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Cheah

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(54) **METHOD AND SYSTEM FOR CONTROLLED DISTRIBUTION OF INFORMATION OVER A NETWORK**

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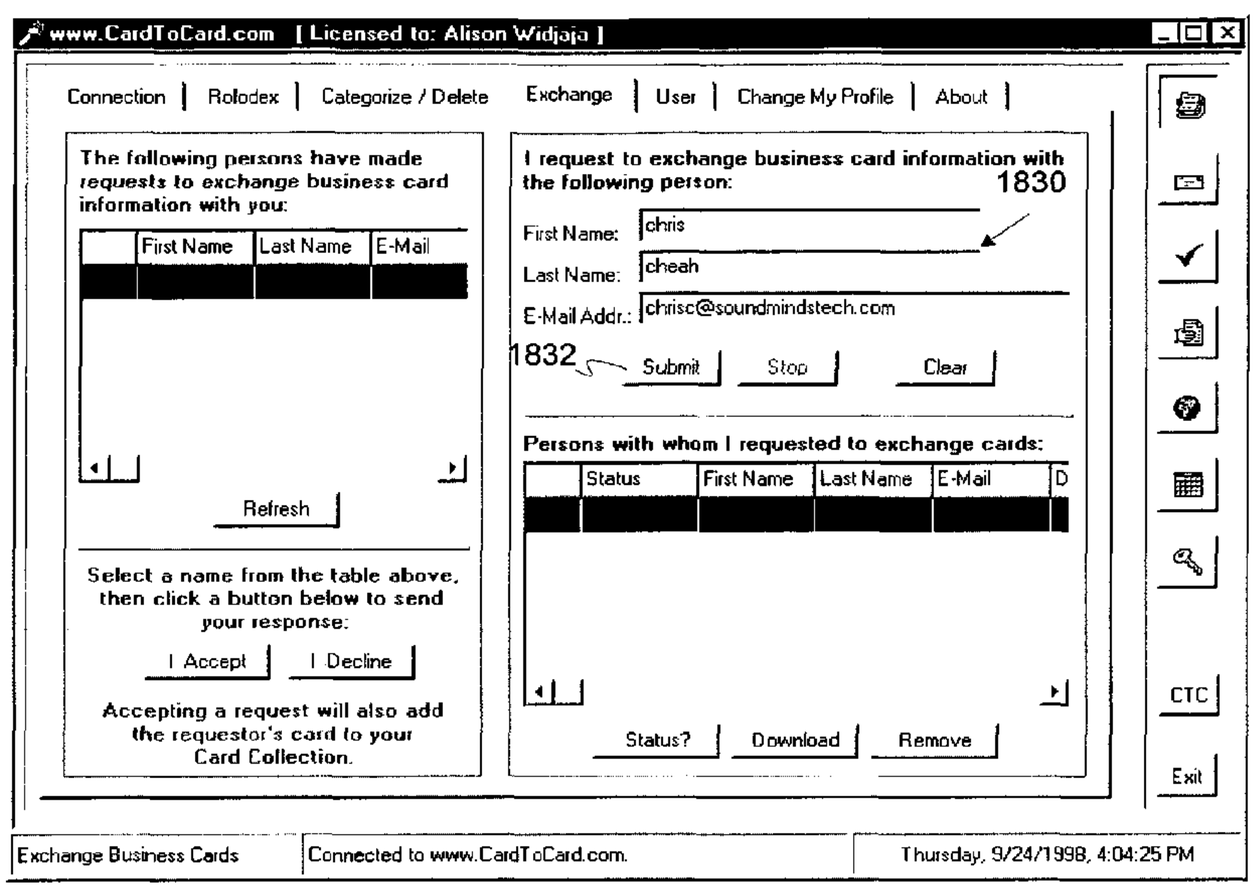
(57) **ABSTRACT**

An information management and distribution system is disclosed. The information management and distribution system includes a client-side application and a server application that interact to facilitate the controlled exchange of contact information over a network. The client-side application can provide creation and design, rolodex, exchange, and update features. The information management and distribution system can also include a corporate administrator application. Still another aspect of the invention is that contact information can be distributed to registered users in a common format.

17 Claims, 37 Drawing Sheets



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See application file for complete search history.

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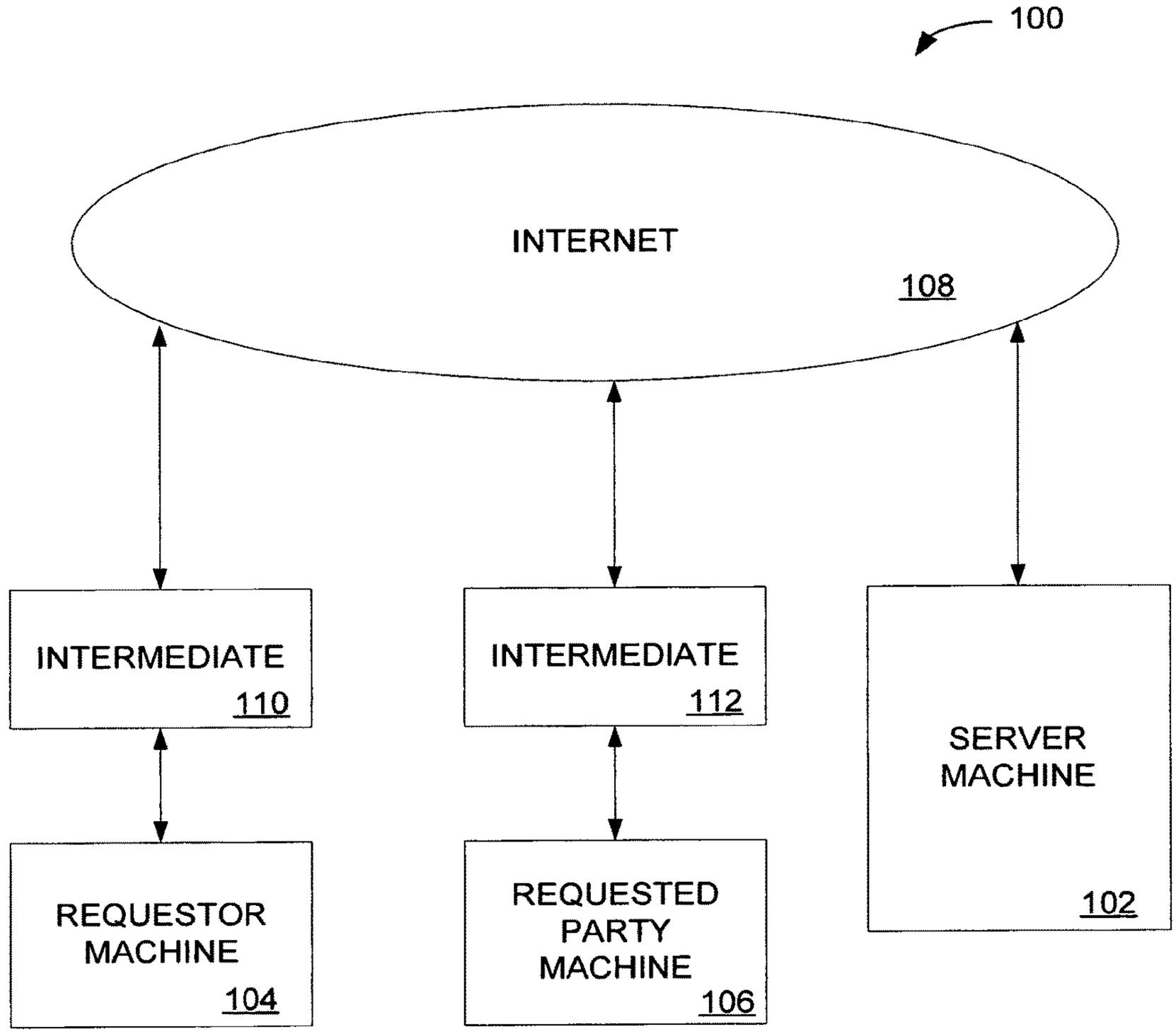
100
INTERNET
108
INTERMEDIATE
110
INTERMEDIATE
112
SERVER
MACHINE
102
REQUESTOR
MACHINE
104
REQUESTED
PARTY
MACHINE
106

