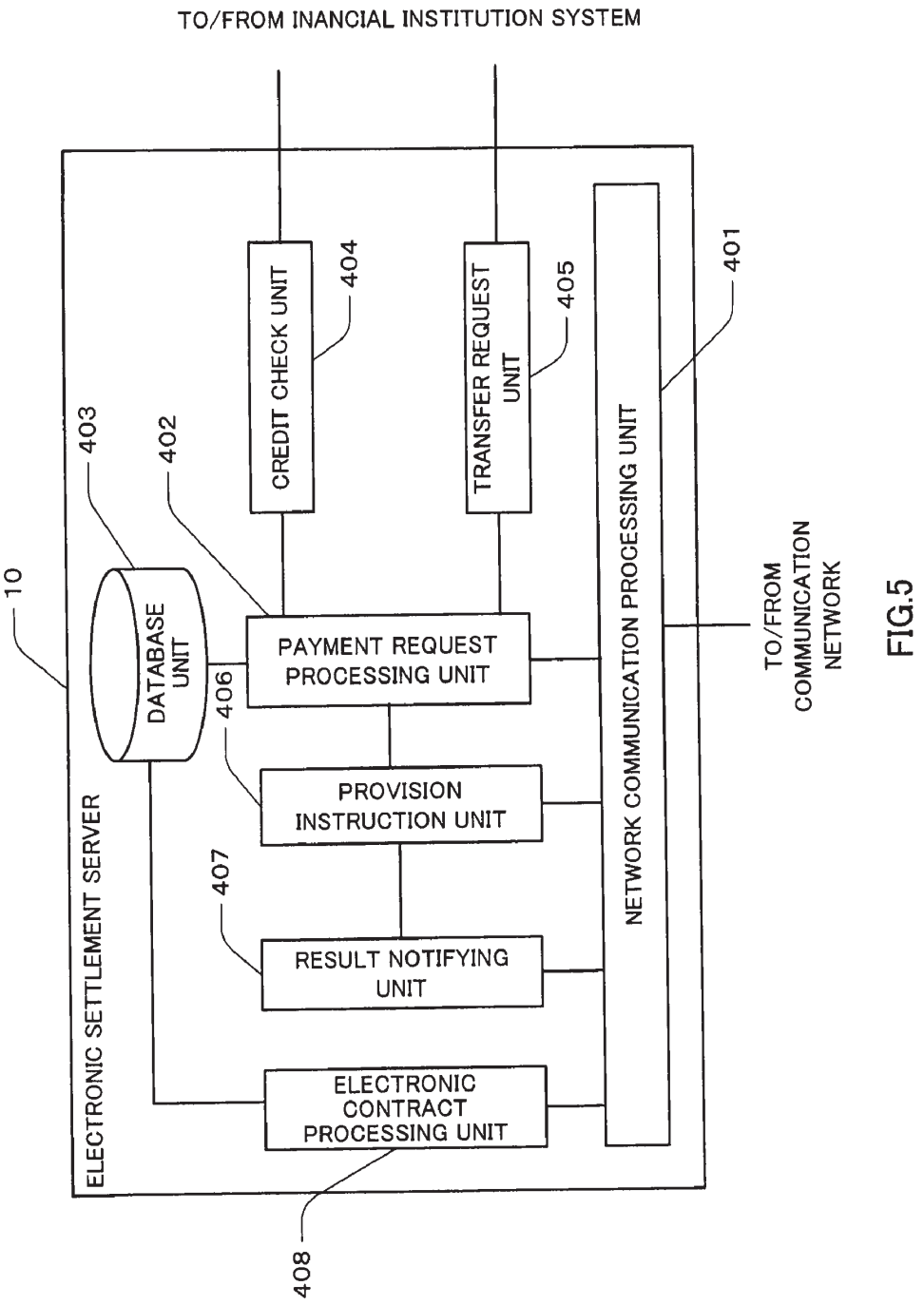

TO/FROM INANCIAL INSTITUTION SYSTEM
10
ELECTRONIC SETTLEMENT SERVER
DATABASE UNIT
403
402
CREDIT CHECK UNIT
404
TRANSFER REQUEST UNIT
405
401
NETWORK COMMUNICATION PROCESSING UNIT
TO/FROM COMMUNICATION NETWORK
PAYMENT REQUEST PROCESSING UNIT
406
PROVISION INSTRUCTION UNIT
407
RESULT NOTIFYING UNIT
ELECTRONIC CONTRACT PROCESSING UNIT
408

FIG.5

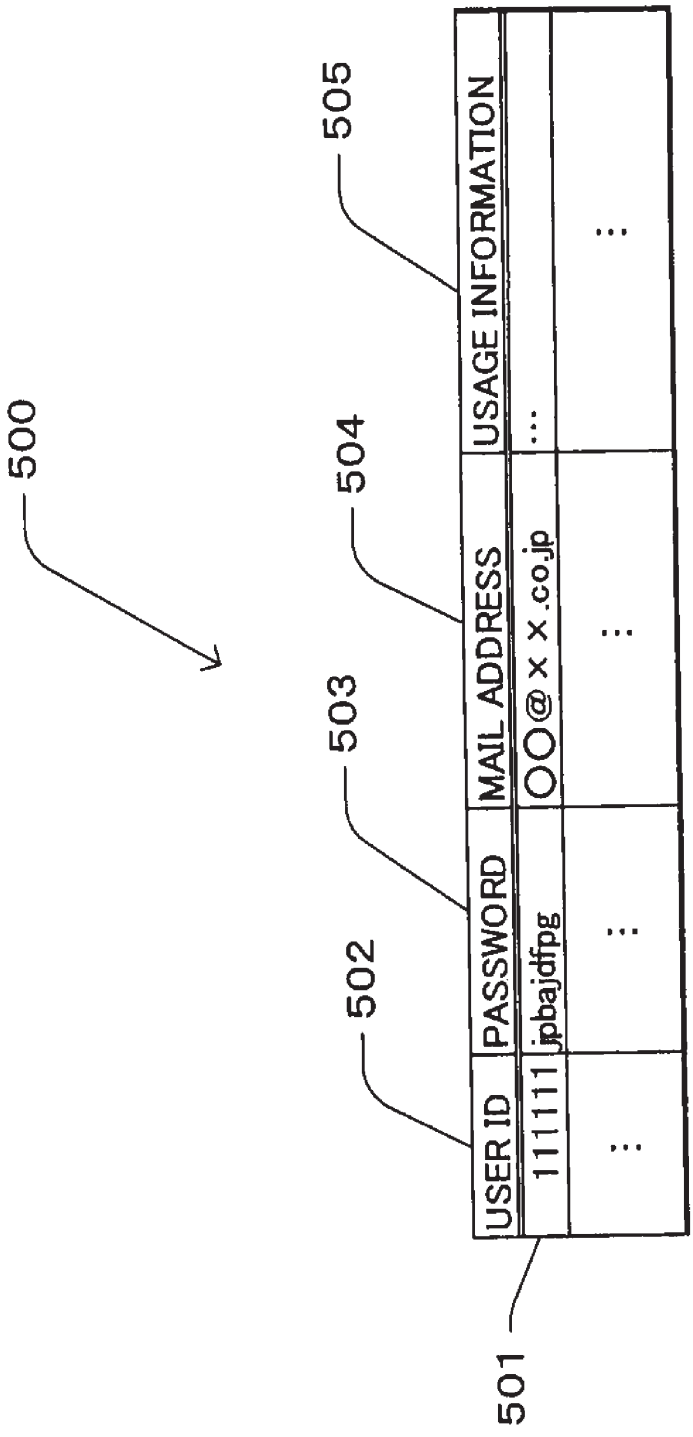

500
501
502
503
504
505
USER ID
PASSWORD
MAIL ADDRESS
USAGE INFORMATION
111111
jpbajdfpg
OO@x x x.co.jp
...

FIG.6

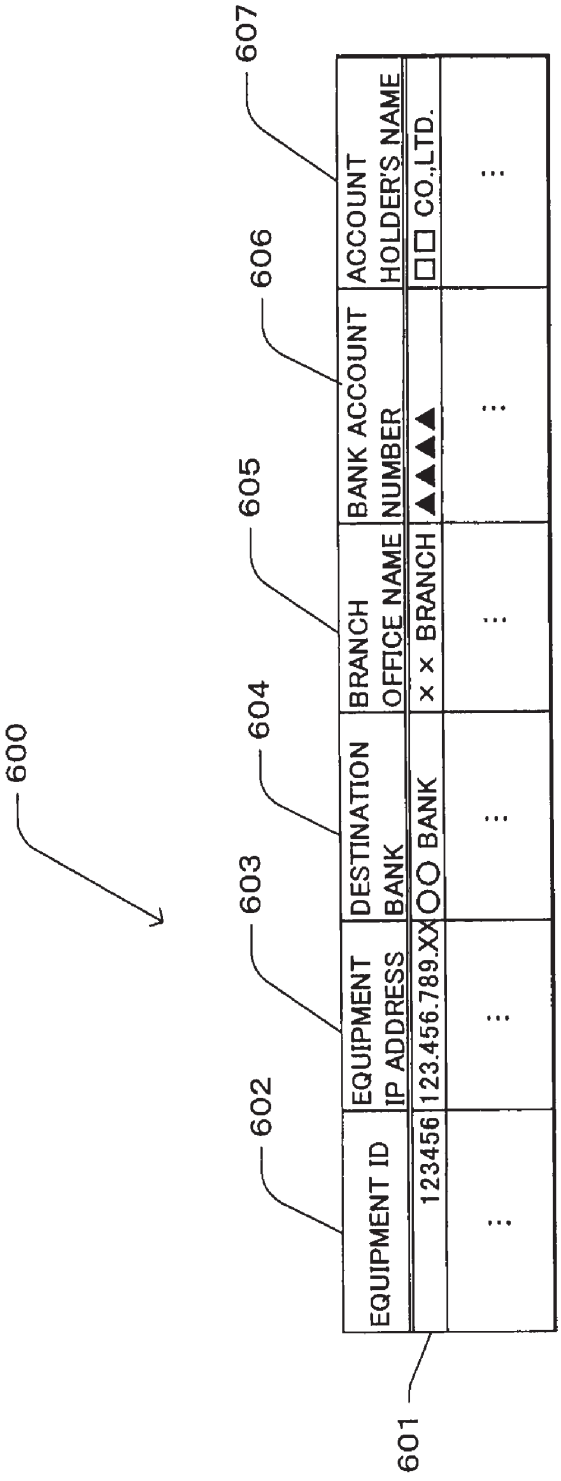

600
601
602
603
604
605
606
607
EQUIPMENT ID
EQUIPMENT IP ADDRESS
DESTINATION BANK
BRANCH OFFICE NAME
BANK ACCOUNT NUMBER
ACCOUNT HOLDER'S NAME
123456
123.456.789.XX
○○ BANK
×× BRANCH
▲▲▲▲
□□ CO.,LTD.

FIG.7

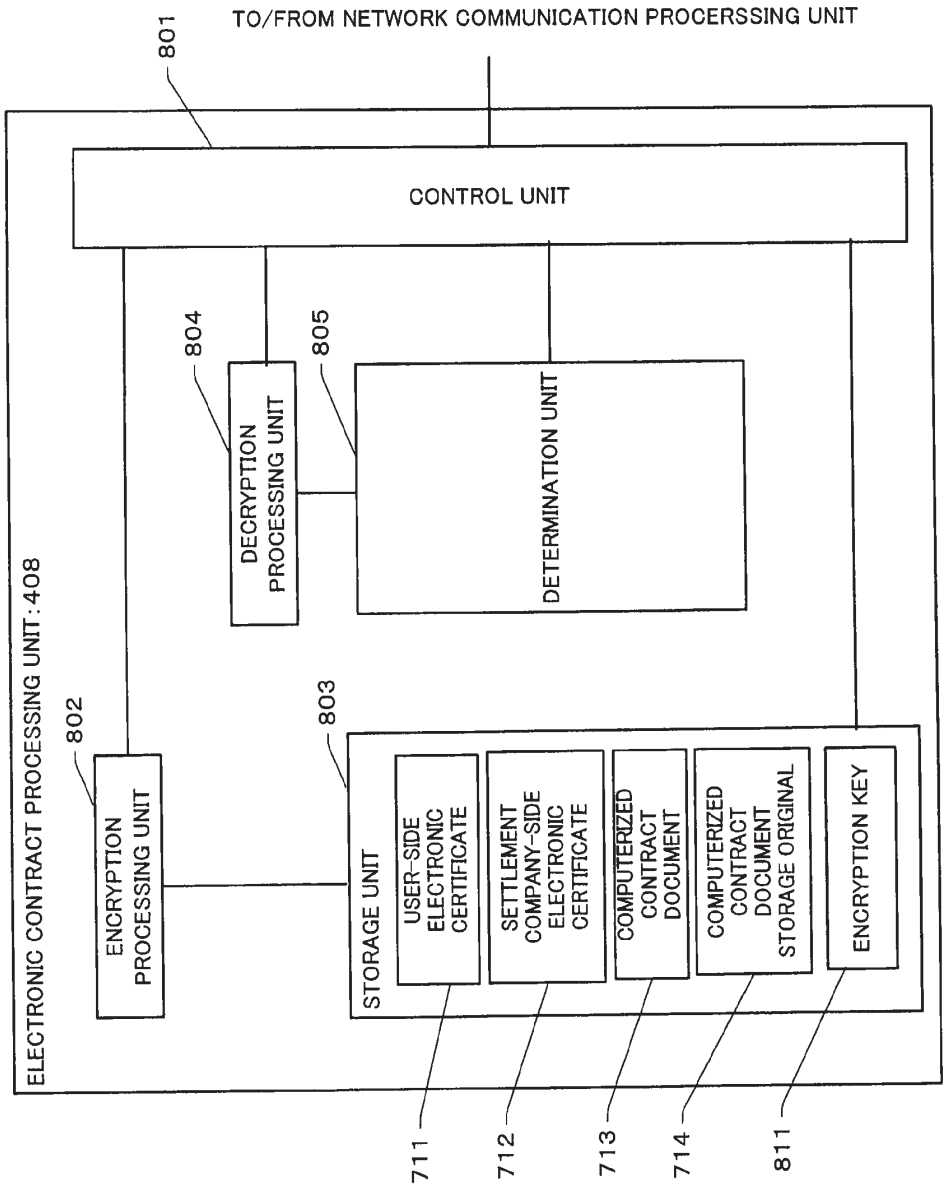

TO/FROM NETWORK COMMUNICATION PROCERSSING UNIT
801
CONTROL UNIT
804
DECRYPTION PROCESSING UNIT
805
DETERMINATION UNIT
ELECTRONIC CONTRACT PROCESSING UNIT :408
802
ENCRYPTION PROCESSING UNIT
803
STORAGE UNIT
USER-SIDE ELECTRONIC CERTIFICATE
SETTLEMENT COMPANY-SIDE ELECTRONIC CERTIFICATE
COMPUTERIZED CONTRACT DOCUMENT
COMPUTERIZED CONTRACT DOCUMENT STORAGE ORIGINAL
ENCRYPTION KEY
711
712
713
714
811

FIG.8

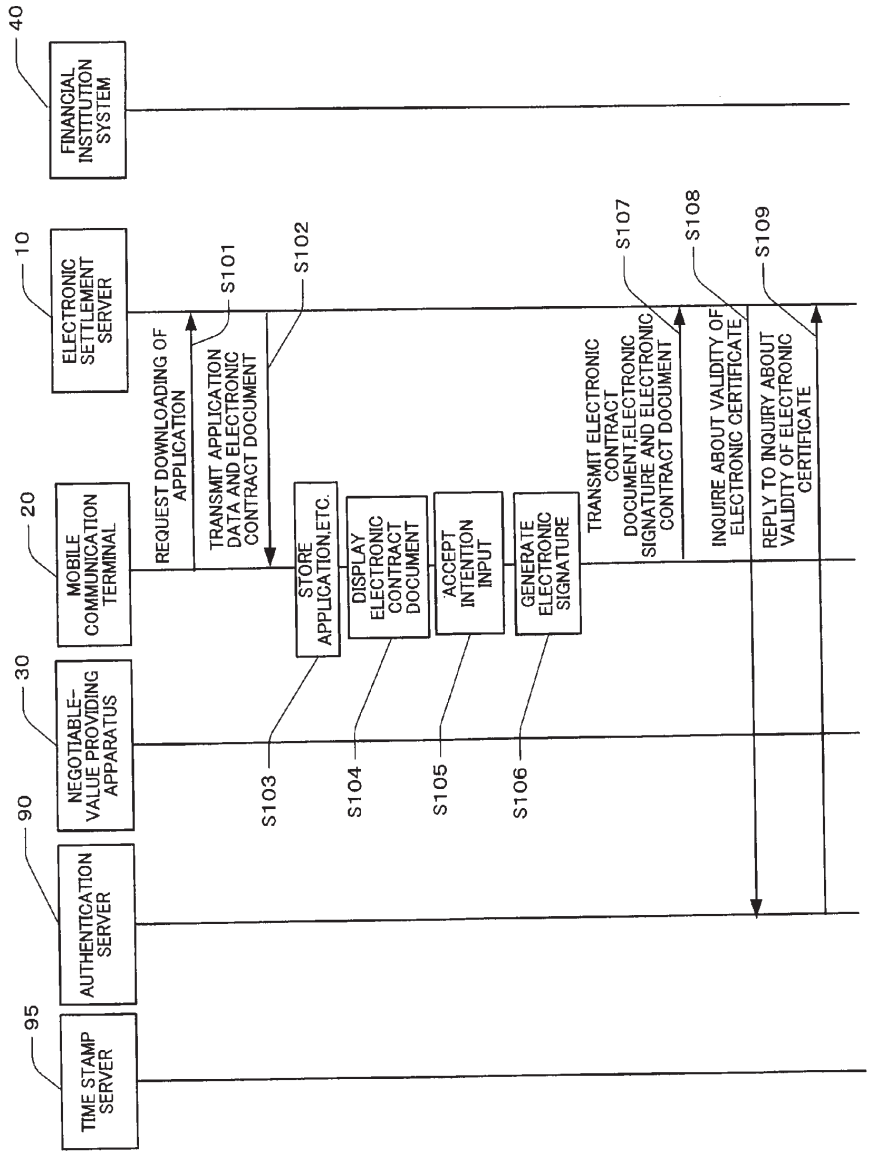

40
FINANCIAL INSTITUTION SYSTEM
10
ELECTRONIC SETTLEMENT SERVER
20
MOBILE COMMUNICATION TERMINAL
30
NEGOTIABLE-VALUE PROVIDING APPARATUS
90
AUTHENTICATION SERVER
95
TIME STAMP SERVER
REQUEST DOWNLOADING OF APPLICATION
S101
TRANSMIT APPLICATION DATA AND ELECTRONIC CONTRACT DOCUMENT
S102
STORE APPLICATION,ETC.
S103
DISPLAY ELECTRONIC CONTRACT DOCUMENT
S104
ACCEPT INTENTION INPUT
S105
GENERATE ELECTRONIC SIGNATURE
S106
TRANSMIT ELECTRONIC CONTRACT DOCUMENT,ELECTRONIC SIGNATURE AND ELECTRONIC CONTRACT DOCUMENT
S107
INQUIRE ABOUT VALIDITY OF ELECTRONIC CERTIFICATE
S108
REPLY TO INQUIRY ABOUT VALIDITY OF ELECTRONIC CERTIFICATE
S109

FIG.9

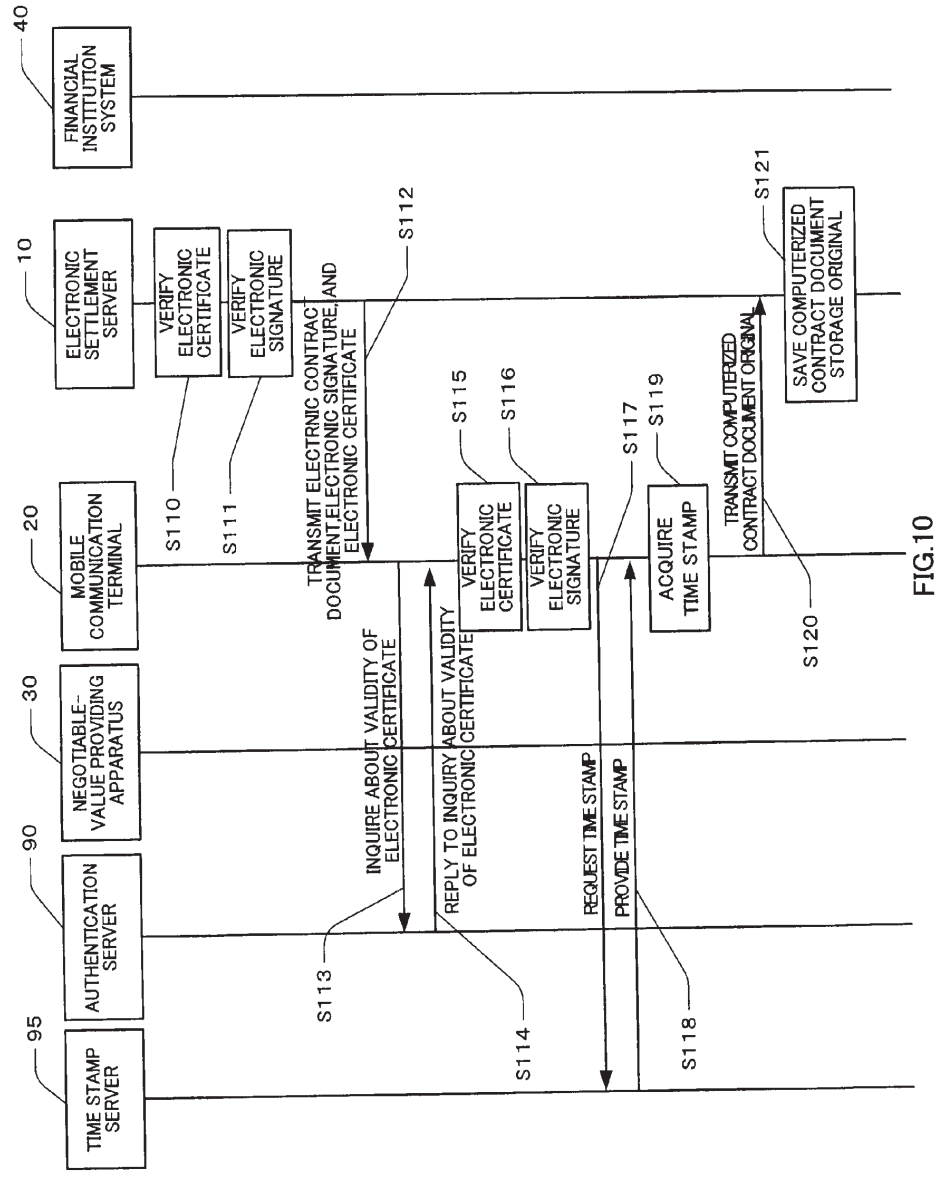

40
FINANCIAL INSTITUTION SYSTEM
10
ELECTRONIC SETTLEMENT SERVER
20
MOBILE COMMUNICATION TERMINAL
30
NEGOTIABLE-VALUE PROVIDING APPARATUS
90
AUTHENTICATION SERVER
95
TIME STAMP SERVER
S110
VERIFY ELECTRONIC CERTIFICATE
S111
VERIFY ELECTRONIC SIGNATURE
S112
TRANSMIT ELECTRNIC CONTRACT DOCUMENT,ELECTRONIC SIGNATURE,AND ELECTRONIC CERTIFICATE
S113
INQUIRE ABOUT VALIDITY OF ELECTRONIC CERTIFICATE
S114
REPLY TO INQUIRY ABOUT VALIDITY OF ELECTRONIC CERTIFICATE
S115
VERIFY ELECTRONIC CERTIFICATE
S116
VERIFY ELECTRONIC SIGNATURE
S117
REQUEST TIME STAMP
S118
PROVIDE TIME STAMP
S119
ACQUIRE TIME STAMP
S120
TRANSMIT COMPUTERIZED CONTRACT DOCUMENT ORIGINAL
S121
SAVE COMPUTERIZED CONTRACT DOCUMENT STORAGE ORIGINAL

FIG.10

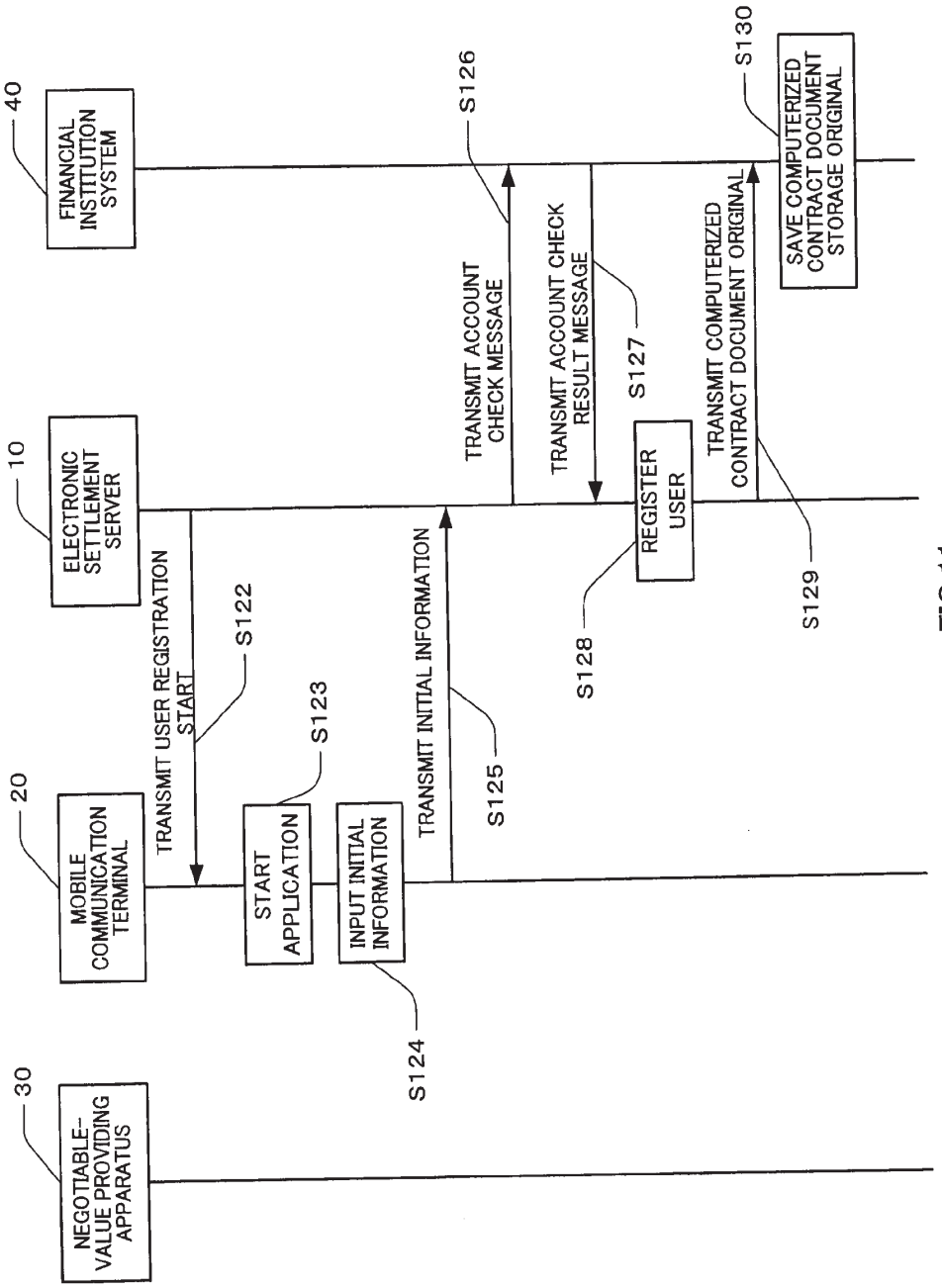

40
FINANCIAL INSTITUTION SYSTEM
10
ELECTRONIC SETTLEMENT SERVER
20
MOBILE COMMUNICATION TERMINAL
30
NEGOTIABLE-VALUE PROVIDING APPARATUS
TRANSMIT USER REGISTRATION START
S122
START APPLICATION
S123
INPUT INITIAL INFORMATION
S124
TRANSMIT INITIAL INFORMATION
S125
TRANSMIT ACCOUNT CHECK MESSAGE
S126
TRANSMIT ACCOUNT CHECK RESULT MESSAGE
S127
REGISTER USER
S128
TRANSMIT COMPUTERIZED CONTRACT DOCUMENT ORIGINAL
S129
SAVE COMPUTERIZED CONTRACT DOCUMENT STORAGE ORIGINAL
S130

FIG.11

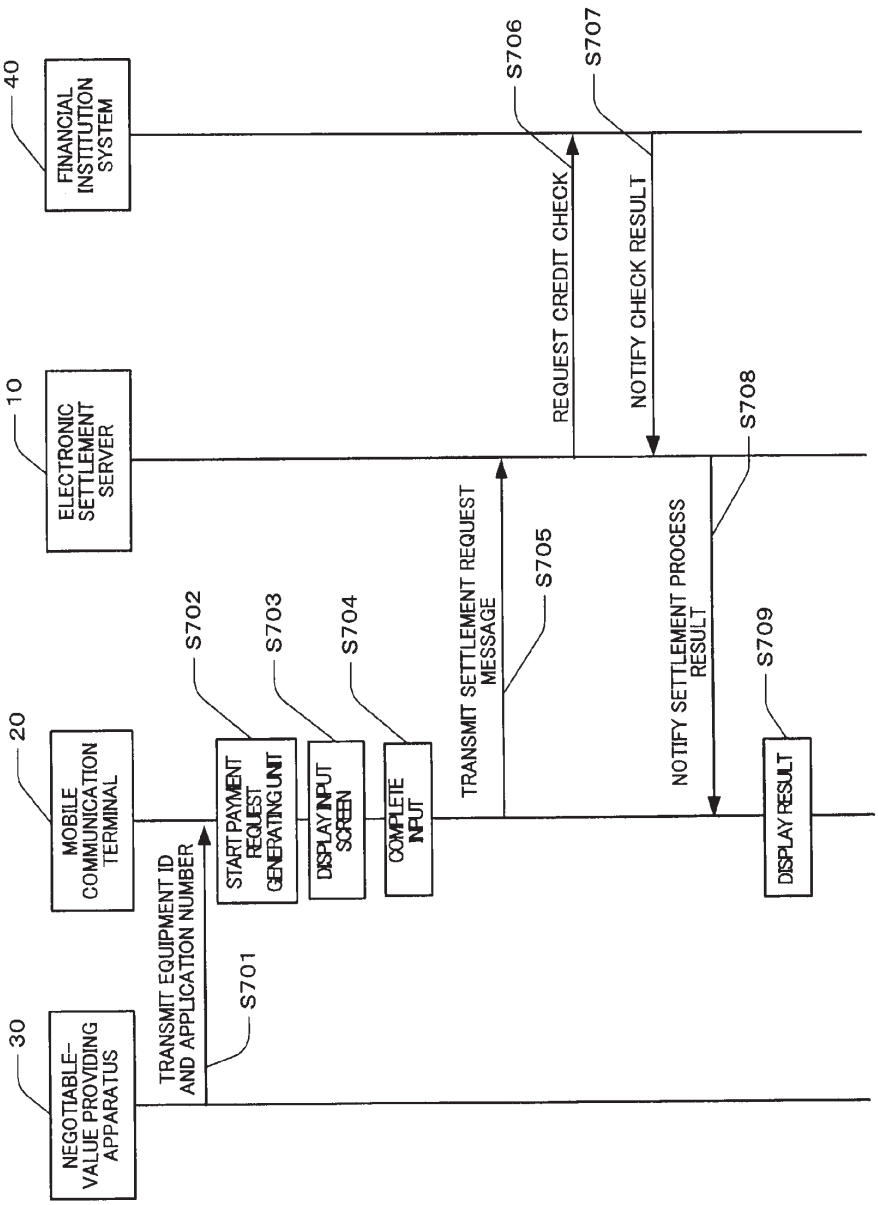

30
NEGOTIABLE-VALUE PROVIDING APPARATUS
20
MOBILE COMMUNICATION TERMINAL
10
ELECTRONIC SETTLEMENT SERVER
40
FINANCIAL INSTITUTION SYSTEM
TRANSMIT EQUIPMENT ID AND APPLICATION NUMBER
S701
START PAYMENT REQUEST GENERATING UNIT
S702
DISPLAY INPUT SCREEN
S703
COMPLETE INPUT
S704
TRANSMIT SETTLEMENT REQUEST MESSAGE
S705
REQUEST CREDIT CHECK
S706
NOTIFY CHECK RESULT
S707
NOTIFY SETTLEMENT PROCESS RESULT
S708
DISPLAY RESULT
S709

FIG.12

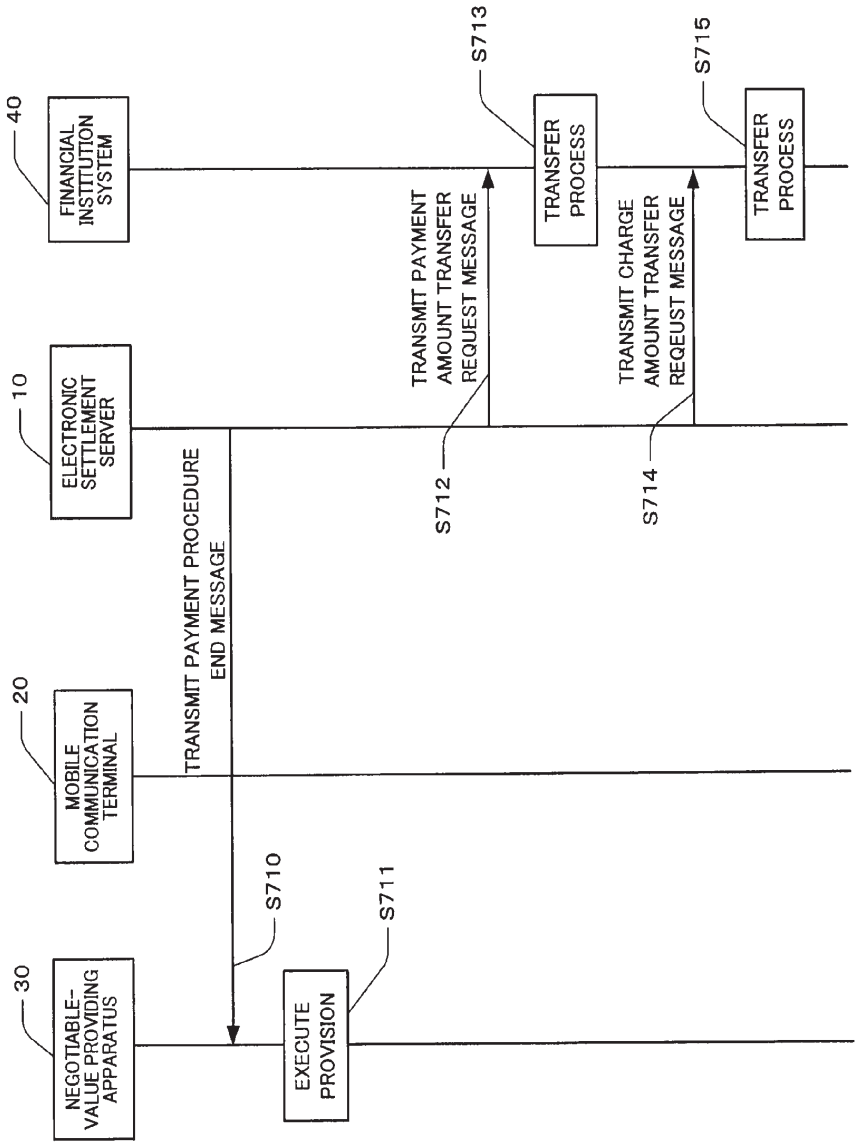

40
FINANCIAL INSTITUTION SYSTEM
10
ELECTRONIC SETTLEMENT SERVER
20
MOBILE COMMUNICATION TERMINAL
30
NEGOTIABLE-VALUE PROVIDING APPARATUS
TRANSMIT PAYMENT PROCEDURE END MESSAGE
S710
EXECUTE PROVISION
S711
TRANSMIT PAYMENT AMOUNT TRANSFER REQUEST MESSAGE
S712
S713
TRANSFER PROCESS
TRANSMIT CHARGE AMOUNT TRANSFER REQEUST MESSAGE
S714
S715
TRANSFER PROCESS

FIG.13

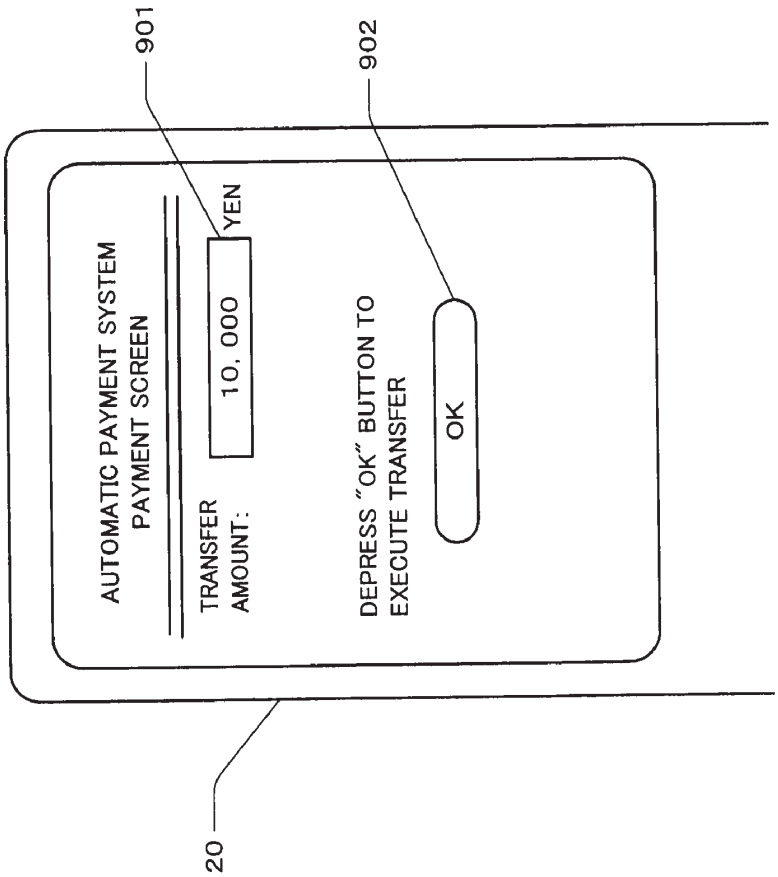

901
902
AUTOMATIC PAYMENT SYSTEM
PAYMENT SCREEN
TRANSFER AMOUNT:
10, 000
YEN
DEPRESS "OK" BUTTON TO EXECUTE TRANSFER
OK
20

FIG.14

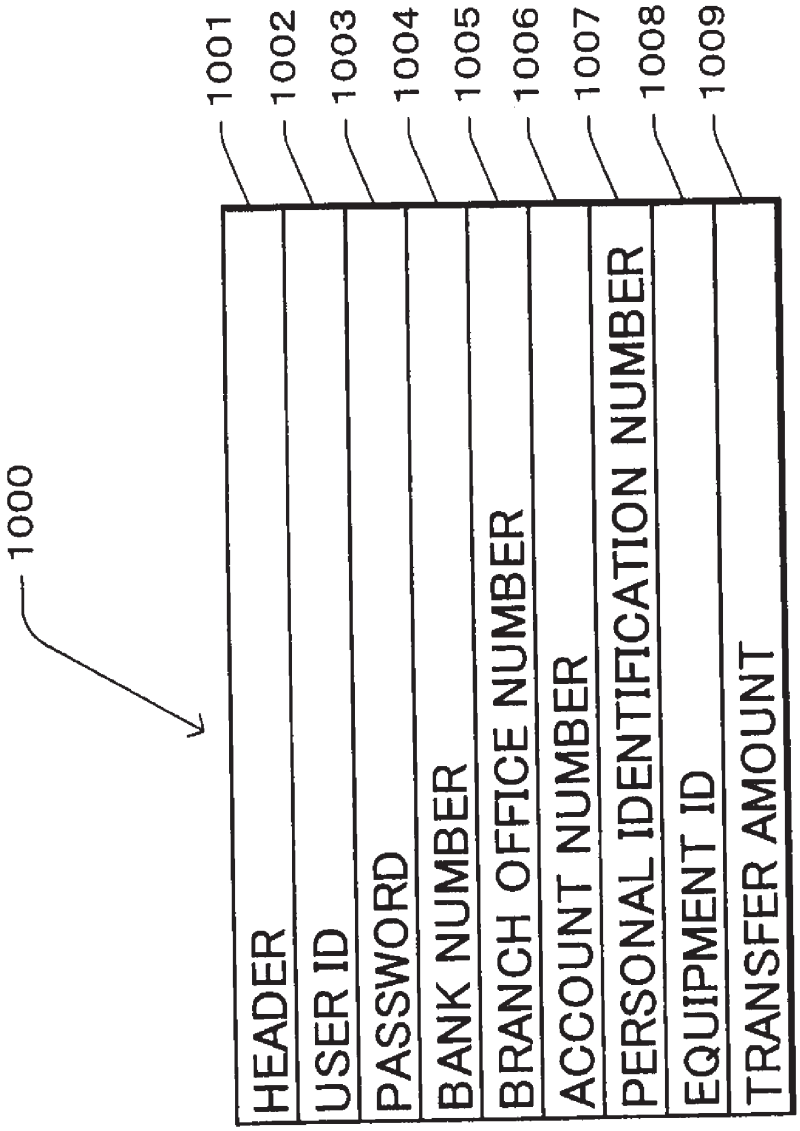

1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
HEADER
USER ID
PASSWORD
BANK NUMBER
BRANCH OFFICE NUMBER
ACCOUNT NUMBER
PERSONAL IDENTIFICATION NUMBER
EQUIPMENT ID
TRANSFER AMOUNT

FIG.15

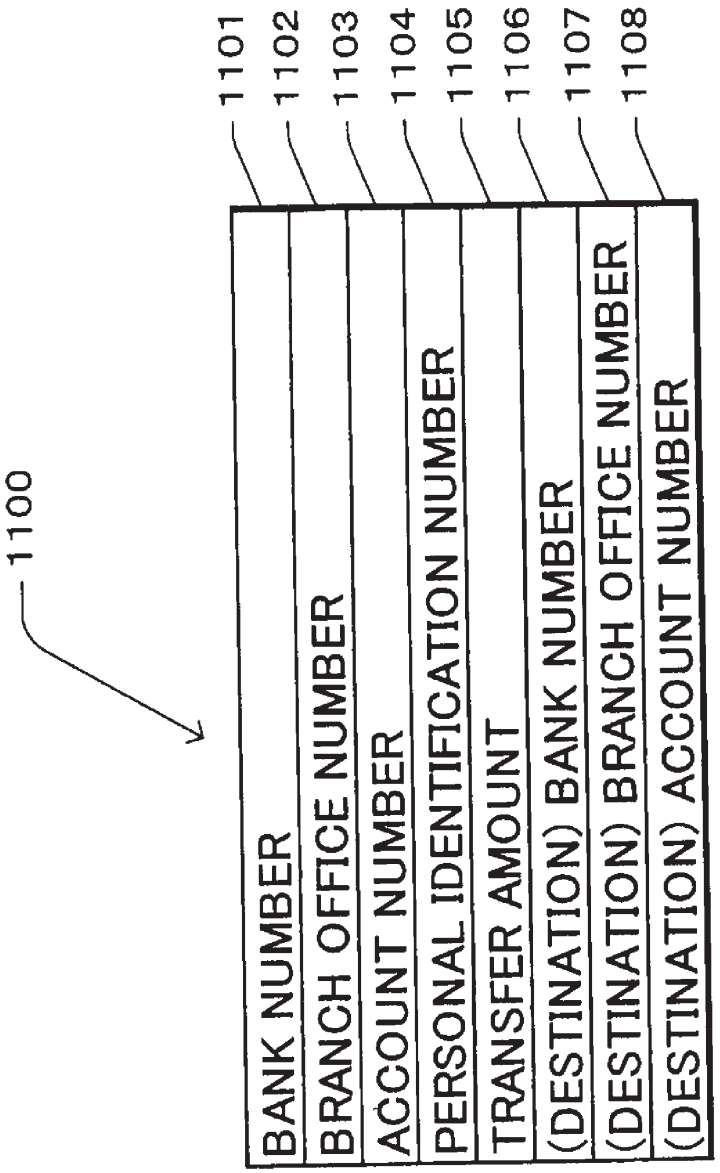

1100
1101
1102
1103
1104
1105
1106
1107
1108
BANK NUMBER
BRANCH OFFICE NUMBER
ACCOUNT NUMBER
PERSONAL IDENTIFICATION NUMBER
TRANSFER AMOUNT
(DESTINATION) BANK NUMBER
(DESTINATION) BRANCH OFFICE NUMBER
(DESTINATION) ACCOUNT NUMBER

FIG.16

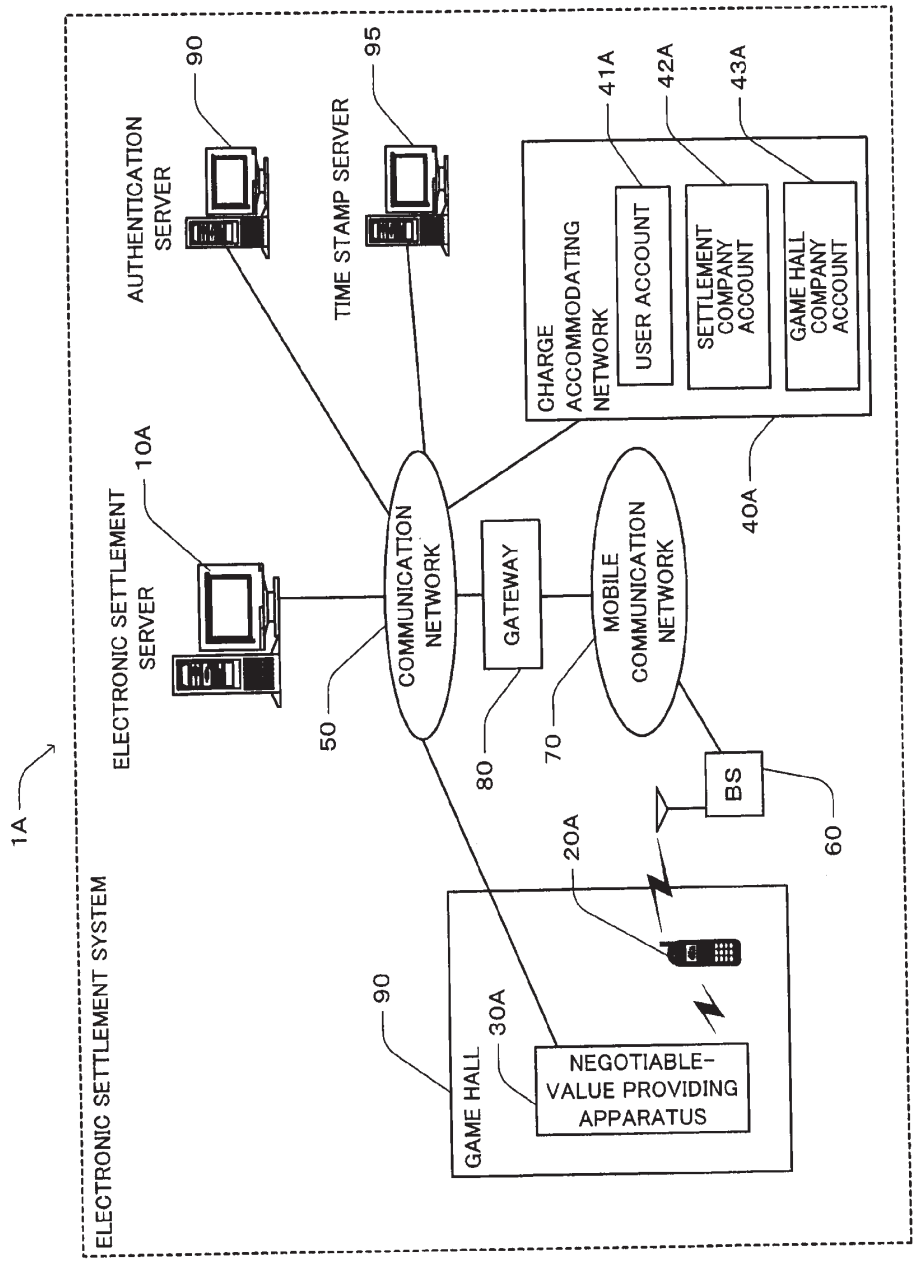

1A
ELECTRONIC SETTLEMENT SYSTEM
ELECTRONIC SETTLEMENT SERVER
10A
AUTHENTICATION SERVER
90
TIME STAMP SERVER
95
50
COMMUNICATION NETWORK
80
GATEWAY
70
MOBILE COMMUNICATION NETWORK
BS
60
20A
40A
CHARGE ACCOMMODATING NETWORK
41A
USER ACCOUNT
42A
SETTLEMENT COMPANY ACCOUNT
43A
GAME HALL COMPANY ACCOUNT
GAME HALL
90
30A
NEGOTIABLE-VALUE PROVIDING APPARATUS

FIG.17

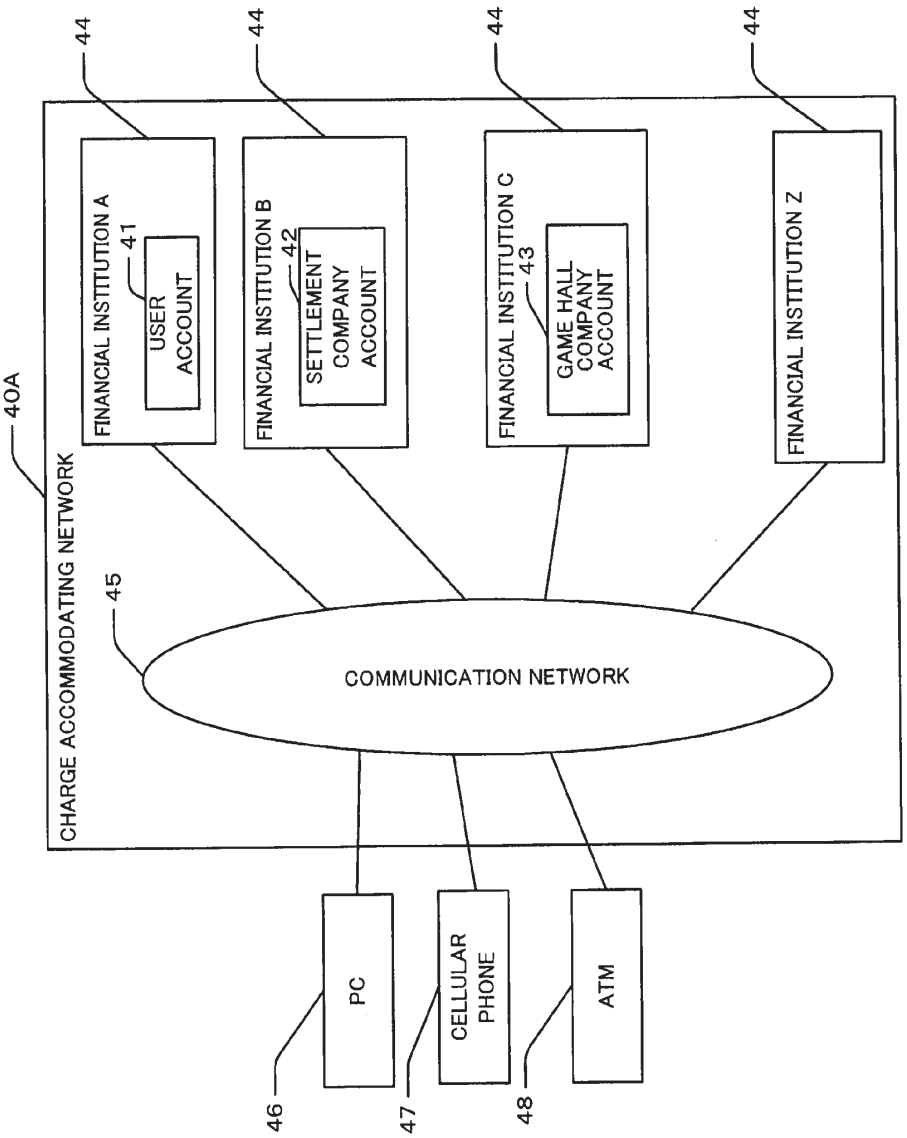

40A
CHARGE ACCOMMODATING NETWORK
FINANCIAL INSTITUTION A
41
USER ACCOUNT
FINANCIAL INSTITUTION B
42
SETTLEMENT COMPANY ACCOUNT
FINANCIAL INSTITUTION C
43
GAME HALL COMPANY ACCOUNT
FINANCIAL INSTITUTION Z
44
44
44
44
45
COMMUNICATION NETWORK
PC
CELLULAR PHONE
ATM
46
47
48

FIG.18

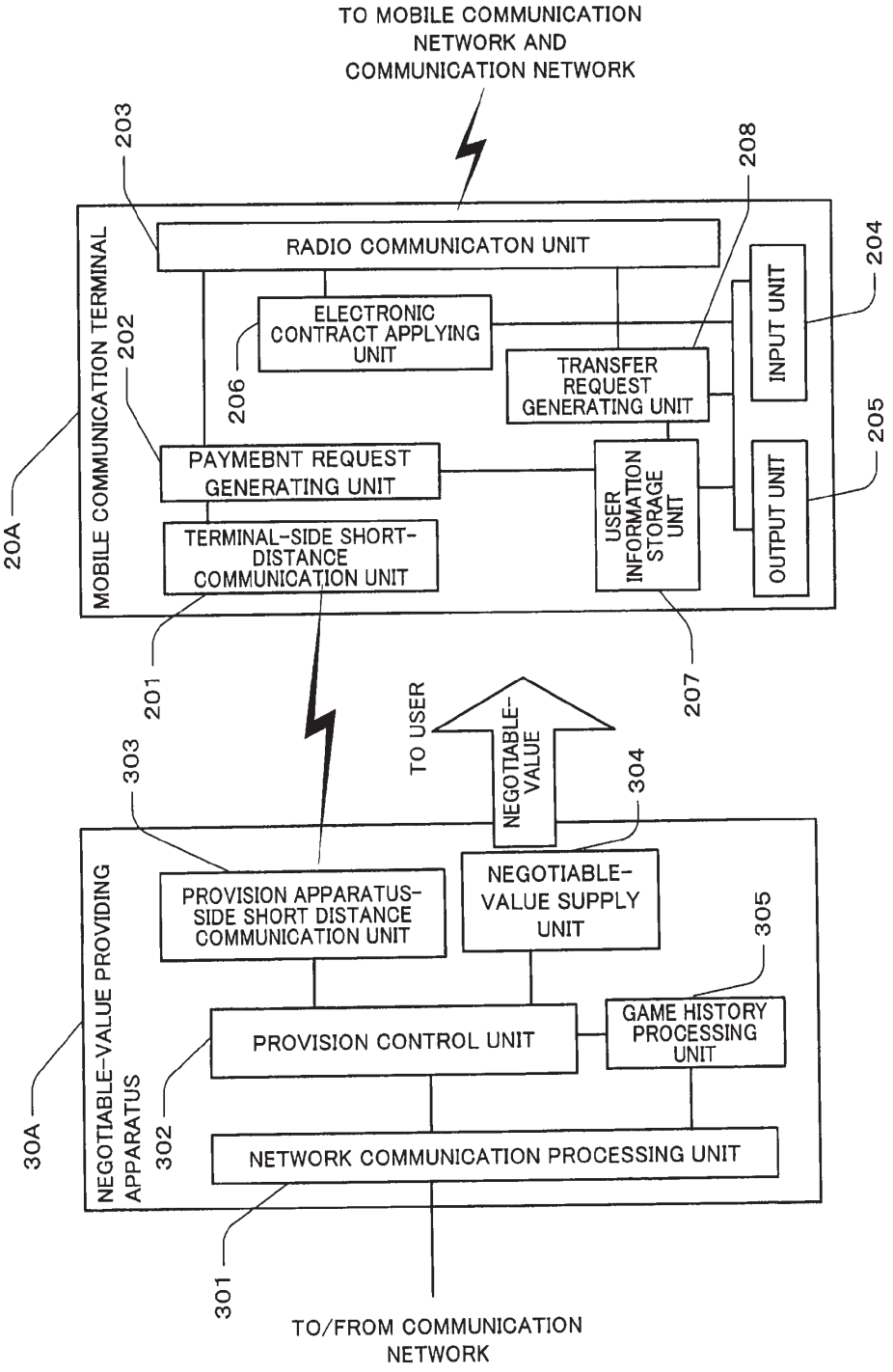

TO MOBILE COMMUNICATION NETWORK AND COMMUNICATION NETWORK
203
208
RADIO COMMUNICATON UNIT
204
INPUT UNIT
ELECTRONIC CONTRACT APPLYING UNIT
206
TRANSFER REQUEST GENERATING UNIT
MOBILE COMMUNICATION TERMINAL
202
205
PAYMEBNT REQUEST GENERATING UNIT
USER INFORMATION STORAGE UNIT
OUTPUT UNIT
20A
TERMINAL-SIDE SHORT-DISTANCE COMMUNICATION UNIT
201
207
TO USER
NEGOTIABLE-VALUE
303
304
PROVISION APPARATUS-SIDE SHORT DISTANCE COMMUNICATION UNIT
NEGOTIABLE-VALUE SUPPLY UNIT
305
GAME HISTORY PROCESSING UNIT
PROVISION CONTROL UNIT
NEGOTIABLE-VALUE PROVIDING APPARATUS
30A
302
NETWORK COMMUNICATION PROCESSING UNIT
301
TO/FROM COMMUNICATION NETWORK

FIG.19

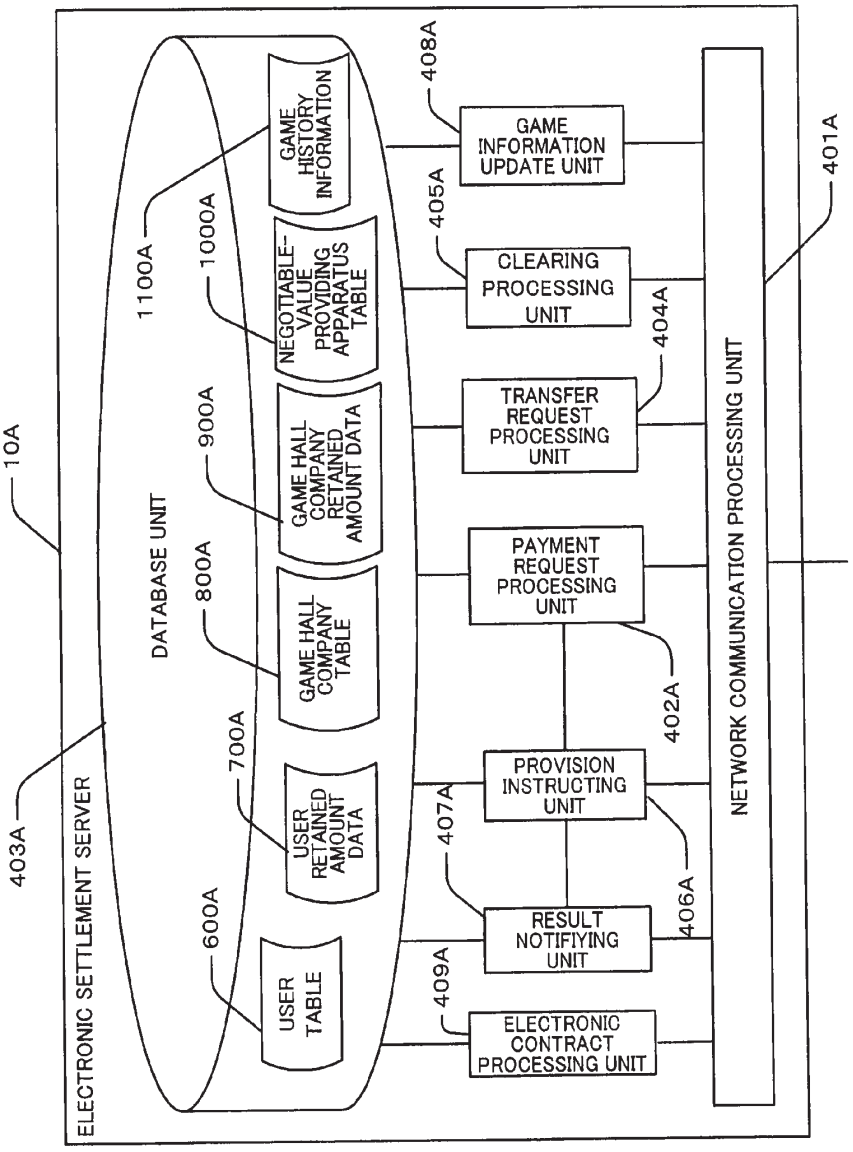

10A
403A
ELECTRONIC SETTLEMENT SERVER
DATABASE UNIT
1100A
600A
USER TABLE
700A
USER RETAINED AMOUNT DATA
800A
GAME HALL COMPANY TABLE
900A
GAME HALL COMPANY RETAINED AMOUNT DATA
1000A
NEGOTIABLE-VALUE PROVIDING APPARATUS TABLE
GAME HISTORY INFORMATION
408A
GAME INFORMATION UPDATE UNIT
405A
CLEARING PROCESSING UNIT
404A
TRANSFER REQUEST PROCESSING UNIT
PAYMENT REQUEST PROCESSING UNIT
402A
PROVISION INSTRUCTING UNIT
407A
RESULT NOTIFIYING UNIT
406A
409A
ELECTRONIC CONTRACT PROCESSING UNIT
NETWORK COMMUNICATION PROCESSING UNIT
401A
TO/FROM COMMUNICATION NETWORK

FIG.20

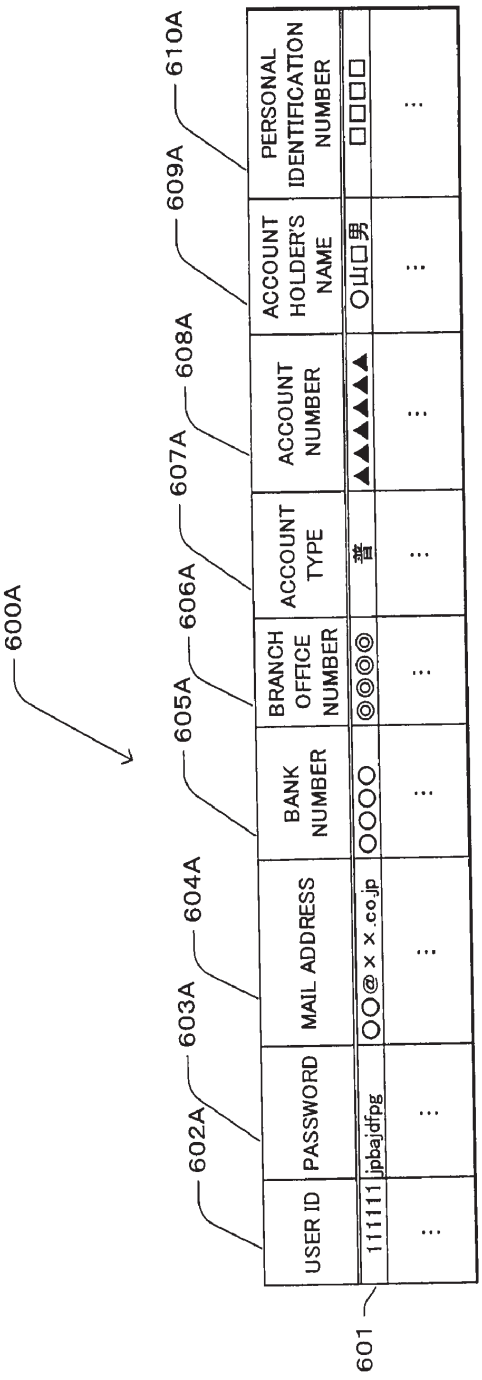

600A
601
602A
603A
604A
605A
606A
607A
608A
609A
610A
USER ID
PASSWORD
MAIL ADDRESS
BANK NUMBER
BRANCH OFFICE NUMBER
ACCOUNT TYPE
ACCOUNT NUMBER
ACCOUNT HOLDER'S NAME
PERSONAL IDENTIFICATION NUMBER
111111
jpbajdfpg
○○@××.co.jp
○○○○
◎◎◎◎
普
▲▲▲▲▲▲
○山□男
□□□□

FIG.21

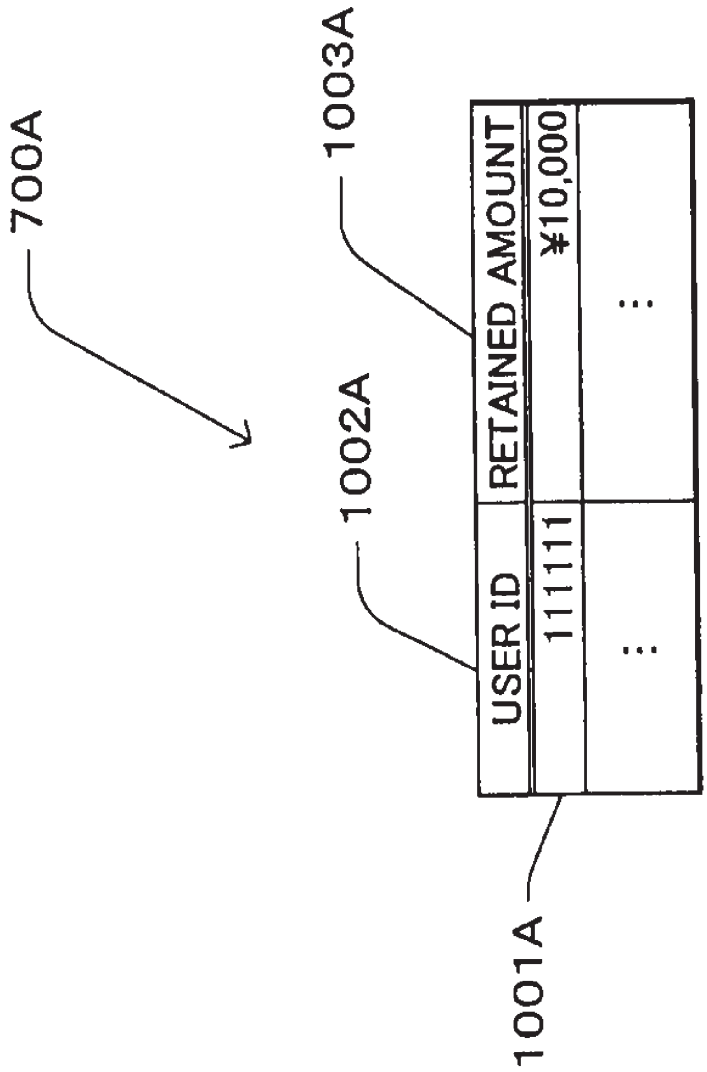

700A
1003A
1002A
1001A
USER ID
RETAINED AMOUNT
111111
¥10,000

FIG.22

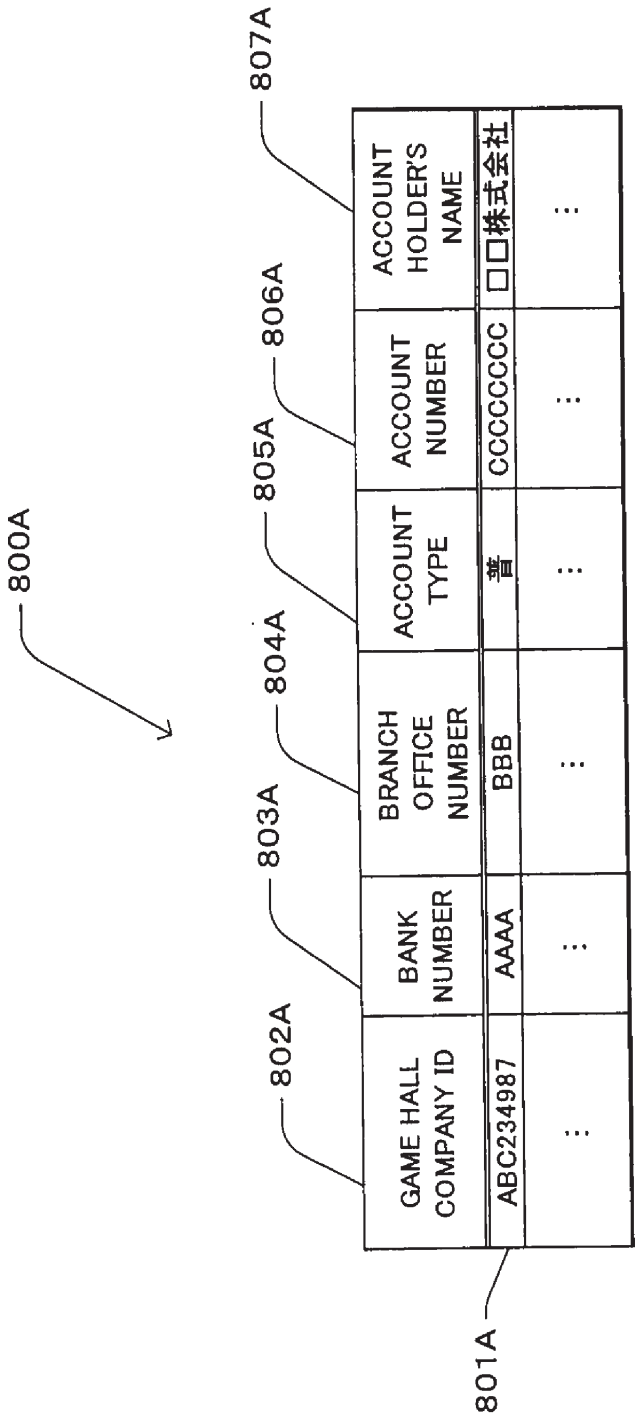

800A
801A
802A
803A
804A
805A
806A
807A
GAME HALL COMPANY ID
BANK NUMBER
BRANCH OFFICE NUMBER
ACCOUNT TYPE
ACCOUNT NUMBER
ACCOUNT HOLDER'S NAME
ABC234987
AAAA
BBB
普
CCCCCCCC
□□株式会社

FIG.23

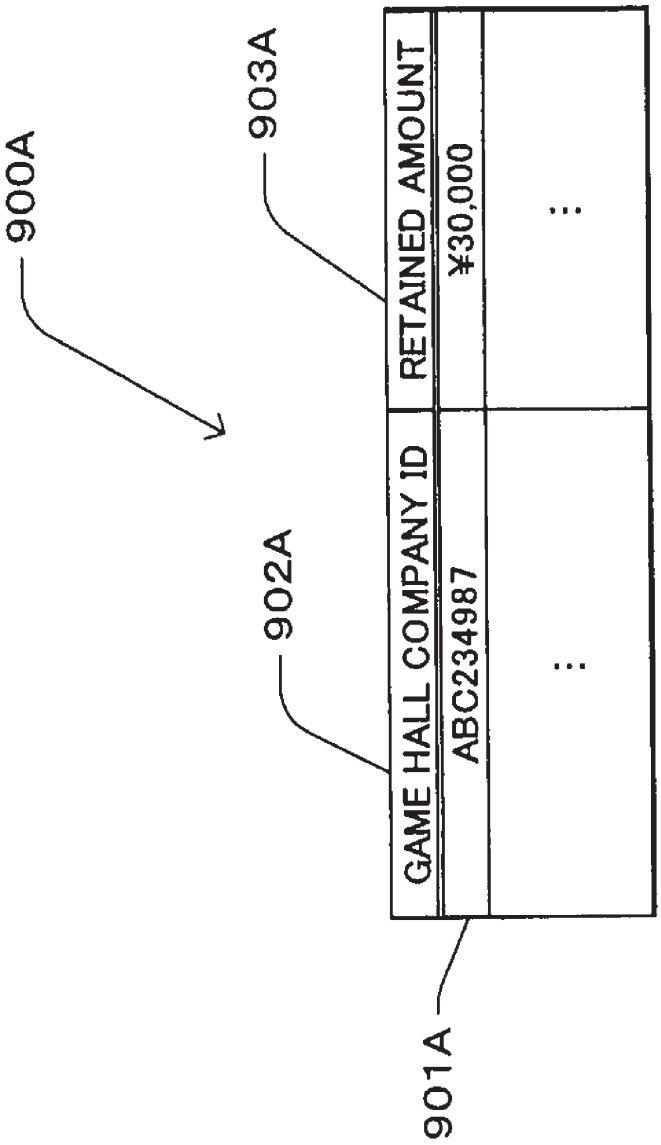

900A
903A
902A
901A
GAME HALL COMPANY ID
RETAINED AMOUNT
ABC234987
¥30,000
...
...

FIG.24

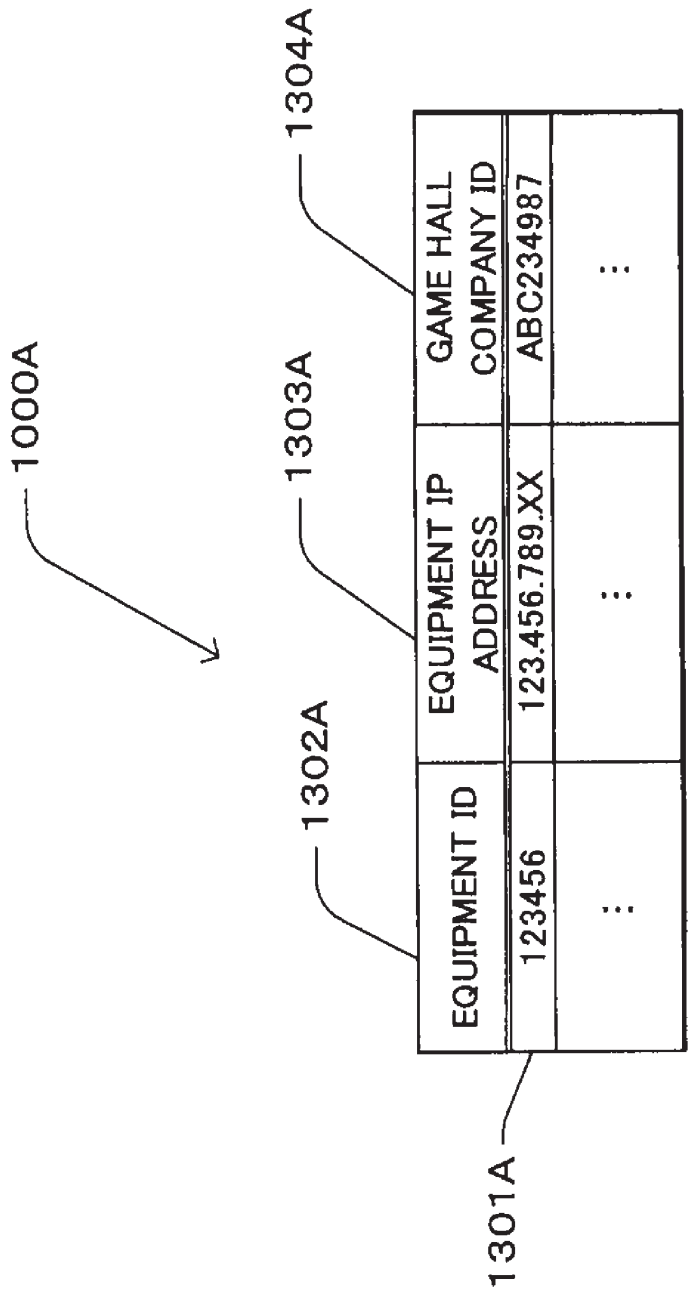

1000A
1301A
1302A
1303A
1304A
EQUIPMENT ID
EQUIPMENT IP ADDRESS
GAME HALL COMPANY ID
123456
123.456.789.XX
ABC234987

FIG.25

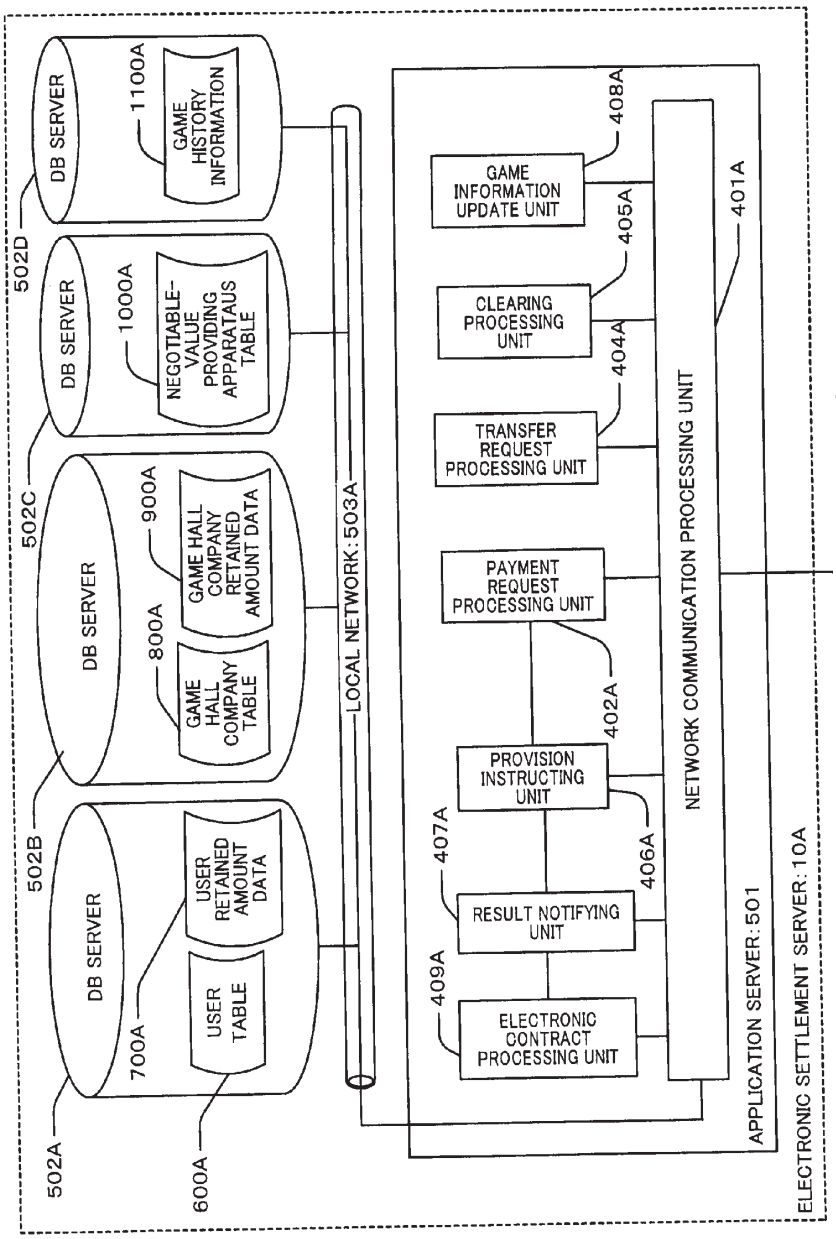

ELECTRONIC SETTLEMENT SERVER: 10A
APPLICATION SERVER: 501
NETWORK COMMUNICATION PROCESSING UNIT
TO/FROM COMMUNICATON NETWORK
LOCAL NETWORK: 503A
GAME INFORMATION UPDATE UNIT
CLEARING PROCESSING UNIT
TRANSFER REQUEST PROCESSING UNIT
PAYMENT REQUEST PROCESSING UNIT
PROVISION INSTRUCTING UNIT
RESULT NOTIFYING UNIT
ELECTRONIC CONTRACT PROCESSING UNIT
408A
405A
404A
402A
407A
406A
409A
401A
DB SERVER
GAME HISTORY INFORMATION
1100A
502D
DB SERVER
NEGOTIABLE-VALUE PROVIDING APPARATAUS TABLE
1000A
DB SERVER
GAME HALL COMPANY RETAINED AMOUNT DATA
900A
GAME HALL COMPANY TABLE
800A
502C
DB SERVER
USER RETAINED AMOUNT DATA
USER TABLE
700A
502B
502A
600A

FIG.26

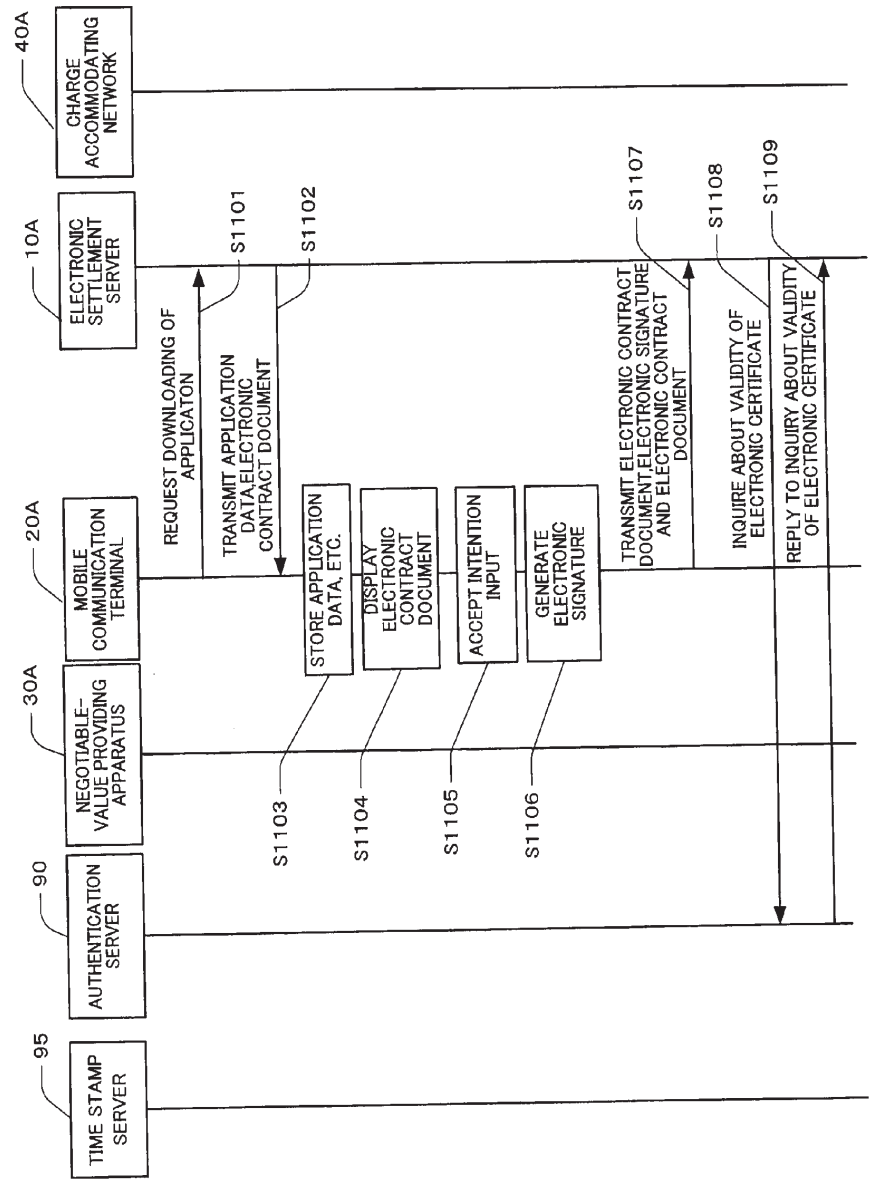

40A
CHARGE ACCOMMODATING NETWORK
10A
ELECTRONIC SETTLEMENT SERVER
20A
MOBILE COMMUNICATION TERMINAL
30A
NEGOTIABLE-VALUE PROVIDING APPARATUS
90
AUTHENTICATION SERVER
95
TIME STAMP SERVER
REQUEST DOWNLOADING OF APPLICATON
S1101
TRANSMIT APPLICATION DATA,ELECTRONIC CONTRACT DOCUMENT
S1102
STORE APPLICATION DATA, ETC.
S1103
DISPLAY ELECTRONIC CONTRACT DOCUMENT
S1104
ACCEPT INTENTION INPUT
S1105
GENERATE ELECTRONIC SIGNATURE
S1106
TRANSMIT ELECTRONIC CONTRACT DOCUMENT,ELECTRONIC SIGNATURE AND ELECTRONIC CONTRACT DOCUMENT
S1107
INQUIRE ABOUT VALIDITY OF ELECTRONIC CERTIFICATE
S1108
REPLY TO INQUIRY ABOUT VALIDITY OF ELECTRONIC CERTIFICATE
S1109

FIG.27

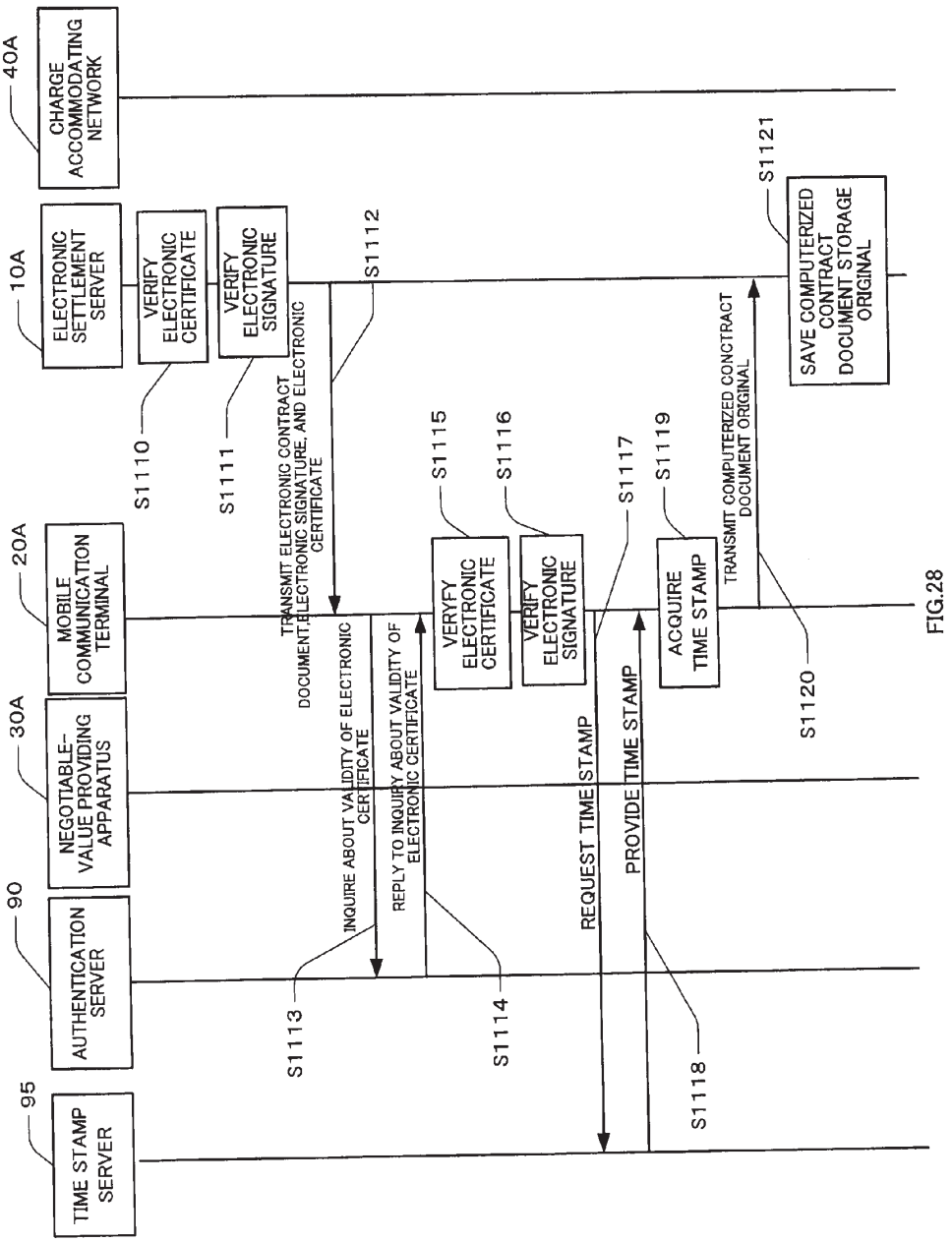

40A
CHARGE ACCOMMODATING NETWORK
10A
ELECTRONIC SETTLEMENT SERVER
VERIFY ELECTRONIC CERTIFICATE
VERIFY ELECTRONIC SIGNATURE
S1112
S1121
SAVE COMPUTERIZED CONTRACT DOCUMENT STORAGE ORIGINAL
S1110
S1111
TRANSMIT ELECTRONIC CONTRACT DOCUMENT, ELECTRONIC SIGNATURE, AND ELECTRONIC CERTIFICATE
S1115
S1116
S1117
S1119
20A
MOBILE COMMUNICATION TERMINAL
VERYFY ELECTRONIC CERTIFICATE
VERIFY ELECTRONIC SIGNATURE
ACQUIRE TIME STAMP
TRANSMIT COMPUTERIZED CONCTRACT DOCUMENT ORIGINAL
30A
NEGOTIABLE-VALUE PROVIDING APPARATUS
INQUIRE ABOUT VALIDITY OF ELECTRONIC CERTIFICATE
REPLY TO INQUIRY ABOUT VALIDITY OF ELECTRONIC CERTIFICATE
REQUEST TIME STAMP
PROVIDE TIME STAMP
S1120
90
AUTHENTICATION SERVER
S1113
S1114
S1118
95
TIME STAMP SERVER