FIG. 1

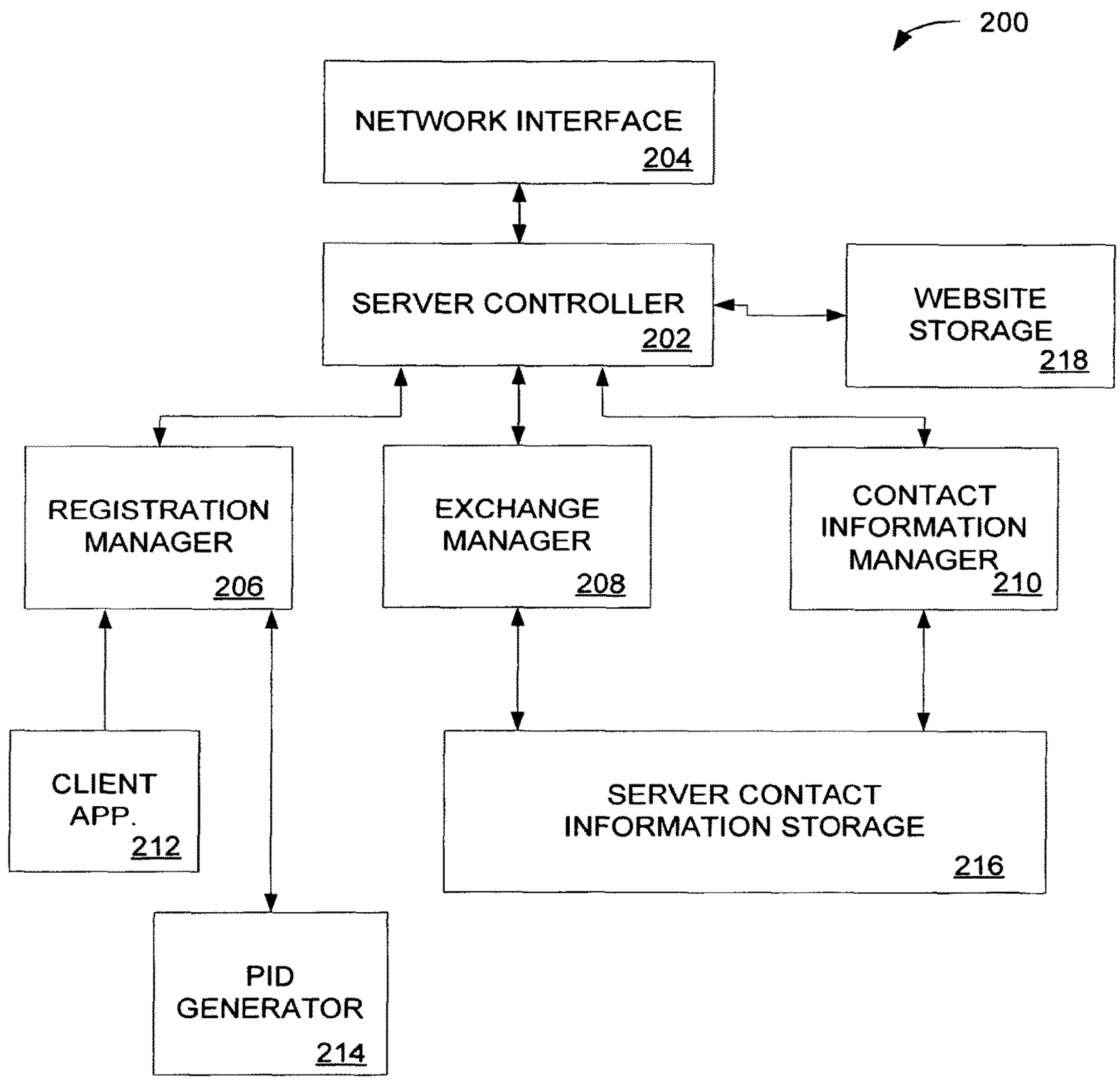
200
NETWORK INTERFACE
204
SERVER CONTROLLER
202
WEBSITE
STORAGE
218
REGISTRATION
MANAGER
206
EXCHANGE
MANAGER
208
CONTACT
INFORMATION
MANAGER
210
CLIENT
APP.
212
SERVER CONTACT
INFORMATION STORAGE
216
PID
GENERATOR
214

FIG. 2

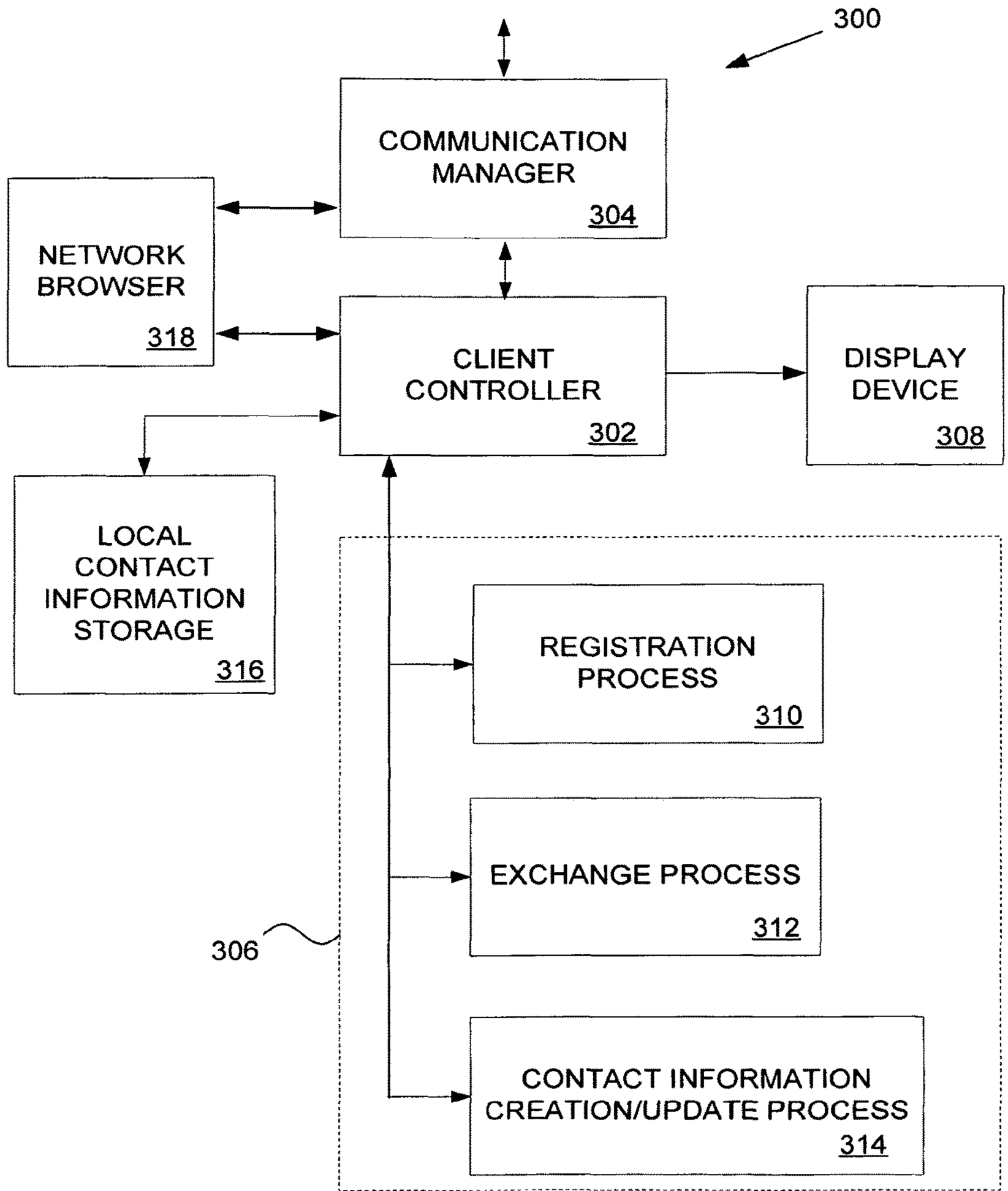
300
COMMUNICATION MANAGER
304
NETWORK BROWSER
318
CLIENT CONTROLLER
302
DISPLAY DEVICE
308
LOCAL CONTACT INFORMATION STORAGE
316
REGISTRATION PROCESS
310
EXCHANGE PROCESS
312
306
CONTACT INFORMATION CREATION/UPDATE PROCESS
314