FIG.28

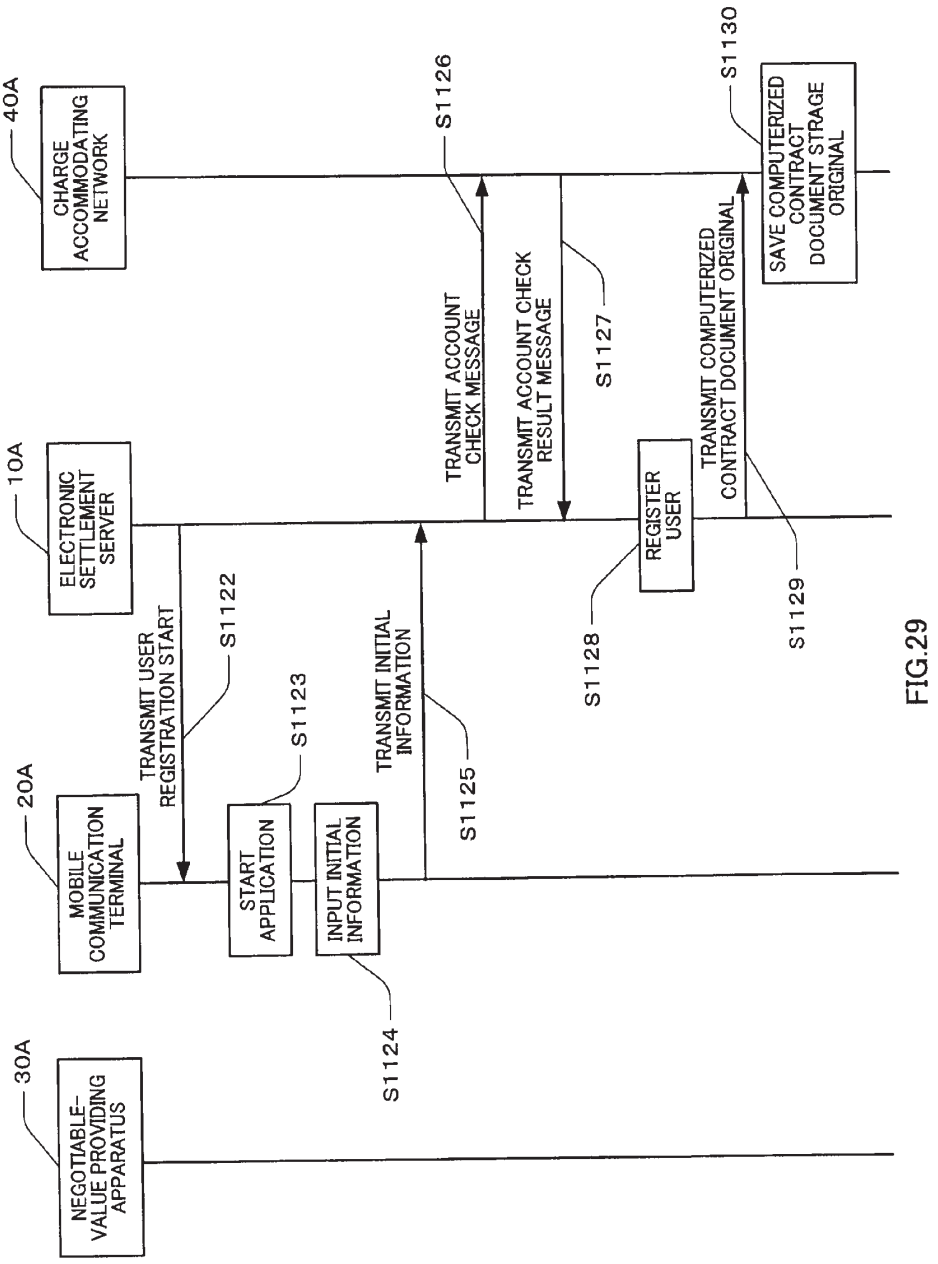

40A
CHARGE ACCOMMODATING NETWORK
10A
ELECTRONIC SETTLEMENT SERVER
20A
MOBILE COMMUNICATION TERMINAL
30A
NEGOTIABLE-VALUE PROVIDING APPARATUS
TRANSMIT USER REGISTRATION START
S1122
START APPLICATION
S1123
INPUT INITIAL INFORMATION
S1124
TRANSMIT INITIAL INFORMATION
S1125
TRANSMIT ACCOUNT CHECK MESSAGE
S1126
TRANSMIT ACCOUNT CHECK RESULT MESSAGE
S1127
REGISTER USER
S1128
TRANSMIT COMPUTERIZED CONTRACT DOCUMENT ORIGINAL
S1129
SAVE COMPUTERIZED CONTRACT DOCUMENT STRAGE ORIGINAL
S1130

FIG.29

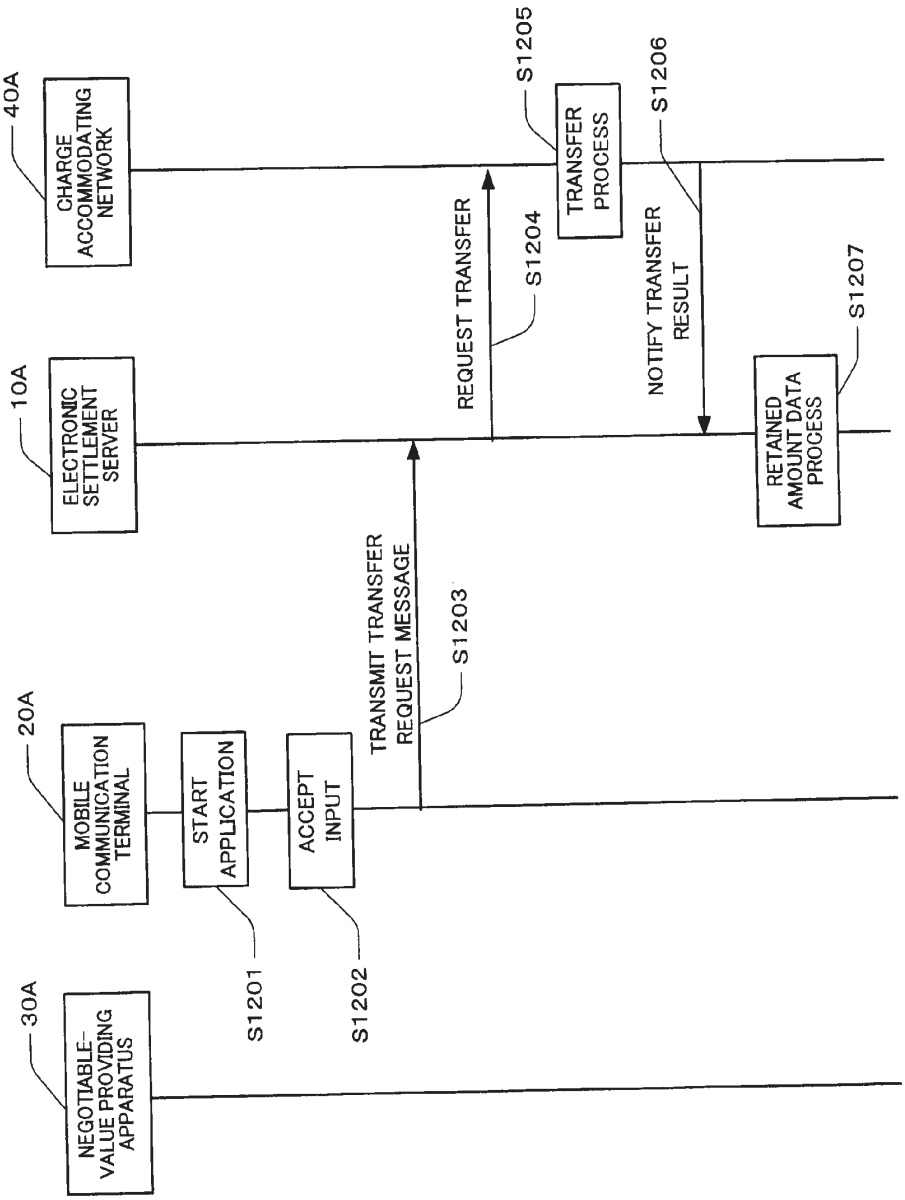

30A
NEGOTIABLE-VALUE PROVIDING APPARATUS
20A
MOBILE COMMUNICATION TERMINAL
10A
ELECTRONIC SETTLEMENT SERVER
40A
CHARGE ACCOMMODATING NETWORK
START APPLICATION
ACCEPT INPUT
TRANSMIT TRANSFER REQUEST MESSAGE
REQUEST TRANSFER
TRANSFER PROCESS
NOTIFY TRANSFER RESULT
RETAINED AMOUNT DATA PROCESS
S1201
S1202
S1203
S1204
S1205
S1206
S1207

FIG.30

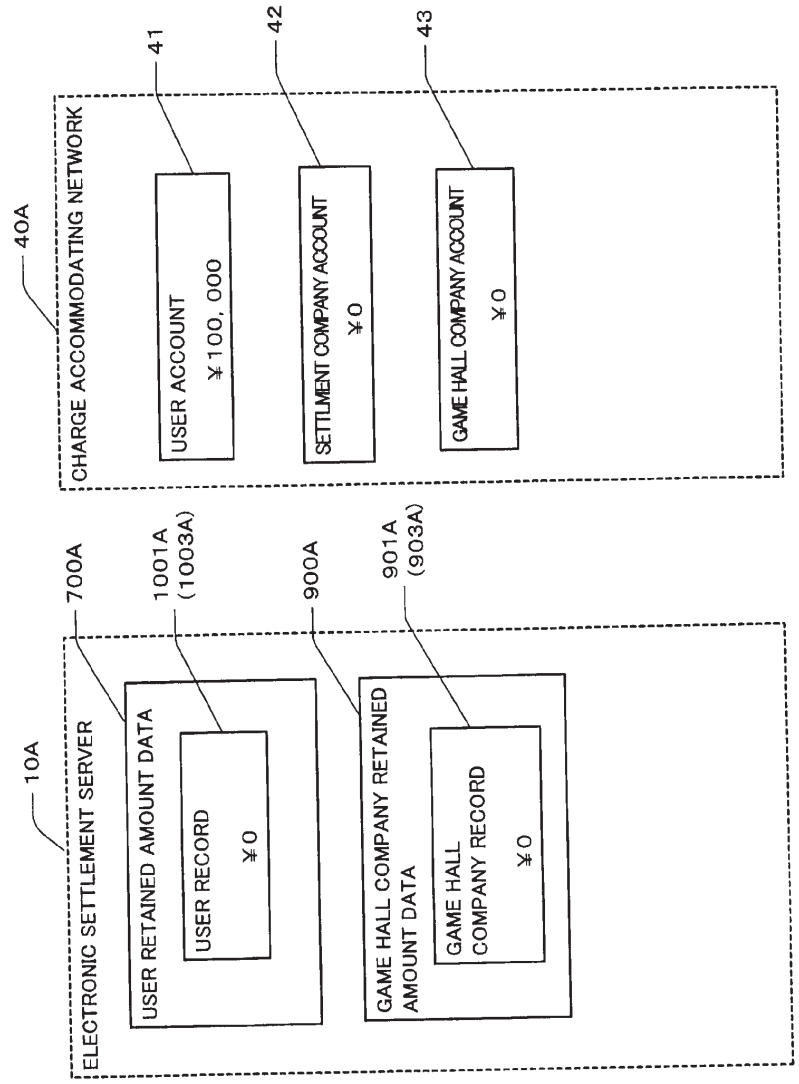

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥100,000
42
SETTLMENT COMPANY ACCOUNT
¥0
43
GAME HALL COMPANY ACCOUNT
¥0
10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A
(1003A)
USER RECORD
¥0
900A
GAME HALL COMPANY RETAINED
AMOUNT DATA
901A
(903A)
GAME HALL
COMPANY RECORD
¥0

FIG.31

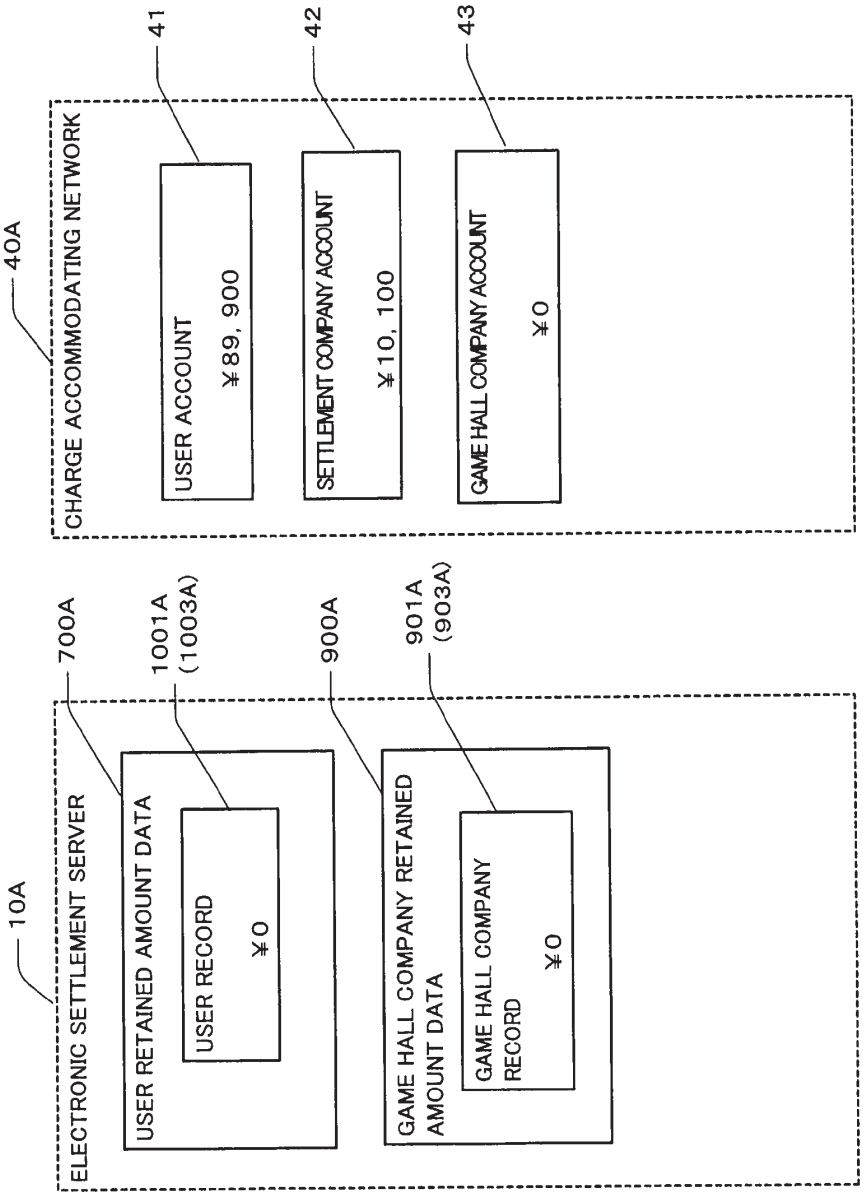

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥10, 100
43
GAME HALL COMPANY ACCOUNT
¥0
10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A
(1003A)
USER RECORD
¥0
900A
GAME HALL COMPANY RETAINED AMOUNT DATA
901A
(903A)
GAME HALL COMPANY RECORD
¥0

FIG.32

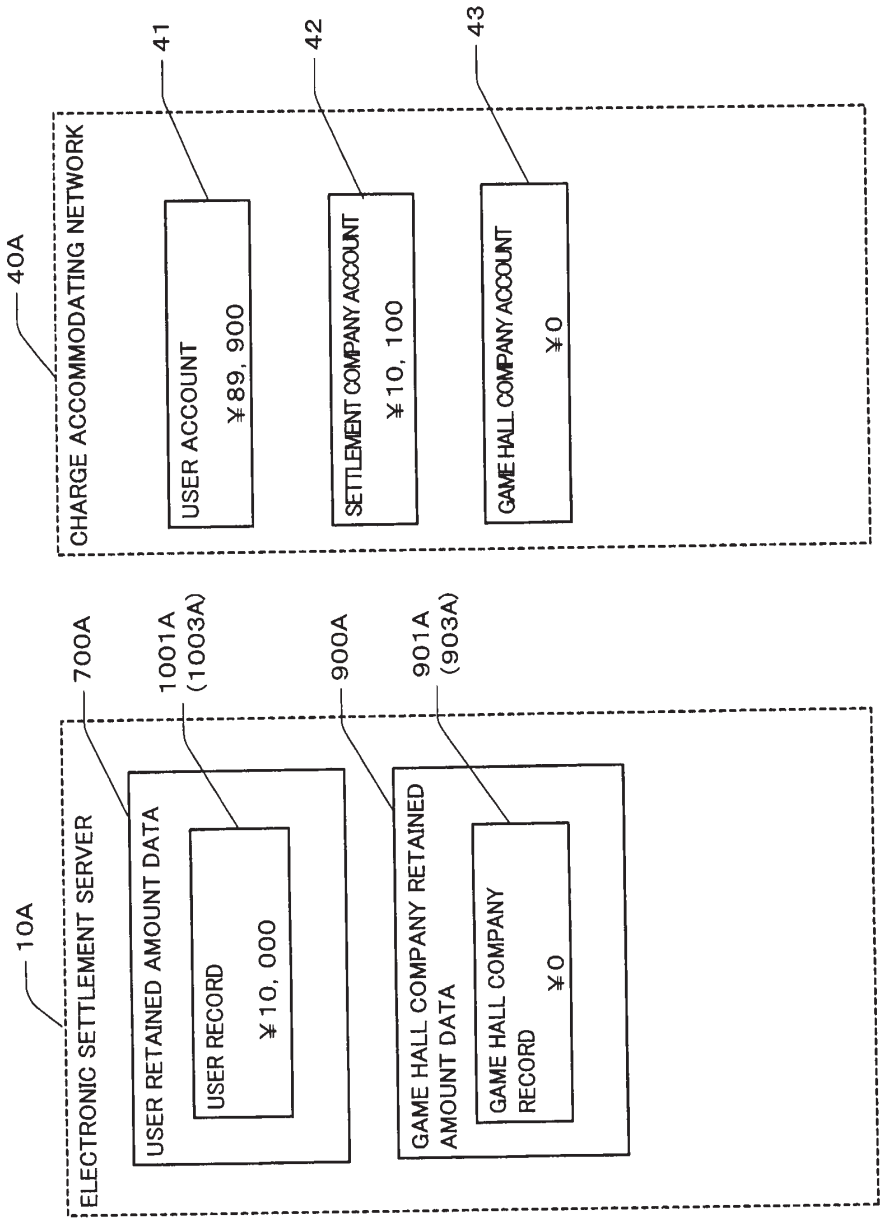

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥10, 100
43
GAME HALL COMPANY ACCOUNT
¥0
10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A
(1003A)
USER RECORD
¥10, 000
900A
GAME HALL COMPANY RETAINED AMOUNT DATA
901A
(903A)
GAME HALL COMPANY RECORD
¥0

FIG.33

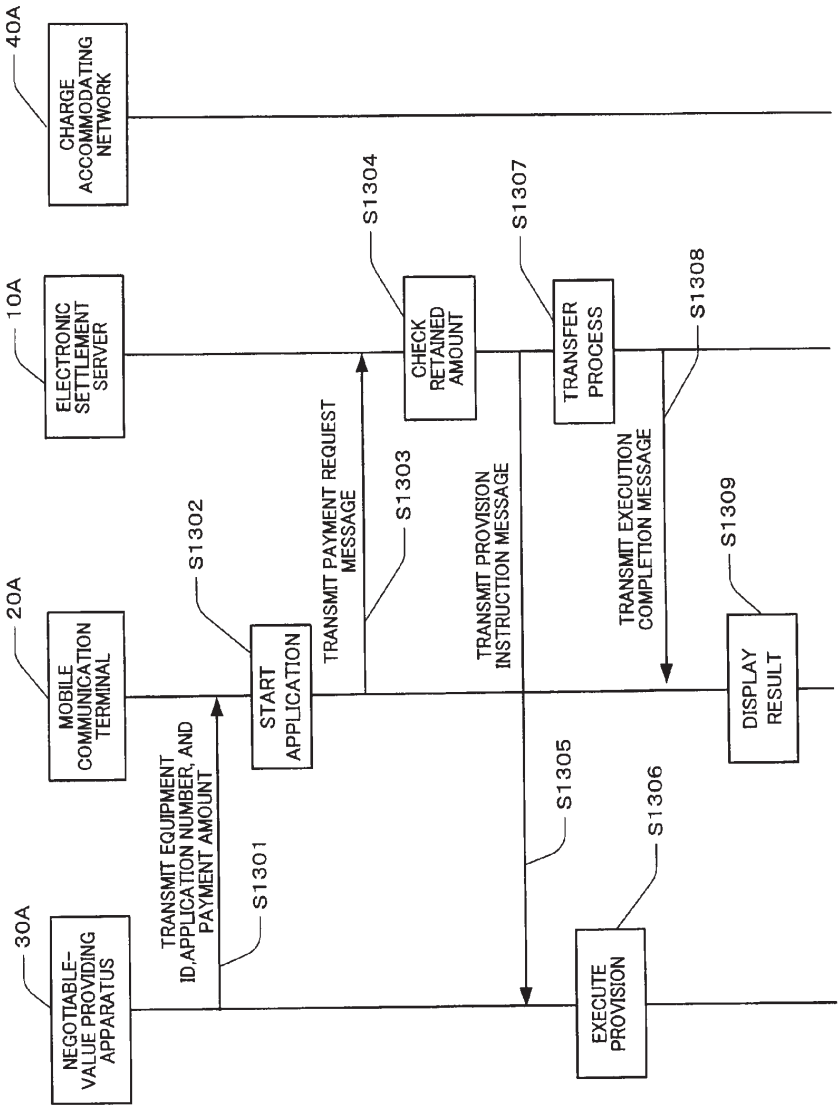

40A
CHARGE ACCOMMODATING NETWORK
10A
ELECTRONIC SETTLEMENT SERVER
20A
MOBILE COMMUNICATION TERMINAL
30A
NEGOTIABLE-VALUE PROVIDING APPARATUS
S1301
TRANSMIT EQUIPMENT ID, APPLICATION NUMBER, AND PAYMENT AMOUNT
S1302
START APPLICATION
S1303
TRANSMIT PAYMENT REQUEST MESSAGE
S1304
CHECK RETAINED AMOUNT
S1305
TRANSMIT PROVISION INSTRUCTION MESSAGE
S1306
EXECUTE PROVISION
S1307
TRANSFER PROCESS
S1308
TRANSMIT EXECUTION COMPLETION MESSAGE
S1309
DISPLAY RESULT

FIG.34

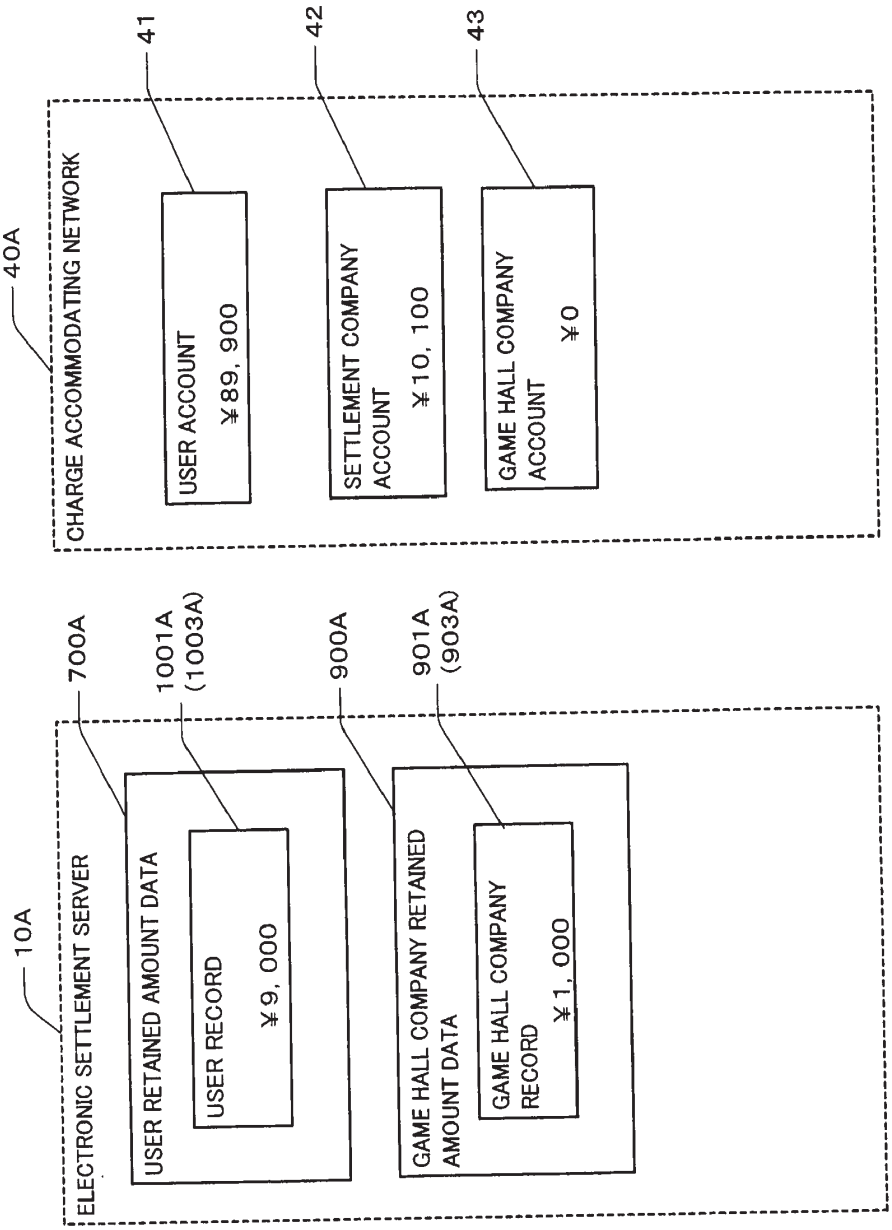

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥10, 100
43
GAME HALL COMPANY ACCOUNT
¥0
10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥9, 000
900A
GAME HALL COMPANY RETAINED AMOUNT DATA
901A (903A)
GAME HALL COMPANY RECORD
¥1, 000

FIG.35

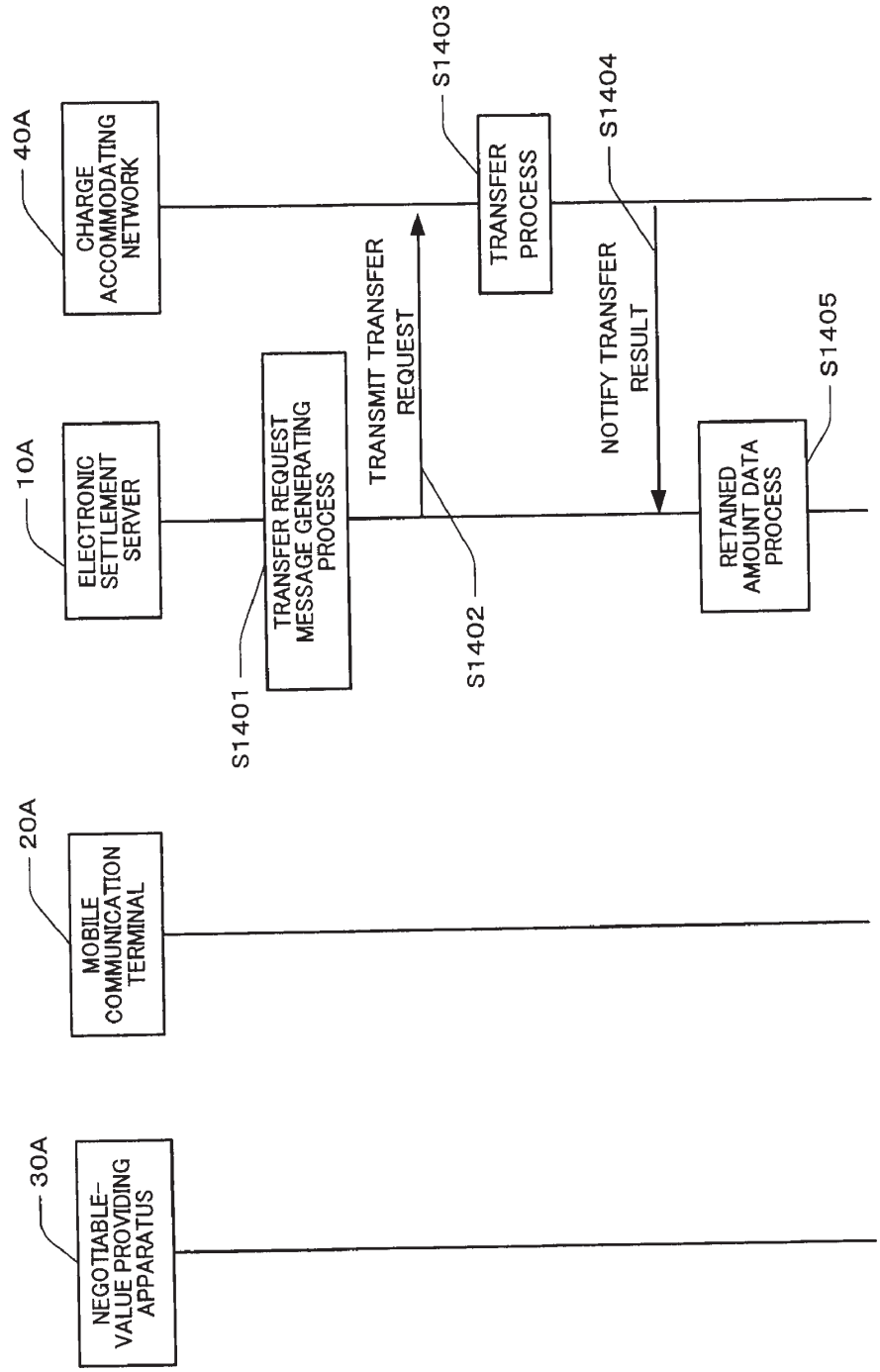

40A
CHARGE ACCOMMODATING NETWORK
10A
ELECTRONIC SETTLEMENT SERVER
20A
MOBILE COMMUNICATION TERMINAL
30A
NEGOTIABLE-VALUE PROVIDING APPARATUS
TRANSFER REQUEST MESSAGE GENERATING PROCESS
TRANSMIT TRANSFER REQUEST
TRANSFER PROCESS
NOTIFY TRANSFER RESULT
RETAINED AMOUNT DATA PROCESS
S1401
S1402
S1403
S1404
S1405

FIG.36

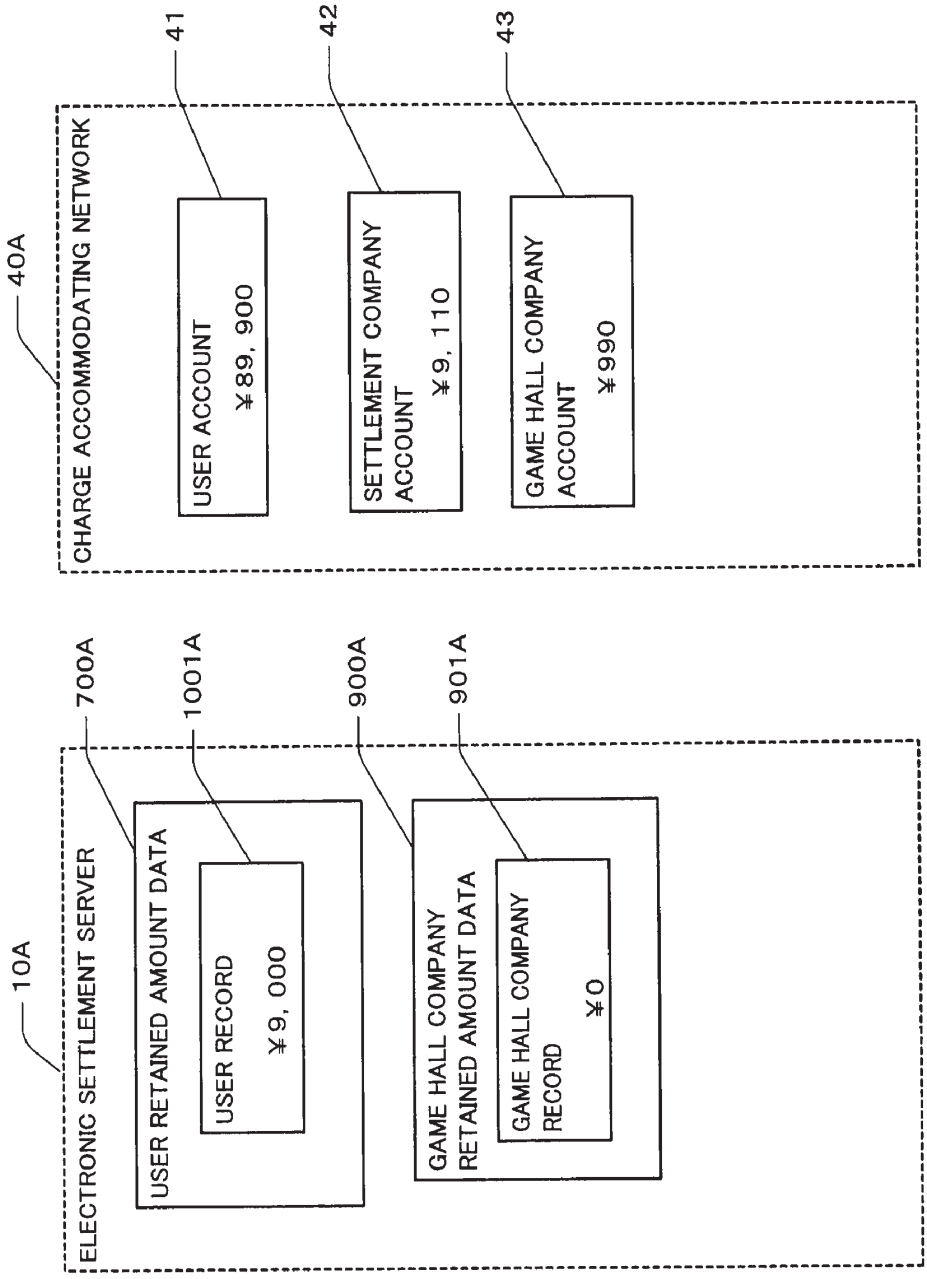

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY
ACCOUNT
¥9, 110
43
GAME HALL COMPANY
ACCOUNT
¥990
10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A
USER RECORD
¥9, 000
900A
GAME HALL COMPANY
RETAINED AMOUNT DATA
901A
GAME HALL COMPANY
RECORD
¥0

FIG.37

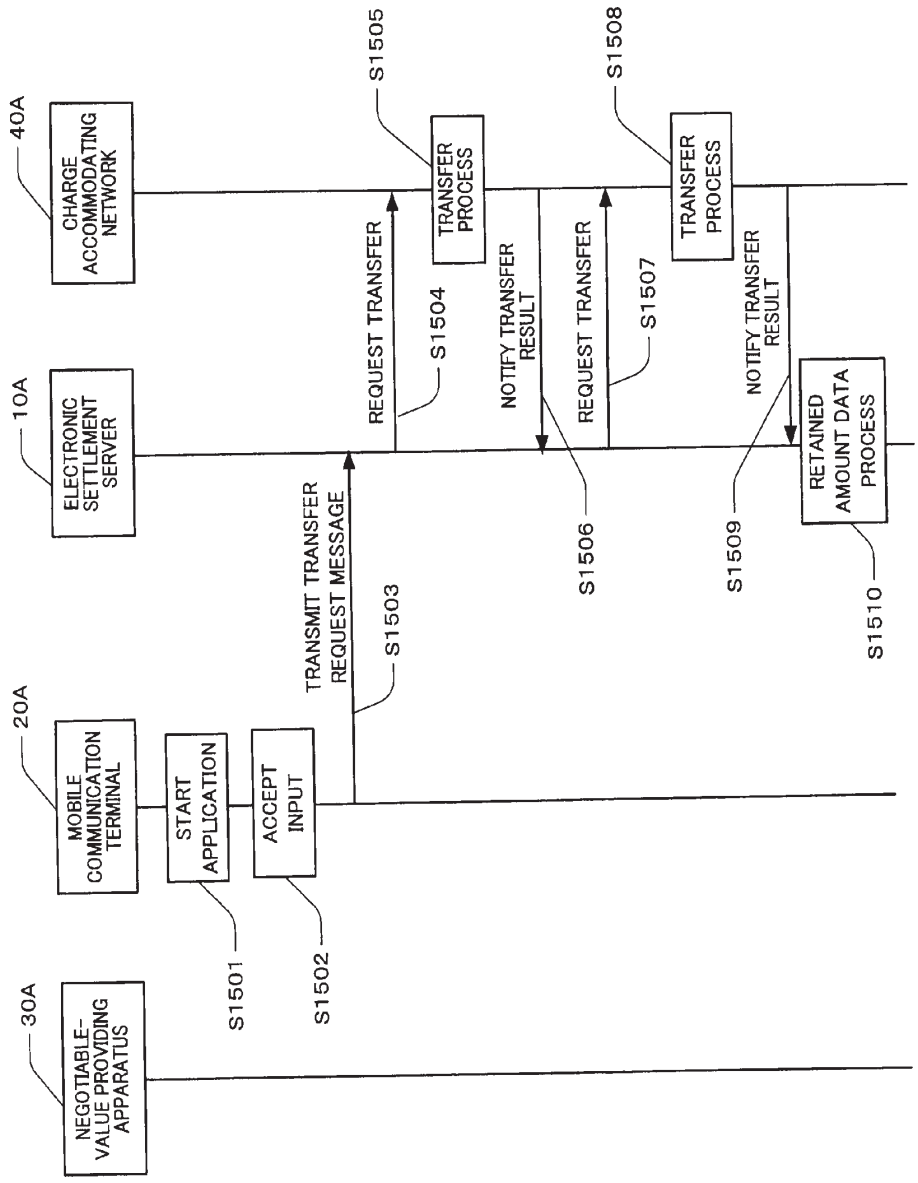

30A
NEGOTIABLE-VALUE PROVIDING APPARATUS
20A
MOBILE COMMUNICATION TERMINAL
10A
ELECTRONIC SETTLEMENT SERVER
40A
CHARGE ACCOMMODATING NETWORK
START APPLICATION
ACCEPT INPUT
TRANSMIT TRANSFER REQUEST MESSAGE
REQUEST TRANSFER
TRANSFER PROCESS
NOTIFY TRANSFER RESULT
REQUEST TRANSFER
TRANSFER PROCESS
NOTIFY TRANSFER RESULT
RETAINED AMOUNT DATA PROCESS
S1501
S1502
S1503
S1504
S1505
S1506
S1507
S1508
S1509
S1510

FIG.38

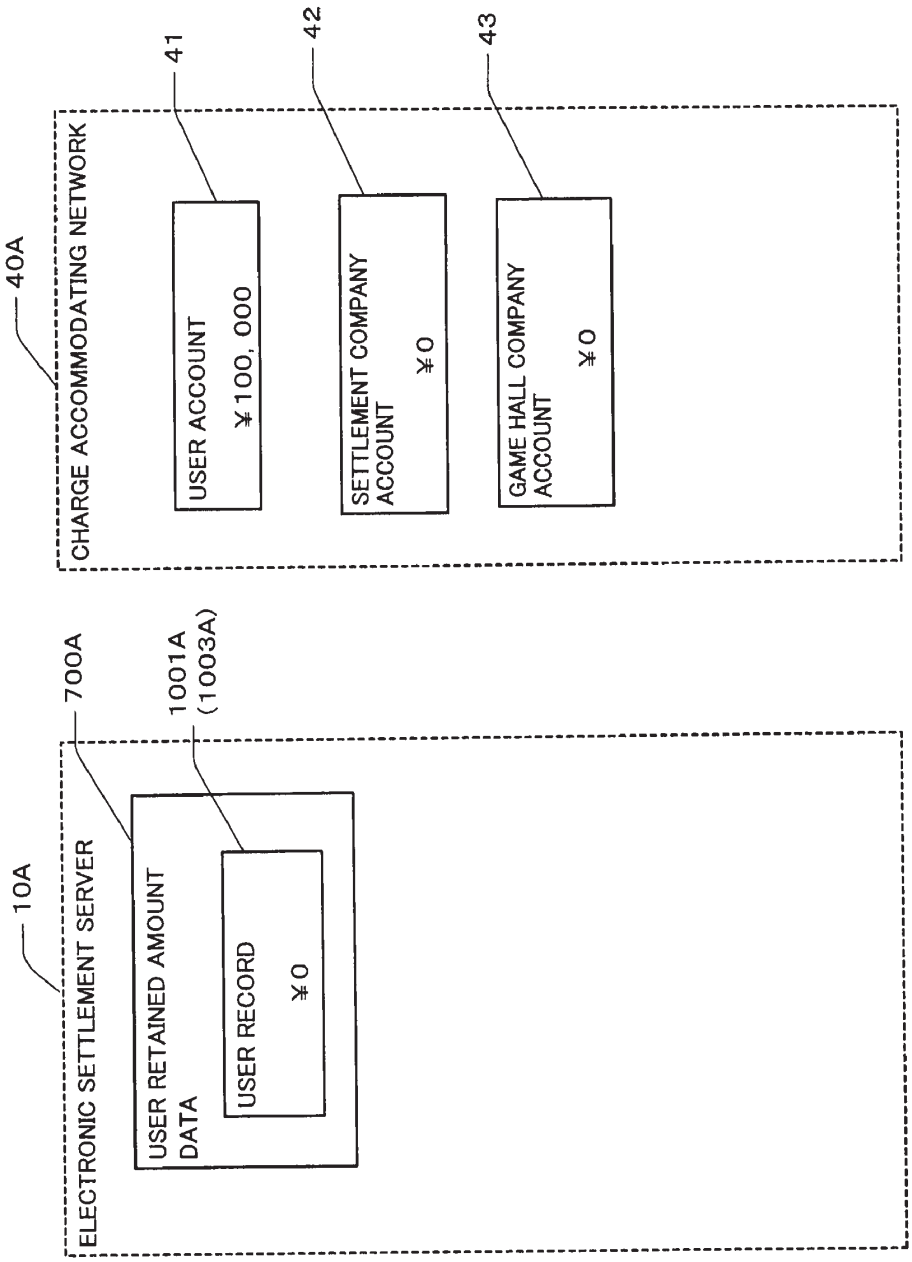

10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD ¥0
40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT ¥100,000
42
SETTLEMENT COMPANY ACCOUNT ¥0
43
GAME HALL COMPANY ACCOUNT ¥0

FIG.39

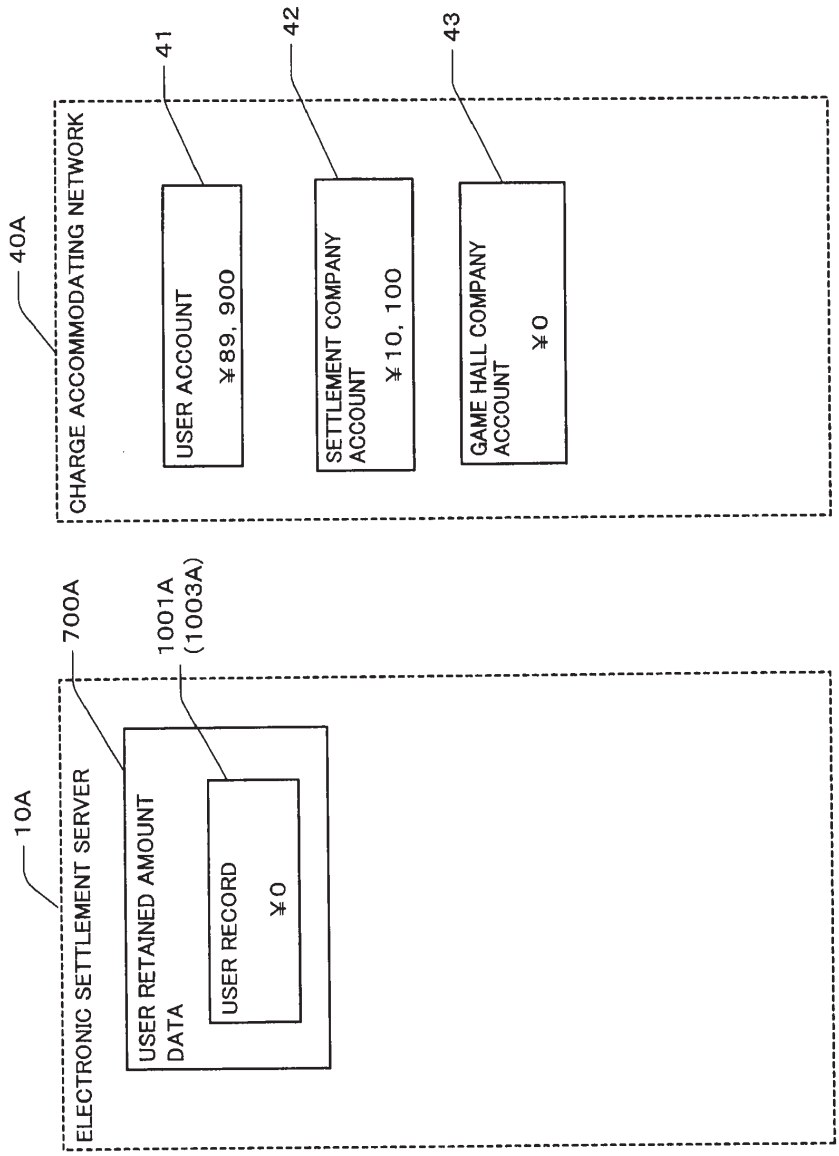

10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥0
40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥10, 100
43
GAME HALL COMPANY ACCOUNT
¥0

FIG.40

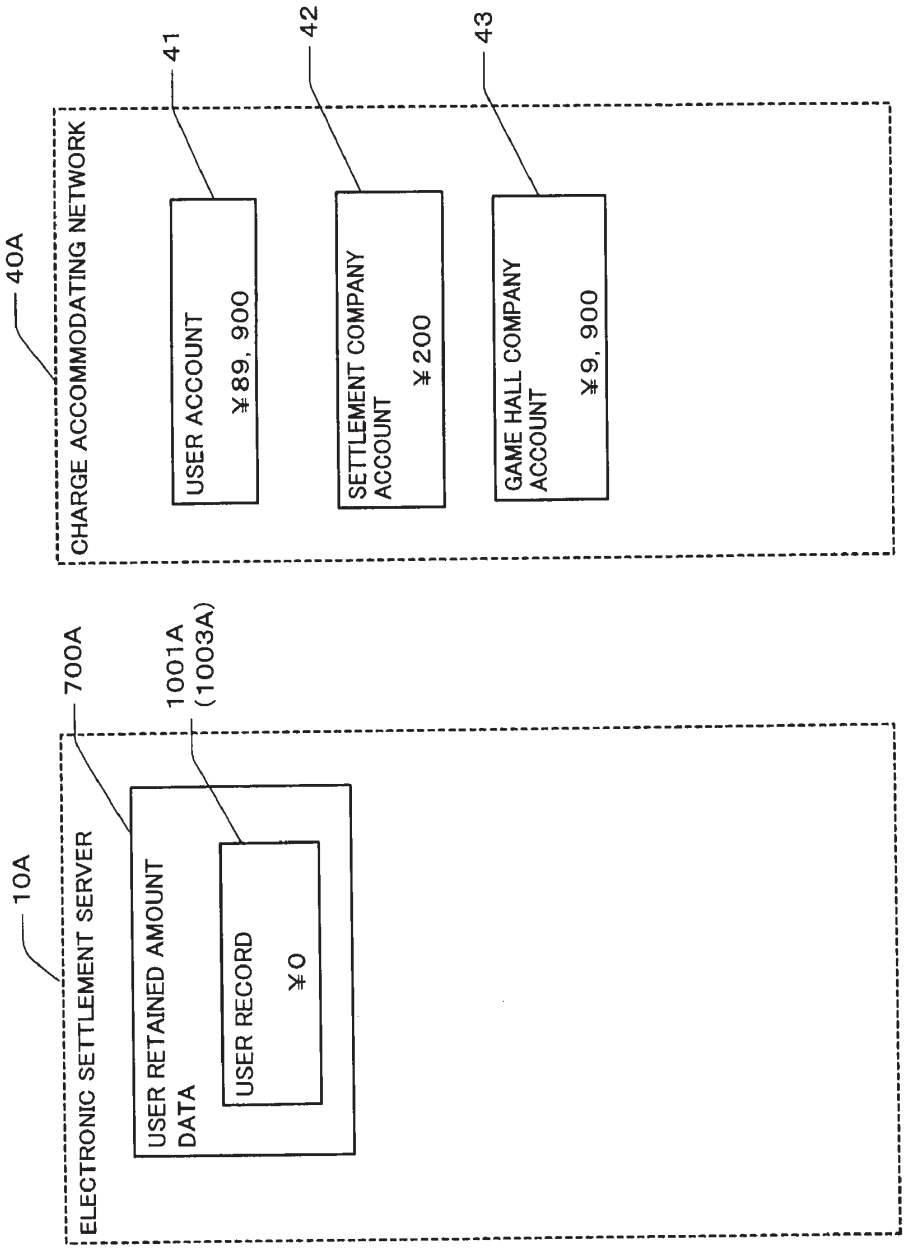

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89,900
42
SETTLEMENT COMPANY ACCOUNT
¥200
43
GAME HALL COMPANY ACCOUNT
¥9,900
10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥0

FIG.41

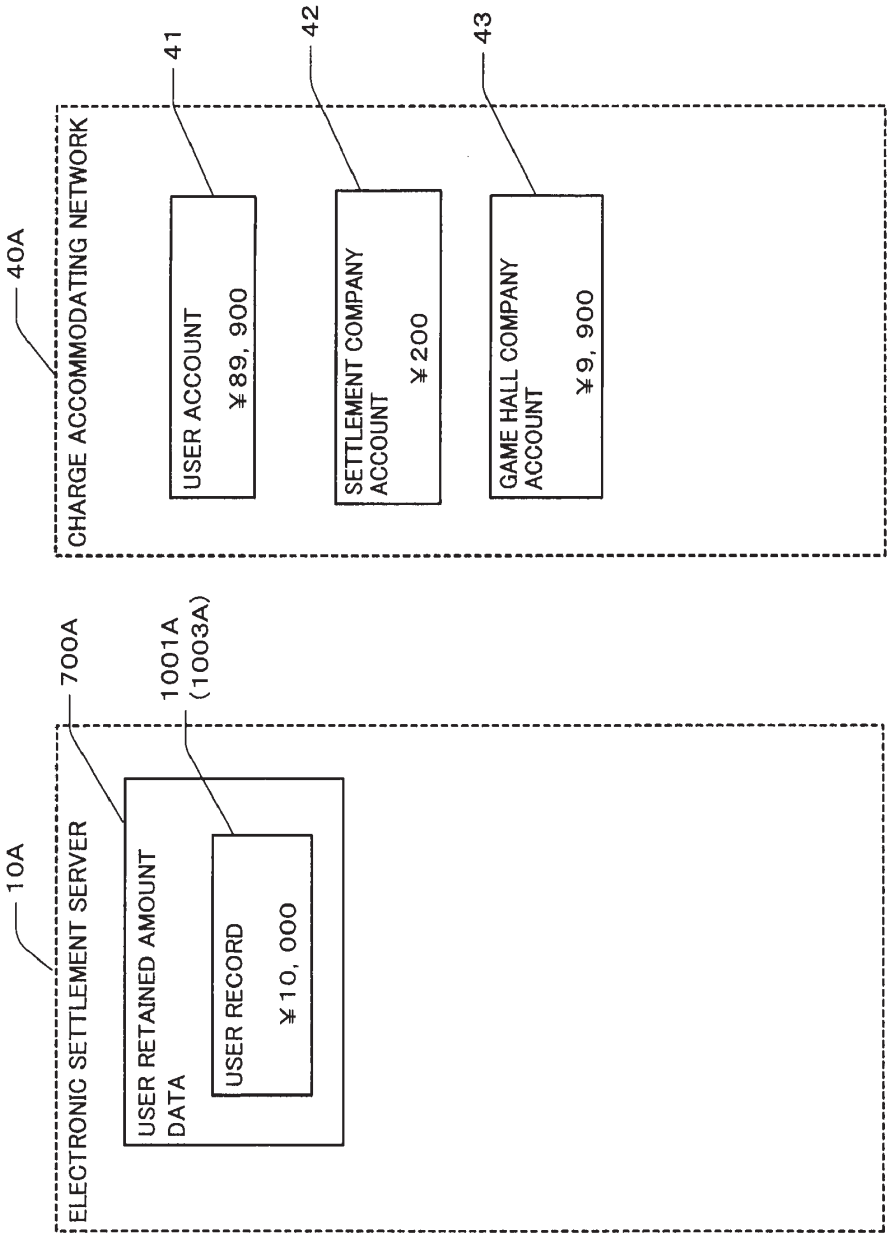

10A
ELECTRONIC SETTLEMENT SERVER
700A
1001A
(1003A)
USER RETAINED AMOUNT DATA
USER RECORD
¥10, 000
40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥200
43
GAME HALL COMPANY ACCOUNT
¥9, 900

FIG.42

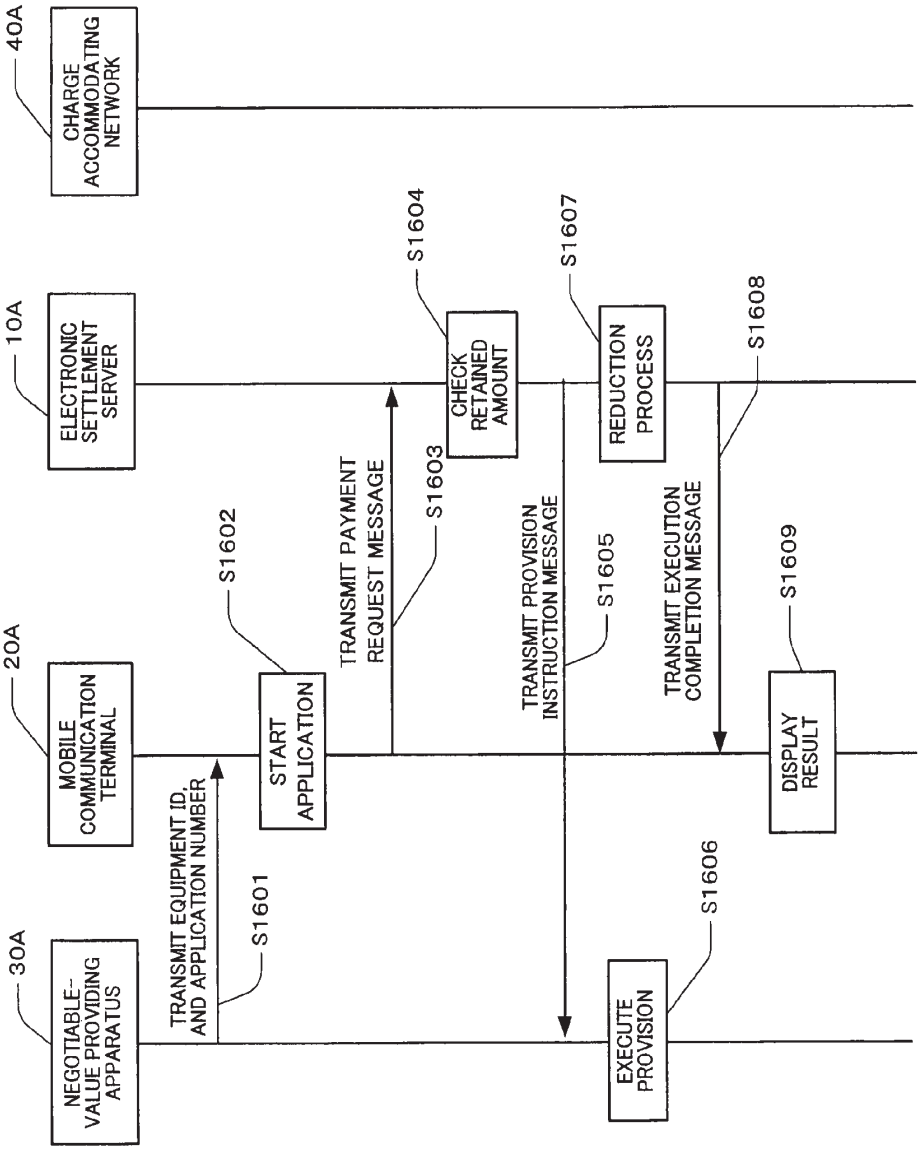

40A
CHARGE ACCOMMODATING NETWORK
10A
ELECTRONIC SETTLEMENT SERVER
20A
MOBILE COMMUNICATION TERMINAL
30A
NEGOTIABLE-VALUE PROVIDING APPARATUS
S1601
TRANSMIT EQUIPMENT ID, AND APPLICATION NUMBER
S1602
START APPLICATION
S1603
TRANSMIT PAYMENT REQUEST MESSAGE
S1604
CHECK RETAINED AMOUNT
S1605
TRANSMIT PROVISION INSTRUCTION MESSAGE
S1606
EXECUTE PROVISION
S1607
REDUCTION PROCESS
S1608
TRANSMIT EXECUTION COMPLETION MESSAGE
S1609
DISPLAY RESULT

FIG.43

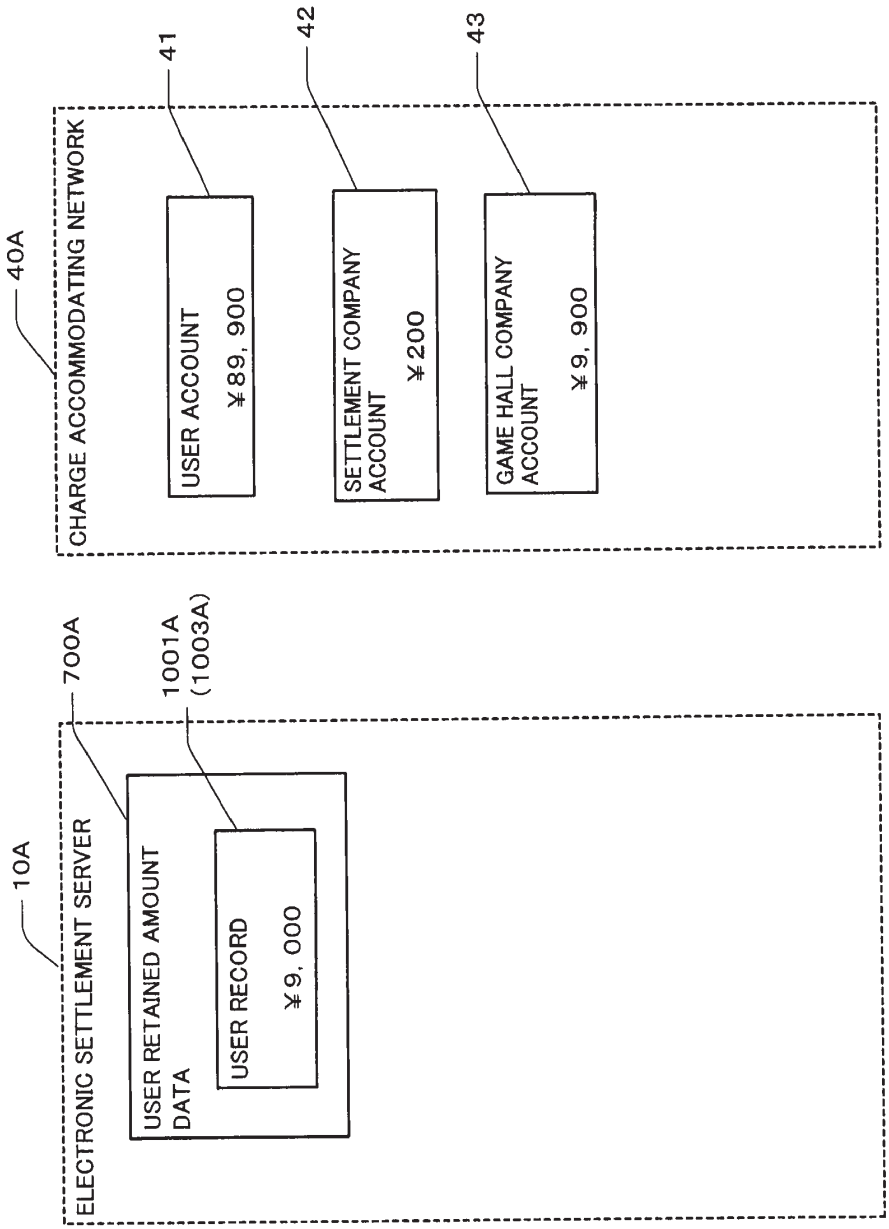

10A
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥9, 000
40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥200
43
GAME HALL COMPANY ACCOUNT
¥9, 900

FIG.44

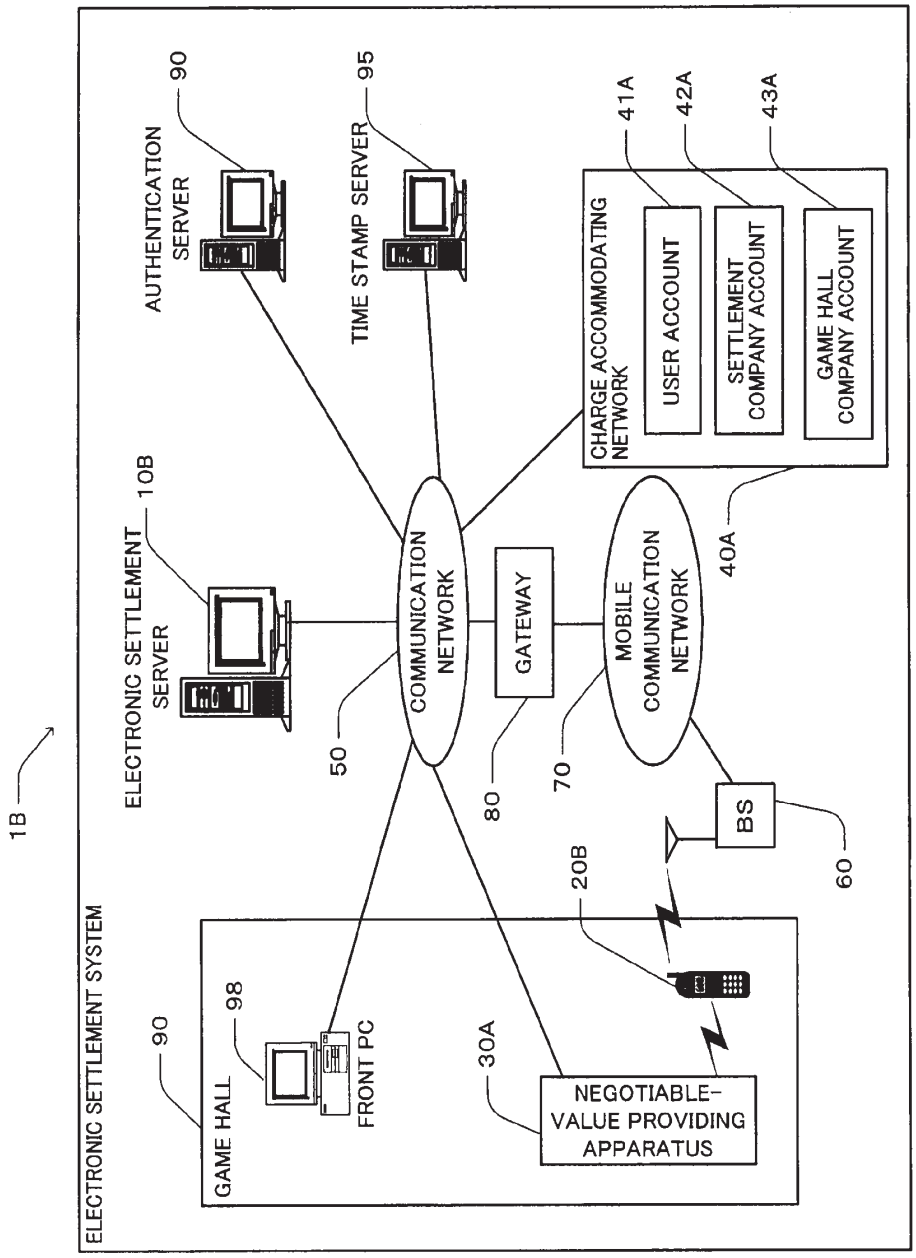

1B
ELECTRONIC SETTLEMENT SYSTEM
AUTHENTICATION SERVER
90
TIME STAMP SERVER
95
CHARGE ACCOMMODATING NETWORK
41A
42A
43A
USER ACCOUNT
SETTLEMENT COMPANY ACCOUNT
GAME HALL COMPANY ACCOUNT
ELECTRONIC SETTLEMENT SERVER
10B
COMMUNICATION NETWORK
50
GATEWAY
80
MOBILE COMMUNICATION NETWORK
70
40A
BS
60
20B
GAME HALL
90
98
FRONT PC
30A
NEGOTIABLE-VALUE PROVIDING APPARATUS

FIG.45

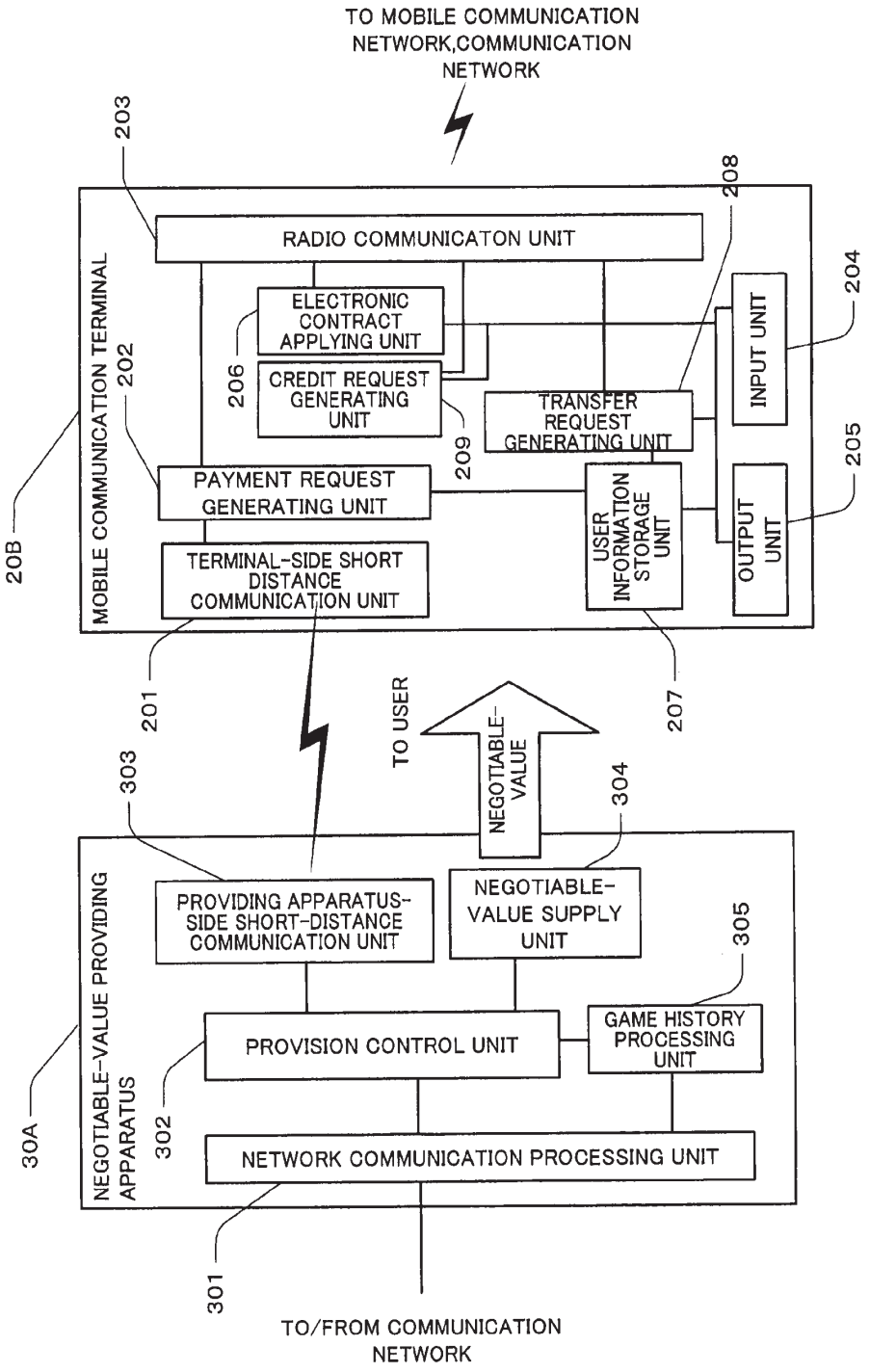

TO MOBILE COMMUNICATION NETWORK,COMMUNICATION NETWORK
203
208
RADIO COMMUNICATON UNIT
ELECTRONIC CONTRACT APPLYING UNIT
206
CREDIT REQUEST GENERATING UNIT
209
TRANSFER REQUEST GENERATING UNIT
INPUT UNIT
204
MOBILE COMMUNICATION TERMINAL
202
PAYMENT REQUEST GENERATING UNIT
USER INFORMATION STORAGE UNIT
OUTPUT UNIT
205
20B
TERMINAL-SIDE SHORT DISTANCE COMMUNICATION UNIT
201
207
TO USER
NEGOTIABLE-VALUE
303
304
PROVIDING APPARATUS-SIDE SHORT-DISTANCE COMMUNICATION UNIT
NEGOTIABLE-VALUE SUPPLY UNIT
305
NEGOTIABLE-VALUE PROVIDING APPARATUS
PROVISION CONTROL UNIT
GAME HISTORY PROCESSING UNIT
30A
302
NETWORK COMMUNICATION PROCESSING UNIT
301
TO/FROM COMMUNICATION NETWORK

FIG.46

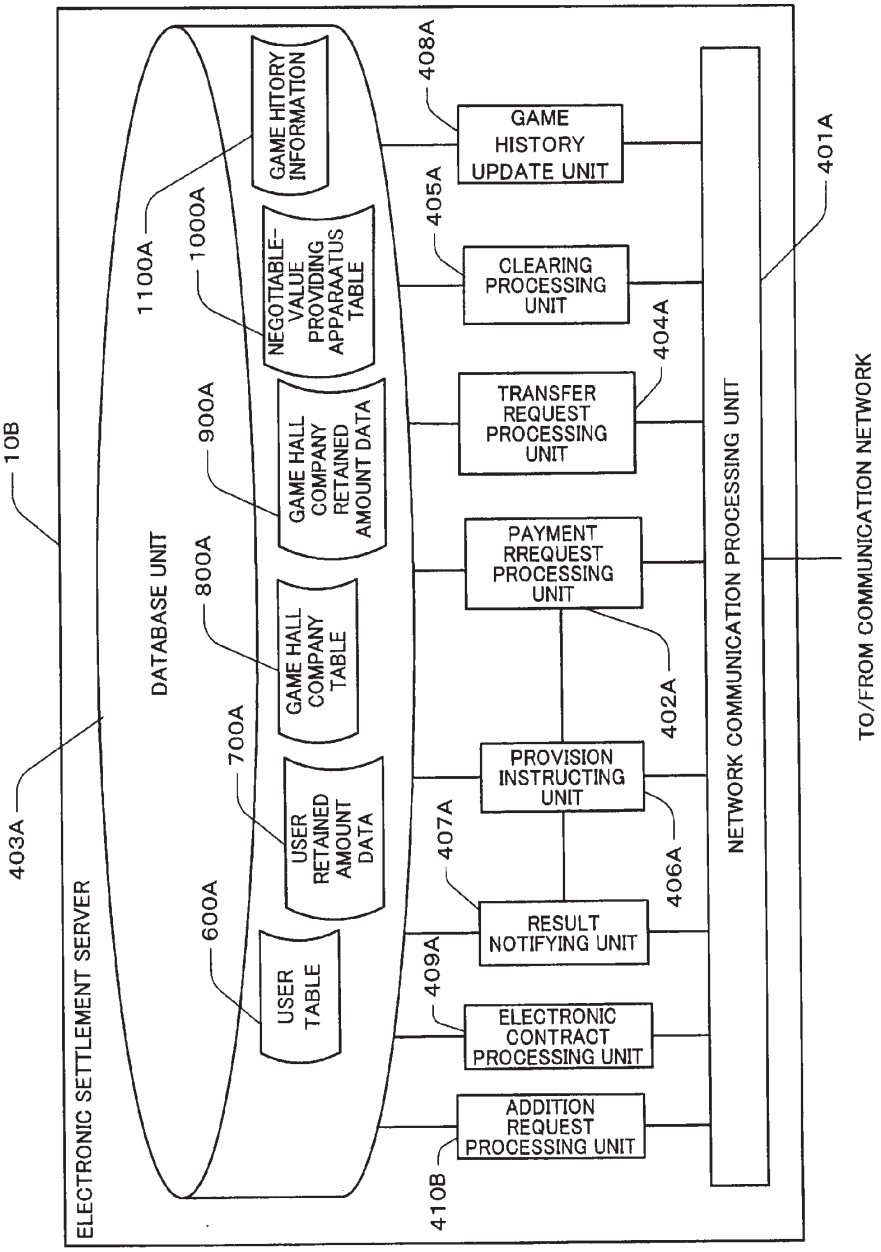

10B
403A
ELECTRONIC SETTLEMENT SERVER
DATABASE UNIT
1100A
1000A
900A
800A
700A
600A
GAME HITORY INFORMATION
NEGOTIABLE-VALUE PROVIDING APPARAATUS TABLE
GAME HALL COMPANY RETAINED AMOUNT DATA
GAME HALL COMPANY TABLE
USER RETAINED AMOUNT DATA
USER TABLE
408A
405A
404A
402A
407A
406A
409A
410B
GAME HISTORY UPDATE UNIT
CLEARING PROCESSING UNIT
TRANSFER REQUEST PROCESSING UNIT
PAYMENT RREQUEST PROCESSING UNIT
PROVISION INSTRUCTING UNIT
RESULT NOTIFYING UNIT
ELECTRONIC CONTRACT PROCESSING UNIT
ADDITION REQUEST PROCESSING UNIT
NETWORK COMMUNICATION PROCESSING UNIT
401A
TO/FROM COMMUNICATION NETWORK

FIG.47

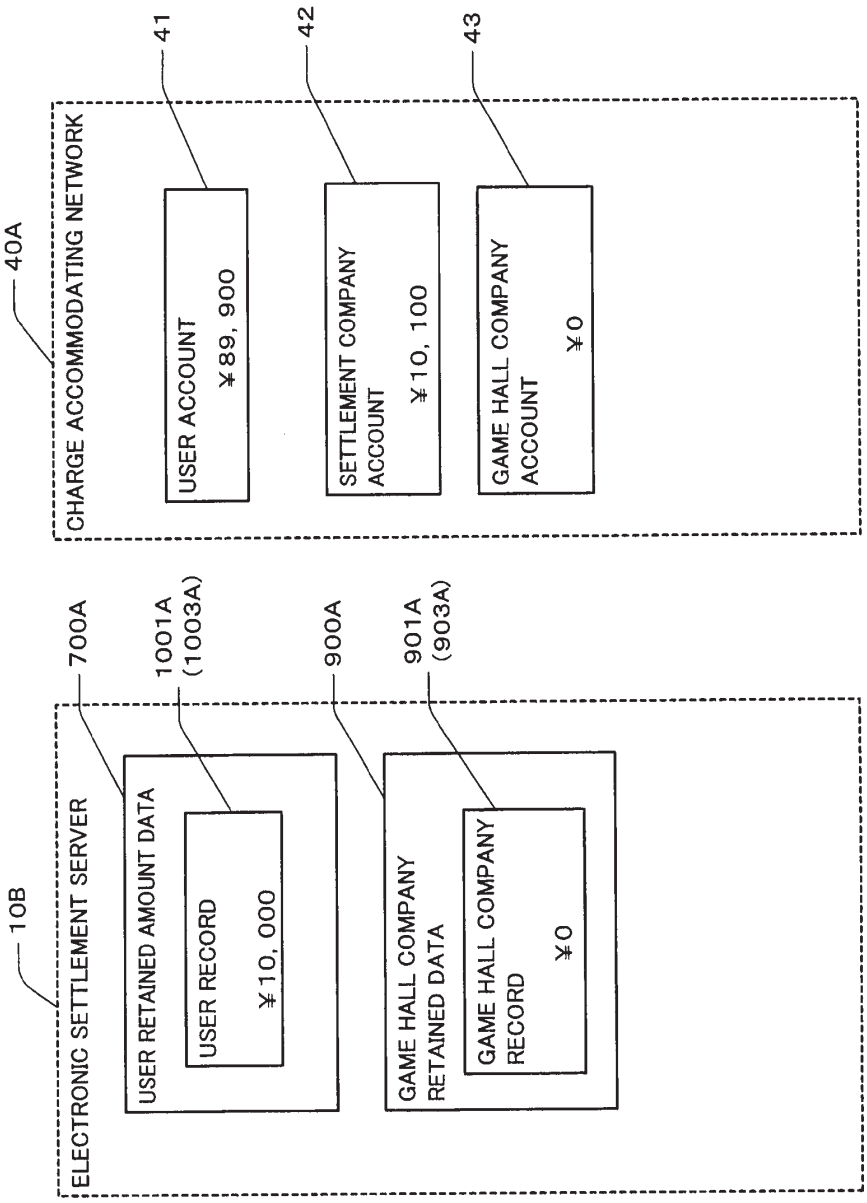

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥10, 100
43
GAME HALL COMPANY ACCOUNT
¥0
10B
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥10, 000
900A
GAME HALL COMPANY RETAINED DATA
901A (903A)
GAME HALL COMPANY RECORD
¥0

FIG.48

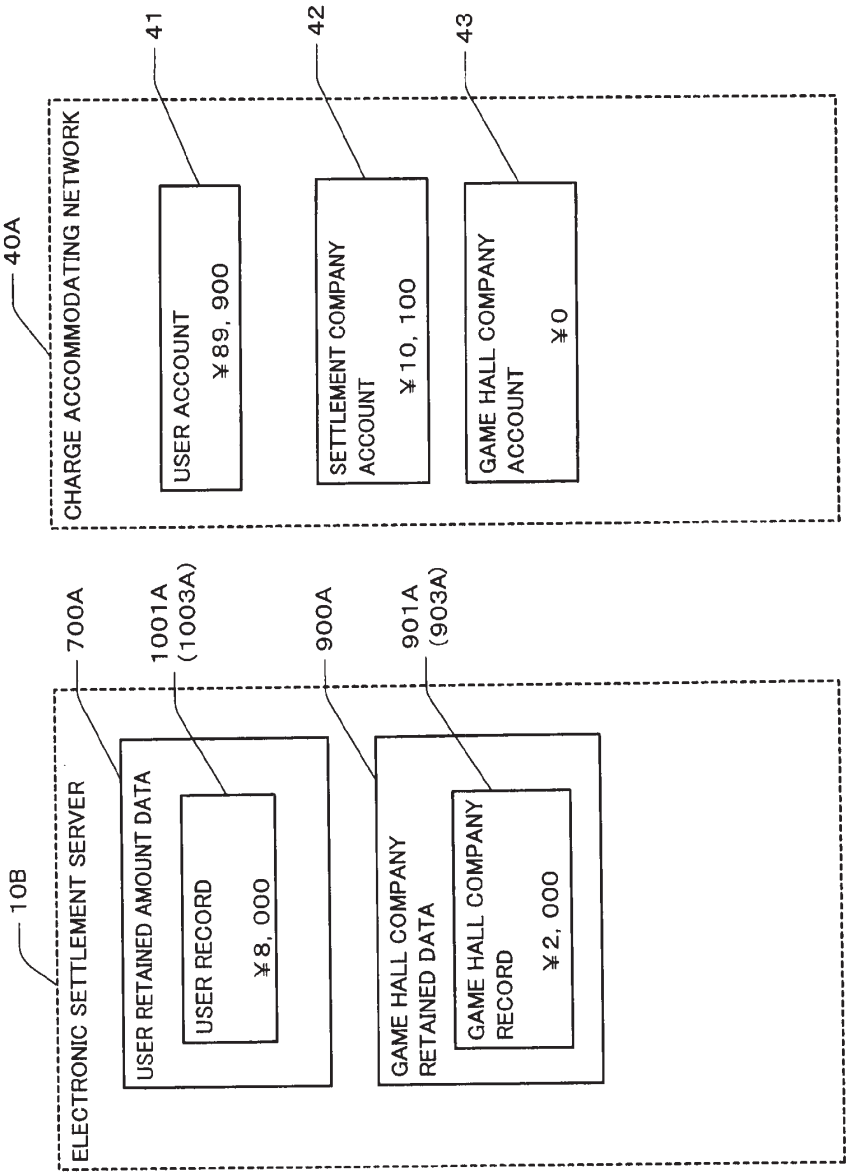

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥10, 100
43
GAME HALL COMPANY ACCOUNT
¥0
10B
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥8, 000
900A
GAME HALL COMPANY RETAINED DATA
901A (903A)
GAME HALL COMPANY RECORD
¥2, 000

FIG.49

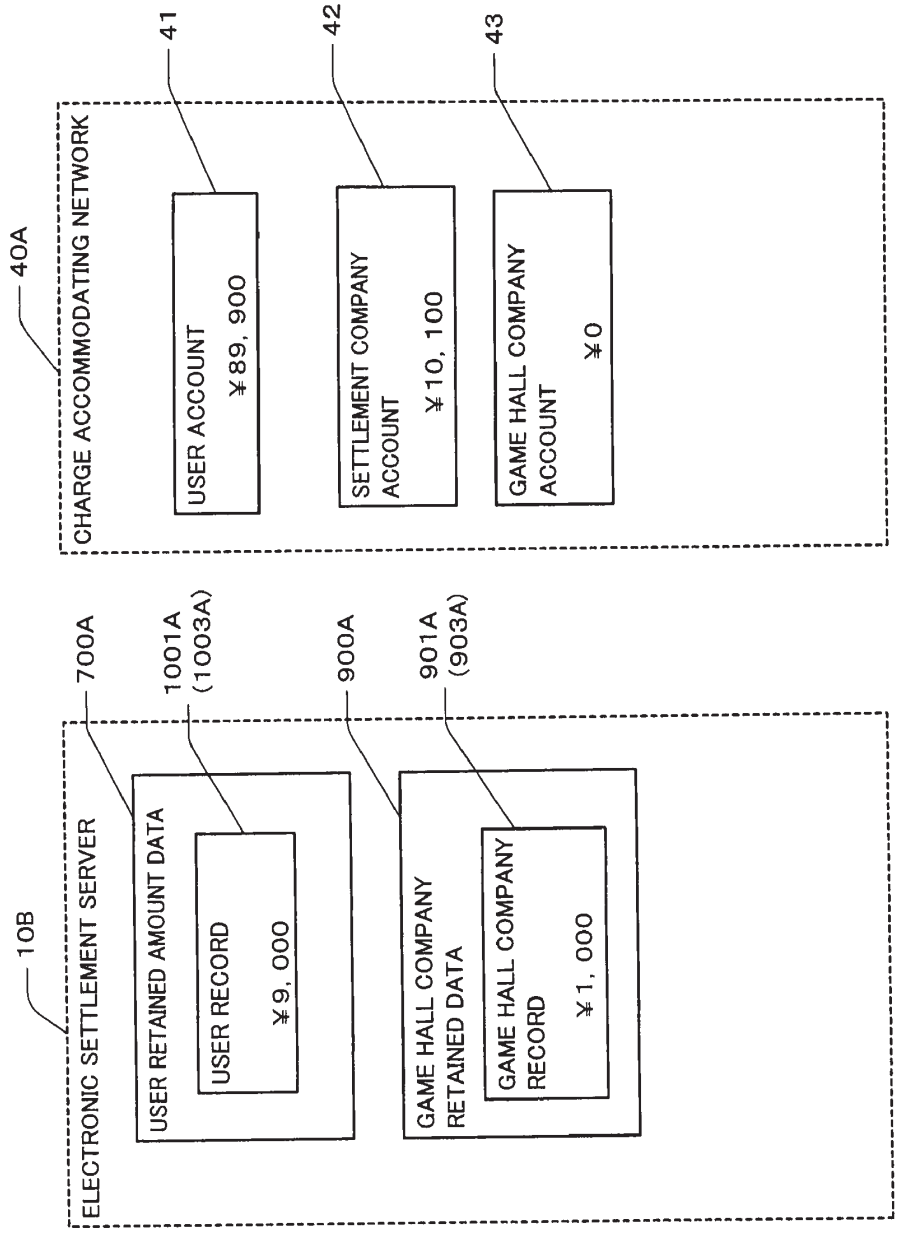

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥10, 100
43
GAME HALL COMPANY ACCOUNT
¥0
10B
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥9, 000
900A
GAME HALL COMPANY RETAINED DATA
901A (903A)
GAME HALL COMPANY RECORD
¥1, 000

FIG.50

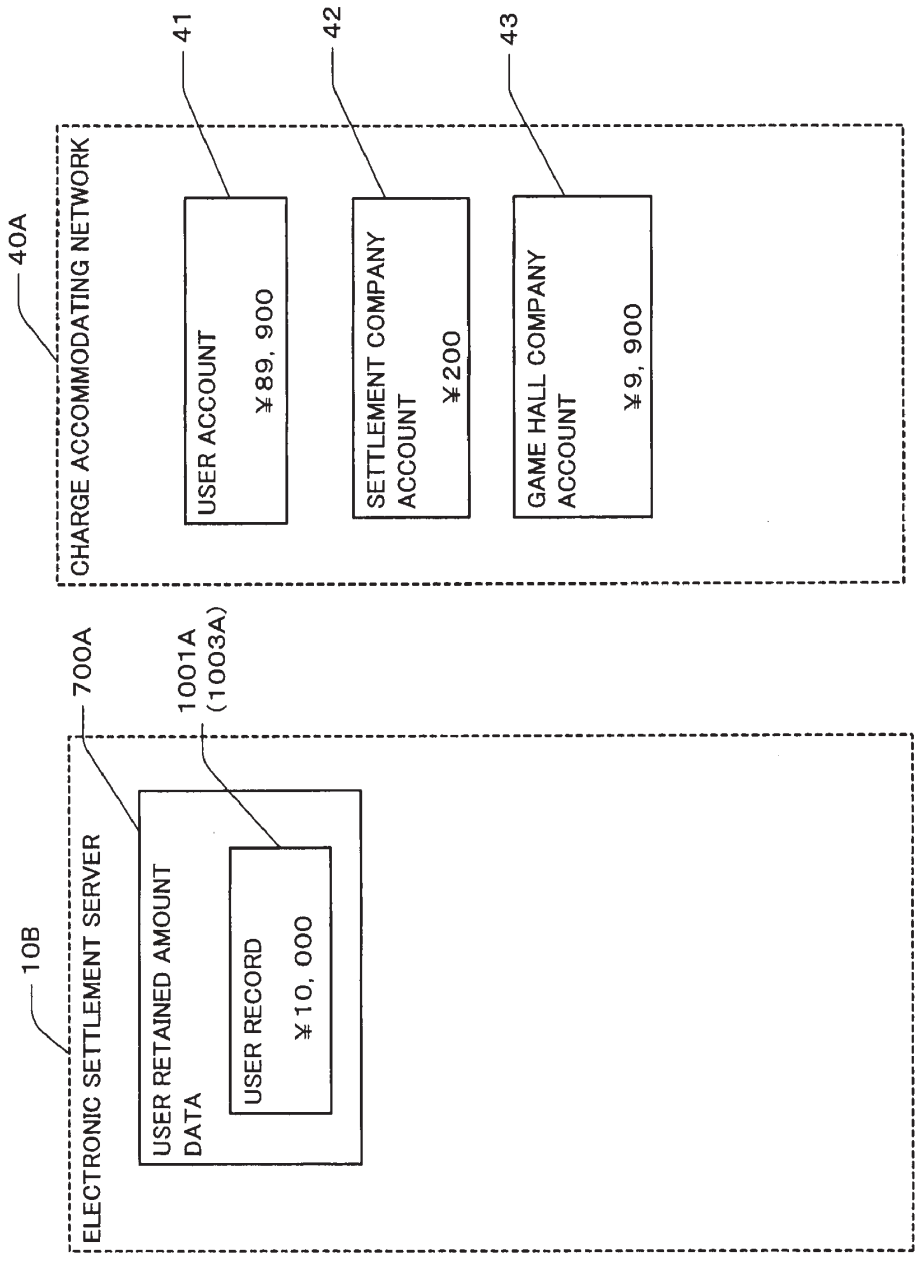

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥200
43
GAME HALL COMPANY ACCOUNT
¥9, 900
10B
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥10, 000

FIG.51

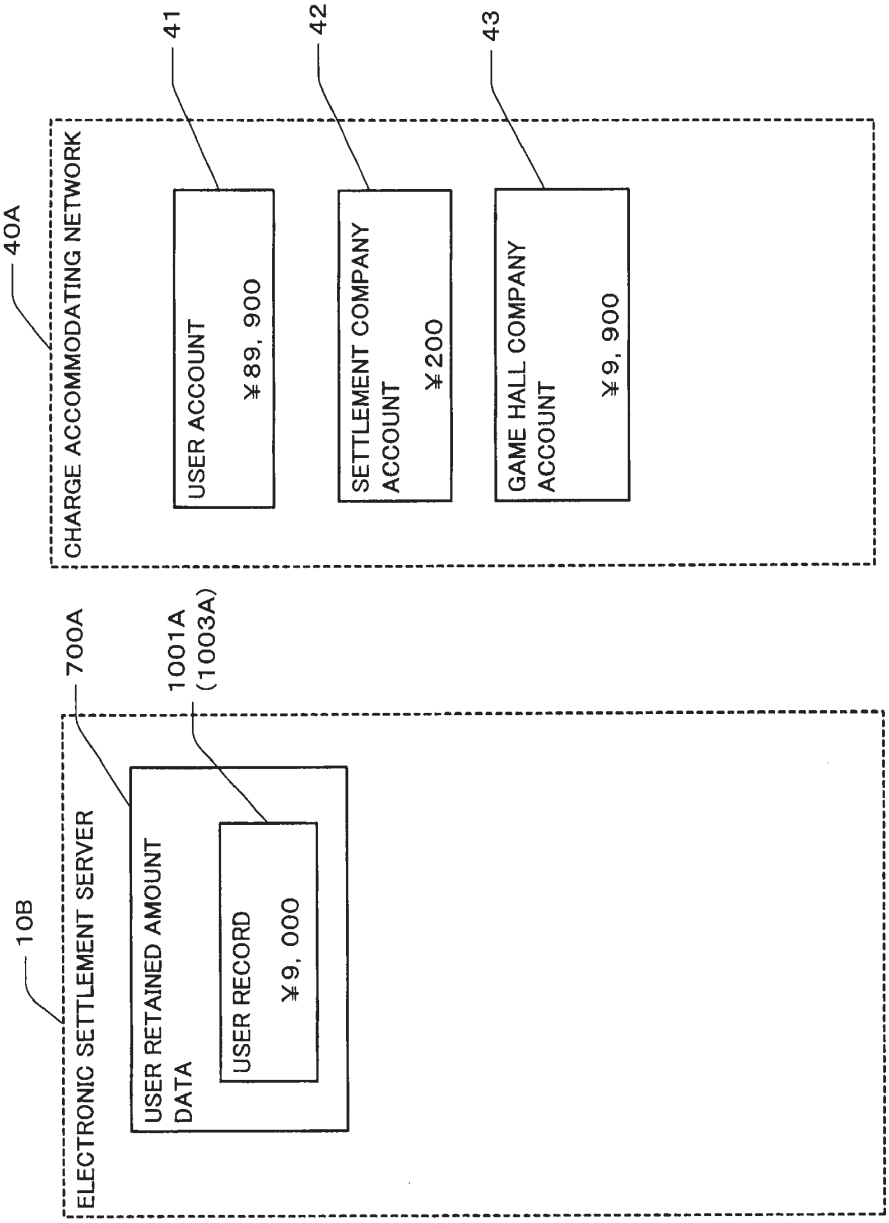

10B
ELECTRONIC SETTLEMENT SERVER
700A
1001A
(1003A)
USER RETAINED AMOUNT DATA
USER RECORD
¥9, 000
40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥200
43
GAME HALL COMPANY ACCOUNT
¥9, 900

FIG.52

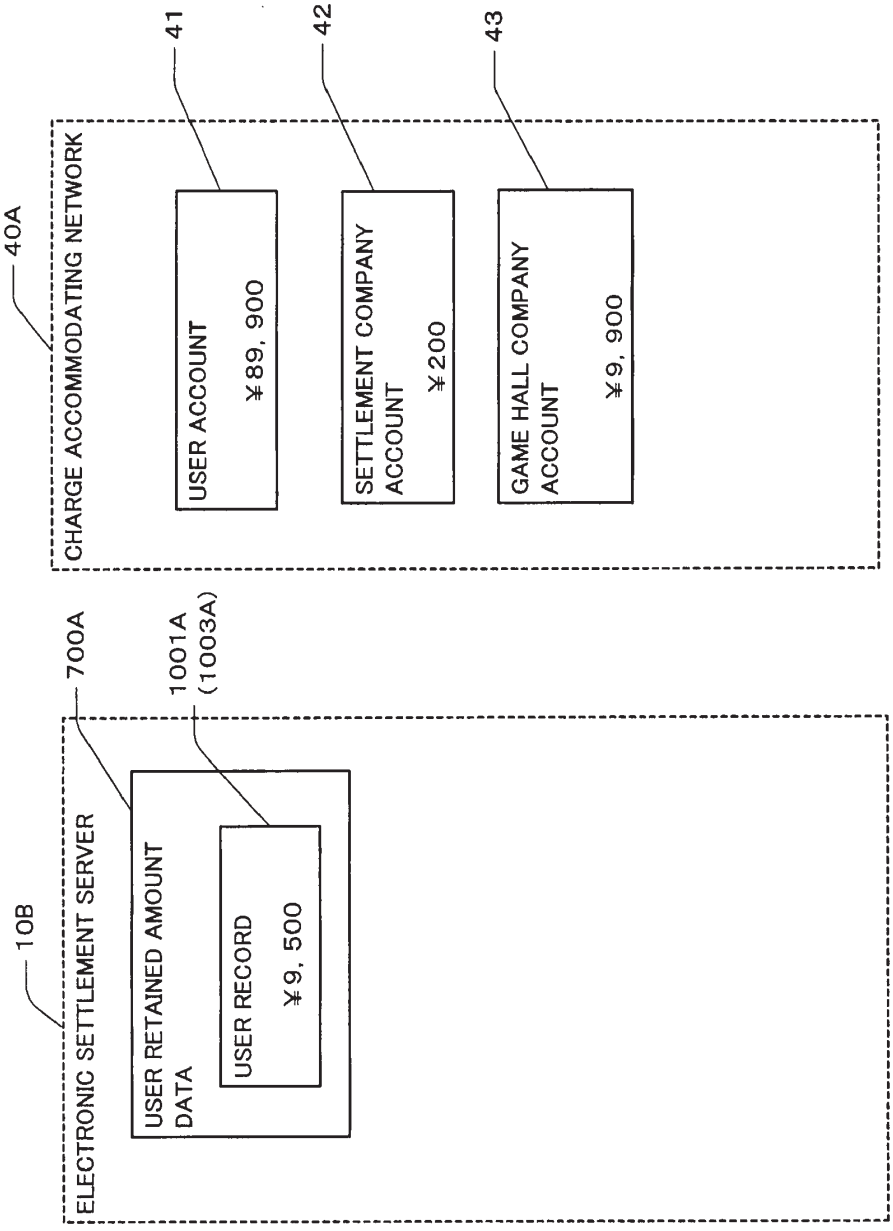

40A
CHARGE ACCOMMODATING NETWORK
41
USER ACCOUNT
¥89, 900
42
SETTLEMENT COMPANY ACCOUNT
¥200
43
GAME HALL COMPANY ACCOUNT
¥9, 900
10B
ELECTRONIC SETTLEMENT SERVER
700A
USER RETAINED AMOUNT DATA
1001A (1003A)
USER RECORD
¥9, 500

FIG.53

ELECTRONIC SETTLEMENT SYSTEM, ELECTRONIC SETTLEMENT SERVER, NEGOTIABLE-VALUE PROVIDING APPARATUS, MOBILE COMMUNICATION TERMINAL, AND ELECTRONIC SETTLEMENT METHOD

TECHNICAL FIELD

[0001] The present invention relates to an electronic settlement system, an electronic settlement server, a negotiable-value providing apparatus, a mobile communication terminal, and an electronic settlement method, and more specifically, to an electronic settlement system, an electronic settlement server, a negotiable-value providing apparatus, a mobile communication terminal, and an electronic settlement method which enable electronic settlement corresponding to cash settlement.