FIG. 3

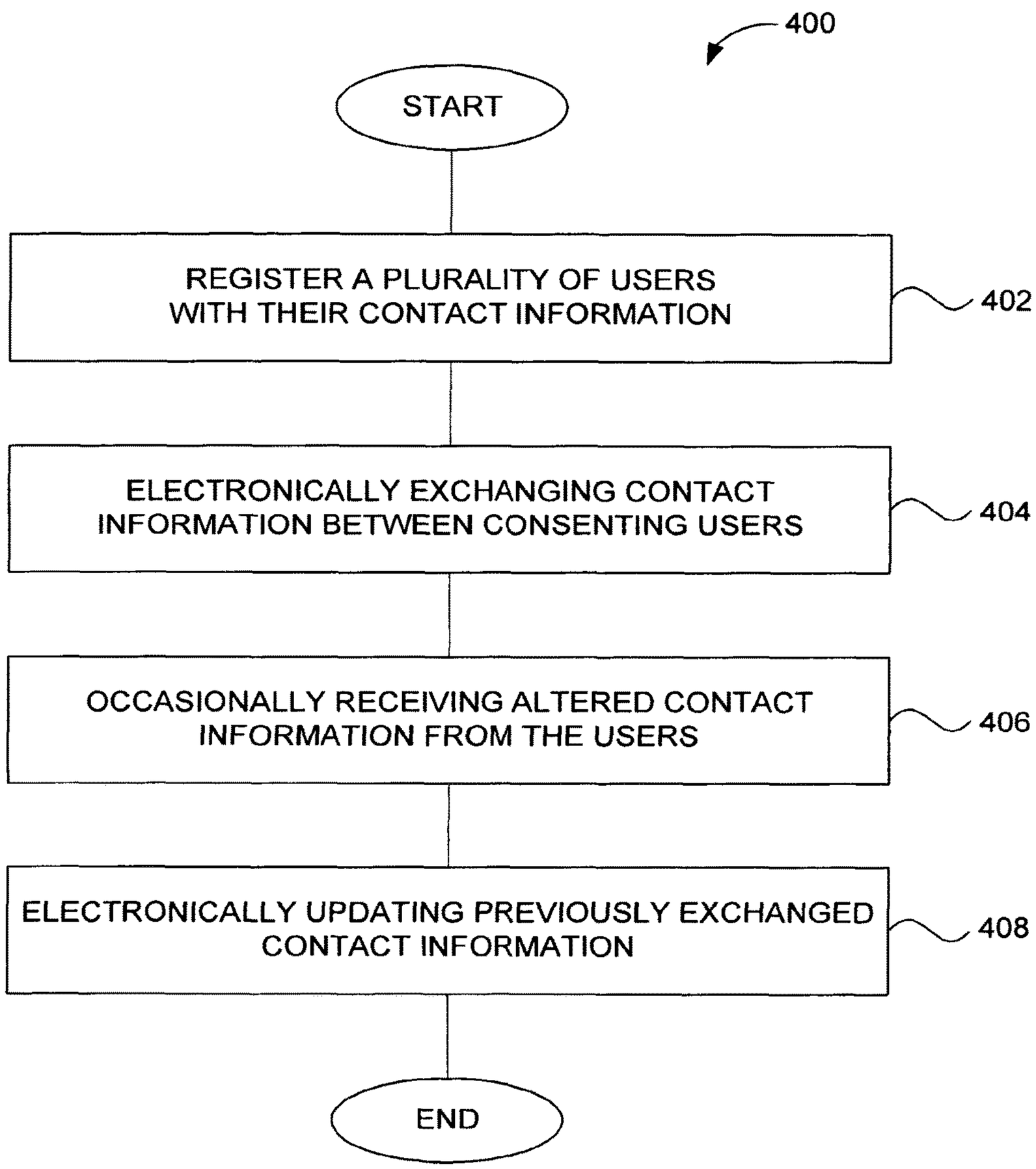
400
START
REGISTER A PLURALITY OF USERS WITH THEIR CONTACT INFORMATION
402
ELECTRONICALLY EXCHANGING CONTACT INFORMATION BETWEEN CONSENTING USERS
404
OCCASIONALLY RECEIVING ALTERED CONTACT INFORMATION FROM THE USERS
406
ELECTRONICALLY UPDATING PREVIOUSLY EXCHANGED CONTACT INFORMATION
408
END

FIG. 4

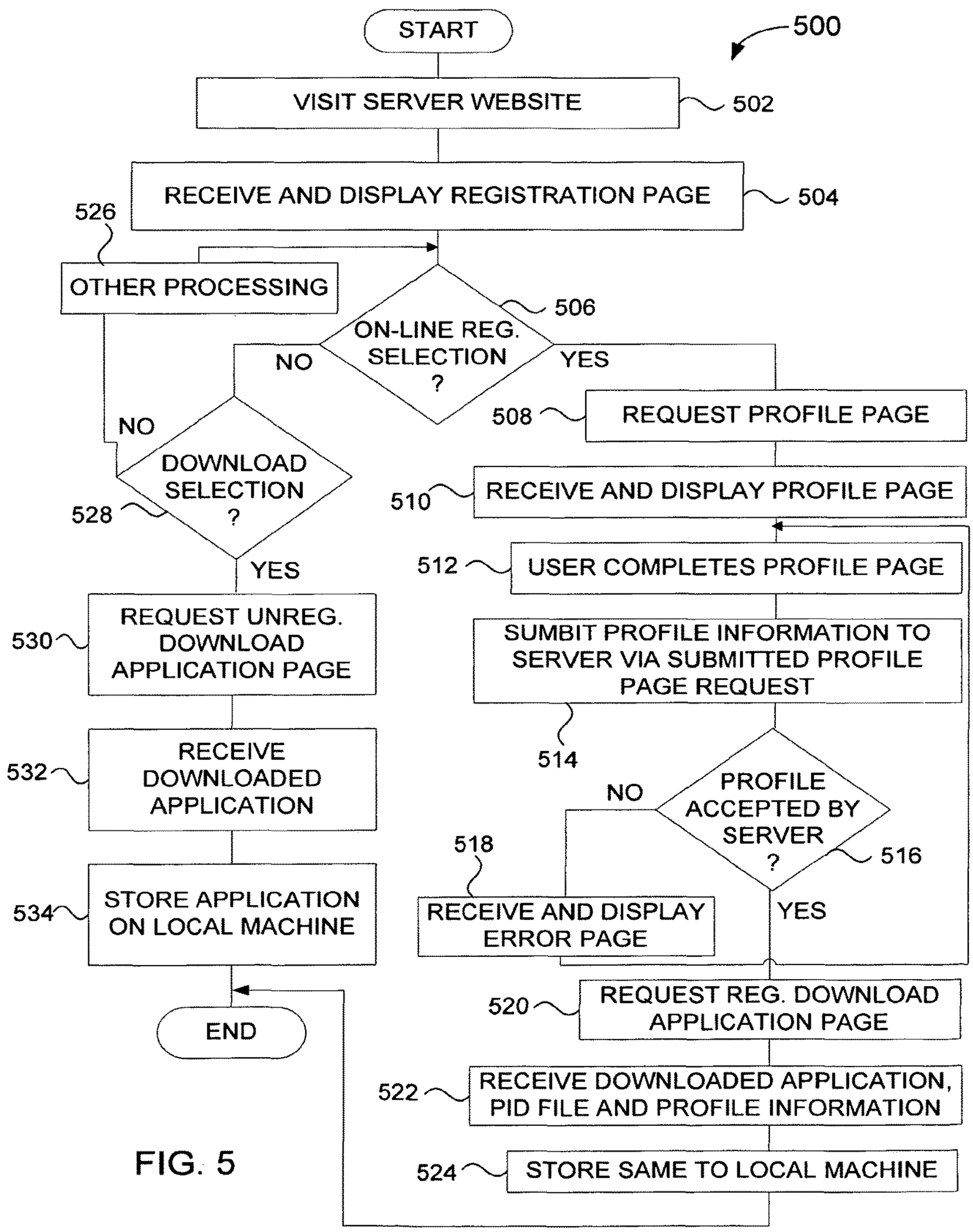
START
500
VISIT SERVER WEBSITE
502
RECEIVE AND DISPLAY REGISTRATION PAGE
504
526
OTHER PROCESSING
506
ON-LINE REG. SELECTION ?
NO
YES
508
REQUEST PROFILE PAGE
NO
DOWNLOAD SELECTION ?
528
510
RECEIVE AND DISPLAY PROFILE PAGE
YES
512
USER COMPLETES PROFILE PAGE
530
REQUEST UNREG. DOWNLOAD APPLICATION PAGE
SUMBIT PROFILE INFORMATION TO SERVER VIA SUBMITTED PROFILE PAGE REQUEST
514
532
RECEIVE DOWNLOADED APPLICATION
NO
PROFILE ACCEPTED BY SERVER ?
516
518
534
STORE APPLICATION ON LOCAL MACHINE
RECEIVE AND DISPLAY ERROR PAGE
YES
520
REQUEST REG. DOWNLOAD APPLICATION PAGE
END
522
RECEIVE DOWNLOADED APPLICATION, PID FILE AND PROFILE INFORMATION
524
STORE SAME TO LOCAL MACHINE

FIG. 5

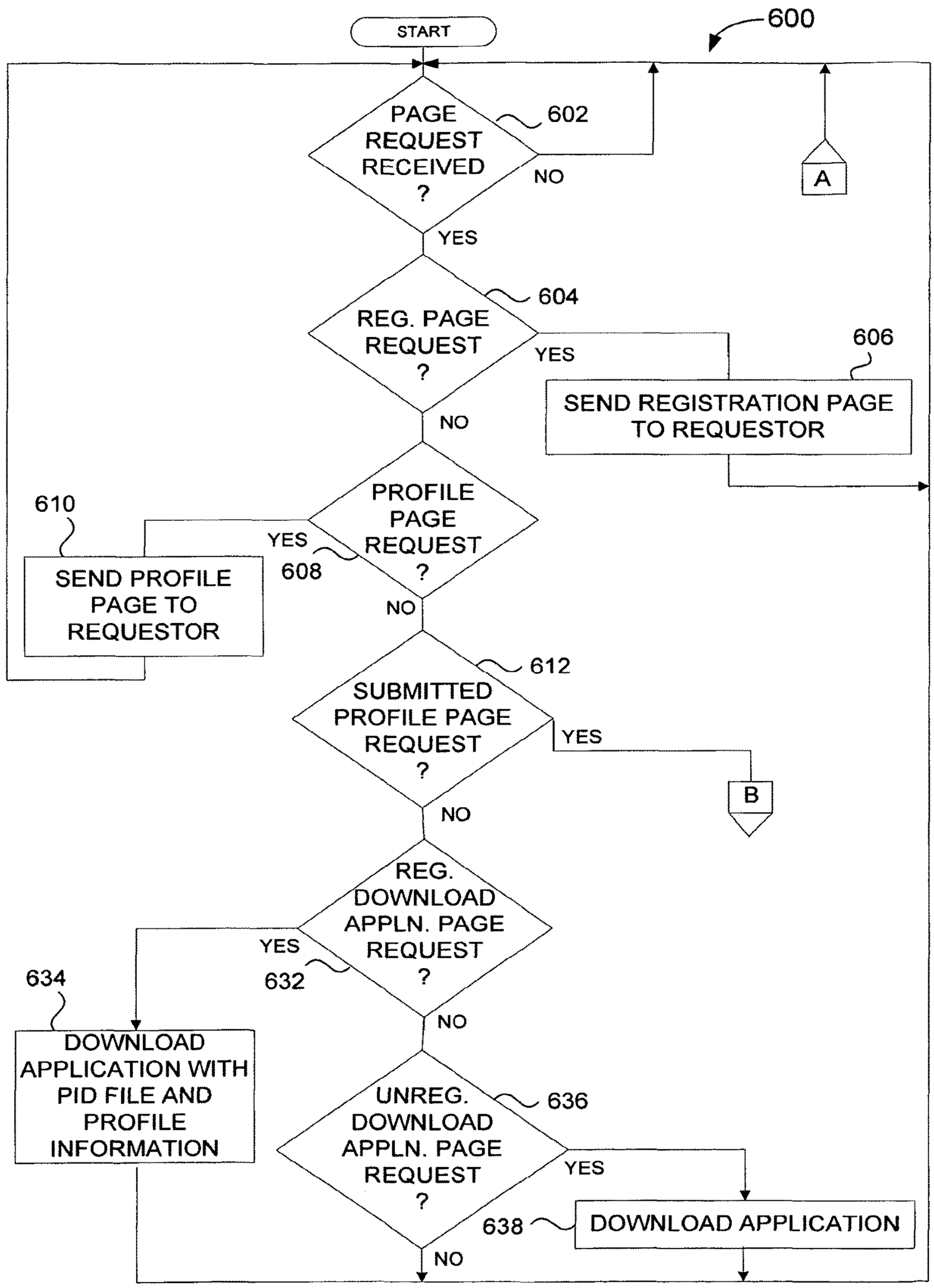
600
START
PAGE REQUEST RECEIVED ?
602
NO
A
YES
REG. PAGE REQUEST ?
604
YES
606
SEND REGISTRATION PAGE TO REQUESTOR
NO
PROFILE PAGE REQUEST ?
610
YES
608
SEND PROFILE PAGE TO REQUESTOR
NO
SUBMITTED PROFILE PAGE REQUEST ?
612
YES
B
NO
REG. DOWNLOAD APPLN. PAGE REQUEST ?
YES
632
634
DOWNLOAD APPLICATION WITH PID FILE AND PROFILE INFORMATION
NO
UNREG. DOWNLOAD APPLN. PAGE REQUEST ?
636
YES
638
DOWNLOAD APPLICATION
NO