BACKGROUND ART

[0002] With recent advanced information processing and communication techniques and prevailing communication infrastructures, a payment method has been diversified, and various methods replacing payment in cash have been proposed and utilized.

[0003] The methods replacing payment in cash include credit cards of what is called a deferred payment type, prepaid cards, and debit cards, which are of an immediate payment type.

[0004] For payment in game halls such as pachinko parlors, casinos, ticket counters for bicycle and horse races, and various lottery stands (hereinafter referred to as game halls), a payment method other than cash payment is expected to improve users' (players') convenience and to increase the operation rate of game machines and thus the sales of the game halls.

DISCLOSURE OF THE INVENTION

Problems to be Solved by the Invention

[0005] However, in order to regulate players' excessive borrowing, the use of credit cards in game halls is generally limited. Furthermore, given that a settlement method using credit cards in game halls is permitted, a record on the usage of credit is sent to the player's home or a credit company calls the player to confirm the player's identity. This is cumbersome to the player. Moreover, personal information may leak because the player needs to let the game hall know the player's credit card number and personal identification number for settlement, with the record of the personal information remaining inside the game hall. The player may thus have a considerable resistance to this. Therefore, the utilization and prevalence of settlement with credit cards in game halls is difficult.

[0006] Furthermore, for payment with prepaid card, another settlement method other than cash payment, if the player spends all of the player's cash as a result of the game, the player cannot buy an additional prepaid card. Even if the player desires to play a little more or to eat some food or buy something in the game hall after spending all of the player's cash for the game, no settlement method is presently available for meeting such a demand. Thus, the game hall simply has to throw away an opportunity to capitalize on such a potential demand.

[0007] Furthermore, to utilize a settlement method other than cash payment, the user conventionally needs to sign a prior written contract with a settlement company that undertakes settlement. Thus, inconveniently, the user cannot immediately utilize the settlement method other than cash payment.

[0008] An object of the present invention is to provide an electronic settlement scheme that is similar to cash settlement and available in gale halls.

[0009] Another object of the present invention is to provide an electronic settlement scheme allowing signing of a contract enabling what is called the online utilization of an electronic settlement scheme.

Means for Solving the Problems

[0010] Means for solving the above-described problems according to the present invention is characterized as follows. A first aspect of the present invention proposes an electronic settlement system comprising an electronic settlement server, a mobile communication terminal capable of communicating with the electronic settlement server, and a negotiable-value providing apparatus capable of communicating with the electronic settlement server and the mobile communication terminal.

[0011] The electronic settlement system is further characterized as follows. The mobile communication terminal acquires equipment identification information (for example, an equipment ID) identifying the negotiable-value providing apparatus, from a negotiable-value providing apparatus, generates a settlement request message containing user identification information (for example, a user ID) identifying a user, a transfer amount corresponding to consideration for provision of a negotiable value, and the equipment identification information, and transmits the settlement request message to the electronic settlement server. According to a result of a check of a credit status of the user identified based on the user identification information, the electronic settlement server transmits, to the negotiable-value providing apparatus, a provision instruction message instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to the transfer amount, and transmits a transfer request message requesting a transfer of an amount corresponding to the transfer amount from the user's account to a predetermined account. Upon receiving the provision instruction message from the electronic settlement server, the negotiable-value providing apparatus provides a negotiable value corresponding to the transfer amount (for example, rental balls, rental medals, prepaid cards, house cards that are valid only in the game hall, and casino chips; hereinafter referred to as the negotiable value).

[0012] The electronic settlement system allows even a user having no cash in hand to easily and securely buy a negotiable value.

[0013] A second aspect of the present invention proposes an electronic settlement server that is an apparatus carrying out an electronic settlement scheme according to the present invention. The electronic settlement server is characterized in that upon receiving, from a mobile communication terminal, a settlement request message containing user identification information (for example, a user ID) identifying a user, a transfer amount corresponding to consideration for provision of a negotiable value, and equipment identification information (for example, an equipment ID), which is information identifying a negotiable-value providing apparatus from which the user has requested provision of the negotiable

value, from a mobile communication terminal, the electronic settlement server transmits, according to a result of a check of a credit status of the user, a provision instruction message instructing the negotiable-value providing apparatus identified based on the equipment identification information to provide a negotiable value corresponding to the transfer amount, and transmits a transfer request message requesting a transfer of an amount corresponding to the transfer amount from the user's account to a predetermined account.

[0014] The electronic settlement server allows even a user having no cash in hand to easily and securely buy a negotiable value.

[0015] A third aspect of the present invention proposes a negotiable-value providing apparatus carrying out an electronic settlement scheme according to the present invention. The negotiable-value providing apparatus is characterized by transmitting equipment identification information (for example, an equipment ID) identifying the negotiable-value providing apparatus to a mobile communication terminal, and upon receiving a provision instruction message transmitted in response to a settlement request message containing user identification information (for example, a user ID) identifying a user, a transfer amount corresponding to consideration for a negotiable value, and the equipment identification information, providing the negotiable value corresponding to the transfer amount.

[0016] The negotiable-value providing apparatus allows even a user having no cash in hand to easily and securely buy a negotiable value.

[0017] A fourth aspect of the present invention proposes a mobile communication terminal that is an apparatus carrying out an electronic settlement scheme according to the present invention. The mobile communication terminal is characterized by acquiring equipment identification information (for example, an equipment ID) identifying a negotiable-value providing apparatus, from the negotiable-value providing apparatus, generating a settlement request message containing user identification information (for example, a user ID) identifying a user, a transfer amount corresponding to consideration for provision of a negotiable value, and the equipment identification information, transmitting the settlement request message to the electronic settlement server, and according to a result of a check of a credit status of the user carried out by the electronic settlement server, allowing the electronic settlement server to transmit, to the negotiable-value providing apparatus, a provision instruction message instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to the transfer amount.

[0018] The mobile communication terminal allows even a user having no cash in hand to easily and securely buy a negotiable value.

[0019] A fifth aspect of the present invention proposes an electronic settlement method for carrying out an electronic settlement scheme according to the present invention. The electronic settlement method is characterized by comprising a step of receiving equipment identification information identifying a negotiable-value providing apparatus, a step of generating a settlement request message containing user identification information identifying a user, a transfer amount corresponding to consideration for a negotiable value, and the equipment identification information, and transmitting the settlement request message, a step of, in response to the settlement request message, inquiring about a credit status of the user, and according to a result for the inquiry of the user's credit status, transmitting, to a negotiable-value providing apparatus identified by the equipment identification information, a provision instruction message instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to the transfer amount, a step of transmitting a transfer request message requesting a transfer of an amount corresponding to the transfer amount from an account of the user identified by the user identification information to a predetermined account, and a step of, according to the provision instruction message, providing the negotiable value corresponding to the transfer amount to the negotiable-value providing apparatus.

[0020] The electronic settlement method allows even a user having no cash in hand to easily and securely buy a negotiable value.

[0021] A sixth aspect of the present invention proposes an electronic settlement system characterized by comprising an electronic settlement server capable of requesting a charge accommodating network (for example, a multi-payment network operated in Japan; not particularly limited; hereinafter referred to as a charge accommodating network) managing a user account, a settlement company account, and a game hall company account to carry out a transfer between the accounts and storing a user retained amount and a game hall company retained amount, a mobile communication terminal (for example, a cellular phone with a non-contact IC card; hereinafter referred to as a mobile communication terminal), and a negotiable-value providing apparatus (for example, a ball renting machine, a prepaid card issuing machine, a house card issuing machine, or a casino chip providing machine; hereinafter referred to as a negotiable-value providing apparatus).

[0022] In the electronic settlement system, the mobile communication terminal communicates with the negotiable-value providing apparatus via short-distance communication means (for example, a non-contact IC card and a reader/writer therefor, infrared communication, or radio communication means such as Bluetooth; hereinafter referred to as the short-distance communication means) to acquire equipment identification information (for example, an equipment ID) identifying the negotiable-value providing apparatus, generates a payment request message containing user identification information (for example, a user ID) identifying a user and the equipment identification information, and transmits the payment request message to the electronic settlement server. Furthermore, the electronic settlement server adds a user transfer amount (for example, a transfer amount minus a charge to be paid to a settlement company) corresponding to an amount transferred from the user account to the settlement company account, to the user retained amount, instructs, according to the payment request message, the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount (for example, a rental ball charge of 1,000 yen), subtracts an amount corresponding to the user payment amount from the user retained amount, while adding an amount corresponding to the user payment amount to a game hall company retained amount, and requests the charge accommodating network to transfer an amount (for example, the game hall company retained amount minus the charge to be paid to the settlement company) corresponding to the game hall company retained amount from the settlement company account to the game hall company account. Additionally, upon receiving the instruction (for example, a provision instruction message) to provide the negotiable value from the electronic settlement

server, the negotiable-value providing apparatus provides the negotiable value corresponding to the user payment amount.

[0023] The electronic settlement system enables provision of a new settlement method replacing existing settlement methods such as credit cards and debit cards.

[0024] A seventh aspect of the present invention proposes an electronic settlement server capable of requesting a charge accommodating network managing a user account, a settlement company account, and a game hall company account to carry out a transfer between the accounts, and instructing a negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount (for example, a rental ball charge of 1,000 yen) according to a payment request message from a mobile communication terminal.

[0025] The electronic settlement server is characterized by comprising storage means (for example, a database unit) for storing a user retained amount and a game hall company retained amount, transfer request processing means (for example, a transfer request processing unit) for adding the user transfer amount corresponding to the transfer amount from the user account to the settlement company account, to the user retained amount, payment request processing means (for example, payment request processing unit) for, according to the payment request message, subtracting the amount corresponding to the user payment amount from the user retained amount, while adding the amount corresponding to the user payment amount to the game hall company retained amount, and requesting the charge accommodating network to transfer the amount corresponding to the game hall company retained amount from the settlement company account to the game hall company account, and provision instructing means (for example, provision instructing unit) for instructing the negotiable-value providing apparatus to provide the negotiable value corresponding to the user payment amount.

[0026] The electronic settlement system enables provision of a new settlement method replacing existing settlement methods such as credit cards and debit cards.

[0027] A third aspect of the present invention proposes a mobile communication terminal for an electronic settlement system. The mobile communication terminal carries out communication via short-distance communication means to acquire equipment identification information identifying a negotiable-value providing apparatus from the negotiable-value providing apparatus, generates a payment request message containing user identification information identifying a user and the equipment identification information, and transmits the payment request message to an electronic settlement server to allow the electronic settlement server to instruct to provide a negotiable value corresponding to a user payment amount (for example, a rental ball charge of 1,000 yen).

[0028] The mobile communication terminal functions as a terminal apparatus implementing a new settlement method replacing existing settlement methods such as credit cards and debit cards.

[0029] An eighth embodiment of the present invention proposes an electronic settlement method.

[0030] The electronic settlement method is characterized by comprising a step (for example, a process S**204** of transmitting a transfer request) of requesting a charge accommodating network to transfer a transfer amount specified by a user from a user account to a settlement company account, a step (for example, a retained amount data process S**207**) of adding a user transfer amount corresponding to the transfer amount, to a user retained amount for storage, a step (for example, S**303**) of receiving a payment request message containing equipment identification information acquired through communication with a negotiable-value providing apparatus via short-distance communication means and identifying the negotiable-value providing apparatus and user identification information identifying the user, a step (for example, a process S**305** of transmitting a provision instruction message) of according to the payment request message, instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount (for example, a rental ball charge of 1,000 yen), a step (for example, a transfer process S**307**) of subtracting an amount corresponding to the user payment amount from the user retained amount, while adding the amount corresponding to the user payment amount to a game hall company retained amount, and a step (for example, a process S**402** of transmitting a transfer request) of requesting the charge accommodating network to transfer an amount corresponding to the game hall company retained amount from the settlement company account to the game hall company account.

[0031] The electronic settlement system enables provision of a new settlement method replacing existing settlement methods such as credit cards and debit cards.

[0032] A ninth aspect of the present invention proposes an electronic settlement system intended mainly for a single game hall company and comprising an electronic settlement server capable of requesting a charge accommodating network managing a user account, a settlement company account, and a game hall company account to carry out a transfer between the accounts, the electronic settlement server being capable of storing a user retained amount, a mobile communication terminal, and a negotiable-value providing apparatus.

[0033] In the electronic settlement system, the mobile communication terminal communicates with the negotiable-value providing apparatus via short-distance communication means to acquire equipment identification information (for example, an equipment ID) identifying the negotiable-value providing apparatus, generates a payment request message containing user identification information (for example, a user ID) identifying a user and the equipment identification information, and transmits the payment request message to the electronic settlement server. The electronic settlement server adds a user transfer amount (for example, a transfer amount minus a charge to be paid to a settlement company) corresponding to an amount transferred from the user account to the settlement company account, to the user retained amount and requests the charge accommodating network to transfer an amount (for example, the user transfer amount minus a charge to be paid to the settlement company) corresponding to the transfer amount from the settlement company account to the game hall company account, then according to the payment request message, instructs the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount (for example, a rental ball charge of 1,000 yen), and subtracts an amount corresponding to the user payment amount from the user retained amount. Upon receiving the instruction to provide the negotiable value from the electronic settlement system, the negotiable-value providing apparatus provides the negotiable value corresponding to the user payment amount.

[0034] The electronic settlement system enables provision of a new settlement method replacing existing settlement methods such as credit cards and debit cards.

[0035] A tenth aspect of the present invention proposes a an electronic settlement server intended mainly for a single game hall company and which is capable of requesting a charge accommodating network managing a user account, a settlement company account, and a game hall company account to carry out a transfer between the accounts, and according to a payment request message from a mobile communication terminal, instructing a negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount (for example, a rental ball charge of 1,000 yen).

[0036] The electronic settlement server is characterized by comprising storage means (for example, a database unit) for storing a user retained amount, transfer request processing means (for example, a transfer request processing unit) for adding a user transfer amount corresponding to a transfer amount from the user account to the settlement company account, to the user retained amount and requesting the charge accommodating network to transfer an amount corresponding to the transfer amount from the settlement company account to the game hall company account, payment request processing means (for example, a payment request processing unit) for, according to the payment request message, subtracting an amount corresponding to the user payment amount from the user retained amount, and provision instructing means (for example, a provision instructing unit) for instructing the negotiable-value providing apparatus to provide the negotiable value corresponding to the user payment amount.

[0037] The electronic settlement server enables provision of a new settlement method replacing existing settlement methods such as credit cards and debit cards.

[0038] An eleventh aspect of the present invention proposes an electronic settlement method.

[0039] The electronic settlement method is characterized by comprising a step (for example, a process **S504** of transmitting a transfer request) of requesting a charge accommodating network to transfer a transfer amount specified by a user from a user account to a settlement company account, a step (for example, a process **S507** of transmitting the transfer request) of requesting the charge accommodating network to transfer an amount corresponding to the transfer amount from the settlement company account to a game hall company account, a step (for example, a retained amount data process **S510**) of adding a user transfer amount corresponding to the transfer amount from the user account to the settlement company account, to a user retained amount for storage, a step (for example, **S603**) of receiving a payment request message containing equipment identification information acquired through communication with a negotiable-value providing apparatus via short-distance communication means and identifying the negotiable-value providing apparatus and user identification information identifying the user, a step (for example, a process **S605** of transmitting a provision instruction message) of, according to the payment request message, instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount (for example, a rental ball charge of 1,000 yen), and a step (for example, a subtraction process **S607**) of subtracting an amount corresponding to the user payment amount from the user retained amount.

[0040] The electronic settlement method enables provision of a new settlement method replacing existing settlement methods such as credit cards and debit cards.

[0041] The present invention is further characterized as follows.

[0042] Before transmitting the provision instruction message and the transfer request message, the electronic settlement server stores a computerized contract document for a contract signed between the user and the settlement company serving as an operator of the electronic settlement system, the contract specifying that the settlement company withdraws the specified amount from the user account, as well as a computerized contract document storage original attached to the computerized contract document and having the verified user's electronic signature and settlement company's electronic signature.

[0043] Furthermore, the electronic settlement server transmits the computerized contract document storage original for a bank in which the user account to be dealt with is present.

[0044] Additionally, the electronic settlement method according to the present invention further comprises a step of receiving a computerized contract document for a contract signed between the user and the settlement company serving as an operator of the electronic settlement system, the contract specifying that the settlement company withdraws the specified amount from the user account, as well as the user's electronic signature and electronic certificate both attached to the contract document, a step of verifying the user's electronic signature and electronic certificate and according to a result of the verification, transmitting a computerized contract document and an electronic signature and an electronic certificate of the settlement company, and a step of receiving and storing the computerized contract document, the user's electronic signature and the settlement company's electronic signature both attached to the computerized contract document, and a computerized contract document storage original including a time stamp.

[0045] According to the present invention having these additional features, the user can immediately utilize the settlement method other than cash payment without the need for a prior written contact between the settlement company and the user.

Advantages of the Invention

[0046] The present invention allows implementation of electronic settlement replacing cash settlement and which can be utilized in game halls.

[0047] Another aspect of the present invention allows implementation of easy and secure electronic settlement which can be utilized in game halls.

BRIEF DESCRIPTION OF THE DRAWINGS

[0048] FIG. **1** is a network diagram showing an example of an electronic settlement system;

[0049] FIG. **2** is a function block diagram showing an example of the configuration of a negotiable-value providing apparatus and a mobile communication terminal;

[0050] FIG. **3** is a diagram showing an example of information stored in a payment request generating unit;

[0051] FIG. **4** is a function block diagram showing an example of the configuration of an electronic contract applying unit;

[0052] FIG. **5** is a function block diagram showing an example of the configuration of an electronic settlement server;

[0053] FIG. **6** is a diagram showing an example of the configuration of a user table stored in a database unit;

[0054] FIG. **7** is a diagram of an example of the configuration of a negotiable-value providing apparatus table stored in the database unit;

[0055] FIG. **8** is a function block diagram showing an example of the configuration of an electronic contract processing unit;

[0056] FIG. **9** is a sequence diagram showing an example of the operation of the electronic settlement system;

[0057] FIG. **10** is a sequence diagram continued from FIG. **9** and showing an example of the operation of the electronic settlement system;

[0058] FIG. **11** is a sequence diagram continued from FIG. **10** and showing an example of the operation of the electronic settlement system;

[0059] FIG. **12** is a sequence diagram continued from FIG. **11** and showing an example of the operation of the electronic settlement system;

[0060] FIG. **13** is a sequence diagram continued from FIG. **12** and showing an example of the operation of the electronic settlement system;

[0061] FIG. **14** is a diagram showing an example of an input screen displayed in an output unit;

[0062] FIG. **15** is a diagram showing an example of the data configuration of a settlement request message generated by the payment request generating unit;

[0063] FIG. **16** is a diagram showing an example of the data configuration of a transfer request message;

[0064] FIG. **17** is a network diagram showing an example of an electronic settlement system according to the present invention;

[0065] FIG. **18** is a block diagram showing a general configuration of a charge accommodating network;

[0066] FIG. **19** is a function block diagram showing an example of the configuration of a negotiable-value providing apparatus and a mobile communication terminal;

[0067] FIG. **20** is a function block diagram showing an example of the configuration of an electronic settlement server;

[0068] FIG. **21** is a diagram showing an example of the configuration of a user table stored in a database unit;

[0069] FIG. **22** is a diagram showing an example of the configuration of user retained amount data stored in the database unit;

[0070] FIG. **23** is a diagram showing an example of the configuration of a game hall company table stored in the database unit;

[0071] FIG. **24** is a diagram showing an example of the configuration of game hall company retained amount data stored in the database unit;

[0072] FIG. **25** is a diagram showing an example of the configuration of a negotiable-value providing apparatus table stored in the database unit;

[0073] FIG. **26** is a function block diagram showing an example in which an electronic settlement server has a distributed server configuration;

[0074] FIG. **27** is a sequence diagram showing an example of the operation of the electronic settlement system;

[0075] FIG. **28** is a sequence diagram continued from FIG. **27** and showing an example of the operation of the electronic settlement system;

[0076] FIG. **29** is a sequence diagram continued from FIG. **28** and showing an example of the operation of the electronic settlement system;

[0077] FIG. **30** is a sequence diagram continued from FIG. **29** and showing an example of the operation of the electronic settlement system;

[0078] FIG. **31** is a diagram illustrating an example of an operation performed between the electronic settlement server and a charge accommodating network when a user transfer amount is processed;

[0079] FIG. **32** is a diagram continued from FIG. **31** and illustrating an example of the operation performed between the electronic settlement server and the charge accommodating network when the user transfer amount is processed;

[0080] FIG. **33** is a diagram continued from FIG. **32** and illustrating an example of the operation performed between the electronic settlement server and the charge accommodating network when the user transfer amount is processed;

[0081] FIG. **34** is a sequence diagram showing an example of the operation of the electronic settlement system performed during communication between the mobile communication terminal and the negotiable-value providing apparatus via short-distance communication means;

[0082] FIG. **35** is a diagram showing a state observed after the processing between step **S1301** and step **S1307** following the state shown in FIG. **33**;

[0083] FIG. **36** is a sequence diagram showing an example of a process of a transfer to a game hall company account in the electronic settlement system;

[0084] FIG. **37** is a diagram showing the result of execution of steps **S1401** to **S1405** following the state shown in FIG. **35**;

[0085] FIG. **38** is a sequence diagram showing an example of the operation of an electronic settlement system performed when a transfer from a user account to a settlement company account is requested according to a third embodiment;

[0086] FIG. **39** is a diagram showing an example of a state observed before a user transmits a transfer request message to an electronic settlement server;

[0087] FIG. **40** is a diagram showing a state observed after the user has transmitted a transfer request message requesting a transfer of a user transfer amount of 10,000 yen, from the mobile communication terminal to the electronic settlement server, wherein the transmission follows the state shown in FIG. **39**;

[0088] FIG. **41** is a diagram showing a state observed after the user has transmitted a transfer request message requesting a transfer of game hall company transfer amount, from a mobile communication terminal to the electronic settlement server and a charge accommodating network has executed a transfer process corresponding to the message, wherein the transmission and execution follow the state shown in FIG. **40**;

[0089] FIG. **42** is a diagram showing a state observed after execution of a retained amount data process by the electronic settlement server following the state shown in FIG. **41**;

[0090] FIG. **43** is a sequence diagram showing an example of the operation of an electronic settlement system **1**A performed during communication between the mobile communication terminal and a negotiable-value providing apparatus via short-distance communication means;

[0091] FIG. **44** is a diagram showing a state observed after the processing between step S**1601** and step S**1607** following the state shown in FIG. **42**;

[0092] FIG. **45** is a block diagram showing an example of the configuration of an electronic settlement system according to a fourth embodiment;

[0093] FIG. **46** is a function block diagram showing an example of the configuration of a negotiable-value providing apparatus and a mobile communication terminal according to a fourth embodiment;

[0094] FIG. **47** is a block diagram showing an example of the configuration of an electronic settlement server according to a fourth embodiment;

[0095] FIG. **48** is a diagram showing an example of an addition process executed by the electronic settlement system according to the fourth embodiment;

[0096] FIG. **49** is a diagram continued from FIG. **48** and showing the example of the addition process executed by the electronic settlement system according to the fourth embodiment;

[0097] FIG. **50** is a diagram continued from FIG. **49** and showing the example of the addition process executed by the electronic settlement system according to the fourth embodiment;

[0098] FIG. **51** is a diagram showing an example of an addition process executed by the electronic settlement system according to the fourth embodiment and which is different from the addition process shown in FIG. **48**;

[0099] FIG. **52** is a diagram continued from FIG. **51** and showing the example of the addition process executed by the electronic settlement system according to the fourth embodiment; and

[0100] FIG. **53** is a diagram continued from FIG. **52** and showing the example of the addition process executed by the electronic settlement system according to the fourth embodiment.

DESCRIPTION OF SYMBOLS

[0101] **1**, **1**A, **1**B . . . Electronic settlement systems

[0102] **10**, **10**A, **10**B . . . Electronic settlement servers

[0103] **20**, **20**A, **20**B . . . Mobile communication terminals

[0104] **30**, **30**A, **30**B . . . Negotiable-value providing apparatuses

[0105] **40** . . . Financial institution system

[0106] **40**A . . . Charge accommodating network

[0107] **41** . . . User account

[0108] **42** . . . Settlement company account

[0109] **43** . . . Game hall company account

[0110] **206** . . . Electronic contract applying unit

[0111] **402**, **402**A . . . Payment request processing units

[0112] **403**, **403**A . . . Database units

[0113] **404** . . . Credit check unit

[0114] **404**A . . . Transfer request processing unit

[0115] **405** . . . Transfer request unit

[0116] **405**A . . . Clearing processing unit

[0117] **406**, **406**A . . . Provision instructing units

[0118] **408**, **409**A . . . Electronic contract processing unit

[0119] **410**B . . . Addition request processing unit

BEST MODE FOR CARRYING OUT THE INVENTION

[0120] Embodiments of the present invention will be described below with reference to the drawings.

I. First Embodiment

I.1. Example of Configuration of the Electronic Settlement System

[0121] FIG. **1** is a network diagram showing an example of an electronic settlement system according to a first embodiment of the present invention.

[0122] In an example shown in FIG. **1**, an electronic settlement system **1** has an electronic settlement server **10**, a mobile communication terminal **20**, a negotiable-value providing apparatus **30**, an authentication server **90**, and a time stamp server **95**. The electronic settlement server **10** is connected to a financial institution system **40** checking credits and executing a process of transferring a specified amount from a user's account to a specified destination account based on an instruction from the electronic settlement server **10**. Furthermore, the electronic settlement server **10** is connected to a communication network **50** and can communicate with the negotiable-value providing apparatus **30** via the communication network **50**. The mobile communication terminal **20** can communicate with the electronic settlement server **10** via a base station **60**, a mobile communication network **70**, and a gateway **80** connecting the mobile communication network **70** and the communication network **50** together. The mobile communication terminal **20** can also communicate with the negotiable-value providing apparatus **30** via short-distance communication means. The authentication server **90** can be connected to the electronic settlement server **10** and the mobile communication terminal **20** via the communication network **70**. The time stamp server **95** can be connected to the mobile communication terminal **20** via the communication network. The components of the electronic settlement system **1** will be described below.

I.1.1. Negotiable-Value Providing Apparatus

[0123] The negotiable-value providing apparatus **30** provides a prepared negotiable value (a tangible object or an intangible object that can be bought with money) to a user as consideration for electronic settlement carried out by the user using the mobile communication terminal **20**. The negotiable-value providing apparatus **30** in the present embodiment need not necessarily provide a negotiable value directly to a user. The negotiable-value providing apparatus **30** may be an apparatus such as a CAT terminal for debit cards which provides a negotiable value indirectly to a user by notifying a shop of the possibility of electronic settlement to allow the shop to deliver an article to the user.

[0124] Furthermore, the negotiable-value providing apparatus **30** may output, transmit, or write electronic data to another apparatus or a storage medium as a negotiable value. For example, the negotiable-value providing apparatus **30** may transmit a message or a command requesting a playing machine or a game machine connected to the negotiable-value providing apparatus **30** via a network to provide a play or a game. In this case, the user can enjoy, through the negotiable-value providing apparatus **30**, a play or a game for a

play or game charge paid utilizing the electronic settlement system **1**. Additionally, the negotiable-value providing apparatus **30** may write electronic data such as the number of times the game machine can be utilized and the amount for which the game machine can be utilized, to a cellular phone including an IC card or an IC card function or a storage medium such as a USB memory. The user allows a playing machine, a game machine, an issuing machine, a clearing machine, or the like to read electronic data from the storage medium to which the negotiable-value providing apparatus **30** has written the electronic data. The user can thus acquire a product or a service provided by these apparatuses.

[0125] FIG. **2** is a function block diagram showing an example of the configuration of the negotiable-value providing apparatus **30** and the mobile communication terminal **20**. The configuration of the negotiable-value providing apparatus **30** will be described below with reference to FIG. **2**.

[0126] The negotiable-value providing apparatus **30** has a network communication processing unit **301**, a provision control unit **302**, a providing apparatus-side short-distance communication unit **303**, and a negotiable-value supply unit **304**. The network communication processing unit **301** has a function of communicating with the electronic settlement server **10** via the communication network **50**. The network communication processing unit **301** is, for example, a communication board with a protocol stack mounted thereon.

[0127] The provision control unit **302** has the function of instructing and controlling the operation of the network communication processing unit **301**, the providing apparatus-side short-distance communication unit **303**, and the negotiable-value supply unit **304**. The provision control unit **302** is, for example, a microcomputer with a program installed thereon allowing the negotiable-value providing apparatus **30** to be implemented.

[0128] The providing apparatus-side short-distance communication unit **303** has the function of communicating with a terminal-side short-distance communication unit **201** mounted in the mobile communication terminal **20**. The providing apparatus-side short distance communication unit **303** is, for example, a reader/write for a non-contact IC card. A communication scheme used by the providing apparatus-side short-distance communication unit **303** need not be limited to radio communication but may be infrared communication. Furthermore, the present invention can be implemented by a method of using the mobile communication terminal **20** to optically read a bar code displayed by the negotiable-value providing apparatus **30** to pass data. Additionally, the communication scheme need not necessarily be of a non-contact type. The present invention can be implemented by a communication scheme using connection with a communication cable or a USB socket.

[0129] The negotiable-value supply unit **304** has the function of providing a negotiable value to a user according to an instruction from the provision control unit **302**. The negotiable-value supply unit **304** is, for example, a rental ball output unit of a ball renting machine, a medal hopper of a medal renting machine, a casino chip renting machine, a display of an authentication terminal (CAT terminal), or a printer. The negotiable value is anything than can be bought with money. The negotiable value is rental balls, rental medals, casino chips, prepaid cards, on-value cards (house cards), or equivalents.

I.1.2. Mobile Communication Terminal

[0130] Now, the mobile communication terminal **20** will be described with reference to FIG. **20**. The mobile communication terminal **20** is a terminal apparatus that can communicate with the electronic settlement server **10** via the communication network **50** and also with the negotiable-value providing apparatus **30**. The mobile communication terminal **20** is, for example, a cellular phone having a non-contact IC card (for example, FeliCa: Sony Corporation's registered trademark) function, a cellular phone with short-distance communication means and radio communication means mounted thereon, PDA (Personal Data Assistant), a portable game machine, or an IP telephone including a radio LAN communication apparatus. The mobile communication terminal **20** has the terminal-side short-distance communication unit **201** allowing communication with the above-described providing apparatus-side short-distance communication unit **303**, a payment request generating unit **202**, a radio communication unit **203**, an input unit **204**, an output unit **205**, and an electronic contract applying unit **206**.

[0131] The terminal-side short-distance communication unit **201** has the function of communicating with the providing apparatus-side short-distance communication unit **303**. The terminal-side short-distance communication unit **201** is, for example, an IC card chip and an antenna.

[0132] The payment request processing unit **202** has the function of generating a settlement request message requesting the electronic settlement server **10** to pay consideration (charge) for the negotiable value provided by the negotiable-value providing apparatus **30**. The payment request processing unit **202** is, for example, a microcomputer with an i appli ("i appli": NTTDoCoMo, Inc.'s registered trademark; an application downloaded into a cellular phone to allow a value-added function to be added and not particularly limiting an OS; hereinafter referred to as the i appli) mounted thereon. The payment request generating unit **202** has the function of storing information used for the user's payment. FIG. **3** shows an example of information stored in the payment request generating unit **202**. In the present example, the payment request generating unit **202** stores a user ID **101** that is information uniquely identifying the user registered as the user of the mobile communication terminal **20**, a password **102** required for the electronic settlement server to authenticate the user, and a bank number **103**, a branch office number **104**, and an account number **105** all identifying an account from which the user withdraws money to be paid, and a personal identification number **106** set for the account. During installation of an application such as the i appli allowed to function as the payment request generating unit **202** by the mobile communication terminal **20** according to the user's instruction or user registration for making services for the present electronic settlement available, the user is requested by the input unit **204** to input these pieces of information, particularly the bank number **103**, branch office number **104**, account number **105**, and personal identification number **106**. The input information is stored in advance as the pieces of information **101** to **106**. The pieces of information **101** to **106** are used to generate a settlement request message requesting payment of consideration (charge) for provision of a negotiable value. The pieces of information **101** to **106** are transmitted to the electronic settlement server **10** as a part of the settlement request message.

[0133] FIG. **2** is referred to again, and the mobile communication terminal **20** will be continuously described.

[0134] The radio communication unit **203** has the function of allowing the mobile communication terminal **20** to connect to the mobile communication network **70** via the base station

60 to communicate via the mobile communication network **70**. The radio communication unit **203** is, for example, a radio communication circuit having a modulation circuit and a demodulation circuit. The mobile communication network **70** may be a communication network for common cellular phones or for WIMAX or a radio LAN.

[0135] The input unit **204** has the function of converting the user's instruction into an electric signal and passing the electric signal to the payment request generating unit **202**. The input unit **204** is, for example, keys of a cellular phone, a touch pen and a touch panel, or a pointing device.

[0136] The output unit **205** has an information output function of allowing the mobile communication terminal **20** to communicate information to the user. The output unit **205** is, for example, a liquid crystal panel of a cellular phone, a liquid crystal panel of a CAT terminal, or a small-sized printer.

[0137] The electronic contract applying unit **206** has the function of executing a process of electronically signing a contract between the user and the operator, administrator, or the like (hereinafter referred to as a settlement company) of the electronic settlement system **1** before the utilization of the electronic settlement system **1**; according to the contract, the settlement company withdraws a specified amount from the user account.

[0138] FIG. **4** is a function block diagram showing an example of the configuration of the electronic contract applying unit **206**. As shown in FIG. **4**, the electronic contract applying unit **206** has a control unit **701**, an encryption processing unit **702**, a storage unit **703**, a decryption processing unit **704**, a determination unit **705**, and a time stamp acquiring unit **706**.

[0139] The control unit **701** has the function of integrally controlling the operation of the encryption processing unit **702**, storage unit **703**, decryption processing unit **704**, determination unit **705**, and time stamp acquiring unit **706** to order starting of each of these units, input and output of data to and from each unit, and the like.

[0140] The encryption processing unit **702** has the function of generating an electronic signature by a predetermined encryption method using an encryption key **715**.

[0141] The storage unit **703** has the function of storing a user-side electronic certificate **711**, a settlement company-side electronic certificate **712**, a computerized contract document **713**, a computerized contract document original **714**, the encryption key **715**, and the like.

[0142] The user-side electronic certificate **711** is electronic data certifying that one of the signees of the computerized contract document **713** is the user himself. The user-side electronic certificate **711** is electronic data defined in, for example, X.509 of ITU-T Recommendations and includes information on the user (an organization to which the user belongs, the user's identification name and name, and the like), a public key, an expiration date, a serial number, and a signature. In the present example, the user-side electronic certificate **711** is electronic data issued by the authentication server **90**.

[0143] According to the present embodiment, the following can also be used as the user-side electronic certificate **711**.

[0144] a) A password or the like issued when a contract for the mobile terminal is signed with a financial institution having the user account,

[0145] b) A serial number (user ID) written to the mobile communication terminal at the same time when the user downloads an application such as the i appli from the electronic settlement **10**,

[0146] c) The manufacture number of the mobile communication terminal **20**,

[0147] d) The serial number of an SIM (Subscriber Identity Module Card),

[0148] e) The telephone number of the mobile communication terminal **20**,

[0149] f) A common ID for the standards typified by OpenID, and

[0150] g) One or more of the results of a logical calculation or encryption of the pieces of information a) to f) and information describing the date and the amount.

[0151] The "OpenID" is a standard for the common ID, is in a URL format, and can be commonly utilized in OpenID-compatible sites (see http://openid.net/).

[0152] The settlement company-side electronic certificate **712** is electronic data certifying that the other of the signees of the electronic contract document **713** is the settlement company. The settlement company-side electronic certificate **712** is electronic data defined in, for example, X.509 of ITU-T Recommendations and includes information on the user (an organization to which the user belongs, the user's identification name and name, and the like), a public key, an expiration date, a serial number, and a signature. In the present example, the settlement company-side electronic certificate **712** is electronic data issued by the authentication server **90**.

[0153] The computerized contract document **713** is electronic data describing the contents a contract signed between the user and the settlement company, the operator of the system and specifying that the settlement company withdraws a specified amount from the user amount and the bank in which the user's account is present agrees that the settlement company withdraws the specified amount from the user's account or the bank is requested to permit the settlement company to withdraw the specified amount from the user's account.

[0154] The computerized contract document original **714** is electronic data corresponding to the computerized contract document **713** with the user's electronic signature, the settlement company's electronic signature, and the time stamp. The computerized contract document original **714** corresponds to a sealed contract document between the parties concerned.

[0155] The encryption key **715** is used by the user to generate an electronic signature or to decrypt encrypted information transmitted by the electronic settlement server **10**. The encryption key **715** is, for example, a secrete key for a public key scheme or a common encryption key for a common key scheme.

[0156] The user-side electronic certificate **711** and the encryption key **715** may be pre-acquired from the authentication server **90**, that is, a certification authority (CA), for storage or installed in the mobile communication terminal **20** by a manufacturer or a vender before shipment thereof.

[0157] The computerized contract document **713** and the settlement company-side electronic certificate **712** are acquired from the electronic settlement server **10** during downloading of an application such as the i appli described below. Of course, the computerized contract document **713** and the settlement company-side electronic certificate **712** may be acquired by a different method.

[0158] The decryption processing unit **704** has the function of decrypting the settlement company's electronic signature transmitted by the electronic settlement server **10**.

[0159] The determination unit **705** has the function of verifying the settlement company's electronic certificate and electronic signature transmitted by the electronic settlement server **10** together with the computerized contract document.

[0160] The time stamp acquiring unit **706** has the following function provided if the determination unit **705** determines that the computerized contract document is electronically signed by the settlement company, based on the settlement company's electronic certificate and electronic signature transmitted by the electronic settlement server. The time stamp acquiring unit **706** requests and acquires the time stamp on the computerized contract document with the electronic signature, from the time stamp server **95**, and transmits the computerized contract document with the electronic signature to the electronic settlement server together with the time stamp acquired. Furthermore, the time stamp and the computerized contract document with the electronic signature are stored in the storage unit **703** as a computerized signed contract document original.

[0161] The electronic contract applying unit **206** and the mobile communication terminal **20** have been described.

I.1.3 Electronic Settlement Server

[0162] Now, the electronic settlement server **10** will be described with reference to FIG. **5**. FIG. **5** is a function block diagram showing an example of the configuration of the electronic settlement server **10**.

[0163] The electronic settlement server **10** is an apparatus including an central processing unit (CPU), a main memory (RAM), a read only memory (ROM), an I/O device (I/O), and an external storage device such as a hard disk device as required. The electronic settlement server **10** is, for example, an information processing apparatus such as a computer or a workstation. The ROM or the hard disk device stores a program allowing the information processing apparatus to function as the electronic settlement server **10** or a program allowing an electronic settlement method to be executed by a computer. The program is placed on the main memory and executed by the CPU to implement the electronic settlement server **10** or to execute the electronic settlement method. Furthermore, the program need not necessarily be stored in the storage device in the information processing apparatus. The program may be provided by an external apparatus (for example, a server such as an ASP (Application Service Provider)) and placed on the main memory. Moreover, the electronic settlement server **10** may be configured as a center into which all functions are integrated or as distributed servers divided by functions installed away from one another to enable a distributed process.

[0164] The electronic settlement server **10** shown in FIG. **5** has a network communication processing unit **401**, a payment request processing unit **402**, a database unit **403**, a credit check unit **404**, a transfer request unit **405**, a provision instructing unit **406**, a processing result notifying unit **407**, and an electronic contract processing unit **408**.

[0165] The network communication processing unit **401** has the function of communicating with the mobile communication terminal **20** and the negotiable-value providing apparatus **30** via the communication network **50**. The network communication processing unit **401** is, for example, a communication board allowing the protocol stack to be carried out. Upon receiving a request message from the mobile communication terminal **20**, the network communication processing unit **401** passes the request message to the payment request processing unit **402**. Upon receiving a provision instruction message destined for the negotiable-value providing apparatus **30** from the provision instructing unit **406**, the network communication processing unit **401** transmits the provision instruction message to the negotiable-value providing apparatus **30**.

[0166] Upon receiving a settlement request message from the mobile communication terminal **20** via the network communication processing unit **401**, the payment request processing unit **402** passes the settlement request message to the credit check unit **404** to allow the credit check unit **404** to inquire about the credit status of the user having issued the settlement request message. If the credit check unit **404** receives, from the financial institution system **40**, a check result indicating that the user's credit status has no problem, that is, the payment request is acceptable, the payment request processing unit **402** allows the transfer request unit **405** to generate and transmit a transfer request message to the financial institution system **40**. Moreover, the payment request processing unit **402** allows the provision instructing unit **406** to generate a provision instruction message destined for the negotiable-value providing apparatus **30** and to transmit the provision instruction message to the negotiable-value providing apparatus **30** via the network communication processing unit **401**.

[0167] The database unit **403** generates a transfer request message based on the settlement request message. The database unit **403** further stores information required to generate a provision instruction message as well as the user's usage of the present electronic settlement system. FIG. **6** shows an example of the configuration of a user table stored in the database unit **403**. A user table **500** is data having one record **501** for each user. Each record **501** stores a user ID **502**, a password **503**, a mail address **504**, and usage information **505**. The user ID **502** is information uniquely identifying the user. The password **503** is information required to prevent a third party from pretending to be the user to unfairly utilize the present electronic settlement system. The mail address **503** is information used as a destination address if the processing result notifying unit **407** utilizes an electronic mail to notify the user of the processing result of settlement. The usage information **505** includes various pieces of information such as the frequency at which the user has utilized the present electronic settlement system, the amount for which the user has utilized the system, and the places in which the user has utilized the system. The usage information **505** is utilized for marketing analysis and selective distribution of recommendation information to the user.

[0168] FIG. **7** shows an example of the configuration of a negotiable-value providing apparatus table stored in the database unit **403**. A negotiable-value providing apparatus table **600** is data having one record **601** for each negotiable-value providing apparatus **30**. Each record **601** stores an equipment ID **602**, an equipment IP address **603**, a destination bank **604**, a branch office name **605**, an account number **606**, and an account holder's name **607**.

[0169] The equipment ID **602** is information uniquely identifying the negotiable-value providing apparatus **30**. The equipment IP address is information utilized as a destination address for a provision instruction message based on a received settlement request message having the correspond-

ing equipment ID. The destination bank **604**, the branch office name **605**, the account number **606**, and the account holder's name **607** are information required to identify the destination of the transfer amount from the user's bank account if the electronic settlement server **10** receives the settlement request message corresponding to the equipment ID.

[0170] FIG. **5** is referred to again, and the example of configuration of the electronic settlement server **10** will be continuously described.

[0171] The provision instructing unit **406** allows a provision instruction message destined for the negotiable-value providing apparatus **30** to be generated. The provision instructing unit **406** transmits the provision instruction message to the negotiable-value providing apparatus **30** via the network communication processing unit **401**. The address of the negotiable-value providing apparatus **30** is acquired with reference to the above-described negotiable-value providing apparatus table **600**.

[0172] Furthermore, the processing result notifying unit **407** serves to notify the user whether or not the settlement request message has been processed. The processing result notifying unit **407** generates an electronic mail destined for the mobile communication terminal **20** and transmits the electronic mail or describes information indicating the processing result on a web page that can be browsed via the mobile communication terminal **20** and wait for browsing via the mobile communication terminal **20**. The content of the notification is, for example, the message "Settlement request has been processed. Thank you for allowing us to serve you" or "Short balance. Settlement has failed."

[0173] The electronic contract processing unit **408** has the function of cooperating with the mobile communication terminal **20**, more specifically the electronic contract applying unit **206** thereof, in allowing the user and the operator, administrator, or the like of the electronic settlement system **1** (hereinafter referred to as the settlement company) to electronically sign a contract specifying that the settlement company withdraws the specified amount from the user account before the utilization of the electronic settlement system **1** can be started.

[0174] Furthermore, the electronic contract processing unit **408** has the function of transmitting data from the computerized contract document original certifying the contract signed between the user and the settlement company, to the financial institution having the user account.

[0175] Specifically, the electronic contract processing unit **408** has the function of allowing the computerized contract document **713** to be downloaded into the mobile communication terminal **20**, the function of receiving a computerized contract document **711** with an electronic signature and a user-side electronic certificate **711** both transmitted by the mobile communication terminal **20**, the function of verifying the received electronic signature and user-side electronic certificate **711**, and if the electronic signature and the user-side electronic certificate **711** are determined to be valid, transmitting the computerized contract document **713** with the user's electronic signature as well as the settlement company's electronic signature and the settlement company-side electronic certificate **712**, to the mobile communication terminal **20**, the function of receiving the computerized contract document original **714** transmitted by the mobile communication terminal **20** for storage, and the function of transmitting the computerized contract document original **714** to an apparatus specified by the financial institution (for example, the financial institution system **40** or a network terminal apparatus (for example, a PC) specified by the financial institution).

[0176] FIG. **8** is a function block diagram showing an example of the configuration of the electronic contract processing unit **408**. As shown in FIG. **8**, the electronic contract processing unit **408** has a control unit **801**, an encryption processing unit **802**, a storage unit **803**, a decryption processing unit **804**, and a determination unit **805**.

[0177] The control unit **801** has the function of integrally controlling the operation of the encryption processing unit **802**, storage unit **803**, decryption processing unit **804**, and determination unit **805** to order starting of each of these units, input and output of data to and from each unit, and the like.

[0178] The encryption processing unit **802** has the function of generating the settlement company's electronic signature by a predetermined encryption method using an encryption key **811**.

[0179] The storage unit **803** has the function of storing the user-side electronic certificate **711**, the settlement company-side electronic certificate **712**, the computerized contract document **713**, the computerized contract document original **714**, the encryption key **811**, and the like.

[0180] The user-side electronic certificate **711**, settlement company-side electronic certificate **712**, computerized contract document **713**, and computerized contract document original **714** are the same as those stored in the storage unit **703** of the electronic contract applying unit **20**. Thus, the description of these units is omitted.

[0181] The encryption key **811** is used by the electronic settlement company to generate an electronic signature or to decrypt encrypted information transmitted by the mobile communication terminal **20**. The encryption key **811** is, for example, a secrete key for a public key scheme or a common encryption key for a common key scheme.

[0182] The settlement company-side electronic certificate **712** and the encryption key **811** may be pre-acquired from the authentication server **90**, that is, the certification authority (CA), for storage.

[0183] The decryption processing unit **804** has the function of decrypting the user's electronic signature transmitted by the mobile communication terminal **20**.

[0184] The determination unit **805** has the function of verifying the user's electronic certificate and electronic signature transmitted by the mobile communication terminal **20** together with the computerized contract document.

[0185] Upon receiving the computerized contract document storage original **714**, corresponding to the computerized contract document with the time stamp and the electronic signature, the control unit **801** allows the storage unit **803** to store the computerized contract document storage original **714**. The control unit **801** further transmits the computerized contract document storage original destined for the bank in which the user's account is present.

I.1.4 Communication Network

[0186] FIG. **1** is referred to again, and the description of the components of the electronic settlement system **1** according to the present embodiment will be restarted.

[0187] Whether the communication network **50** is a wired or wireless network and uses a leased or switched circuit, the communication network **50** operates to enable information transmission between apparatuses connected to the communication network **50** when each of the apparatuses establishes

a session with the target apparatus. The communication network **50** may be implemented by combining a plurality of networks via gateways as in the Internet. Furthermore, the connections may be temporary ones like PPP connections instead of direct connections to what is called a backbone provided that information can be transmitted between the apparatuses when each of the apparatuses establishes a session with the other. The "communication network" may be a communication network not using path switching means such as switching equipment, a switch, or a router which has fixedly distributed leased circuits.

I.1.5 Mobile Communication Network, Gateway, and Base Station

[0188] In the example shown in FIG. **1**, it is assumed that a cellular phone is used as the mobile communication terminal **20**. Thus, in the figure, the cellular phone serving as the mobile communication terminal **20** connects first to the base station **60** through a radio circuit and then via the mobile communication network **70** and the gateway **80** to the communication network **50**, to which the electronic settlement server **10** is connected. However, provided that the mobile communication terminal **20** can be connected directly to the communication network **50**, the mobile communication terminal **20** may be connected to the electronic settlement server **10** without passing through the mobile communication network **70** or the gateway **80**. For example, if the mobile communication terminal **20** has a radio LAN connection function, communication via the mobile communication network **70** and the gateway **80** is not required.

I.1.6. Financial Institution System

[0189] In response to an inquiry about the user's credit status from the electronic settlement server **1**, the financial institution system **40** replies to the electronic settlement server **1** with the credit status. In response to a transfer request from the electronic settlement server **10**, the financial institution system **40** can execute a transfer process (a transfer of money from one account to another) or request a certain apparatus to execute the transfer process. The financial institution system **40** may be an accommodation system such as a multi-payment network (see, for example, http://www.jampa.gr.jp/pub/) which is not run directly by a financial institution. The system replying to the electronic settlement server **10** with the credit status need not necessarily be the same as that executing the transfer process. Furthermore, in the example shown in FIG. **1**, the electronic settlement server **10** is connected to the financial institution system **40** via a leased circuit. However, the present embodiment can be implemented even when the electronic settlement server **10** and the financial institution system **40** are connected together via the communication network **50**. If for example, the financial institution system **40** is a system prepared by what is called an Internet bank, the electronic settlement server **10** and the financial institution system **40** may be connected together via the communication network **50**.

[0190] Furthermore, the financial institution system **40** may have the function of receiving and storing the computerized contract document original **714** transmitted, by the electronic settlement server **10**, to the financial institution having the user's account. Based on the computerized contract document original **714**, the financial institution can determine that the both the user and the settlement company agree that the settlement company withdraws the specified amount from the user's account. It is assumed that after the reception of the computerized contract document original **714**, the settlement company receives a request message requesting that the settlement company withdraw the specified amount from the user's account. Then, the computerized contract document original **714** serves as a legal ground for the transfer, by the financial institution system **40**, of the specified amount from the user's account in response to the request message even without any special instruction from the user.

I.1.7. Authentication Server

[0191] The authentication server **90** is an apparatus including a central processing unit (CPU), a main memory (RAM), a read only memory (ROM), an I/O device (I/O), and an external storage device such as a hard disk device as required. The authentication server **90** is, for example, an information processing apparatus such as a computer or a workstation.

[0192] The authentication server **90** may further have the function of issuing the user-side electronic certificate **711** and/or the settlement company-side electronic certificate **712** and managing a CRL (Certificate Revocation List) that is a list of the validity of the user-side electronic certificate **711** and/or the settlement company-side electronic certificate **712** and replying to an inquiry about the validity.

I.1.8. Time Stamp Service

[0193] The time stamp server **95** is an apparatus including a central processing unit (CPU), a main memory (RAM), a read only memory (ROM), an I/O device (I/O), and an external storage device such as a hard disk device as required. The time stamp server **95** is, for example, an information processing apparatus such as a computer or a workstation.

[0194] The time stamp server **95** has the function of, in response to a time stamp issuance request from the mobile communication terminal **90**, generating and transmitting a time stamp token to the mobile communication terminal. The time stamp server **95** is an apparatus operating as a time stamp station (TSA: Time Stamping Authority) described in RFC 3161.

I.2. Example of Operation of the Electronic Settlement System

[0195] Now, the operation of the electronic settlement system **1** will be described with reference to FIGS. **9**, **10**, **11**, and **12**. FIGS. **9** and **10** are sequence diagrams showing an example of an operation performed by the electronic settlement system **1** during user registration. FIG. **11** shows an example of an operation performed when the user acquires a negotiable value through the electronic settlement system **1** after the user registration. FIG. **12** is a sequence diagram continued from FIG. **11**.

[0196] First, the operation performed by the electronic settlement system **1** until the user is successfully registered will be described with reference to FIGS. **9** and **10** and the subsequent figures. FIGS. **9** and **10** are sequence diagrams showing an example of an operation performed by the electronic settlement system **1** when the user is registered in the electronic settlement system **1** using the mobile communication terminal **20**.

[0197] First, the user connects the mobile communication terminal **20** to the electronic settlement server **10** and

requests, from the electronic settlement server **10**, software for the mobile communication terminal **20** (an application the function of which can be added to the mobile communication terminal **20** by downloading the application into the mobile communication terminal **20**, for example, the i appli) which is required to receive services from the electronic settlement system **1** (S**101**). In response to the request, the electronic settlement server **10** allows the data of an application such as the i appli and the computerized contract document **713** to be downloaded into the mobile communication terminal **20** (S**102**). Upon receiving the i appli and the computerized contract document **713**, the mobile communication terminal **20** allows the data of the i appli and the like to be stored in a storage device such as a memory, while allowing the computerized contract document **713** to be stored in the storage unit **703** (S**103**). The i appli is executed by the CPU in the mobile communication terminal **20** or the like to function as the above-described payment request generating unit **202**, transfer request generating unit **207**, electronic contract applying unit **206**, or the like.

[0198] In the above-described embodiment, the electronic settlement server **10** is also used as a server for downloading of the application such as the i appli and a server for downloading of the computerized contract document **713**. However, of course, the server for downloading of the application such as the i appli and/or the server for downloading of the computerized contract document **713** may be an apparatus or a system that is separate from the electronic settlement server **10**.

[0199] The downloaded i appli is started by the user's predetermined operation via the mobile communication terminal **20** (S**104**). Upon being started for the first time after downloading, the electronic contract applying unit **206**, that is, the i appli, allows the output unit **205** to display the computerized contract document **713** (S**104**). The electronic contract applying unit **206** thus urges the user to check the contents of the computerized contract document.

[0200] Then, the mobile communication terminal **20**, more specifically the electronic contract applying unit **206**, accepts an input indicating whether or not the user is to sign the electronic contract (S**105**). For example, the liquid crystal display, that is, the output unit **205**, displays the message "Contents of contract are displayed. Will you sign contract? YES/NO" or the like to urge the user to input an answer. If the user opts to sign the contract according to the contents of the computerized contract document **713**, the electronic contact applying unit **206**, more specifically the encryption processing unit **702**, uses the encryption key **715** to generate an electronic signature (S**106**). In the present embodiment, the electronic signature corresponds to a hash value for the computerized contract document **713** in which the user's address, name, and the like are filled, the hash value being encrypted according to an RSA encryption scheme using the encryption key **715**. However, the present invention is not limited to this aspect. For example, information may be used which allows the user to be uniquely identified and which is obtained by encrypting data that cannot be easily known by the third party. However, in this case, the electronic certificate **711** is not utilized.

[0201] Then, the mobile communication terminal **20**, more specifically the electronic contract applying unit **206**, transmits the computerized contract document **713** (in which the user's address and name are additionally filled), the electronic signature generated in S**106**, and the user-side electronic certificate **711** to the electronic settlement server **10** (S**107**).

[0202] Upon receiving the computerized contract document **713** and others transmitted in the above-described S**107**, the electronic settlement server **10** inquires of the authentication server **90**, that is, an institution issuing the user-side electronic certificate, about the validity of the user-side electronic certificate **711** (S**108**). The authentication server **90** references the CRL (Certified Revocation List) to determine the validity of the user-side electronic certificate **711**. The authentication server **90** then transmits the result of the determination to the electronic settlement server **10** (S**109**).

[0203] If the result of the determination indicates that the user-side electronic certificate **711** is valid, the electronic settlement server **10** executes a process of verifying the user-side electronic certificate **711** (S**110**). That is, the electronic settlement server **10** uses the public key of the certification authority (CA) to decrypt the electronic signature on the user-side electronic certificate **711** to determine whether the electronic signature has been written by the certification authority (CA). The electronic settlement server **10** further determines whether or not the user-side electronic certificate **711** has been altered. If the verifications in S**109** to S**111** are all successful, the user-side electronic certificate **711** is determined to be credible, that is, the encryption key (for example, the public key according to the public encryption key scheme) described in the user-side electronic certificate **711** is determined to belong to the user.

[0204] If the verification of the user-side electronic certificate **711** is successful, the electronic settlement server **10** verifies the electronic signature attached to the computerized contract document **713** (S**111**). That is, the electronic settlement server **10** uses the encryption key described in the user-side electronic certificate **711** to decrypt the electronic signature attached to the computerized contract document **713**. The electronic settlement server **10** thus verifies the electronic signature and determines the validity of the computerized contract document **713** (the computerized contract document **713** has not been altered).

[0205] If the verification of the electronic signature in S**111** is successful, the electronic settlement server **10** determines that the computerized contract document **711** has been validly signed by the user. The electronic settlement server **10** further attaches the settlement company's electronic signature to the computerized contract document **713** (to which the user's electronic signature is already attached) received from the mobile communication terminal **20**. The electronic settlement server **10** also attaches the settlement company-side electronic certificate **712** to the computerized contract document **713**. The electronic settlement server **10** transmits the computerized contract document **713**, the settlement company's electronic signature, and the settlement company-side electronic certificate **712** to the mobile communication terminal **20** (S**112**).

[0206] Upon receiving the computerized contract document **713** and others transmitted in step S**112**, the mobile communication terminal **20** inquires of the authentication server **90**, that is, an institution issuing the settlement company-side electronic certificate **712**, about the validity of the settlement company-side electronic certificate **712** (S**113**). The authentication server **90** references the CRL (Certified Revocation List) to determine the validity of the settlement company-side electronic certificate **712**. The authentication

server **90** then transmits the result of the determination to the mobile communication terminal **20** (S**114**).

[0207] If the result of the determination indicates that the settlement company-side electronic certificate **712** is valid, the mobile communication terminal **20** executes a process of verifying the settlement company-side electronic certificate **712** (S**115**). That is, the mobile communication terminal **20** uses the public key of the certification authority (CA) to decrypt the electronic signature on the settlement company-side electronic certificate **712** to determine whether the electronic signature has been written by the certification authority (CA). The mobile communication terminal **20** further determines whether or not the settlement company-side electronic certificate **712** has been altered. If the verifications in S**113** to S**115** are all successful, the settlement company-side electronic certificate **712** is determined to be credible, that is, the encryption key (for example, the public key according to the public encryption key scheme) described in the settlement company-side electronic certificate **712** is determined to belong to the settlement company.

[0208] If the verification of the settlement company-side electronic certificate **712** is successful, the mobile communication terminal **20** verifies the settlement company's electronic signature attached to the computerized contract document **713** (S**116**). That is, the mobile communication terminal **20** uses the encryption key described in the settlement company-side electronic certificate **712** to decrypt the settlement company's electronic signature attached to the computerized contract document **713**. The mobile communication terminal **20** thus verifies the settlement company's electronic signature and determines the validity of the computerized contract document **713** (the computerized contract document **713** has not been altered).

[0209] If the verification of the settlement company's electronic signature in S**116** is successful, the mobile communication terminal **20** determines that the computerized contract document **713** has been validly signed by the settlement company.

[0210] Then, the mobile communication terminal **20** transmits the computerized contract document **713** (or a hash value therefor) with the user's electronic signature and the settlement company's electronic signature, to the time stamp server **95**. The mobile communication terminal **20** thus requests the time stamp server **95** to issue a time stamp (S**117**). Upon receiving the time stamp request, the time stamp server **95** applies a date and time to the hash value for the computerized contract document **713** with the user's electronic signature and the settlement company's electronic signature to generate a digitally signed time stamp token. The time stamp server **95** then transmits the time stamp token to the mobile communication terminal **20** (S**118**).

[0211] The mobile communication terminal **20** acquires the time stamp token (S**119**). Then, the mobile communication terminal **20** adds the time stamp token to the computerized contract document **713** with the user's electronic signature and the settlement company's electronic signature to obtain a computerized contract document storage original **714**. The mobile communication terminal **20** stores the computerized contract document storage original **714** in the storage unit **703**, and transmits the computerized contract document storage original **714** to the electronic settlement server **10** (S**120**).

[0212] Upon receiving the computerized contract document storage original **714**, the electronic settlement server **10** stores the computerized contract document storage original **714** in the storage unit **803** (S**121**).

[0213] Thus, a contract for withdrawal substitution is signed between the user and the settlement company. Under the condition that the computerized contract document storage original **714** is stored in the electronic settlement server **10**, the electronic settlement server **10** accepts the user registration. That is, if the computerized contract document storage original **714** is not stored in the electronic settlement server **10**, the user is not registered and cannot start utilizing the electronic settlement system **1**. In other words, storing the computerized contract document storage original **714** in the electronic settlement server **10** is essential for the user registration.

[0214] Now, the operation of the electronic settlement system **1** after step S**121** will be described with reference to FIG. **11**. In the sequence diagrams following FIG. **11**, the illustration of the authentication server **90** and the time stamp server **95** is omitted.

[0215] Using the completion of step S**121** as a trigger, the electronic settlement server **10** transmits a user registration start message to the mobile communication terminal **20** (S**122**).

[0216] Upon receiving the user registration start message, the mobile communication terminal **20** starts the i appli (S**123**). When started for the first time after downloading, the i appli allows the output unit **205** to display an initial input screen via which the user inputs initial information, thus urging the user to input the initial information (S**124**). Here, the requested initial information includes a user ID **602**, a password **603**, a mail address **604**, a bank number **605**, a branch office number **606**, a account type **607**, an account number **608**, an account holder's name **609**, and a personal identification number **610**. The user ID **602** and the password **603** may be preset by the electronic settlement server **10** without the need for the user's input.

[0217] The user completes inputting the initial information using the input unit **204** of the mobile communication terminal **20**. Then, the mobile communication terminal **20** connects to the electronic settlement server **10** via the communication network **50** and transmits the input initial information and the like to the electronic settlement server **10** (S**125**).

[0218] Upon receiving the initial information, the electronic settlement server **20** transmits, to the financial institution system **40**, an account check request message inquiring of the financial institution system **40** whether or not the initial information is correct and whether or not the input user account is available (S**126**). Upon receiving the account check request message, the financial institution system **40** searches an account database or the like for the presence and validity of the user account indicated as a check target in the account check request message. The financial institution system **40** transmits the result of the determination to the electronic settlement server **10** as an account check result message (S**127**). If the account check result message indicates that the input account information is incorrect or the account is unavailable, the electronic settlement server **10** having received the account check result message transmits a message urging the initial information to be input again, to the mobile communication terminal **20** (not shown in FIG. **11**). On the other hand, if the account check result message indicates that the input account information is correct and that the input account is available, the electronic settlement server **10** having received the account check result message registers

the user based on the input initial information (S128). That is, the electronic settlement server **20** adds new records **601** and **701** to a user table **600** and a user retained amount data **700**, respectively, both of which are located in the database unit **403**. The electronic settlement server **20** thus writes the user ID **602**, password **603**, mail address **604**, bank number **605**, branch office number **606**, account type **607**, account number **608**, account holder's name **609**, personal identification number **610** and the like, into the records **601** and **701**.

[0219] Once the above-described user registration (S128) is completed, the electronic settlement server **10** transmits the computerized contract document original **714** to the financial institution system **40** (**129**). The financial institution system **40** receives and stores the computerized contract document original **714** (**130**). In the present example, the financial institution system **40** receives the computerized contract document original **714**. However, any apparatus can receive the computerized contract document original **714** provided that the apparatus enables the financial institution having the user account to confirm the signing of the contact based on the computerized contract document original **714**.

[0220] Furthermore, in the above-described example, the transmission of the computerized contract document original **714** to the financial institution system **40** follows the user registration (S128). However, the present invention can be implemented regardless of the timing when the computerized contract document storage original **714** is transmitted to the financial institution system **40**, provided that the transmission follows the generation of the computerized contract document original **714** (the transmission follows S119).

[0221] After the user registration (S128) is completed, the user can utilize the electronic settlement system **1**. An example of the operation of the electronic settlement system **1** following the user registration will be described below with reference to FIG. **12**.

[0222] It is assumed that the user first utilizes the present electronic settlement system to attempt to allow the negotiable-value providing apparatus **30** to provide a negotiable value.

[0223] In this case, the user allows the mobile communication terminal **20** and the negotiable-value providing apparatus **30** to carry out short-distance communication so that the mobile communication terminal **20** can acquire the equipment ID of the negotiable-value providing apparatus **30**. For example, it is assumed that the terminal-side short-distance communication unit **201** is an IC chip for non-contact IC cards and that the providing apparatus-side short-distance communication unit **303** is a reader/writer. Then, upon sensing that the chip for non-contact IC cards is nearby, the reader/writer serving as the providing apparatus-side short-distance communication unit **303** transmits the equipment ID and the application number corresponding to the payment request generating unit **202** to the chip for non-contact IC cards serving as the terminal-side short-distance communication unit **201** (S701).

[0224] Upon receiving the equipment ID and the application number, the terminal-side short-distance communication unit **201** starts the application such as the i appli which corresponds to the application number, that is, the payment request generating unit **202** (S702). At this time, the equipment ID is passed to the payment request generating unit **202**.

[0225] The started payment request generating unit **202** allows the liquid crystal display serving as the input unit **205** to display an input screen accepting user's inputs (S703). FIG. **14** is a diagram showing an example of the input screen displayed on the liquid crystal display serving as the input unit **205**. The example of the input screen includes an amount input box **901** and an OK button **902**. The user inputs the price of the negotiable value to be provided by the negotiable-value providing apparatus **30**, to the amount input box **901**. If any amount has already been input to the amount input box **901**, the payment request generating unit **202** may store and automatically display the amount in the amount input box **901**. The payment request generating unit **202** may thus generate a settlement request message with this amount unless the user changes the input. After the amount input to the amount input box **901** is confirmed, the user operates the input unit **204** to activate the OK button **902** to complete the user input (S704). Then, the payment request generating unit **202** generates and transmits a settlement request message to the electronic settlement server **10** (S705).

[0226] Here, the OK button **902** has the function of executing, in response to one operation, a process of determining a transfer amount specified as consideration for the negotiable value by the mobile communication terminal **20** and a process of executing a settlement request for provision of the negotiable value corresponding to the transfer amount.

[0227] FIG. **15** shows an example of the data configuration of a settlement request message generated by the payment request generating unit **202**. The settlement request message **1000** shown in FIG. **15** is data composed of a header **1001**, a user ID **1002**, a password **1003**, a bank number **1004**, a branch office number **1005**, an account number **1006**, a personal identification number **1007**, an equipment ID **1008**, and a transfer amount **1009**. The header **1001** is data indicating that the data generated by the payment request generating unit **202** is a settlement request message. The user ID **1002**, password **1003**, bank number **1004**, branch office number **1005**, account number **1006**, and personal identification number **1007** store the user ID **101**, the password **102**, used by the electronic settlement server **10** to authenticate the user, the bank number **103**, branch office number **104**, and account number **105**, identifying the account from which the user withdraws the charge to be paid, and the personal identification number **106**, set for the account (FIG. **3**); all the pieces of information are pre-stored in the payment request generating unit **202** described above. Furthermore, the equipment ID **1008** has been transmitted by the negotiable-value providing apparatus **30** in S701. The transfer amount **1009** is information input to the amount input box **901** on the input screen.

[0228] FIG. **12** is referred to again, and the operation of the electronic settlement system **1** will be continuously described.

[0229] Upon receiving the settlement request message **1000**, the electronic settlement server **10**, more specifically the payment request processing unit **402** starts the credit check unit **404**. The payment request processing unit **402** then allows the credit check unit **404** to transmit a credit check request to the financial institution system **40** (S706). The credit check request inquires of the financial institution system **40** about the paying capacity of the user corresponding to the user ID contained in the settlement request message **1000**.

[0230] The financial institution system **40** examines the user's credit information to determine whether or not the user can pay the requested amount, by checking the account balance and the like. The financial institution system **40** then transmits the result of the determination to the electronic settlement server **10** as a check result notification (S707).

[0231] Upon receiving the check result notification from the financial institution system **40**, the electronic settlement server **10**, more specifically the payment request processing unit **402** starts a result notifying unit **407** to generate a processing result notification based on the check result notification received from the financial institution system **40**. The payment request processing unit **402** then transmits the processing result notification to the mobile communication terminal **20** (S**708**).

[0232] Upon receiving the processing result notification, the mobile communication terminal **20** displays the contents of the processing result notification on the output unit **205** (S**709**). The displayed contents are, for example, "Settlement request has been processed. Thank you for allowing us to serve you." or "Short balance. Settlement has failed."

[0233] Now, the example of the operation of the electronic settlement system **1** will be continuously described with reference to FIG. **13**. FIG. **13** is a sequence diagram continued from FIG. **12** and showing the example of the operation of the electronic settlement system **1**. If the result of the determination of the credit status by the financial institution system **40** indicates that the user can pay the charge, the electronic settlement server **10**, more specifically the provision instructing unit **406** transmits a payment procedure end message to the negotiable-value providing apparatus **30** (S**710**). The payment procedure end message corresponds to a telegram indicating that a payment procedure corresponding to the user specified amount is finished.

[0234] Destination information (for example, an IP address) on the negotiable-value providing apparatus **30**, corresponding to the destination of the payment procedure end message, may be acquired from the negotiable-value providing apparatus table **600** stored in the database unit **403**. The payment procedure end message contains amount information corresponding to a transfer amount **1009**. However, the amount information may indicate the original amount from which an amount such as a transfer fee has been subtracted.

[0235] Upon receiving the payment procedure end message, the negotiable-value providing apparatus **30** provides the user with a negotiable value of a quantity corresponding to the amount information contained in the payment procedure end message (S**711**).

[0236] On the other hand, the electronic settlement server **10** transmits, to the financial institution system **40**, a transfer request message requesting the financial institution system **40** to transfer the user specified amount from the user's account to the account of the administrator, operator, or the like of the negotiable-value providing apparatus **30** who is qualified to acquire sales of the negotiable-value providing apparatus **30** (hereinafter simply referred to as the "administrator") (S**712**). FIG. **16** is a diagram showing an example of the data configuration of the transfer request message. A transfer request message **1100** contains a bank account **1101**, a branch office number **1102**, and an account number **1103** which are pieces of information identifying the user's debit account, and a personal identification number **1104** indicating that the user approves the withdrawal. The transfer request message **1100** further contains a transfer amount **1105**, and a (destination) bank number **1106**, a (destination) branch office number **1107**, and a (destination) account number **1108** which are pieces of information indicating the administrator' account corresponding to the destination account.

[0237] The bank account **1101**, branch office number **1102**, account number **1103**, and personal identification number **1104** are generated based on the bank account **1004**, branch office number **1005**, account number **1006**, personal identification number **1007**, and transfer amount **1009** contained in the settlement request message **1000**. The (destination) bank number **1106**, (destination) branch office number **1107**, and (destination) account number **1108** are generated based on the equipment ID **1008** and data acquired from the negotiable-value providing apparatus table **600**.

[0238] Upon receiving the above-described transfer request message, the financial institution system **40** executes a transfer process of transferring the specified transfer amount from the user's account to the administrator's account (S**713**). Thus, the payment of the consideration for the negotiable value the user has received from the negotiable-value providing apparatus **30** is completed.

[0239] The operator, administrator, or the like of the electronic settlement server **10** (hereinafter referred to as the settlement company) qualified to acquire profits through the operation of the electronic settlement server **10** may receive the charge from the user or the administrator. In this case, the electronic settlement server **10** transmits, to the financial institution system **40**, a transfer request message requesting the financial institution system **40** to transfer the amount corresponding to the charge from the user's or administrator's account to the settlement company's account (S**714**). Upon receiving the transfer request message, the financial institution system **40** executes a transfer process of transferring the specified transfer amount from the user's or administrator's account to the settlement company's account (S**715**). Thus, the settlement company can gain profits through the operation of the present electronic settlement system.

I.3. Advantages of the Present Electronic Settlement System

[0240] (1) Advantages for the User

[0241] The present settlement method is different from cash payment and can be used in game halls. Thus, even when running short of cash in hand in a game hall, the user can buy rental balls, rental medals, any product, or the like by an easy settlement action (the process of performing an easy input operation such as the activation of the OK button **902** on the mobile communication terminal **20**). The user can feel secure to utilize the method through the function of, for example, requesting the user to input the personal identification number when a pre-settable usage accumulated amount for one month and/or the maximum usage amount per day is reached, in order to cope with the loss of the card and to inform the user of overspending of which the user knows nothing.

[0242] Furthermore, the user can feel secure to carry out the settlement action because the user's mobile communication terminal is used for the settlement action. The user can further feel secure to settle the account because of the non-need to input the card number or the personal identification number, preventing the record of the card number or the personal identification number from remaining in the shop or being unfairly acquired by a malicious person as is the case with ordinary credit and debit cards.

[0243] Furthermore, information distribution is available which is based on usage information acquired by the electronic settlement server **10**. Thus, more various services are expected to be available.

[0244] (2) Advantages for the Shop (Administrator)

[0245] Even when running short of cash in hand as a result of playing games, the user can further buy a negotiable value

via the present electronic settlement system. This increases the operation rate of the game machines and the possibility that such users make a purchase in the shop. Thus, the sales of the game hall are expected to increase. Furthermore, information is available which indicates the game machines on which the user has played and the amount of money for which the user has played. Consequently, based on the information, the operation status of the game machines can be determined in detail, and the user's preferences can also be known. Therefore, the information can be utilized for marketing.

[0246] The use of the present electronic settlement system avoids increasing cash used in the shop. This facilitates credit management and improves security management.

[0247] (3) Advantages for the Electronic Settlement Company

[0248] The operation of the present electronic settlement system enables the electronic settlement company to determine the playing statuses of players who are users. The electronic settlement company can thus accumulate data to be referenced for the development, sale, marketing, or the like of game machines.

I.4. Variations and Others

[0249] (1) QR codes or the like may be displayed on the liquid crystal display provided in the negotiable-value providing apparatus **30**. Furthermore, a bar code reader utilizing a CCD camera may be provided in the mobile communication terminal **20** to read bar codes. These arrangements may replace the providing apparatus-side short-distance communication unit **303** and the terminal-side short-distance communication unit **201**. In this case, information indicated by the bar code may directly be the equipment ID.

[0250] (2) In the above-described embodiment, the user's credit check is carried out by the electronic settlement server **10** inquiring of the financial institution system **40**. However, the present invention can also be implemented when the electronic settlement server **10** has a credit amount table in the database unit **403** to carry out credit checks by itself. A creditable amount and a credit balance are stored in the credit amount table for each user. If the credit balance is equal to or more than a transfer request amount, the amount is permitted to be paid.

[0251] (3) In the above-described embodiment, the transfer amount is transferred directly from the user's account to the shop's (administrator's) account. However, the present invention can also be implemented by transferring the transfer amount from the user's account to the electronic settlement company's account and then transferring the transfer amount from which the transfer fee is subtracted from the electronic settlement company's account to the shop's (administrator's) account.

[0252] (4) The present invention can be implemented regardless of whether the authentication server **90**, serving as the certification agency (CA), is another company's server commonly used or a server constructed by the settlement company.

II. Second Embodiment

[0253] Now, a second embodiment of the present invention will be described.

II.1. Example of the Configuration of the Electronic Settlement System

[0254] An electronic settlement system **1**A according to the second embodiment is configured almost similarly to the electronic settlement system **1** according to the first embodiment. The same components as those in the first embodiment are denoted by the same reference numerals and will not be described in detail.

[0255] FIG. **17** is a network diagram showing an example of an electronic settlement system according to the second embodiment.

[0256] In the example shown in FIG. **17**, the electronic settlement system **1**A has an electronic settlement server **10**A, a mobile communication terminal **20**A, and a negotiable-value providing apparatus **30**A. Furthermore, a charge accommodating network **40**A, an authentication server **90**, and a time stamp server **95** are connected to the electronic settlement system **1**A so as to be able to communicate with the electronic settlement system **1**A.

[0257] The electronic settlement server **10**A is connected to the charge accommodating network **40**A. The charge accommodating network **40**A executes a process of transferring a specified amount from the user's account to a specified destination account based on an instruction from the electronic settlement server **10**A. The charge accommodating network **40**A is, for example, the "Multi-Payment Network" (see, for example, http://www.jampa.gr.jp/pub/) operated in Japan.

[0258] FIG. **18** is a block diagram showing the general configuration of the charge accommodating network **40**A. A financial institution system **44** of a financial institution such as a bank (including a form such as a sharing center) is connected to the charge accommodating network **40**A via a communication network **45** so that the financial institution system **44** and the charge accommodating network **40**A can communicate with each other. The financial institution system **44** can electronically transfer money to and from the following accounts. The financial institution system **40** utilized by the present electronic settlement system **1**A has an account (hereinafter referred to as a user account **41**) of a party playing games on game machines (hereinafter referred to as a user) paying a charge using the present electronic settlement system, an account (hereinafter referred to as a settlement company account **42**) of a party (hereinafter referred to as a settlement company) directly or indirectly operating and managing the present electronic settlement system **1**A to receive consideration, a price, or a charge, or the like for the operation of the electronic settlement system **1**A, and an account (hereinafter referred to as a game hall company account **43**)of a party (hereinafter referred to as a game hall company) providing the user with games played on game machines and receiving the user's payment using the present electronic settlement system **1**A. The accounts **41**, **42**, and **43** may be provided in the same financial institution system **44** or in separate financial institution systems **44**. FIG. **18** shows that the accounts **41**, **42**, and **43** are provided in the different financial institution systems **44**. However, the present embodiment is not limited to this aspect.

[0259] A terminal apparatus is connected to the communication network **45** so that a client can transmit a payment request to the charge accommodating network **40**A. A personal computer (PC) **46**, a cellular phone **47**, an ATM (Automated Teller Machine) **48**, or the like is used as the terminal apparatus. In the electronic settlement system **1**A according to the present embodiment, the mobile communication terminal **20**A or the electronic settlement server **10**A operates as a terminal apparatus for the charge accommodating network **40**A.

[0260] FIG. **17** is referred to again, and the configuration of the electronic settlement system **1**A will be continuously described.

[0261] The electronic settlement server **10**A is connected to a communication network **50** and can communicate with the negotiable-value providing apparatus **30**A via the communication network **50**. The mobile communication terminal **20**A can communicate with the electronic settlement server **10**A and the charge accommodating network **40**A via a base station **60**, a mobile communication network **70**, and a gateway **80** connecting the mobile communication network **70** and the communication network **50** together. The mobile communication terminal **20**A can also communicate with the negotiable-value providing apparatus **30**A via short-distance communication means. The authentication server **90** can be connected to the electronic settlement server **10**A and the mobile communication terminal **20**A via the communication network **50** and the mobile communication network **70**. The time stamp server **95** can be connected to the mobile communication terminal **20**A via the communication network **50** and the mobile communication network **70**. The components of the electronic settlement system **1**A will be described below.

II.1.1. Negotiable-Value Providing Apparatus

[0262] The negotiable-value providing apparatus **30**A provides a certain negotiable value (a tangible object or an intangible object that can be bought in exchange for money) to the user as consideration for electronic settlement carried out by the user using the mobile communication terminal **20**A. The negotiable-value providing apparatus **30**A in the present embodiment need not necessarily provide a negotiable value directly to a user. The negotiable-value providing apparatus **30**A may be an apparatus such as a CAT terminal for debit cards which provides a negotiable value indirectly to a user by notifying a game hall (shop) of the possibility of electronic settlement to allow the game hall to deliver an article or the like to the user.

[0263] Furthermore, the negotiable-value providing apparatus **30**A may output, transmit, or write electronic data to another apparatus or a storage medium as a negotiable value similarly to the negotiable-value providing apparatus **30** according to the first embodiment.

[0264] FIG. **19** is a function block diagram showing an example of the configuration of the negotiable-value providing apparatus **30**A and the mobile communication terminal **20**A. The configuration of the negotiable-value providing apparatus **30**A will be described below with reference to FIG. **19**. The same components as those of the negotiable-value providing apparatus **30** according to the first embodiment are denoted by the same reference numerals.

[0265] The negotiable-value providing apparatus **30**A has a network communication processing unit **301**, a provision control unit **302**, a providing apparatus-side short-distance communication unit **303**, a negotiable-value supply unit **304**, and a game history processing unit **305**. The network communication processing unit **301**, provision control unit **302**, providing apparatus-side short-distance communication unit **303**, and negotiable-value supply unit **304** are the same as those of the negotiable-value providing apparatus **30** according to the first embodiment, and will thus not be described in detail.

[0266] The game history processing unit **305** has the function of generating game history data on the game history of a player based on the player's use of the negotiable-value providing apparatus **30**A and transmitting the data to the server via the network communication processing unit **301**.

[0267] It is assumed that the negotiable-value providing apparatus **30**A is, for example, a ball renting machine provided in a particular game machine. To play games in the game machine in which ball renting machines are provided, the player obtains rental balls through settlement carried out by the present electronic settlement system **1**A using the negotiable-value providing apparatus **30**A, corresponding to the ball renting machine, and the player's cellular phone, corresponding to the mobile communication terminal **20**A. The game history processing unit **305** generates game history data indicating which player played games, on which game machine the player played the games, when the player played the games, and how much the player spent in the games, based on the operational status of the provision control unit **302** and the operational status of the game machine. The game history processing unit **305** then transmits the game history data to the server managing the game history data. The game history data is transmitted to the server for storage every time each of all the negotiable-value providing apparatuses **30**A is used. By analyzing the game history data and carrying out another analysis or the like according to a data mining technique or the like, the tendency of the player's action, the tendency of the popularity of the game machine, and an hourly use trend are clarified. As a result, useful information can be acquired which serves as a material for management of the shop and development of game machines.

[0268] In the configuration described in the present embodiment, the electronic settlement server **10**A is used as the server managing the game history data. However, of course, the server managing the game history data may be incorporated into the present electronic settlement system **1**A as a server apparatus different from the electronic settlement server.

II.1.2. Mobile Communication Terminal

[0269] Now, the mobile communication terminal **20**A will be described with reference to FIG. **19**.

[0270] The mobile communication terminal **20**A is a terminal apparatus that can communicate with the electronic settlement server **10**A, the authentication server **90**, the time stamp server **95**, and/or the charge accommodating network **40**A via the communication network **50** and also with the negotiable-value providing apparatus **30**A using the short-distance communication means. The mobile communication terminal **20**A is, for example, a cellular phone having a non-contact IC card (for example, FeliCa: Sony Corporation's registered trademark) function, a cellular phone including short-distance communication means and radio communication means, PDA (Personal Data Assistant), a portable game machine, or an IP telephone including a radio LAN communication apparatus.

[0271] The mobile communication terminal **20** has a terminal-side short-distance communication unit **201** allowing communication with the above-described providing apparatus-side short-distance communication unit **303**, a payment request generating unit **202**, a radio communication unit **203**, an input unit **204**, an output unit **205**, and a user information storage unit **207**, a transfer request generating unit **208**, and an electronic contract applying unit **206**. The same components of the mobile communication terminal **20** as those of the mobile communication terminal **30** according to the first

embodiment are denoted by the same reference numerals, and will thus not be described in detail.

[0272] The user information storage unit **207** has the function of storing information required for the user's payment and settlement. The information stored in the user information storage unit **207** is similar to that shown in the first embodiment (see FIG. **19**), and the description of the individual pieces of information is omitted.

[0273] The mobile communication terminal **20**A has been described.

II.1.3 Electronic Settlement Server

[0274] FIG. **17** is referred to again, and the components of the electronic settlement system **1**A will be continuously described.

[0275] The electronic settlement system **1**A has the electronic settlement server **10**A as a core component. The electronic settlement server **10**A is an apparatus including a central processing unit (CPU), a main memory (RAM), a read only memory (ROM), an I/O device (I/O), and an external storage device such as a hard disk device as required. The electronic settlement server **10**A is, for example, an information processing apparatus such as a computer or a workstation. The ROM or the hard disk device or the like stores a program allowing the information processing apparatus to function as the electronic settlement server **10**A or a program allowing an electronic settlement method to be executed by a computer. The program is placed on the main memory and executed by the CPU to implement the electronic settlement server **10**A or the electronic settlement method. Furthermore, the program need not necessarily be stored in the storage device in the information processing apparatus. The program may be provided by an external apparatus (for example, a server such as an ASP (Application Service Provider)) and placed on the main memory. Moreover, the electronic settlement server **10**A may be composed of a single apparatus or a plurality of apparatuses coupled together via a network. The electronic settlement server **10**A may be configured as a center into which all functions are integrated or as distributed servers obtained by division according to functions so as to enable a distributed process.

[0276] The electronic settlement server **10**A will be described below with reference to FIG. **20**. FIG. **20** is a function block diagram showing an example of the configuration of the electronic settlement server **10**A.

[0277] The electronic settlement server **10**A shown in FIG. **20** has a network communication processing unit **401**A, a payment request processing unit **402**A, a database unit **403**A, a transfer request processing unit **404**A, a clearing processing unit **405**A, provision instructing unit **406**A, a result notifying unit **407**A, a game information update unit **408**A, and an electronic contract processing unit **409**A. Each of these units is a component composed of, for example, a storage device in which a program is stored and a CPU executing the program.

[0278] The network communication processing unit **401**A has the function of communicating with the mobile communication terminal **20**A, the negotiable-value providing apparatus **30**A, and the charge accommodating network **40**A via the communication network **50**. The network communication processing unit **401**A is, for example, a communication board allowing the protocol stack to be carried out. Upon receiving a request message from the mobile communication terminal **20**A, the network communication processing unit **401**A passes the request message to the payment request processing unit **402**A or the transfer request processing unit **404**A. Furthermore, upon receiving a provision instruction message destined for the negotiable-value providing apparatus **30**A from the provision instructing unit **406**A, the network communication processing unit **401**A transmits the provision instruction message to the negotiable-value providing apparatus **30**A. Additionally, upon receiving a transfer request message destined for the charge accommodating network **40**A from the clearing processing unit **405**A, the network communication processing unit **401**A transmits the transfer request message to the charge accommodating network **40**A.

[0279] The payment request processing unit **402**A has the function of processing a payment request message received from the mobile communication terminal **20**A. The payment request processing unit **402**A receives the payment request message from the mobile communication terminal **20**A via the network communication processing unit **401**A. Then, the payment request processing unit **402**A checks the user's retained amount data stored in the database unit **403**A described below. The payment request processing unit **402**A compares the user's retained amount data with the payment request message, and if the user can pay the charge, starts the provision instructing unit **406**A. The started provision instructing unit **406**A generates and transmits a provision instruction message to the negotiable-value providing apparatus **30**A via the network communication processing unit **401**A.

[0280] Furthermore, if the user can pay the charge according to the payment request message, the payment request processing unit **402**A updates (rewrites) user retained amount data **700**A on the user and retained amount data **900**A on the game hall company corresponding to the company providing the negotiable value through the negotiable-value providing apparatus **30**A; both data **700**A and **900**A are stored in the database unit **403**A.