FIG. 6A

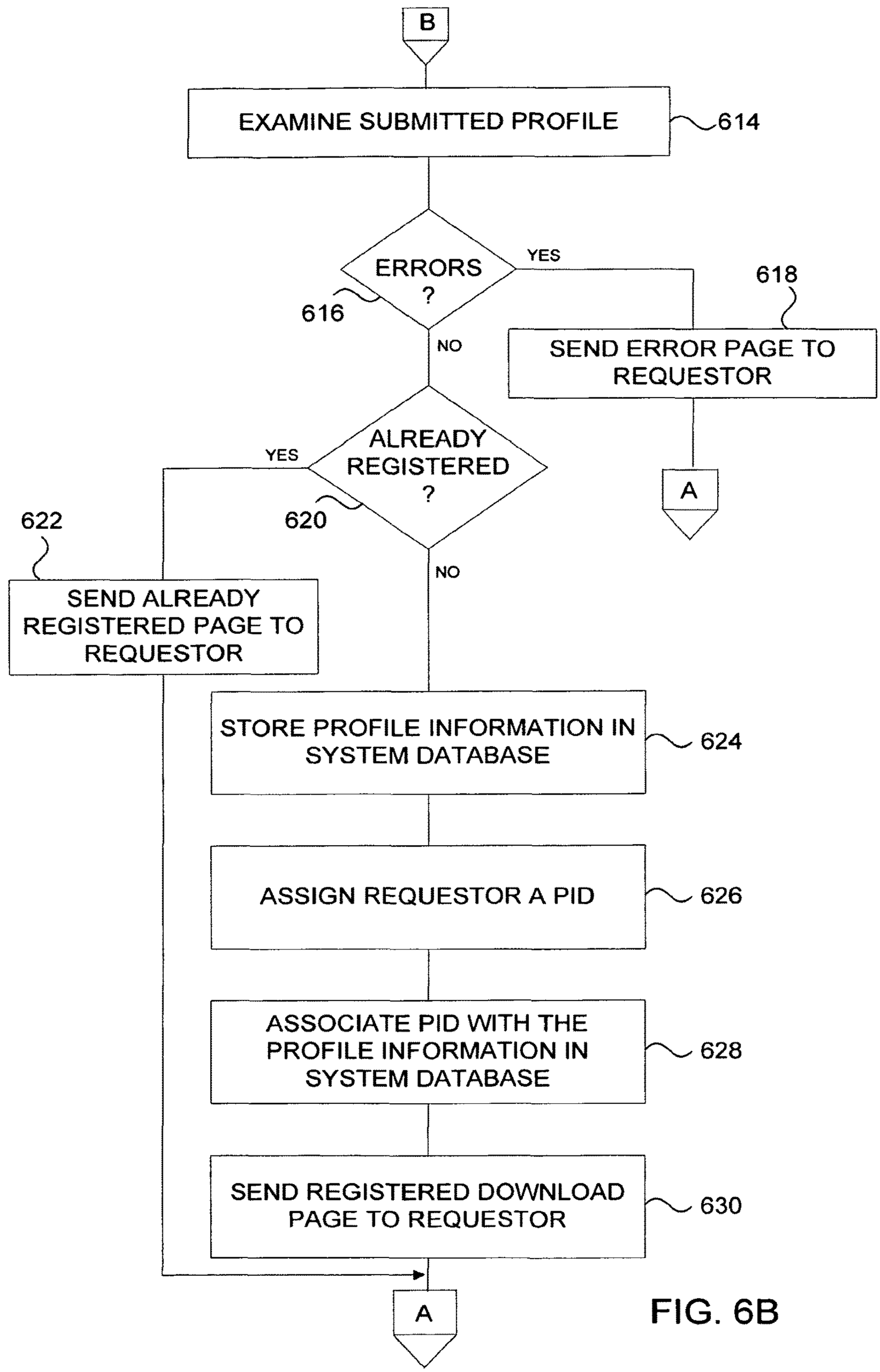
B
EXAMINE SUBMITTED PROFILE
614
ERRORS ?
616
YES
618
SEND ERROR PAGE TO REQUESTOR
NO
ALREADY REGISTERED ?
620
YES
A
622
SEND ALREADY REGISTERED PAGE TO REQUESTOR
NO
STORE PROFILE INFORMATION IN SYSTEM DATABASE
624
ASSIGN REQUESTOR A PID
626
ASSOCIATE PID WITH THE PROFILE INFORMATION IN SYSTEM DATABASE
628
SEND REGISTERED DOWNLOAD PAGE TO REQUESTOR
630
A

FIG. 6B

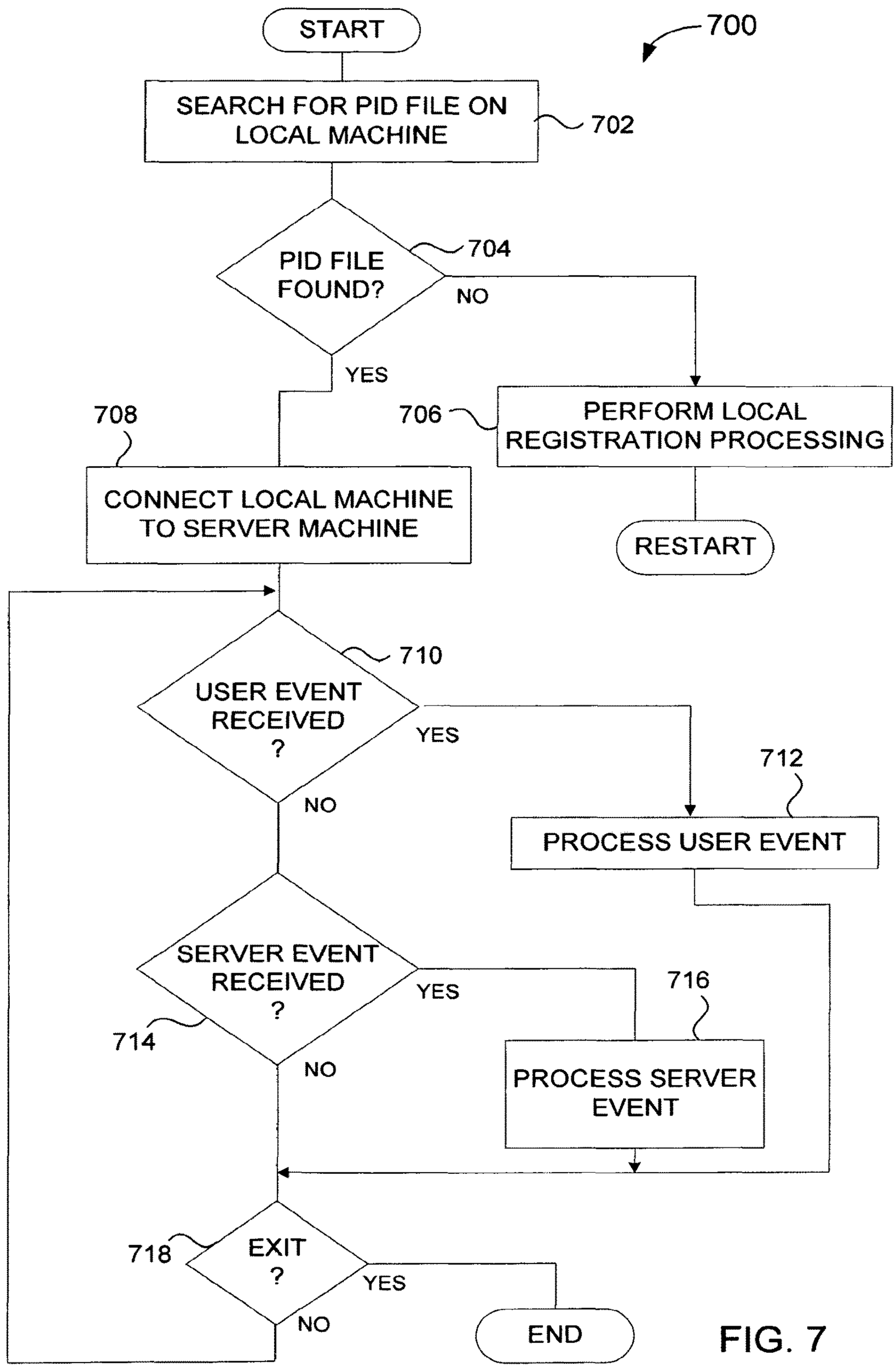
START
700
SEARCH FOR PID FILE ON LOCAL MACHINE
702
PID FILE FOUND?
704
NO
YES
708
706
PERFORM LOCAL REGISTRATION PROCESSING
CONNECT LOCAL MACHINE TO SERVER MACHINE
RESTART
710
USER EVENT RECEIVED ?
YES
712
NO
PROCESS USER EVENT
SERVER EVENT RECEIVED ?
YES
716
714
NO
PROCESS SERVER EVENT
718
EXIT ?
YES
NO
END