[0281] The database unit **403**A stores the retained amount data **700**A on each of the users registered in the present electronic settlement system **1**A, and the retained amount data **900**A on the game hall company. The database unit **403**A also stores a user table **600**A, the user retained amount data **700**A, a game hall company table **800**A, the game hall company retained amount data **900**A, a negotiable-value providing apparatus table **1000**A, and game history information **1100**A; all the data **600**A to **1100**A are required for transfers from and to the charge accommodating network **40**A.

[0282] FIG. **21** shows an example of the configuration of the user table **600**A stored in the database unit **403**A. The user table **600**A is data storing information about users (players). The user table **600**A is data having one record **601** for each user. Each record **601**A stores a user ID **602**A, a password **603**A, and a mail address **604**A. The record **601**A further stores a bank number **605**A, a branch office number **606**A, an account type **607**A, an account number **608**A, an account holder's name **609**A, and a personal identification information **610**A; all of these pieces of information are required to identify the user's account corresponding to the debit account. The user ID **602**A is information uniquely identifying the user. The password **603**A is information required to prevent a third party from pretending to be the user to unfairly utilize the present electronic settlement system **1**A. The mail address **604**A is used as the destination address to which an electronic mail is transmitted when the processing result notifying unit **407**A notifies the user of the processing result of a payment process. The bank number **605**A, branch office num-

ber **606**A, account type **607**A, account number **608**A, account holder's name **609**A, and personal identification information **610**A are information required to indicate a debit account to the charge accommodating network **40**A.

[0283] The information stored in the user table **600**A is input to the electronic settlement server **10**A when the user is registered in the electronic settlement server **10**A.

[0284] FIG. **22** shows an example of the configuration of the user retained amount data **700**A stored in the database unit **403**A. The user retained amount data **700**A is data having one record **1001**A for each user. Each record **1001**A has a user ID field **1002**A in which the user ID is stored, and a retained amount field **1003**A in which a retained amount corresponding to an amount deposited in the electronic settlement system **1**A by the user is stored. The value stored in the retained amount field **1003**A is rewritten so as to increase by a deposited amount when the user deposits money in the electronic settlement system **1**A and to decrease by a payment amount when the user carries out payment utilizing the negotiable-value providing apparatus **30**A.

[0285] FIG. **23** shows an example of the configuration of the game hall company table **800**A stored in the database unit **403**A. The game hall company table **800**A is data storing information on game hall companies. The game hall company table **800**A is data having one record **801**A for each of the game hall companies having signed up with the electronic settlement system **1**A. Each record **801**A stores a game hall company ID **802**A in which a game hall company ID is stored. The record **801**A further stores a bank number **803**A, a branch office number **804**A, an account type **805**A, an account number **806**A, and an account holder's name **807**A; all of these pieces of information are required to identify the game hall company's account, to which an amount paid to the negotiable-value providing apparatus **30**A is transferred. The game hall company ID **802**A is information uniquely identifying the game hall company. The bank number **803**A, branch office number **804**A, account type **805**A, account number **806**A, and account holder's name **807**A are information required to indicate a destination account to the charge accommodating network **40**A.

[0286] The information stored in the game hall company table **800**A is input to the electronic settlement server **10**A when the game hall company signs up with and is registered in the electronic settlement system **1**A.

[0287] FIG. **24** shows an example of the configuration of the game hall company retained amount data **900**A stored in the database unit **403**A. The game hall company retained amount data **900**A is data having one record **901**A for each of the game hall companies registered in the electronic settlement system **1**A. Each record **901**A has a game hall company ID **902**A, and a retained amount **903**A in which a retained amount corresponding to an amount transferred to game hall company by the electronic settlement system **1**A is stored. The value stored in the retained amount **903**A is rewritten so as to increase by an amount paid by the user for the use of the negotiable-value providing apparatus **30**A and to decrease by an amount transferred to the game hall company account **43** utilizing the charge accommodating network **40**A.

[0288] FIG. **25** shows an example of the configuration of the negotiable-value providing apparatus table **1000**A stored in the database unit **403**A. The negotiable-value providing apparatus table **1000**A is data having one record **1301**A for each negotiable-value providing apparatus **30**A. Each record **1301**A stores an equipment ID **1302**A, an equipment IP address **1303**A, and a game hall company ID **1304**A.

[0289] The equipment ID **1302**A is information uniquely identifying the negotiable-value providing apparatus **30**A. The equipment IP address **1303**A is information utilized, in response to a payment request message received by the electronic settlement server **10**A and containing a certain equipment ID **1302**A, as a destination address required to transmit a provision instruction message to the negotiable-value providing apparatus **30**A having the equipment ID **1302**A. The game hall company ID **1304**A is information identifying the game hall company qualified to receive the user's money paid to the negotiable-value providing apparatus **30**A having the equipment ID **1302**A. The game hall company ID **1304**A is the same as the game hall company ID **802** in the game hall company table **800**A.

[0290] The game history information **1100**A includes the history of games indicating when and where the player played games, on which game machine the player played the games, and how much the player spent in the games. The game history information **1100**A is generated by accumulating and storing game history data generated and transmitted by a history information processing unit **305** of each negotiable-value providing apparatus **30**A. Various pieces of useful information can be obtained by analyzing the game history information **1100**A by well-known marketing analysis or the well-known data mining technique.

[0291] FIG. **20** is referred to again, and the example of configuration of the electronic settlement server **10**A will be continuously described.

[0292] The provision instructing unit **406**A allows a provision instruction message destined for the negotiable-value providing apparatus **30**A to be generated. The provision instructing unit **406**A transmits the provision instruction message to the negotiable-value providing apparatus **30**A via the network communication processing unit **401**A. The address of the negotiable-value providing apparatus **30**A, corresponding to the destination of the provision instruction message, is acquired with reference to the above-described negotiable-value providing apparatus table **1000**A.

[0293] Furthermore, the result notifying unit **407**A has the function of notifying the user whether or not a payment request message has been properly processed. By way of example, the result notifying unit **407**A generates an electronic mail destined for the mobile communication terminal **20**A and transmits the electronic mail. Alternatively, the result notifying unit **407**A may describe information indicating the processing result on a web page that can be browsed via the mobile communication terminal **20**A and wait for browsing via the mobile communication terminal **20**A. The contents of the notification from the result notifying unit **407**A are, for example, the message "Settlement request has been processed. Thank you for allowing us to serve you" or "Short balance. Settlement has failed."

[0294] Now, the transfer request processing unit **404**A will be described. The transfer request processing unit **404**A has the function of processing a transfer request message received from the mobile communication terminal **20**A. The transfer request processing unit **404**A receives the transfer request message from the mobile communication terminal **20**A via the network communication processing unit **401**A. The contents of the transfer request message correspond to a request that a specified amount be withdrawn from the user account **41** so that the electronic settlement system **1**A can use the

specified amount. Upon receiving the transfer request message, the transfer request processing unit **404**A checks the user table **600**A stored in the database unit **403**A. The transfer request processing unit **404**A acquires, from the user table **600**A, the bank number **605**A, branch office number **606**A, account type **607**A, account number **608**A, account holder's name **609**A, and personal identification information **610**A, which are the information identifying the user's account, corresponding to the source account. The transfer request processing unit **404**A transmits these pieces of information as well as information identifying the settlement company account **43**, corresponding to the destination account, to the charge accommodating network **40**A via the network communication processing unit **401**A as a transfer request message. Upon receiving the transfer request message, the charge accommodating network **40**A transfers a specified amount of money from the user account **41** to the settlement company account **42**. The transferred money (except for the charge) can be used by the user utilizing the present electronic settlement system **1**A.

[0295] Now, the clearing processing unit **405**A will be described. The clearing processing unit **405**A request the charge accommodating network **40**A to transfer an amount indicated by the game hall company retained amount data **900**A, from the settlement company account **42** to the game hall company account **43** of each game hall company. The amount of money transferred corresponds to the amount of the user's money kept by the electronic settlement system **1**A and which is to be paid to the game hall company, that is, the game hall company retained amount **903**A in the game hall company retained amount data **900**A. In the present embodiment, the clearing processing unit **405**A executes autonomous processing. For example, the clearing processing unit **405**A is automatically started at a predetermined timing (for example, at the end of every month or week). The started clearing processing unit **405**A checks all the game hall company retained amount data **900**A stored in the database unit **403**A. The clearing processing unit **405**A then transmits, to the charge accommodating network **40**A, a transfer request requesting the charge accommodating network **40**A to carry out a transfer of money not yet transferred from the settlement company account **42** to the corresponding game hall company account **43**.

[0296] The game information update unit **408**A has the function of accumulating and storing, from moment to moment, game history data received from the history information processing unit **305** of the negotiable-value providing apparatus **30**A, to update the game history information **1100**A.

[0297] The electronic contract processing unit **409**A cooperates with the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206** in allowing the user and the operator, administrator, or the like of the electronic settlement system **1**A (hereinafter referred to as the settlement company) to electronically sign a contract specifying that the settlement company withdraws the specified amount from the user account, before the use of the electronic settlement system **1**A can be started.

[0298] Furthermore, the electronic contract processing unit **409**A has the function of transmitting data from a computerized contract document original certifying the contract signed between the user and the settlement company, to the financial institution having the user account.

[0299] Specifically, the electronic contract processing unit **409**A has the function of allowing a computerized contract document **713** to be downloaded into the mobile communication terminal **20**A, the function of receiving a computerized contract document **711** with an electronic signature and a user-side electronic certificate **711** both transmitted by the mobile communication terminal **20**A, the function of verifying the received electronic signature and user-side electronic certificate **711**, and if the electronic signature and the user-side electronic certificate **711** are determined to be valid, transmitting the computerized contract document **713** with the user's electronic signature and the settlement company's electronic signature and a settlement company-side electronic certificate **712** to the mobile communication terminal **20**A, the function of receiving a computerized contract document original **714** transmitted by the mobile communication terminal **20**A for storage, and the function of transmitting the computerized contract document original **714** to an apparatus specified by the financial institution (for example, the charge accommodating network **40**A or a network terminal apparatus (for example, a PC) specified by the financial institution).

[0300] The electronic contract processing unit **409**A is configured similarly to the electronic contract processing unit **408** of the electronic settlement server **10** according to the first embodiment (see FIG. **8**). Thus, the detailed description of the individual arrangements is omitted.

II.1.3.1. Distributed Server Configuration of the Electronic Settlement Server

[0301] In the example shown in FIG. **20**, the electronic settlement server **10**A is implemented by one server apparatus. However, of course, the electronic settlement server **10**A is not limited to the configuration of such a server apparatus.

[0302] FIG. **26** is a function block diagram showing an example of configuration in which the electronic settlement server **10**A has a distributed server configuration. The same components of the electronic settlement server **10**A as those shown in FIG. **20** are denoted by the same reference numerals, and will thus not be described in detail.

[0303] The electronic settlement server **10**A of the distributed server configuration serves to reduce the possibility that information on the user or the game hall company leaks or is stolen. The electronic settlement server **10**A configured as distributed servers also enables the reliability of security of the present electronic settlement system **1**A to be improved.

[0304] The electronic settlement server **10**A of the distributed server configuration is composed of an application server **501** and a plurality of database servers **502**A to **502**D. The application server **501** has the network communication processing unit **401**A, the payment request processing unit **402**A, the transfer request processing unit **404**A, the clearing processing unit **405**A, the provision instructing unit **406**A, the result notifying unit **407**A, the game information update unit **408**A, and the electronic contract processing unit **409**A.

[0305] It is possible to optionally specify how to divide the database unit **403**A, how many database servers **502** are provided, and how to assign stored contents (tables and data) to the respective database servers. Thus, the present invention is not limited to the configuration shown in FIG. **26**.

II.1.4. Others

[0306] FIG. **17** is referred to again, and the description of the components of the electronic settlement system **1**A

according to the present embodiment will be resumed. The communication network **50**, the base station **60**, the mobile communication network **70**, the gateway **80**, the authentication server **90**, and the time stamp server **95** are similar to those in the first embodiment. The detailed description of these components is omitted.

II.1.5. Charge Accommodating Network

[0307] The charge accommodating network **40**A is a system having the function of transferring the specified amount from the user account **41** to the settlement company account **42** and from the settlement company account **42** to the game hall company account **43** according to a transfer request from the electronic settlement server **10**A. In the example shown in FIG. **17**, the electronic settlement server **10**A is connected to the charge accommodating network **40**A via the communication network **50**. However, the present embodiment can be implemented even when the electronic settlement server **10**A and the charge accommodating network **40**A are connected together via a leased circuit (not shown in the drawings) without passing through the communication network **50**.

[0308] Furthermore, the charge accommodating network **40**A may have the function of receiving and storing the computerized contract document original **714** transmitted, by the electronic settlement server **10**A, to the financial institution having the user's account. Based on the computerized contract document original **714**, the financial institution can determine that the both the user and the settlement company agree that the settlement company withdraws the specified amount from the user's account. It is assumed that after the reception of the computerized contract document original **714**, the settlement company receives a request message requesting that the settlement company withdraw the specified amount from the user's account. Then, the computerized contract document original **714** serves as a legal ground for the transfer, by the charge accommodating network **40**A, of the specified amount from the user's account in response to the request message even without any special instruction from the user.

II.2. Example of Operation of the Electronic Settlement System

[0309] Now, the operation of the electronic settlement system **1**A will be described with reference to FIGS. **27**, **28**, **29**, **30**, **34**, and **36**. FIGS. **27**, **28**, **29**, and **30** are sequence diagrams showing an example of an operation performed by the electronic settlement system **1**A during user registration. FIGS. **34** and **36** show an example of an operation performed when the user acquires a negotiable value through the present electronic settlement system **1**A after the user registration.

[0310] First, the operation performed by the electronic settlement system **1**A until the user is registered will be described with reference to FIGS. **27**, **28**, **29**, and **30**.

[0311] First, the unregistered user uses the mobile communication terminal **20**A to connect to the electronic settlement server **10**. The user then requests, from the electronic settlement server **10**A, software for the mobile communication terminal **20**A (an application such as an i appli) which is required to receive services from the electronic settlement system **1**A (FIG. **27**; S**1101**). In response to the request, the electronic settlement server **10**A allows the data of the i appli and the computerized contract document **713** to be downloaded into the mobile communication terminal **20**A (S**1102**). Upon receiving the i appli and the computerized contract document **713**, the mobile communication terminal **20**A allows the data of the i appli and the like to be stored in a storage device such as a memory, while allowing the computerized contract document **713** to be stored in a storage unit **703** (S**1103**). The i appli is executed by the CPU in the mobile communication terminal **20**A or the like to function as the above-described payment request generating unit **202**, transfer request generating unit **208**, electronic contract applying unit **206**, or the like.

[0312] In the above-described embodiment, the electronic settlement server **10**A is also used as a server for downloading of the application such as the i appli and a server for downloading of the computerized contract document **713**. However, of course, the server for downloading of the application such as the i appli and/or the server for downloading of the computerized contract document **713** may be an apparatus or a system that is separate from the electronic settlement server **10**A.

[0313] The downloaded i appli is started by the user's predetermined operation via the mobile communication terminal **20**A (S**1104**). Upon being started for the first time after downloading, the electronic contract applying unit **206**, that is, the i appli, allows the output unit **205** to display the computerized contract document **713** (S**1104**). The electronic contract applying unit **206** thus urges the user to check the contents of the computerized contract document **713**.

[0314] Then, the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, accepts an input indicating whether or not the user is to sign the electronic contract (S**105**). For example, the liquid crystal display, that is, the output unit **205**, displays the message "Contents of contract are displayed. Will you sign contract? YES/NO" or the like to urge the user to input an answer. If the user opts to sign the contract according to the contents of the computerized contract document **713**, the electronic contact applying unit **206**, more specifically an encryption processing unit **702**, uses an encryption key **715** to generate an electronic signature (S**1106**). In the present embodiment, the electronic signature corresponds to a hash value for the computerized contract document **713** in which the user's address, name, and the like are filled, the hash value being encrypted using the encryption key **715** according to an RSA encryption scheme. However, the present invention is not limited to this aspect. For example, information may be used which allows the user to be uniquely identified and which is obtained by encrypting data that cannot be easily known by the third party. However, in this case, the electronic certificate **711** is not utilized.

[0315] Then, the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, transmits the computerized contract document **713** (in which the user's address and name are additionally filled), the electronic signature generated in S**1106**, and the user-side electronic certificate **711** to the electronic settlement server **10**A (S**1107**).

[0316] Upon receiving the computerized contract document **713** and others transmitted in the above-described **51107**, the electronic settlement server **10**A, more specifically the electronic contract processing unit **409**A, inquires of the authentication server **90**, that is, an institution issuing the user-side electronic certificate **711**, about the validity of the user-side electronic certificate **711** (S**108**). The authentication server **90** references a CRL (Certified Revocation List) to determine the validity of the user-side electronic certificate

711. The authentication server **90** then transmits the result of the determination to the electronic settlement server **10**A (S**1109**).

[0317] The description will be continued with reference to FIG. **28**.

[0318] If the result of the determination indicates that the user-side electronic certificate **711** is valid, the electronic settlement server **10**A, more specifically the electronic contract processing unit **409**A, executes a process of verifying the user-side electronic certificate **711** (S**1110**). That is, the electronic settlement server **10**A uses the public key of a certification authority (CA) to decrypt the electronic signature on the user-side electronic certificate **711** to determine whether the electronic signature has been written by the certification authority (CA). The electronic settlement server **10**A further determines whether or not the user-side electronic certificate **711** has been altered. If the verifications in S**1109** to S**1111** are all successful, the user-side electronic certificate **711** is determined to be credible, that is, the encryption key (for example, the public key according to the public encryption key scheme) described in the user-side electronic certificate **711** is determined to belong to the user.

[0319] If the verification of the user-side electronic certificate **711** is successful, the electronic settlement server **10**A, more specifically the electronic contract processing unit **409**A, verifies the electronic signature attached to the computerized contract document **713** (S**1111**). That is, the electronic settlement server **10**A uses the encryption key described in the user-side electronic certificate **711** to decrypt the electronic signature attached to the computerized contract document **713**. The electronic settlement server **10**A thus verifies the electronic signature and determines the validity of the computerized contract document **713** (that the computerized contract document **713** has not been altered).

[0320] If the verification of the electronic signature in S**1111** is successful, the electronic settlement server **10**A, more specifically the electronic contract processing unit **409**A, determines that the computerized contract document **711** has been validly signed by the user. The electronic settlement server **10**A, more specifically the electronic contract processing unit **409**A, further attaches the settlement company's electronic signature to the computerized contract document **713** (to which the user's electronic signature is already attached) received from the mobile communication terminal **20**A. The electronic settlement server **10**A also attaches the settlement company-side electronic certificate **712** to the computerized contract document **713**. The electronic settlement server **10**A then transmits the computerized contract document **713**, the settlement company's electronic signature, and the settlement company-side electronic certificate **712** to the mobile communication terminal **20**A (S**1112**).

[0321] Upon receiving the computerized contract document **713** and others transmitted in step S**1112**, the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, inquires of the authentication server **90**, that is, an institution issuing the settlement company-side electronic certificate **712**, about the validity of the settlement company-side electronic certificate **712** (S**1113**). The authentication server **90** references the CRL (Certified Revocation List) to determine the validity of the settlement company-side electronic certificate **712**. The authentication server **90** then transmits the result of the determination to the electronic settlement server **10**A (S**1114**).

[0322] If the result of the determination indicates that the settlement company-side electronic certificate **712** is valid, the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, executes a process of verifying the settlement company-side electronic certificate **712** (S**1115**). That is, the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, uses the public key of the certification authority (CA) to decrypt the electronic signature on the settlement company-side electronic certificate **712** to determine whether the electronic signature has been written by the certification authority (CA). The mobile communication terminal **20**A further determines whether or not the settlement company-side electronic certificate **712** has been altered. If the verifications in S**1113** to S**1115** are all successful, the settlement company-side electronic certificate **712** is determined to be credible, that is, the encryption key (for example, the public key according to the public encryption key scheme) described in the settlement company-side electronic certificate **712** is determined to belong to the settlement company.

[0323] If the verification of the settlement company-side electronic certificate **712** is successful, the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, verifies the settlement company's electronic signature attached to the computerized contract document **713** (S**1116**). That is, the mobile communication terminal **20**A uses the encryption key described in the settlement company-side electronic certificate **712** to decrypt the settlement company's electronic signature attached to the computerized contract document **713**. The mobile communication terminal **20** thus verifies the settlement company's electronic signature and determines the validity of the computerized contract document **713** (that the computerized contract document **713** has not been altered).

[0324] If the verification of the settlement company's electronic signature in S**1116** is successful, the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, determines that the computerized contract document **713** has been validly signed by the settlement company.

[0325] Then, the mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, transmits the computerized contract document **713** (or a hash value therefore) with the user's electronic signature and the settlement company's electronic signature, to the time stamp server **95**. The mobile communication terminal **20** thus requests the time stamp server **92** to issue a time stamp (S**1117**). Upon receiving the time stamp request, the time stamp server **95** applies a date and time to the hash value for the computerized contract document **713** with the user's electronic signature and the settlement company's electronic signature to generate a digitally signed time stamp token. The time stamp server **95** then transmits the time stamp token to the mobile communication terminal **20**A (S**1118**).

[0326] The mobile communication terminal **20**A, more specifically the electronic contract applying unit **206**, acquires the time stamp token (S**1119**). Then, the mobile communication terminal **20**A adds the time stamp token to the computerized contract document **713** with the user's electronic signature and the settlement company's electronic signature to obtain a computerized contract document storage original **714**. The mobile communication terminal **20**A stores the computerized contract document storage original **714** in the storage unit **703**, and also transmits the computerized

contract document storage original **714** to the electronic settlement server **10**A (S**1120**).

[0327] Upon receiving the computerized contract document storage original **714**, the electronic settlement server **10**A, more specifically the electronic contract processing unit **409**A, stores the computerized contract document storage original **714** in a storage unit **803** (S**1121**).

[0328] Thus, a contract for withdrawal substitution is signed between the user and the settlement company. Under the condition that the computerized contract document storage original **714** is stored in the electronic settlement server **10**A, the electronic settlement server **10** accepts the user registration. That is, if the computerized contract document storage original **714** is not stored in the electronic settlement server **10**A, the user is not registered and cannot start utilizing the electronic settlement system **1**A. In other words, storing the computerized contract document storage original **714** in the electronic settlement server **10**A is essential for the user registration.

[0329] Now, the operation of the electronic settlement system **1**A after step S**1121** will be described with reference to FIG. **29**. In the sequence diagrams following FIG. **29**, the illustration of the authentication server **90** and the time stamp server **95** is omitted.

[0330] Using the completion of step S**1121** as a trigger, the electronic settlement server **10**A transmits a user registration start message to the mobile communication terminal **20**A (S**1122**).

[0331] Upon receiving the user registration start message, the mobile communication terminal **20**A starts the i appli (S**1123**). When started for the first time after downloading, the i appli allows the output unit **205** to display an initial input screen via which the user inputs initial information, thus urging the user to input the initial information (S**1124**). Here, the requested initial information includes the user ID **602**A, password **603**A, mail address **604**A, bank number **605**A, branch office number **606**A, account type **607**A, account number **608**A, account holder's name **609**A, and personal identification number **610**A (see FIG. **21**). The user ID **602**A and the password **603**A may be preset by the electronic settlement server **10**A without the need for the user's input.

[0332] The user completes inputting the initial information using the input unit **204** of the mobile communication terminal **20**A. Then, the mobile communication terminal **20**A connects to the electronic settlement server **10**A via the communication network **50** and transmits the input initial information and the like to the electronic settlement server **10**A (S**1125**).

[0333] Upon receiving the initial information, the electronic settlement server **20** transmits, to the charge accommodating network **40**A, an account check request message inquiring of the charge accommodating network **40**A whether or not the initial information is correct and whether or not the input user account is available (S**1126**). Upon receiving the account check request message, the charge accommodating network **40**A searches an account database or the like for the presence and validity of the user account indicated to be a check target in the account check request message. The charge accommodating network **40**A then transmits the result of the determination to the electronic settlement server **10**A as an account check result message (S**1127**). If the account check result message indicates that the input account information is incorrect or the account is unavailable, the electronic settlement server **10**A having received the account check result message transmits a message urging the initial information to be input again, to the mobile communication terminal **20**A (not shown in FIG. **29**). On the other hand, if the account check result message indicates that the input account information is correct and that the input account is available, the electronic settlement server **10**A having received the account check result message registers the user based on the input initial information (S**1128**). That is, the electronic settlement server **20** adds new records **601**A and **1001**A to the user table **600**A and the user retained amount data **700**A, respectively, both of which are located in the database unit **403**A. The electronic settlement server **20** thus writes the user ID **602**A, password **603**A, mail address **604**A, bank number **605**A, branch office number **606**A, account type **607**A, account number **608**A, account holder's name **609**A, personal identification number **610**A, user ID **1002**A, retained amount **1003**A, and the like into the records **601**A and **1001**A.

[0334] Once the above-described user registration (S**1128**) is completed, the electronic settlement server **10**A transmits the computerized contract document original **714** to the charge accommodating network **40**A (S**1129**). The charge accommodating network **40**A receives and stores the computerized contract document original **714** (S**1130**). In the present example, the charge accommodating network **40**A receives the computerized contract document original **714**. However, any apparatus can receive the computerized contract document original **714** provided that the apparatus enables the financial institution having the user account to confirm the signing of the contract based on the computerized contract document original **714**.

[0335] Furthermore, in the above-described example, the transmission of the computerized contract document original **714** to the charge accommodating network **40**A follows the user registration (S**1128**). However, the present invention can be implemented regardless of the timing when the computerized contract document original **714** is transmitted to the charge accommodating network **40**A, provided that the transmission follows the generation of the computerized contract document original **714** (the transmission follows S**1119**).

[0336] After the user registration (S**1128**) is completed, the user can utilize the electronic settlement system **1**A. An example of the operation of the electronic settlement system **1**A following the user registration will be described below with reference to FIG. **30**.

[0337] Simply finishing the above-described user registration does not allow the user to utilize the electronic settlement system **1**A to make a purchase (receive a negotiable value) via the negotiable-value providing apparatus **30**A. The user needs to use the mobile communication terminal **20**A to request the electronic settlement system **1**A, more specifically the electronic settlement server **10**A, to transfer an appropriate amount of the deposit in the user account **41** to the settlement company account **42**. The amount consumed by the user as a result of the provision of the negotiable value by the negotiable-value providing apparatus **30**A is subtracted from the deposit. The amount resulting from the subtraction is equal to that paid to the negotiable-value providing apparatus **30**A, and is transferred later to the game hall company's account, corresponding to the recipient of the payment, as a result of processing by the charge accommodating network **40**A. Now, with reference to FIG. **30**, description will be given of an example of an operation performed by the electronic settlement system **1**A when the user requests the elec-

tronic settlement server **10**A to carry out a transfer from the user account **41**, that is, the user's own account, to the settlement company account **42**. FIG. **30** is a sequence diagram showing an example of an operation performed by the electronic settlement system **1**A when the user requests a transfer from the user account **41** to the settlement company account **42**.

[0338] First, the user uses the mobile communication terminal **20**A to start the i appli, more specifically the transfer request generating unit **208** (S**1201**). The started i appli, more specifically the transfer request generating unit **208**, allows the output unit **205** of the mobile communication terminal **20**A to display an input interface screen or the like. The i appli thus urges the user to input information required for a transfer request message, for example, the transfer amount and the personal account identification number.

[0339] Upon receiving the input (S**1202**), the mobile communication terminal **20**A, more specifically the transfer request generating unit **208**, generates and transmits a transfer request message to the electronic settlement server **10**A via the communication network **50** and the like (S**1203**). The transfer request message stores the user ID **206**, the password **207**, the personal account identification number **211**, the input transfer amount, and the like.

[0340] Upon receiving the transfer request message, the electronic settlement server **10**A, more specifically the transfer request processing unit **404**A, searches the user table **600**A using the user ID **206** contained in the transfer request message as a key. The electronic settlement server **10**A thus acquires the bank number **605**A, branch office number **606**A, account type **607**A, account number **608**A, and account holder's name **609**A, which are the information specifying the user account **41**, from the record **601**A matching the user ID **206**. Moreover, the electronic settlement server **10**A reads another stored information (not shown in the drawings) identifying the settlement company account, that is, the bank number, branch office number, account type, and account number of the settlement company account. Then, based on these pieces of information, the electronic settlement server **10**A generates and transmits a transfer request to the charge accommodating network **40**A (S**1204**). A data configuration, a communication procedure, and the like for the transmission of the transfer request may comply with a scheme adopted for the charge accommodating network **40**A.

[0341] Upon receiving the transfer request, the charge accommodating network **40**A executes a transfer process according to the contents of the transfer request so as to transfer a specified amount (hereinafter referred to as a "user transfer amount") from the user account **41** to the settlement company account **42** (S**1205**). If the transfer process (S**1205**) is executed normally, the charge accommodating network **40**A transmits a transfer result notification to the electronic settlement server **10**A to notify the electronic settlement server **10**A that the transfer process has been executed normally (S**1206**). If the transfer process fails to be properly executed because of insufficient balance in the user account **41** or the like, the charge accommodating network **40**A transmits a transfer result notification indicating the failure in the transfer to the electronic settlement server **10**A.

[0342] Upon receiving the transfer result notification indicating the transfer process has been executed normally, the electronic settlement server **10**A executes a retained amount data process of reflecting the user transfer amount in the corresponding record **1001**A in the user retained amount data **700**A (S**1207**). The retained amount data process allows the user to use the amount corresponding to the user transfer amount, via the electronic settlement system **1**A.

[0343] FIGS. **31** and **32** are diagrams illustrating an example of an operation performed between the electronic settlement server **10**A and the charge accommodating network **40**A to process the user transfer amount.

[0344] FIG. **31** shows an example of a state observed before the user transmits a transfer request message to the electronic settlement server **10**A (FIG. **30**, S**1203**). In the example, the charge accommodating network **40**A has the user account **41**, the settlement company account **42**, and the game hall company account **43**.

[0345] By way of example, it is assumed that the balance of the user account **41** is 100,000 yen and that the balance of both the settlement company account **42** and the game hall company account **43** is 0 yen. In actuality, a plurality of users and a plurality of game hall companies have accounts in the charge accommodating network **40**A. However, FIGS. **31** and **32** show one user account **41** and one game hall company account **43** as typical examples.

[0346] As described above, the electronic settlement server **10**A stores the user retained amount data **700**A and the game hall company retained amount data **900**A. The user retained amount data **700**A has the record **1001**A for each user. The game hall company retained amount data **900**A has the record **901**A for each game hall company. In the figures, the record **1001**A is data corresponding to the user having the user account **41**. The record **901**A is data corresponding to the game hall company having the game hall company account **43**. The retained amounts stored in the records **1001**A and **901**A are both assumed to be currently 0 yen.

[0347] Here, it is assumed that the user desires to use 10,000 yen from the user account **41** via the electronic settlement system **1**A. FIG. **32** shows a state observed after the user has transmitted a transfer request message for a transfer of a user transfer amount of 10,000 yen, from the mobile communication terminal **20**A to the electronic settlement server **10**A; the transmission follows the state shown in FIG. **31**. In response to the transfer request message, the electronic settlement server **10**A transmits the following transfer request to the charge accommodating network **40**A. The transfer request is transmitted to the charge accommodating network **40**A, requesting that the user transfer amount of 10,000 yen and the charge to be paid to the settlement company (for example, 100 yen) be transferred from the user account **41** to the settlement company account **42**.

[0348] Upon receiving the transfer request, the charge accommodating network **40**A executes a process of transferring 10,000 yen from the user account **41** to the settlement company account **42**. As a result, as shown in FIG. **32**, the balance of the user account **41** is 100,000 yen−10,100 yen=89,900 yen. The balance of the settlement company account **42** is 0 yen+10,100 yen=10,100 yen. The charge accommodating network **40**A changes the balances of the accounts **41** and **42** as described above according to the transfer request.

[0349] FIG. **33** shows a state observed after the electronic settlement server **10**A has executed a retained amount data process (FIG. **30**, S**1207**); the execution follows the state shown in FIG. **32**. As shown in FIG. **32** described above, after executing the transfer process, the charge accommodating network **40**A transmits a transfer result notification indicating that 10,100 yen has been transferred normally, to the elec-

tronic settlement server **10**A (FIG. **30**, S**1206**). In response to the transfer result notification, the electronic settlement server **10**A, more specifically the transfer request processing unit **404**A, adds the transferred amount to the value of the user retained amount **1003**A stored in the record **1001**A corresponding to the user account **41** subjected to the transfer. However, 100 yen, corresponding to the charge, is not added. As a result of the retained amount data process (S**1207**) based on the addition, 0 yen+10,000 yen=10,000 yen is recorded in the record **1001**A. The 10,000 yen is the amount that the user can use via the electronic settlement system **1**A.

[0350] Now, with reference to FIG. **34**, description will be given of an example of an operation performed by the electronic settlement system **1**A when the user attempts to obtain a negotiable value from the negotiable-value providing apparatus **30**A. FIG. **34** is a sequence diagram showing an example of an operation performed by the electronic settlement system **1**A when the user allows the mobile communication terminal **20**A and the negotiable-value providing apparatus **30**A to communicate via the short-distance communication means **201303**A in order to obtain a negotiable value from the negotiable-value providing apparatus **30**A.

[0351] It is assumed that the user first attempts to obtain a negotiable value from the negotiable-value providing apparatus **30**A utilizing the present electronic settlement system **1**A.

[0352] In this case, the user allows the mobile communication terminal **20**A and the negotiable-value providing apparatus **30**A to carry out short-distance communication so that the mobile communication terminal **20**A can acquire the equipment ID and the like of the negotiable-value providing apparatus **30**A. For example, it is assumed that the terminal-side short-distance communication unit **201** is an IC chip for non-contact IC cards and that the providing apparatus-side short-distance communication unit **303** is a reader/writer. Then, upon sensing that the chip for non-contact IC cards is nearby, the reader/writer, serving as the providing apparatus-side short-distance communication unit **303**, transmits the equipment ID, an application number specifying an application such as the i appli, and a user payment amount, which are all stored in the reader/writer, to the chip for non-contact IC cards, serving as the terminal-side short-distance communication unit **201** (S**1301**). Here, the equipment ID is identification information allowing the negotiable-value providing apparatus **30**A to be uniquely identified. The application number is identification information uniquely identifying the application such as the i appli which operates in the mobile communication terminal **20**A. The user payment amount is information indicative of the value of consideration for the negotiable value provided to the user by the negotiable-value providing apparatus **30**A. When the purchase of a negotiable value is requested via the mobile communication terminal **20**A, the negotiable-value providing apparatus **30**A considers the request to be a purchase request for a negotiable value for a pre-specified payment amount. For example, if the negotiable-value providing apparatus **30**A is a ball renting machine, the user moves the mobile communication terminal **30** closer to the ball renting machine, corresponding to the negotiable-value providing apparatus **30**A, to allow the negotiable-value providing apparatus **30**A to read data from the chip for non-contact IC cards. Then, the negotiable-value providing apparatus **30**A considers the request to be a purchase request for rental balls for a payment amount (for example, 1,000 yen) specified for the negotiable-value providing apparatus **30**A. The user payment amount may vary with the negotiable-value providing apparatus **30**A. For example, the payment amount may be set to 1,000 yen for a ball renting machine A installed in the game hall and to 5,000 yen for another ball renting machine B installed in the same game hall. Alternatively, the user payment amount may be selectively determined by the user. For example, if the negotiable-value providing apparatus **30**A is a prepaid card issuing apparatus, the prepaid card issuing apparatus can issue prepaid cards for a plurality of different amounts (for example, 1,000 yen, 3,000 yen, 5,000 yen, and 10,000 yen), and has a plurality of amount determination buttons used to specify the respective amounts. The user depresses the amount determination button for the desired amount to buy the prepaid card for the desired amount. In this case, the amount selected by the user via the amount determination button may be considered by the electronic settlement system **1**A to be the user payment amount.

[0353] The above-described user payment amount need not necessarily be transmitted from the negotiable-value providing apparatus **30**A to the mobile communication terminal **20**A in step S**1301**. The payment amount may be determined by the electronic settlement server **10**A based on the equipment ID using a prepared table.

[0354] Upon receiving the equipment ID, the application number, and the user payment amount, the terminal-side short-distance communication unit **201** starts the application such as the i appli which corresponds to the application number, that is, the payment request generating unit **202** (S**1302**). At this time, the equipment ID and the user payment amount are passed from the terminal-side short-distance communication unit **201** to the payment request generating unit **202**.

[0355] The started payment request generating unit **202** generates a payment request message containing the equipment ID and user payment amount received from the negotiable-value providing apparatus **30**A and the user ID **206** and password **207** stored in the user information storage unit **207**. The payment request generating unit **202** then transmits the payment request message to the electronic settlement server **10**A (S**1303**).

[0356] Upon receiving the payment request message, the electronic settlement server **10**A, more specifically the payment request processing unit **402**A first searches for the user retained amount data **700**A using the user ID **206** as a search key. The electronic settlement server **10**A thus acquires the retained amount **1003**A from the record **1001**A corresponding to the user ID **206**. The payment request processing unit **402**A compares the user payment amount with the retained amount **1003**A to determine whether or not the user payment amount can be withdrawn from the retained amount **1003**A (S**1304**).

[0357] In step S**1304**, upon determining that the user payment amount cannot be withdrawn, the payment request processing unit **402**A starts the result notifying unit **407**A. The result notifying unit **407**A generates and transmits a processing result notification based on the determination to the negotiable-value providing apparatus **30**A and/or the mobile communication terminal **20**A. Upon receiving the processing result notification, the mobile communication terminal **20**A displays the contents of the processing result notification on the output unit **205** thereof. The contents of the processing result notification are, for example, "Settlement request has

been processed. Thank you for allowing us to serve you" or "Short balance. Settlement has failed."

[0358] On the other hand, upon determining in step S**1304** that the user payment amount can be withdrawn, the payment request processing unit **402**A starts the provision instructing unit **406**A. The started provision instructing unit **406**A transmits a provision instruction message to the negotiable-value providing apparatus **30**A (S**1305**). The negotiable-value providing apparatus **30**A provides the user with a negotiable value corresponding to the user payment amount (S**1306**). The destination address of the provision instruction message is determined based on the equipment IP address **1303**A in the corresponding record **1301**A obtained by searching the negotiable-value providing apparatus table **1000**A using the equipment ID as a key.

[0359] Furthermore, upon determining in step S**1304** that the user payment amount can be withdrawn, the payment request processing unit **402**A rewrites the user retained amount data **700**A, more specifically the retained amount **1003**A in the record **1001**A with the corresponding user ID, and the game hall company retained amount data **900**A, more specifically the retained amount **903**A in the record **901**A with the corresponding game hall company ID, so as to allow the user payment amount to be transferred.

[0360] Furthermore, upon determining in step S**1304** that the user payment amount can be withdrawn, the electronic settlement server **10**A, more specifically the payment request processing unit **402**A, starts the result notifying unit **407**A. The started result notifying unit **407**A transmits an execution completion message notifying the mobile communication terminal **20**A that the specified payment amount has been paid (S**1308**). The execution completion message indicates that a payment procedure corresponding to the user's specified payment amount has ended. The destination address of the execution completion message is determined based on the mail address **604**A in the corresponding record **601**A obtained by searching the user table **600**A using the user ID as a key.

[0361] Upon receiving the execution completion message, the mobile communication terminal **20**A allows the output unit **205** to provide a result display showing the contents of the execution completion message (S**1309**). For example, as the result display, the output unit **205** of the mobile communication terminal **20**A shows the message "1,000 yen has been paid from XX's retained amount". Alternatively, during the result display, the value of the retained amount **1003**A resulting from the withdrawal of the payment amount, that is, the balance in the electronic settlement server **10**A, may be displayed. However, the retained amount **1003** is not stored in the mobile communication terminal **20**A. The electronic settlement server **10**A stores the retained amount **1003**A.

[0362] FIG. **35** is a diagram showing the storage state of the electronic settlement server **10**A and the charge accommodating network **40**A resulting from the processing from step S**1301** to step S**1307** following the state shown in FIG. **33**. In the state shown in FIG. **33** and in which the user payment amount has not been transferred yet, the retained amount **1003**A in the corresponding record **1001**A in the user retained amount data **700**A is 10,000 yen. The retained amount **903**A in the corresponding record **901**A in the game hall company retained amount data **900**A is 0 yen.

[0363] FIG. **35** shows a state observed after the transfer process (S**1307**) has been executed if the user payment amount is 1,000 yen. In the transfer process (S**1307**), the payment request processing unit **402** of the electronic settlement server **10**A subtracts the user payment amount of 1,000 yen from 10,000 yen, that is, the value of the retained amount **1003**A, corresponding to the user's retained amount, to rewrite the value of the retained amount **1003** to 9,000 yen. Furthermore, the payment request processing unit **402** adds the user payment amount of 1,000 yen to 0 yen, that is, the value of the retained amount **903**A, corresponding to the game hall company's retained amount, to rewrite the value of the retained amount **903**A to 1,000 yen.

[0364] The rewriting of the retained amounts **1003**A and **903**A based on the transfer process (S**1307**) allows the electronic settlement server **10**A to pay consideration for the provision of a negotiable value by the negotiable-value providing apparatus **30**A, that is, allows the user to pay to the game hall company.

[0365] The processing from step S**1301** to step S**1309** described above is executed every time each user buys a negotiable value utilizing the negotiable-value providing apparatus **30**A. Each user payment amount is added and recorded as the retained amount of the corresponding game hall company. That is, every time the user buys a negotiable value utilizing the negotiable-value providing apparatus **30**A, the value of the retained amount **903**A of the game hall company owning or operating the negotiable-value providing apparatus **30**A increases.

[0366] The game hall company's retained amount **903**A needs to be transferred to the game hall company account **43** on the charge accommodating network **40**A. The transfer to the game hall company account **43** in the electronic settlement system **1**A will be described below with reference to FIG. **36**. FIG. **36** is a sequence diagram showing an example of the process of a transfer to the game hall company account **43** in the electronic settlement system **1**A.

[0367] The electronic settlement server **10**A, more specifically the clearing processing unit **405**A, is automatically started at a predetermined timing to execute a transfer request generating process (S**1401**). The resulting transfer request is a message requesting the charge accommodating network **40**A to transfer the amount corresponding to the retained amount **903**A from the settlement company account **42** to the game hall company account **43**. The details of the message are set so as to meet the specifications of the charge accommodating network **40**A.

[0368] In the transfer request generating process (S**1401**), one transfer request is generated for each record **901**A in the game hall company retained amount table **900**A. The transfer request stores information identifying the game hall company account **43**, corresponding to a destination account, that is, the bank number **803**A, branch office number **804**A, account type **805**A, account number **806**A, and account holder's name **807**A. The transfer request also stores the bank number, branch office number, account type, account number, and account holder's name of the settlement company account **42**, as information identifying the settlement company account **42**, corresponding to a source account. The transfer request further stores the value of an amount based on the retained amount **903**A as a transfer amount. The amount based on the retained amount **903**A need not necessarily be the same as the retained amount but is, for example, the retained amount minus the charge for the settlement company.

[0369] The clearing processing unit **405**A may be automatically started at any predetermined timing provided that the CPU can determine the timing. For example, the timing

may be based on a temporal condition (the thirtieth day of every month, the fourth Monday of every month, the fifth, tenth, fifteenth, twentieth, twenty-fifth, and thirtieth of every month, or the like) or on the amount condition; the clearing processing unit **405**A may be started when the retained amount reaches a predetermined value. The clearing processing unit **405**A need not necessarily be automatically started. The present invention can be implemented even when the clearing processing unit **405**A is manually operated by the administrator or operator of the electronic settlement server **10**A.

[0370] The clearing processing unit **405**A generates transfer requests for the respective records **901**A and transmits the generated transfer request to the charge accommodating network **40**A (S**1402**). Upon receiving the transfer requests, the charge accommodating network **40**A executes the process of a transfer from the settlement company account **42** to the game hall company account **43** according to the contents of each of the transfer requests (S**1403**). The processing from step S**1401** to step S**1403** allows the total amount paid by each user as consideration for the use of the negotiable-value providing apparatus **30**A to be transferred to the corresponding game hall company account **43**.

[0371] Upon receiving a transfer result notification indicating the transfer process has been executed normally, the electronic settlement server **10**A executes a retained amount data process of reflecting the transfer amount in the corresponding record **901**A in the game hall company retained amount data **900**A (S**1405**). The retained amount data process sets the value of the game hall company's retained amount **903**A back to "zero".

[0372] FIG. **37** is a diagram showing the storage state of the electronic settlement server **10**A and the charge accommodating network **40**A resulting from the processing from step S**1401** to step S**1405** following the state shown in FIG. **35**. In the state shown in FIG. **35**, the retained amount **903**A in the record **901**A is 1,000 yen. The clearing processing unit **405**A generates a transfer request requesting that the value of the retained amount **903**A minus the charge for the settlement company (for example, 10 yen), that is, 990 yen, be transferred from the settlement company account **42** to the game hall company account **43**. The clearing processing unit **405**A transmits the transfer request to the charge accommodating network **40**A (S**1402**).

[0373] Upon receiving the transfer request, the charge accommodating network **40**A executes a transfer process of transferring 990 yen from the settlement company account **42** to the game hall company account **43** (S**1403**). As a result, 10,100 yen minus 990 yen, that is, 9,110 yen, is stored in the settlement company account **42** as the balance. On the other hand, 0 yen plus 990 yen, that is, 990 yen, is stored in the game hall company account **43** as the balance. In the balance of the settlement company account **42**, that is, 9,110 yen, 9,000 yen is deposited by the user, and the remaining 110 yen is the settlement company's profit. Thus, the electronic settlement company can gain a profit from the operation of the present electronic settlement system **1**A.