FIG. 7

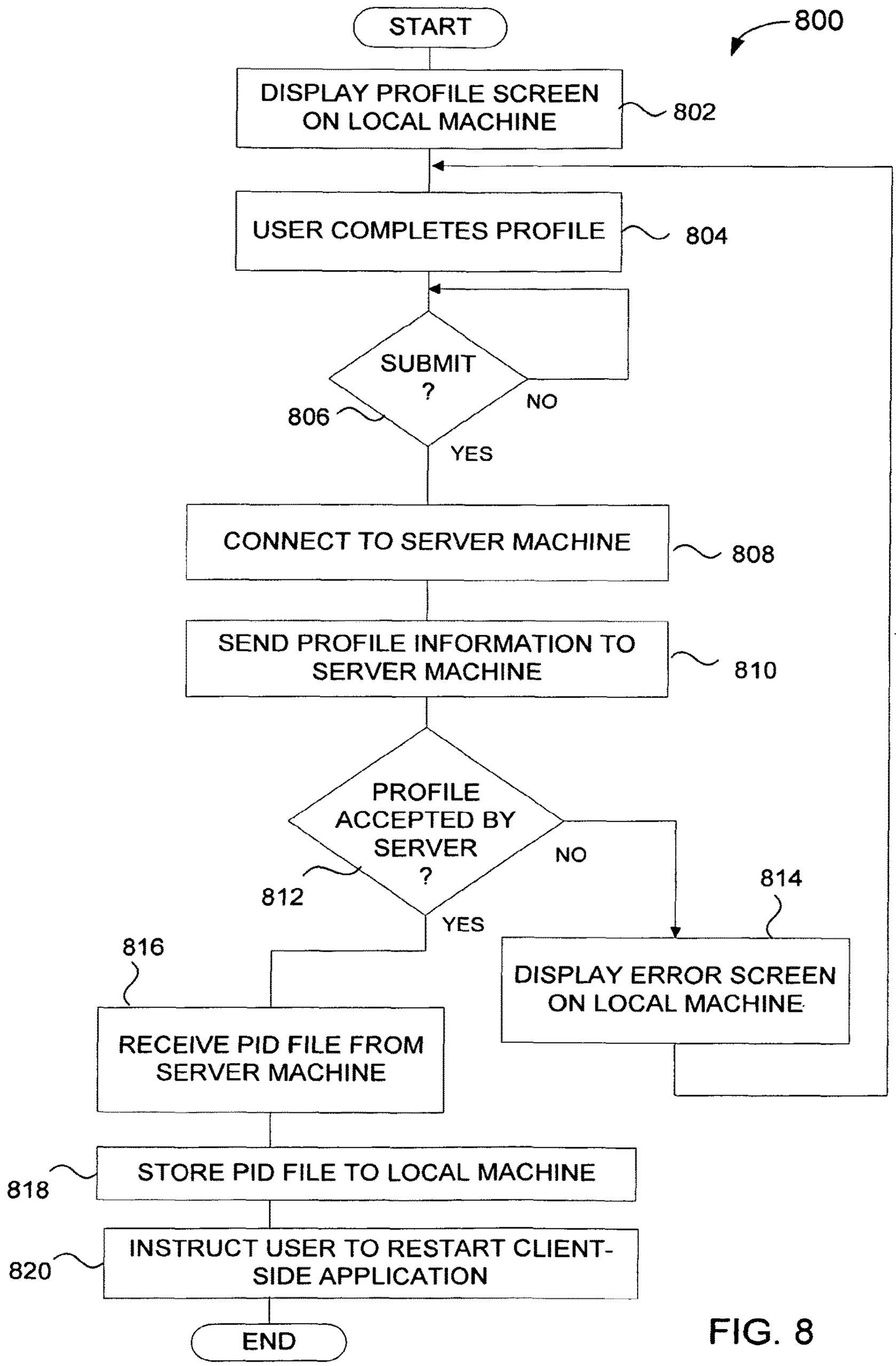
800
START
DISPLAY PROFILE SCREEN ON LOCAL MACHINE
802
USER COMPLETES PROFILE
804
SUBMIT ?
806
NO
YES
CONNECT TO SERVER MACHINE
808
SEND PROFILE INFORMATION TO SERVER MACHINE
810
PROFILE ACCEPTED BY SERVER ?
812
NO
YES
814
DISPLAY ERROR SCREEN ON LOCAL MACHINE
816
RECEIVE PID FILE FROM SERVER MACHINE
818
STORE PID FILE TO LOCAL MACHINE
820
INSTRUCT USER TO RESTART CLIENT-SIDE APPLICATION
END

FIG. 8

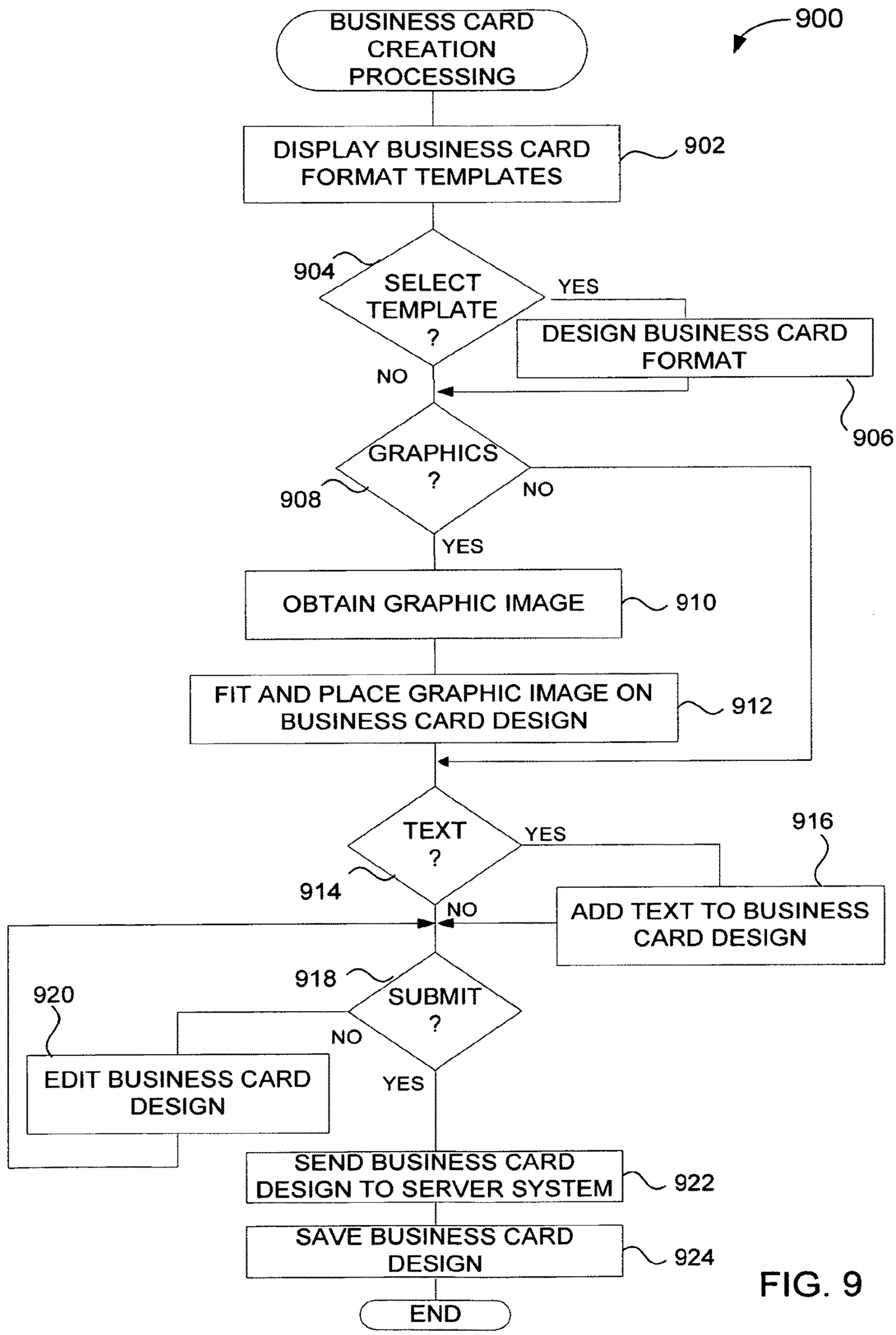
900
BUSINESS CARD CREATION PROCESSING
DISPLAY BUSINESS CARD FORMAT TEMPLATES
902
904
SELECT TEMPLATE ?
YES
DESIGN BUSINESS CARD FORMAT
906
NO
GRAPHICS ?
908
NO
YES
OBTAIN GRAPHIC IMAGE
910
FIT AND PLACE GRAPHIC IMAGE ON BUSINESS CARD DESIGN
912
TEXT ?
YES
916
914
NO
ADD TEXT TO BUSINESS CARD DESIGN
918
SUBMIT ?
920
NO
EDIT BUSINESS CARD DESIGN
YES
SEND BUSINESS CARD DESIGN TO SERVER SYSTEM
922
SAVE BUSINESS CARD DESIGN
924
END