III. Third Embodiment

[0374] Now, a third embodiment of the present invention will be described.

III.1. Example of Configuration of the Electronic Settlement System

[0375] The electronic settlement system **1**A according to the second embodiment differs from an electronic settlement system **1**A according to the second embodiment in that the former deals with payment to a plurality of different game hall companies, whereas the latter copes with payment to a single game hall company. Thus, according to the second embodiment, one electronic settlement system **1**A is provided for each game hall company. However, a plurality of game halls operated by the same game hall company can be dealt with by the same electronic settlement system **1**A.

[0376] Furthermore, an electronic settlement server **10**A according to the third embodiment differs from the electronic settlement server according to the first embodiment in that the former eliminates the need for the clearing processing unit **405**A.

Example of Configuration of the Electronic Settlement System According to the Third Embodiment

[0377] The configuration of the electronic settlement system according to the third embodiment is basically similar to that according to the second embodiment, and will thus not be described below in detail. Since the electronic settlement server **10**A according to the third embodiment deals with a single game hall company, a database unit **403**A of the electronic settlement server **10**A need not have a game hall company table **800**A or a game hall company retained amount table **900**A.

III.2. Example of Operation of the Electronic Settlement System According to the Third Embodiment

[0378] Now, an example of the operation of the electronic settlement system according to the second embodiment will be described.

[0379] Also in the electronic settlement system **1**A according to the second embodiment, the user first needs to download an application such as the i appli and be registered in the electronic settlement system **1**A, more specifically the electronic settlement server **10**A. This processing is similar to that in the example of the operation according to the second embodiment shown in FIG. **27** to FIG. **29**. Thus, the processing according to the third embodiment will not be described below in detail.

[0380] As in the case of the second embodiment, in the third embodiment, simply finishing the above-described user registration does not allow the user to make a purchase (receive a negotiable value) utilizing the electronic settlement system **1**A from a negotiable-value providing apparatus **30**A. The user needs to use a mobile communication terminal **20**A to request the electronic settlement system **1**A, more specifically the electronic settlement server **10**A, to transfer an appropriate amount of the deposit in a user account **41** to a settlement company account **42**. The amount consumed by the user for the negotiable-value providing apparatus **30**A is subtracted from the deposit. The amount resulting from the subtraction is equal to that paid to the negotiable-value providing apparatus **30**A, and is transferred to the game hall company account **43**, corresponding to the recipient of the payment, as a result of processing by a charge accommodating network **40**A. Now, with reference to FIG. **38**, description will be given of an example of an operation performed by the electronic settlement system **1**A according to the second embodiment when the user requests the electronic settlement server **10**A to carry out a transfer from the user account **41**,

that is, the user's own account, to the settlement company account **42**. FIG. **38** is a sequence diagram showing an example of an operation performed by the electronic settlement system **1**A when the user requests a transfer from the user account **41** to the settlement company account **42**.

[0381] First, the user uses the mobile communication terminal **20**A to start an i appli, more specifically a transfer request generating unit **208** (S**1501**). The started i appli, more specifically the transfer request generating unit **208**, allows an output unit **205** of the mobile communication terminal **20**A to display an input interface screen or the like. The i appli thus urges the user to input information required for a transfer request message, for example, a transfer amount and a personal account identification number.

[0382] Upon receiving the input (S**1502**), the mobile communication terminal **20**A, more specifically the transfer request generating unit **208**, generates and transmits a transfer request message to the electronic settlement server **10**A via a communication network **50** and the like (S**1503**). The transfer request message stores a user ID **206**, a password **207**, the input transfer amount and personal account identification number, and the like.

[0383] Upon receiving the transfer request message, the electronic settlement server **10**A, more specifically a transfer request processing unit **404**A, searches a user table **600**A using the user ID **206** contained in the transfer request message as a key. The electronic settlement server **10**A thus acquires a bank number **605**A, a branch office number **606**A, an account type **607**A, an account number **608**A, and an account holder's name **609**A, which are the information specifying the user account **41**, from a record **601**A matching the user ID **206**. Moreover, the electronic settlement server **10**A reads another stored information (not shown in the drawings) identifying the settlement company account, that is, the bank number, branch office number, account type, and account number of the settlement company account **42**. Then, based on these pieces of information, the electronic settlement server **10**A generates and transmits a transfer request to the charge accommodating network **40**A (S**1504**). A data configuration, a communication procedure, and the like for the transmission of the transfer request may comply with a scheme adopted for the charge accommodating network **40**A.

[0384] Upon receiving the transfer request, the charge accommodating network **40**A executes a transfer process according to the contents of the transfer request so as to transfer a specified amount (hereinafter referred to as a "user transfer amount") from the user account **41** to the settlement company account **42** (S**1505**). If the transfer process (S**1505**) is executed normally, the charge accommodating network **40**A transmits a transfer result notification to the electronic settlement server **10**A to notify the electronic settlement server **10**A that the transfer process has been executed normally (S**1506**). If the transfer process fails to be properly executed because of insufficient balance in the user account **41** or the like, the charge accommodating network **40**A transmits a transfer result notification indicating the failure in the transfer to the electronic settlement server **10**A.

[0385] The processing from S**1501** to S**1506** is similar to that from S**1201** to S**1206** according to the first embodiment.

[0386] After S**1506**, the electronic settlement server **10**A, more specifically the transfer request processing unit **404**A, generates and transmits a transfer request requesting a transfer of an amount corresponding to the user transfer amount from the settlement company account **42** to a game hall company account **43**, to the charge accommodating network **40**A (S**1507**).

[0387] The electronic settlement server **10**A, more specifically the transfer request processing unit **404**A, reads prestored information identifying the settlement company account **42**, that is, the bank number, branch office number, account type, and account number of the settlement company account **42**, and information identifying the game hall company account **43**, that is, the bank number, branch office number, account type, account number, and account holder's name of the game hall company account **43**. The electronic settlement server **10**A generates a transfer request from the above-described pieces of information and an amount based on a user payment amount. The electronic settlement server **10**A then transmits the transfer request to the charge accommodating network **40**A (S**1507**). In the present embodiment, the "amount based on the user payment amount" refers to the amount (hereinafter referred to as the "game hall company transfer amount") obtained by subtracting a charge to be paid to the settlement company from the user payment amount. A data configuration, a communication procedure, and the like for the transmission of the transfer request may comply with the scheme adopted for the charge accommodating network **40**A.

[0388] Upon receiving the transfer request, the charge accommodating network **40**A executes a transfer process according to the contents of the transfer request so as to transfer the game hall company transfer amount from the settlement company account **42** to the game hall company account **43** (S**1508**). If the transfer process (S**1508**) is executed normally, the charge accommodating network **40**A transmits a transfer result notification to the electronic settlement server **10**A to notify the electronic settlement server **10**A that the transfer process has been executed normally (S**1509**).

[0389] Upon receiving the transfer result notification indicating the transfer process has been executed normally, the electronic settlement server **10**A executes a retained amount data process of reflecting the user transfer amount in a corresponding record **1001**A in a user retained amount data **700**A (S**1510**). The retained amount data process allows the user to use the amount corresponding to the user transfer amount, via the electronic settlement system **1**A.

[0390] FIG. **39** to FIG. **42** are diagrams illustrating the storage state of the electronic settlement server **10**A and charge accommodating network **40**A according to the second embodiment observed when processing of the user transfer amount is executed between the electronic settlement server **10**A and the charge accommodating network **40**A.

[0391] FIG. **39** shows an example of a state observed before the user transmits a transfer request message to the electronic settlement server **10**A (FIG. **38**, S**1503**). In the example, the charge accommodating network **40**A has the user account **41**, the settlement company account **42**, and the game hall company account **43**.

[0392] It is assumed that the balance of the user account **41** is 100,000 yen and that balance of both the settlement company account **42** and the game hall company account **43** is 0 yen. In actuality, a plurality of users and a plurality of game hall companies have accounts in the charge accommodating network **40**A. However, FIG. **39** to FIG. **42** show one user account **41** and one game hall company account **43** as typical examples.

[0393] As described above, the electronic settlement server **10**A stores the user retained amount data **700**A. However, unlike in the case of the second embodiment, in the third embodiment, the electronic settlement server **10**A need not store game hall company retained amount data **900**A.

[0394] FIG. **40** shows a state observed after the user has transmitted a transfer request message from the mobile communication terminal **20**A to the electronic settlement server **10**A, requesting a transfer of a user transfer amount of 10,000 yen; the transmission follows the state shown in FIG. **39**. In response to the transfer request message, the electronic settlement server **10**A transmits the following transfer request to the charge accommodating network **40**A (see S**1504**). The transfer request is transmitted to the charge accommodating network **40**A, requesting that the user transfer amount of 10,000 yen and a charge to be paid to the settlement company (for example, 100 yen) be transferred from the user account **41** to the settlement company account **42**.

[0395] Upon receiving the transfer request, the charge accommodating network **40**A executes a process of transferring 10,100 yen from the user account **41** to the settlement company account **42** (see S**1505**). As a result, as shown in FIG. **40**, the balance of the user account **41** is 100,000 yen−10,100 yen=89,900 yen. The balance of the settlement company account **42** is 0 yen+10,100 yen=10,100 yen. The charge accommodating network **40**A changes the balances of the accounts **41** and **42** as described above according to the transfer request.

[0396] FIG. **41** shows a state observed after the electronic settlement server **10**A has transmitted a transfer request for a transfer of the transfer amount to the game hall company account **43**, to the charge accommodating network **40**A (S**1507**) and the charge accommodating network **40**A has executed a transfer process (S**1508**) corresponding to the transfer request; the transmission and execution follow the state shown in FIG. **40**.

[0397] The electronic settlement server **10**A transmits the following transfer request requesting a transfer of the transfer amount to the game hall company account **43** to the charge accommodating network **40**A (see S**1507**). The transfer request is transmitted to the charge accommodating network **40**A, requesting that a game hall company transfer amount (10,000 yen−100 yen=9,900 yen) corresponding to the user transfer amount of 10,000 yen minus the charge to be paid to the settlement company (for example, 100 yen) be transferred from the settlement company account **42** to the game hall company account **43**.

[0398] Upon receiving the transfer request, the charge accommodating network **40**A executes a process of transferring 9,900 yen from the settlement company account **41** to the game hall company account **43** (see S**1508**). As a result, as shown in FIG. **41**, the balance of the settlement company account **42** is 10,100 yen−9,900 yen=200 yen. The balance of the game hall company account **43** is 0 yen+9,900 yen=9,900 yen. The balance of the user account **41** remains to be 89,900 yen. The charge accommodating network **40**A changes the balances of the accounts **41** and **42** according to the transfer request as described above.

[0399] FIG. **42** is a diagram showing the storage state of the electronic settlement server **10**A and the charge accommodating network **40**A resulting from execution of a retained amount data process (S**1510**) by the electronic settlement server **10**A following the state shown in FIG. **41**. As shown in FIG. **38**, after executing the transfer process (S**1508**), the charge accommodating network **40**A transmits a transfer result notification indicating that the game hall company transfer amount has been transferred normally, to the electronic settlement server **10**A (S**1509**).

[0400] In response to the transfer result notification, the electronic settlement server **10**A, more specifically the transfer request processing unit **404**A, executes a retained amount data process (S**1510**) of adding the user transfer amount to the user retained amount stored in the record **1001**A corresponding to the user account **41** subjected to the transfer. However, 100 yen, corresponding to the charge, is not added. As a result of the retained amount data process (S**1510**) based on the addition, 0 yen+10,000 yen=10,000 yen is recorded in the record **1001**A. The 10,000 yen is the amount that the user can use via the electronic settlement system **1**A.

[0401] Now, with reference to FIG. **43**, description will be given of an example of an operation performed by the electronic settlement system **1**A when the user attempts to obtain a negotiable value from the negotiable-value providing apparatus **30** in the electronic settlement system **1**A according to the third embodiment. FIG. **43** is a sequence diagram showing an example of an operation performed by the electronic settlement system **1**A when the user allows the mobile communication terminal **20**A and the negotiable-value providing apparatus **30**A to communicate via short-distance communication means in order to obtain a negotiable value from the negotiable-value providing apparatus **30**A.

[0402] It is assumed that the user first attempts to obtain a negotiable value from the negotiable-value providing apparatus **30**A utilizing the present electronic settlement system **1**A.

[0403] In this case, the user allows the mobile communication terminal **20**A and the negotiable-value providing apparatus **30**A to carry out short-distance communication so that the mobile communication terminal **20**A can acquire the equipment ID and the like of the negotiable-value providing apparatus **30**A. For example, it is assumed that a terminal-side short-distance communication unit **201** is an IC chip for non-contact IC cards and that a providing apparatus-side short-distance communication unit **303** is a reader/writer. Then, upon sensing that the chip for non-contact IC cards is nearby, the reader/writer, serving as the providing apparatus-side short-distance communication unit **303**, transmits the equipment ID, an application number, and a user payment amount, which are all stored in the reader/writer, to the chip for non-contact IC cards, serving as the terminal-side short-distance communication unit **201** (S**1601**). Here, the equipment ID is identification information allowing the negotiable-value providing apparatus **30**A to be uniquely identified. The application number is identification information uniquely identifying the application such as the i appli which operates in the mobile communication terminal **20**A. The user payment amount is information indicative of the value of consideration for the negotiable value provided to the user by the negotiable-value providing apparatus **30**A. When the purchase of a negotiable value is requested via the mobile communication terminal **20**A, the negotiable-value providing apparatus **30**A considers the request to be a purchase request for a negotiable value for a pre-specified payment amount. For example, if the negotiable-value providing apparatus **30**A is a ball renting machine, the user moves the mobile communication terminal **30** closer to the ball renting machine to allow the ball renting machine to read data from the chip for non-contact IC cards. Then, the negotiable-value providing

apparatus **30**A considers the request to be a purchase request for rental balls for a payment amount (for example, 1,000 yen) specified for the negotiable-value providing apparatus **30**A. The user payment amount may vary with the negotiable-value providing apparatus **30**A. For example, the payment amount may be set to 1,000 yen for a ball renting machine A installed in the game hall and to 2,000 yen for another ball renting machine B installed in the same game hall. Alternatively, the user payment amount may be selectively determined by the user. For example, if the negotiable-value providing apparatus **30**A is a prepaid card issuing apparatus, the prepaid card issuing apparatus can issue prepaid cards for a plurality of different amounts (for example, 1,000 yen, 3,000 yen, 5,000 yen, and 10,000 yen), and has a plurality of amount determination buttons used to specify the respective amounts. The user depresses the amount determination button for the desired amount to buy the prepaid card for the desired amount. In this case, the amount selected by the user via the amount determination button may be considered by the electronic settlement system **1**A to be the user payment amount.

[0404] The above-described user payment amount need not necessarily be transmitted from the negotiable-value providing apparatus **30**A to the mobile communication terminal **20**A in step S**1601**. The payment amount may be determined by the electronic settlement server **10**A based on the equipment ID using a prepared table.

[0405] Upon receiving the equipment ID, the application number, and the payment amount, the terminal-side short-distance communication unit **201** starts the application such as the i appli which corresponds to the application number, that is, a payment request generating unit **202** (S**1602**). At this time, the equipment ID and the user payment amount are passed from the terminal-side short-distance communication unit **201** to the payment request generating unit **202**.

[0406] The started payment request generating unit **202** generates a payment request message containing the equipment ID and user payment amount received from the negotiable-value providing apparatus **30**A and a user ID **206** and a password **207** stored in a user information storage unit **207**. The payment request generating unit **202** then transmits the payment request message to the electronic settlement server **10**A (S**1603**).

[0407] In step S**1604**, upon determining that the user payment amount cannot be withdrawn, a payment request processing unit **402**A starts a result notifying unit **407**A. The result notifying unit **407**A generates and transmits a processing result notification based on the determination to the negotiable-value providing apparatus **30**A and/or the mobile communication terminal **20**A. Upon receiving the processing result notification, the mobile communication terminal **20**A displays the contents of the processing result notification on the output unit **205** thereof. The contents of the processing result notification are, for example, "Short balance. Settlement has failed."

[0408] On the other hand, upon determining in step S**1604** that the user payment amount can be withdrawn, the payment request processing unit **402**A starts a provision instructing unit **406**A. The started provision instructing unit **406**A transmits a provision instruction message to the negotiable-value providing apparatus **30**A (S**1605**). The provision instruction message contains the payment amount. The negotiable-value providing apparatus **30**A provides the user with a negotiable value corresponding to the payment amount (S**1606**). The destination address of the provision instruction message is determined based on an equipment IP address **1003** in a corresponding record **1001** obtained by searching a negotiable-value providing apparatus table **1000**A using the equipment ID as a key.

[0409] Furthermore, upon determining in step S**1604** that the user payment amount can be withdrawn, the payment request processing unit **402**A rewrites the user retained amount data **700**A, more specifically the retained amount **1003** in the record **1001** with the corresponding user ID so as to reduce the retained amount **1003** by the payment amount (S**1607**).

[0410] Furthermore, upon determining in step S**1604** that the user payment amount can be withdrawn, the electronic settlement server **10**A, more specifically the payment request processing unit **402**A, starts a result notifying unit **407**A. The started result notifying unit **407**A transmits an execution completion message notifying the mobile communication terminal **20**A that the specified payment amount has been paid (S**1608**). The execution completion message indicates that a payment procedure corresponding to the user's specified payment amount has ended. The destination address of the execution completion message is determined based on a mail address **604**A in a corresponding record **601**A obtained by searching a user table **600**A using the user ID as a key.

[0411] Upon receiving the execution completion message, the mobile communication terminal **20**A allows the output unit **205** to provide a result display corresponding to the contents of the execution completion message (S**1609**). For example, as the result display, the output unit **205** of the mobile communication terminal **20**A shows the message "1,000 yen has been paid from XX's retained amount". Alternatively, during the result display, the value of the retained amount **1003**A resulting from the withdrawal of the payment amount, that is, the balance in the electronic settlement server **10**A, may be displayed. However, the retained amount **1003**A is not stored in the mobile communication terminal **20**A. The electronic settlement server **10**A stores the retained amount **1003**A.

[0412] FIG. **44** is a diagram showing the storage state of the electronic settlement server **10**A and the charge accommodating network **40**A resulting from execution of the processing from step S**1601** to step S**1607** following the state shown in FIG. **42**. In the state shown in FIG. **42** and in which the transfer of the payment amount has not been carried out yet, the retained amount **1003**A in the corresponding record **1001**A in the user retained amount data **700**A is 10,000 yen.

[0413] FIG. **44** shows a state observed after the transfer process (S**1607**) has been executed if the payment amount is 1,000 yen. In the transfer process (S**1607**), the payment request processing unit **402** of the electronic settlement server **10**A subtracts the payment amount of 1,000 yen from 10,000 yen, that is, the value of the retained amount **1003**A, corresponding to the user's retained amount, to rewrite the value of the retained amount **1003**A to 9,000 yen.

[0414] The rewriting of the retained amount **1003**A based on the transfer process (S**1607**) allows the electronic settlement server **10**A to pay consideration for the provision of a negotiable value by the negotiable-value providing apparatus **30**A, that is, allows the user to pay to the game hall company.

[0415] The processing from step S**1601** to step S**1609** described above is executed every time each user buys a negotiable value utilizing the negotiable-value providing apparatus **30**A. However, unlike in the case of the second embodiment, each user's payment amount is not added or

recorded as the retained amount of the corresponding game hall company. Furthermore, unlike the second embodiment, the third embodiment eliminates the need to transfer the retained amount **903**A of the game hall company to the game hall company account **43** on the charge accommodating network **40**A according to a transfer request from the electronic settlement server **10**A. That is, the third embodiment eliminates the need for a transfer to the game hall company account **43** in the electronic settlement system **1**A as shown in FIG. **36** (see S**1401** to S**1405**).

IV. Variations and Others

[0416] Variations of the second and third embodiments will be described below.

[0417] (1) QR codes or the like may be displayed on a liquid crystal display provided in the negotiable-value providing apparatus **30**A. Furthermore, a bar code reader utilizing a CCD camera may be provided in the mobile communication terminal **20**A to read bar codes. These arrangements replace the providing apparatus-side short-distance communication unit **303** and the terminal-side short-distance communication unit **201**. In this case, information indicated by the bar code may directly be the equipment ID.

[0418] (2) In the above-described first and second embodiments, for a transfer from the user account **41** to the settlement company account, a transfer request is transmitted from the mobile communication terminal **20**A to the charge accommodating network **40**A via the electronic settlement server **10**A. However, the present invention can be implemented even when the transfer request is transmitted from the mobile communication terminal **20**A directly to the charge accommodating network **40**A.

V. Advantages of the Present Electronic Settlement System

[0419] (1) Advantages for the User

[0420] The present settlement method is different from cash payment and can be used in game halls. Thus, even when running short of cash in hand in a game hall, the user can buy rental balls, rental medals, any product, or the like by an easy settlement action (a process of performing such an easy input operation as holds the mobile communication terminal **20**A over the negotiable-value providing apparatus **30**A).

[0421] While playing games, the user may hit a bull's eye with no or little cash in hand but be likely to run short of balls or medals in hand. In this case, the user can additionally buy rental balls or the like by an easy operation. The user can thus feel secure to continue games without worrying about the cash balance.

[0422] Furthermore, the user can feel secure to carry out the settlement action because the user's mobile communication terminal is used for the settlement action. The user can further feel secure to settle the account because of the non-need to input the card number or the personal identification number, preventing the record of the card number or the personal identification number from remaining in the shop or being unfairly acquired by a malicious person as is the case with ordinary credit and debit cards.

[0423] Furthermore, information distribution is available which is based on usage information acquired by the electronic settlement server **10**A. Thus, more various services are expected to be available.

[0424] (2) Advantages for the Shop (Administrator)

[0425] Even when running short of cash in hand as a result of playing games, the user can further buy rental balls or rental medals via the present electronic settlement system. This increases the operation rate of the game machines and the possibility that such users make a purchase in the shop. Thus, the sales of the game hall are expected to increase. Furthermore, information is available which indicates the game machines on which the user has played and the amount of money for which the user has played. Consequently, based on the information, the operation status of the game machines can be determined in detail, and the user's preferences can also be known. Therefore, the information can be utilized for marketing.

[0426] The use of the present electronic settlement system avoids increasing cash used in the shop. This facilitates credit management and improves security management.

[0427] (3) Advantages for the Settlement Company

[0428] The operation of the present electronic settlement system enables the settlement company to determine the playing statuses of players who are users. The settlement company can thus accumulate data to be referenced for the development, sale, marketing, or the like of game machines.

[0429] (4) The present invention can be implemented regardless of whether the authentication server **90**, serving as the certification agency (CA), is another company's server commonly used or a server constructed by the settlement company.

VI. Fourth Embodiment

[0430] Now, a fourth embodiment of the present invention will be described. The fourth embodiment has a configuration and functions basically similar to those of the second or third embodiment. The fourth embodiment is further characterized by having the function of adding casino chips in hand or the amount, level, or cash stored in a prepaid card, an IC card, or the like to a user retained amount **1003**A stored in an electronic settlement server **10**A. This addition is carried out using a terminal apparatus that can communicate with the electronic settlement server. The terminal apparatus is the user's mobile communication terminal or a computer installed at an appropriate location such as a casino reception desk.

[0431] In the fourth embodiment, the above-described function allows the present electronic settlement system to hold remaining casino chips or the remaining amount, level, or the like in the prepaid card instead of the user if the user ends or suspends the game. The user's convenience is thus improved.

[0432] FIG. **45** shows an example of the configuration of the electronic settlement system according to the fourth embodiment. An electronic settlement system **1**B according to the fourth embodiment is different from the electronic settlement system **1**A (see FIG. **17**) according to the second and third embodiments in that the electronic settlement system **1**B further has a computer **98** configured to request an electronic settlement server **10**B to carry out addition (credit). Furthermore, the configurations of the electronic settlement server **10**B and a mobile communication terminal **10**B are different from those of the electronic settlement servers **10**A and mobile communication terminals **10**A according to the second and third embodiments. The mobile communication terminal **10**B has functions similar to those of the mobile communication terminal **10**A and the function of serving as a

terminal apparatus configured to request the electronic settlement server **10**B to carry out an addition (credit).

[0433] The computer **98** is an apparatus having the function of communicating with the electronic settlement server **10**B. The computer **98** includes a central processing unit (CPU), a main memory (RAM), a read only memory (ROM), an I/O device (I/O), and an external storage device such as a hard disk device as required.

[0434] Upon receiving a request for an addition (credit) from a user (player), the operator of the computer **98** checks the amount, level, or the like to be added (credited). For example, for a request for an addition (credit) of casino chips, the operator performs, for example, an operation of counting casino chips. Furthermore, for a request for an addition (credit) with a prepaid card, the operator reads the remaining amount using a separately prepared prepaid card reading apparatus. Additionally, if the remaining amount in the prepaid card is managed by a managing apparatus such as a hall computer, the operator reads the ID number of the card instead of the remaining amount.

[0435] Then, the operator inputs information (for example, a user ID) identifying the user and information indicating the amount, level, or the like to be added, to the computer **98**. The computer **98** executes an addition (credit) process to generate a message requesting an addition of a value corresponding to information indicative of the amount, level, or the like to be added to the value of the user retained amount **1003**A in a user record **1001**A corresponding to the information identifying the user. The computer **98** then transmits the message to the electronic settlement server **10**B via a communication network **50**.

[0436] Upon receiving the message, the electronic settlement server **10**B executes a process of adding the value corresponding to the information indicative of the amount, level, or the like to be added to the value of the user retained amount **1003**A in the user record **1001**A corresponding to the information identifying the user.

[0437] Now, the mobile communication terminal **20**B according to the fourth embodiment will be described. As described above, the mobile communication terminal **20**B functions as the mobile communication terminals **20**A according to the second and third embodiments. The mobile communication terminal **20**B further has the function of generating a message requesting an addition of the value corresponding to information indicative of the amount, level, or the like to be added to the value of the user retained amount **1003**A in the user record **1001**A and transmitting the message to the electronic settlement server **10**B via the communication network **50**, similarly to the above-described computer **98**. The information indicative of the amount, level, or the like to be added need not directly indicate the amount, level, or the like but may be information that can be used as a search key to acquire information directly indicating the amount, level, or the like. For example, the IC number of the prepaid card may be the "information indicating the amount, level, or the like" as used herein. In this case, upon receiving the ID number of the prepaid card or the like, the electronic settlement server **10**B may inquire of the managing apparatus (for example, a casino hall computer) managing the remaining amount in the prepaid card, about the remaining amount corresponding to the ID number of the prepaid card. The electronic settlement server **10**B may then execute an addition (credit) process using the remaining amount transmitted in response to the inquiry as the amount or level.

[0438] FIG. **46** shows an example of the configuration of the mobile communication terminal **20**B according to the fourth embodiment. The configuration of the negotiable-value providing apparatus **30**A is the same as those according to the second and third embodiments. Furthermore, the same components as those of the mobile communication terminal **20**A (see FIG. **19**) are denoted by the same reference numerals and will thus not be described below in detail.

[0439] The mobile communication terminal **20**B has a terminal-side short-distance communication unit **201**, a payment request generating unit **202**, a radio communication unit **203**, an input unit **204**, an output unit **205**, a user information storage unit **207**, a transfer request generating unit **208**, an electronic contract applying unit **206**, and a credit request generating unit **209**.

[0440] Based on information input via an output unit **204** and identifying the user and information also input via the input unit **204** and indicating an amount, a level, or the like to be added, the credit request generating unit **209** generates a message requesting an addition of a value corresponding to the information indicative of the amount, level, or the like to be added to the value of the user retained amount **1003**A in the user record **1001**A corresponding to the information identifying the user. The generated request message is passed to the radio communication unit **203**, which then transmits a radio signal modulated based on the request message.

[0441] Now, the electronic settlement server **10**B according to the fourth embodiment will be described. FIG. **47** is a diagram showing an example of the configuration of the electronic settlement server **10**B in the fourth embodiment. The electronic settlement server **10**B includes the components of the electronic settlement servers **10**A according to the second and third embodiments and further includes a credit request processing unit **410**B. The same components as those of the electronic settlement server **10**A according to the second and third embodiments are denoted by the same reference numerals and will thus not be described below in detail.

[0442] The addition request processing unit **410**B acquires a message requesting an addition from the computer **98** or the mobile communication terminal **20**B via a network communication processing unit **401**A. Upon receiving the message, the addition request processing unit **410**B searches user retained amount data **700**A and adds a value corresponding to information indicative of an amount, a level, or the like to be added, to the value of the user retained amount **1003**A in the user record **1001**A corresponding to information contained in the message and identifying the user. The addition request processing unit **410**B then allows the result of the addition to be stored.

[0443] Now, a specific example of an addition process in the electronic settlement system **10**B according to the fourth embodiment based on the second embodiment will be described. FIGS. **48** and **49** are diagrams showing an example of an addition process in the electronic settlement system **1**B according to the fourth embodiment based on the second embodiment.

[0444] FIG. **48** shows that "10,000 yen" is stored in the electronic settlement server **10**B as the user retained amount **1003**A. The other conditions are similar to those described with reference to FIG. **33**.

[0445] It is assumed that in this state, the user is provided with 2,000 yen of prepaid card by the negotiable-value providing apparatus **30**A. FIG. **49** shows an example of the stored contents of the electronic settlement server **20**B and a

charge accommodating network **40**A obtained after the user has acquired 2,000 yen of prepaid card. The user retained amount **1003**A has been rewritten from "10,000 yen" to "8,000 yen", obtained by subtracting 2,000 yen from the 10,000 yen. Furthermore, a game hall company retained amount **903**A has been rewritten from "0 yen" to "2,000 yen".

[0446] It is assumed that the user having acquired the 2,000 yen of prepaid card then spends 1,000 yen, ends playing games, and then in order to return the remaining amount of 1,000 yen to the electronic settlement system **1**B, requests the electronic settlement server **10**B to add 1,000 yen, via the computer **98** or the mobile communication terminal **20**B.

[0447] Upon receiving the message transmitted by the computer **98** or the mobile communication terminal **20**B and requesting an addition of 1,000 yen, the electronic settlement server **10**B, more specifically the addition request processing unit **410**B, rewrites the user retained amount **1003**A and the game hall company retained amount **903**A according to the contents of the request message. FIG. **50** shows an example in which the user retained amount **1003**A and the game hall company retained amount **903**A have been rewritten according to the contents of the request message. The user retained amount **1003**A has been rewritten to "9,000 yen", obtained by adding 1,000 yen to "8,000 yen". Furthermore, the game hall company retained amount **903**A has been rewritten from 2,000 yen to 1,000 yen.

[0448] The above-described processing enables the user to reuse the negotiable value the user has not spent, later via the electronic settlement system **1**B.

[0449] Now, a specific example of an addition process in the electronic settlement system **1**B according to the fourth embodiment based on the third embodiment will be described. FIG. **51** to FIG. **53** are diagrams showing an example of an addition process in the electronic settlement system **1**B according to the fourth embodiment based on the third embodiment.

[0450] FIG. **51** shows that "10,000 yen" is stored in the electronic settlement server **10**B as the user retained amount **1003**A. The other conditions are similar to those described with reference to FIG. **42**.

[0451] It is assumed that in this state, the user is provided with 1,000 yen of prepaid card by the negotiable-value providing apparatus **30**A. FIG. **52** shows an example of the stored contents of the electronic settlement server **20**B and the charge accommodating network **40**A obtained after the user has acquired 1,000 yen of prepaid card. The user retained amount **1003**A has been rewritten from "10,000 yen" to "9,000 yen", obtained by subtracting 1,000 yen from the 10,000 yen.

[0452] It is assumed that the user having acquired the 1,000 yen of prepaid card then spends 500 yen, ends playing games, and then in order to return the remaining amount of 500 yen to the electronic settlement system **1**B, requests the electronic settlement server **10**B to add 500 yen, via the computer **98** or the mobile communication terminal **20**B.

[0453] Upon receiving the message transmitted by the computer **98** or the mobile communication terminal **20**B and requesting an addition of 500 yen, the electronic settlement server **10**B, more specifically the addition request processing unit **410**B, rewrites the user retained amount **1003**A according to the contents of the request message. FIG. **53** shows an example in which the user retained amount **1003**A has been rewritten according to the contents of the request message. The user retained amount **1003**A has been rewritten to "9,500 yen", obtained by adding 500 yen to "9,000 yen".

[0454] The above-described processing enables the user to reuse the negotiable value the user has not spent yet, later via the electronic settlement system **1**B.

[0455] The fourth embodiment may be varied similarly to the first to third embodiments.

1. An electronic settlement system comprising an electronic settlement server, a mobile communication terminal capable of communicating with the electronic settlement server, and a negotiable-value providing apparatus capable of communicating with the electronic settlement server and the mobile communication terminal, wherein:

the mobile communication terminal acquires equipment identification information identifying the negotiable-value providing apparatus, from a negotiable-value providing apparatus, generates a settlement request message containing user identification information identifying a user, a transfer amount corresponding to consideration for provision of a negotiable value, and the equipment identification information, and transmits the settlement request message to the electronic settlement server,

according to a result of a check of a credit status of the user identified based on the user identification information, the electronic settlement server transmits, to the negotiable-value providing apparatus, a provision instruction message instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to the transfer amount, and transmits a transfer request message requesting a transfer of an amount corresponding to the transfer amount from the user's account to a predetermined account, and

upon receiving the provision instruction message from the electronic settlement server, the negotiable-value providing apparatus provides a negotiable value corresponding to the transfer amount.

2. The electronic settlement system according to claim **1**, wherein the predetermined account is the account of an administrator of the negotiable-value providing apparatus.

3. The electronic settlement system according to claim **1**, wherein the predetermined account is the account of an electronic settlement system operator.

4. The electronic settlement system according to claim **1**, wherein before transmitting the provision instruction message and the transfer request message, the electronic settlement server stores a computerized contract document for a contract between the user and a settlement company corresponding to the electronic settlement system operator, the computerized contract document specifying that the settlement company withdraws a specified amount from the user account, as well as a computerized contract document storage original including the user's electronic signature and the settlement company's electronic signature both verified and attached to the computerized contract document.

5. The electronic settlement system according to claim **4**, wherein the electronic settlement server transmits the computerized contract document storage original for a bank in which the user account for dealing is present.

6. An electronic settlement server wherein upon receiving, from a mobile communication terminal, a settlement request message containing user identification information identifying a user, a transfer amount corresponding to consideration for provision of a negotiable value, and equipment identifi-

cation information, which is information identifying a negotiable-value providing apparatus from which the user has requested provision of the negotiable value, the electronic settlement server transmits, according to a result of a check of a credit status of the user identified based on the user identification information, a provision instruction message instructing the negotiable-value providing apparatus identified based on the equipment identification information to provide a negotiable value corresponding to the transfer amount, and transmits a transfer request message requesting a transfer of an amount corresponding to the transfer amount from the user's account to a predetermined account.

7. The electronic settlement server according to claim **6**, wherein the predetermined account is the account of an administrator of the negotiable-value providing apparatus.

8. The electronic settlement server according to claim **6**, wherein the predetermined account is the account of an electronic settlement system operator.

9. The electronic settlement server according to any of claim **6**, wherein before transmitting the provision instruction message and the transfer request message, the electronic settlement server stores a computerized contract document for a contract between the user and a settlement company corresponding to the electronic settlement system operator, the computerized contract document specifying that the settlement company withdraws a specified amount from the user account, as well as a computerized contract document storage original including the user's electronic signature and the settlement company's electronic signature both verified attached to the computerized contract document.

10. The electronic settlement system according to claim **4**, wherein the electronic settlement server transmits the computerized contract document storage original addressed to a bank in which the user account for dealing is present.

11. A negotiable-value providing apparatus transmitting equipment identification information identifying the negotiable-value providing apparatus to a mobile communication terminal, and upon receiving a provision instruction message transmitted in response to a settlement request message containing user identification information identifying a user, a transfer amount corresponding to consideration for a negotiable value, and the equipment identification information, providing the negotiable value corresponding to the transfer amount.

12. A mobile communication terminal acquiring equipment identification information identifying a negotiable-value providing apparatus, from the negotiable-value providing apparatus, generating a settlement request message containing user identification information identifying a user, a transfer amount corresponding to consideration for provision of a negotiable value, and the equipment identification information, transmitting the settlement request message to an electronic settlement server, and according to a result of a check of a credit status of the user carried out by the electronic settlement server, allowing the electronic settlement server to transmit, to the negotiable-value providing apparatus, a provision instruction message instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to the transfer amount.

13. An electronic settlement method comprising:

a step of receiving equipment identification information identifying a negotiable-value providing apparatus;

a step of generating a settlement request message containing user identification information identifying a user, a transfer amount corresponding to consideration for a negotiable value, and the equipment identification information, and transmitting the settlement request message;

a step of, in response to the settlement request message, inquiring about a credit status of the user, and according to a result for the inquiry of the user's credit status, transmitting, to a negotiable-value providing apparatus identified by the equipment identification information, a provision instruction message instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to the transfer amount;

a step of transmitting a transfer request message requesting a transfer of an amount corresponding to the transfer amount from an account of the user identified by the user identification information to a predetermined account; and

a step of, according to the provision instruction message, providing the negotiable value corresponding to the transfer amount to the negotiable-valve providing apparatus.

14. The electronic settlement method according to claim **13**, further comprising:

a step of receiving a computerized contract document for a contract between the user and a settlement company corresponding to the electronic settlement system operator, the computerized contract document specifying that the settlement company withdraws a specified amount from the user account, and the user's electronic signature and electronic certificate attached to the computerized contract document;

a step of verifying the user's electronic signature and electronic certificate, and according to a result of the verification, transmitting the computerized contract document and the settlement company's electronic signature and electronic certificate; and

a step of receiving and storing the computerized contract document and a computerized contract document storage original containing the user's electronic signature and the settlement company's electronic signature, and a time stamp attached thereto.

15. The mobile communication terminal according to claim **12**, further comprising, in response to one operation, a process of determining the transfer amount specified as consideration for the negotiable value and a process of carrying out the settlement request requesting provision of the negotiable value corresponding to the transfer amount.

16. An electronic settlement system comprising an electronic settlement server capable of requesting a charge accommodating network managing a user account, a settlement company account, and a game hall company account to carry out a transfer between the accounts and storing a user retained amount and a game hall company retained amount, a mobile communication terminal, and a negotiable-value providing apparatus, characterized in that:

the mobile communication terminal communicates with the negotiable-value providing apparatus via short-distance communication means to acquire equipment identification information identifying the negotiable-value providing apparatus, generates a payment request message containing user identification information identifying a user and the equipment identification information, and transmits the payment request message to the electronic settlement server,

the electronic settlement server adds a user transfer amount corresponding to an amount transferred from the user account to the settlement company account, to the user retained amount, instructs, according to the payment request message, the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount, subtracts an amount corresponding to the user payment amount from the user retained amount, while adding an amount corresponding to the user payment amount to a game hall company retained amount, and requests the charge accommodating network to transfer an amount corresponding to the game hall company retained amount from the settlement company account to the game hall company account, and

upon receiving the instruction to provide the negotiable value from the electronic settlement server, the negotiable-value providing apparatus provides the negotiable value corresponding to the user payment amount.

17. An electronic settlement server capable of requesting a charge accommodating network managing a user account, a settlement company account, and a game hall company account to carry out a transfer between the accounts, and instructing a negotiable-value providing apparatus, according to a payment request message from a mobile information terminal, to provide a negotiable value corresponding to a user payment amount, comprising:

storage means for storing a user retained amount and a game hall company retained amount;

transfer request processing means for adding the user transfer amount corresponding to the transfer amount from the user account to the settlement company account, to the user retained amount,

payment request processing means for, according to the payment request message, subtracting the amount corresponding to the user payment amount from the user retained amount, while adding the amount corresponding to the user payment amount to the game hall company retained amount, and requesting the charge accommodating network to transfer the amount corresponding to the game hall company retained amount from the settlement company account to the game hall company account; and

provision instructing means for instructing the negotiable-value providing apparatus to provide the negotiable value corresponding to the user payment amount.

18. A mobile communication terminal carrying out communication via short-distance communication means to acquire equipment identification information identifying a negotiable-value providing apparatus from the negotiable-value providing apparatus, generating a payment request message containing user identification information identifying a user and the equipment identification information, and transmitting the payment request message to an electronic settlement server to allow the electronic settlement server to instruct the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount.

19. An electronic settlement method comprising:

a step of requesting a charge accommodating network to transfer a transfer amount specified by a user from a user account to a settlement company account;

a step of adding a user transfer amount corresponding to the transfer amount, to a user retained amount for storage;

a step of receiving a payment request message containing equipment identification information acquired through communication with a negotiable-value providing apparatus via short-distance communication means and identifying the negotiable-value providing apparatus and user identification information identifying the user;

a step of, according to the payment request message, instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount;

a step of subtracting an amount corresponding to the user payment amount from the user retained amount, while adding the amount corresponding to the user payment amount to a game hall company retained amount; and

a step of requesting the charge accommodating network to transfer an amount corresponding to the game hall company retained amount from the settlement company account to the game hall company account.

20. An electronic settlement system comprising an electronic settlement server capable of requesting a charge accommodating network managing a user account, a settlement company account, and a game hall company account to carry out a transfer between the accounts, the electronic settlement server being capable of storing a user retained amount, a mobile communication terminal, and a negotiable-value providing apparatus, wherein:

the mobile communication terminal communicates with the negotiable-value providing apparatus via short-distance communication means to acquire equipment identification information identifying the negotiable-value providing apparatus, generates a payment request message containing user identification information identifying a user and the equipment identification information, and transmits the payment request message to the electronic settlement server,

the electronic settlement server adds a user transfer amount corresponding to an amount transferred from the user account to the settlement company account, to the user retained amount and requests the charge accommodating network to transfer an amount corresponding to the transfer amount from the settlement company account to the game hall company account, then according to the payment request message, instructs the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount, and subtracts an amount corresponding to the user payment amount from the user retained amount, and

upon receiving the instruction to provide the negotiable value, the negotiable-value providing apparatus provides the negotiable value corresponding to the user payment amount.

21. An electronic settlement server capable of requesting a charge accommodating network managing a user account, a settlement company account, and a game hall company account to carry out a transfer between the accounts, and according to a payment request message from a mobile communication terminal, instructing a negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount, comprising:

storage means for storing a user retained amount;

transfer request processing means for adding a user transfer amount corresponding to a transfer amount from the user account to the settlement company account, to the user retained amount, and requesting the charge accommodating network to transfer an amount corresponding

to the transfer amount from the settlement company account to the game hall company account;

payment processing means for, according to the payment request message, subtracting an amount corresponding to the user payment amount from the user retained amount; and

provision instructing means for instructing the negotiable-value providing apparatus to provide the negotiable value corresponding to the user payment amount.

22. An electronic settlement method comprising:

a step of requesting a charge accommodating network to transfer a transfer amount specified by a user from a user account to a settlement company account;

a step of requesting the charge accommodating network to transfer an amount corresponding to the transfer amount from the settlement company account to a game hall company account;

a step of adding a user transfer amount corresponding to the transfer amount from the user account to the settlement company account, to a user retained amount for storage;

a step of receiving a payment request message containing equipment identification information acquired through communication with a negotiable-value providing apparatus via short-distance communication means and identifying the negotiable-value providing apparatus and user identification information identifying the user;

a step of, according to the payment request message, instructing the negotiable-value providing apparatus to provide a negotiable value corresponding to a user payment amount; and

a step of subtracting an amount corresponding to the user payment amount from the user retained amount.

23. The electronic settlement system according to claim **16**, wherein before transmitting the provision instruction message and the transfer request message, the electronic settlement server stores a computerized contract document for a contract between the user and a settlement company corresponding to the electronic settlement system operator, the computerized contract document specifying that the settlement company withdraws a specified amount from the user account, as well as a computerized contract document storage original including the user's electronic signature and the settlement company's electronic signature both verified and attached to the computerized contract document.

24. The electronic settlement system according to claim **23**, the electronic settlement server transmits the computerized contract document storage original for a bank in which the user account for dealing is present.

25. The electronic settlement server according to claim **17**, wherein before transmitting the provision instruction message and the transfer request message, the electronic settlement server stores a computerized contract document for a contract between the user and a settlement company corresponding to the electronic settlement system operator, the computerized contract document specifying that the settlement company withdraws a specified amount from the user account, as well as a computerized contract document storage original including the user's electronic signature and the settlement company's electronic signature both verified attached to the computerized contract document.

26. The electronic settlement system according to claim **25**, wherein the electronic settlement server transmits the computerized contract document storage original addressed to a bank in which the user account for dealing is present.

27. The electronic settlement method according to claim **19**, further comprising:

a step of receiving a computerized contract document for a contract between the user and a settlement company corresponding to the electronic settlement system operator, the computerized contract document specifying that the settlement company withdraws a specified amount from the user account, and a the user's electronic signature and electronic certificate attached to the computerized contract document;

a step of verifying the user's electronic signature and electronic certificate, and according to a result of the verification, transmitting the computerized contract document and the settlement company's electronic signature and electronic certificate; and

a step of receiving and storing the computerized contract document and a computerized contract document storage original containing the user's electronic signature and the settlement company's electronic signature, and a time stamp attached thereto.

28. The electronic settlement system according to claim **16**, wherein upon receiving a message requesting an addition to the user retained amount, the electronic settlement server carries out an addition on the user retained amount of the corresponding user.

29. The electronic settlement server according to claim **17**, further comprising an addition request processing unit for, upon receiving a message requesting an addition to the user retained amount, carrying out an addition on the user retained amount of the corresponding user.

30. The electronic settlement method according to claim **19**, further comprising a step of, upon receiving a message requesting an addition to the user retained amount, carrying out an addition on the user retained amount of the corresponding user. **3**

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