FIG. 9

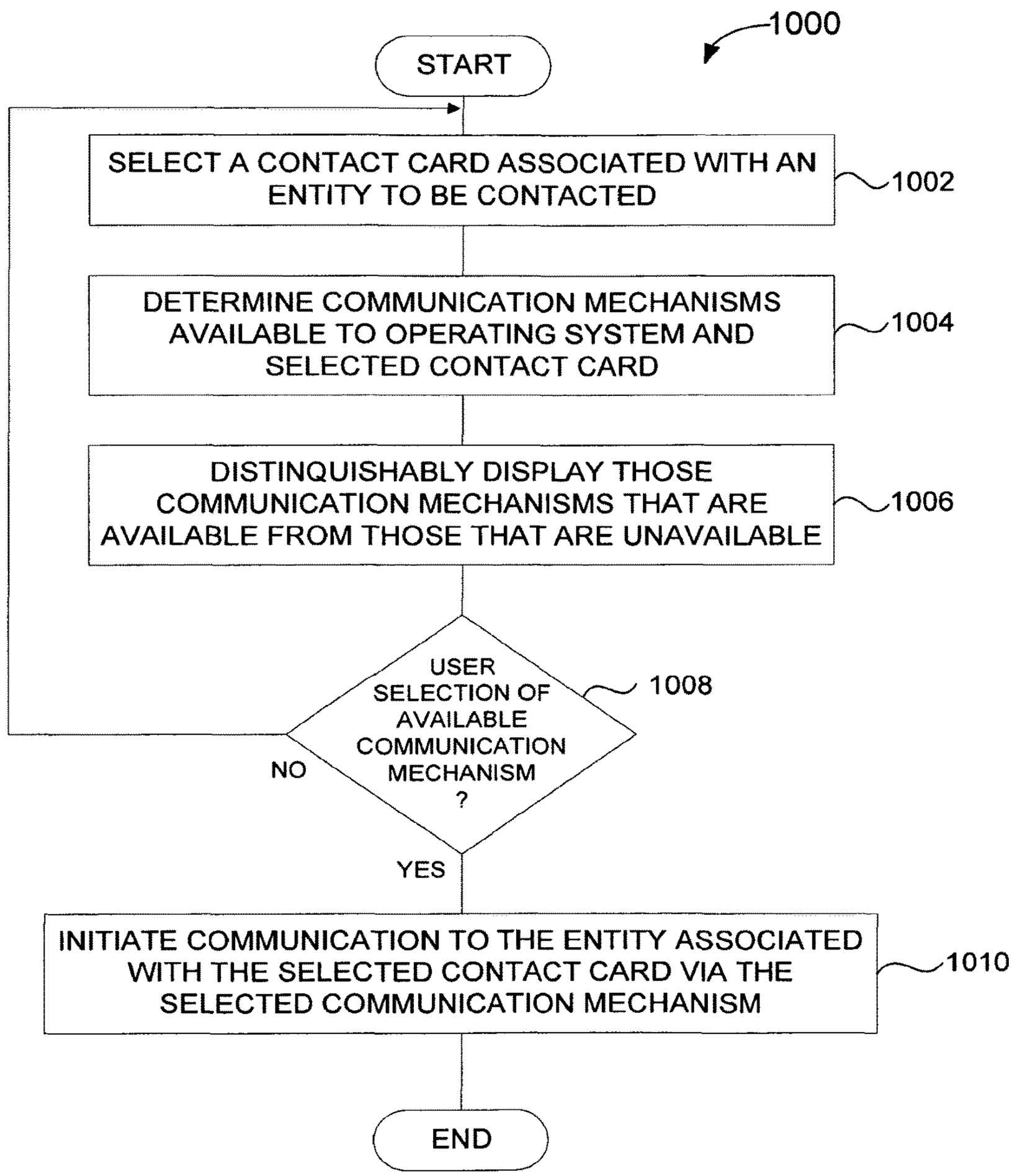
1000
START
SELECT A CONTACT CARD ASSOCIATED WITH AN ENTITY TO BE CONTACTED
1002
DETERMINE COMMUNICATION MECHANISMS AVAILABLE TO OPERATING SYSTEM AND SELECTED CONTACT CARD
1004
DISTINQUISHABLY DISPLAY THOSE COMMUNICATION MECHANISMS THAT ARE AVAILABLE FROM THOSE THAT ARE UNAVAILABLE
1006
USER SELECTION OF AVAILABLE COMMUNICATION MECHANISM ?
1008
NO
YES
INITIATE COMMUNICATION TO THE ENTITY ASSOCIATED WITH THE SELECTED CONTACT CARD VIA THE SELECTED COMMUNICATION MECHANISM
1010
END

FIG. 10

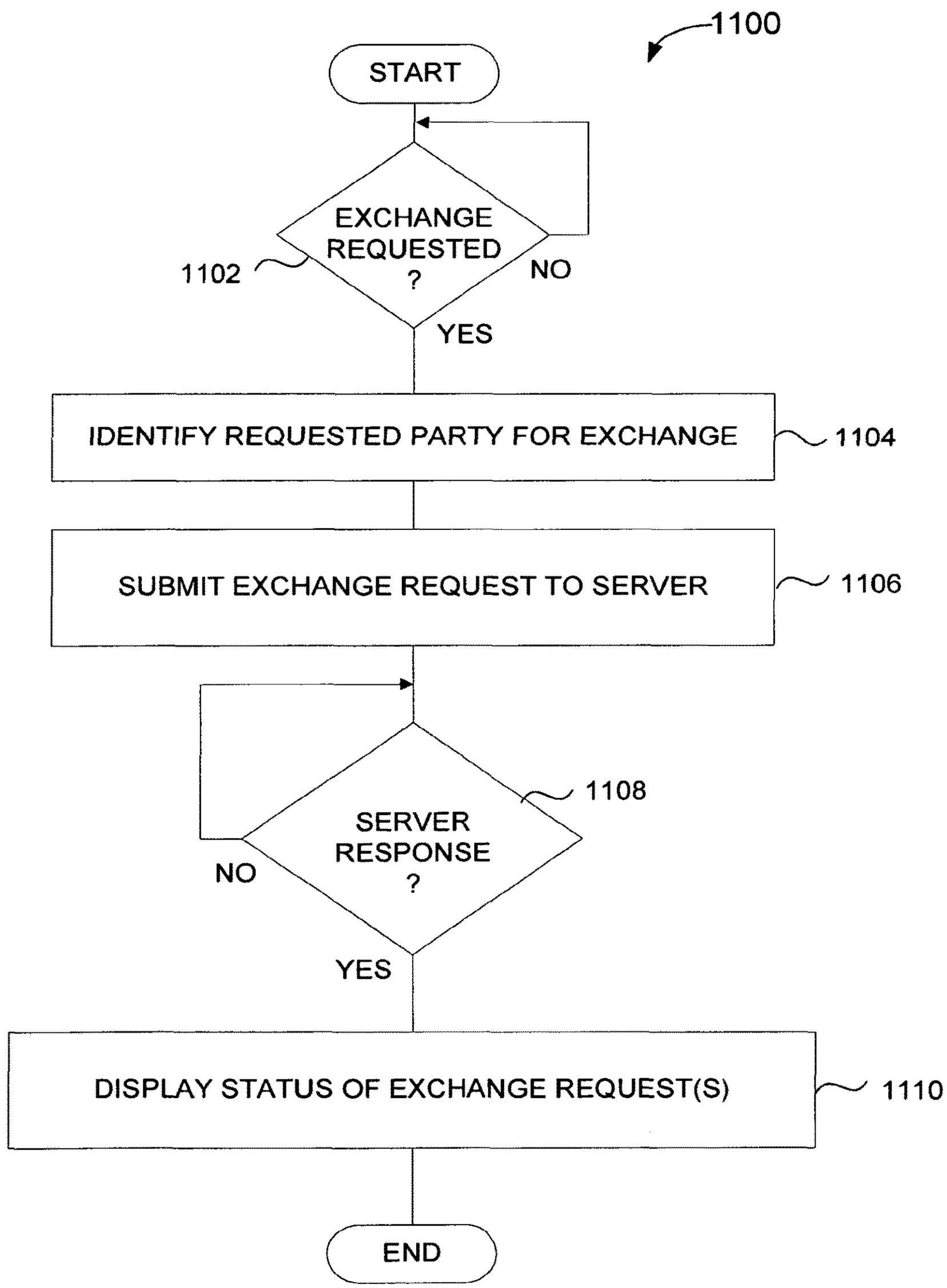
1100
START
EXCHANGE REQUESTED ?
1102
NO
YES
IDENTIFY REQUESTED PARTY FOR EXCHANGE
1104
SUBMIT EXCHANGE REQUEST TO SERVER
1106
SERVER RESPONSE ?
1108
NO
YES
DISPLAY STATUS OF EXCHANGE REQUEST(S)
1110
END

FIG. 11

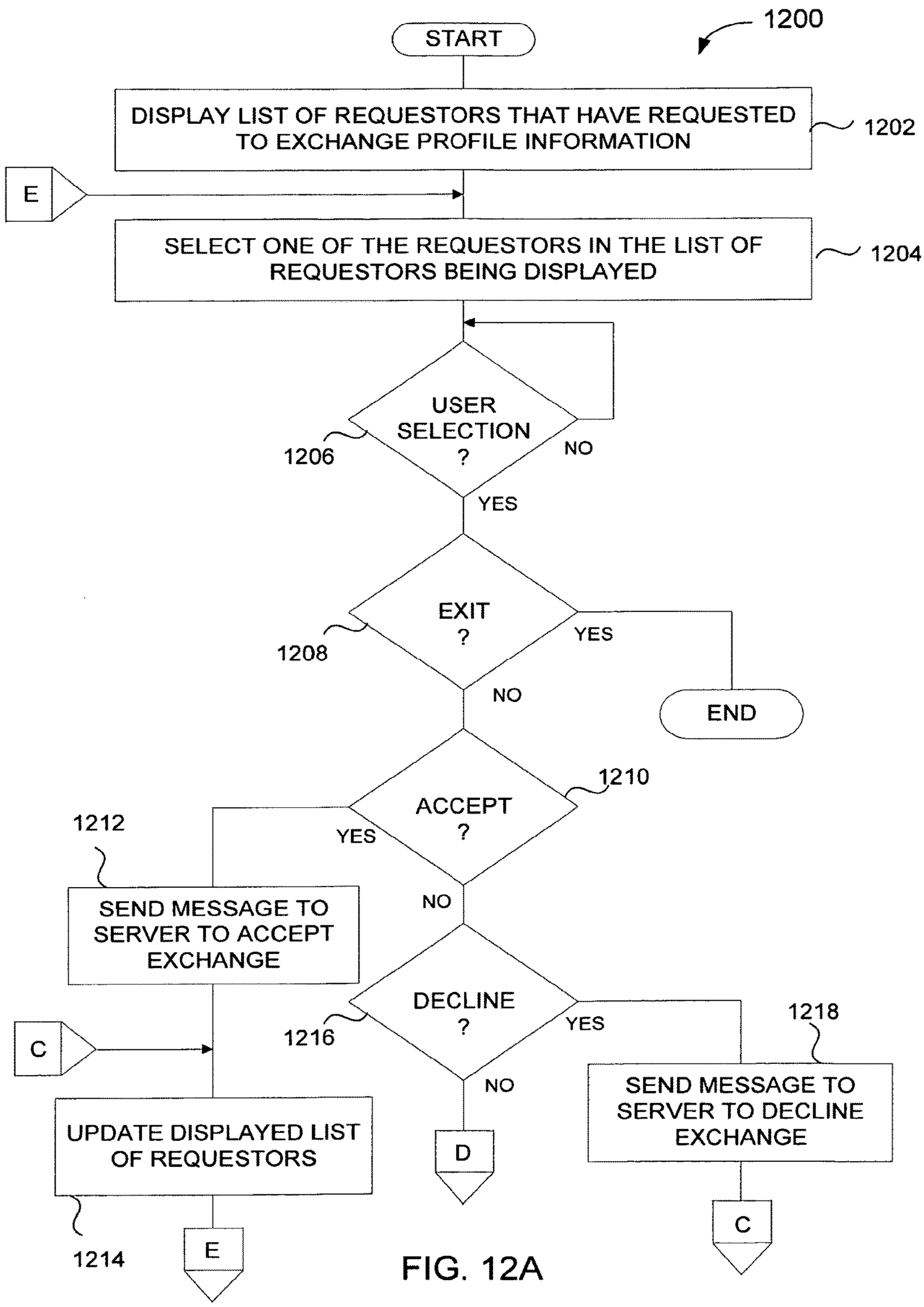
1200
START
DISPLAY LIST OF REQUESTORS THAT HAVE REQUESTED TO EXCHANGE PROFILE INFORMATION
1202
E
SELECT ONE OF THE REQUESTORS IN THE LIST OF REQUESTORS BEING DISPLAYED
1204
USER SELECTION ?
1206
NO
YES
EXIT ?
1208
YES
NO
END
ACCEPT ?
1210
YES
1212
SEND MESSAGE TO SERVER TO ACCEPT EXCHANGE
NO
DECLINE ?
1216
YES
1218
C
NO
SEND MESSAGE TO SERVER TO DECLINE EXCHANGE
UPDATE DISPLAYED LIST OF REQUESTORS
D
C
1214
E

FIG. 12A

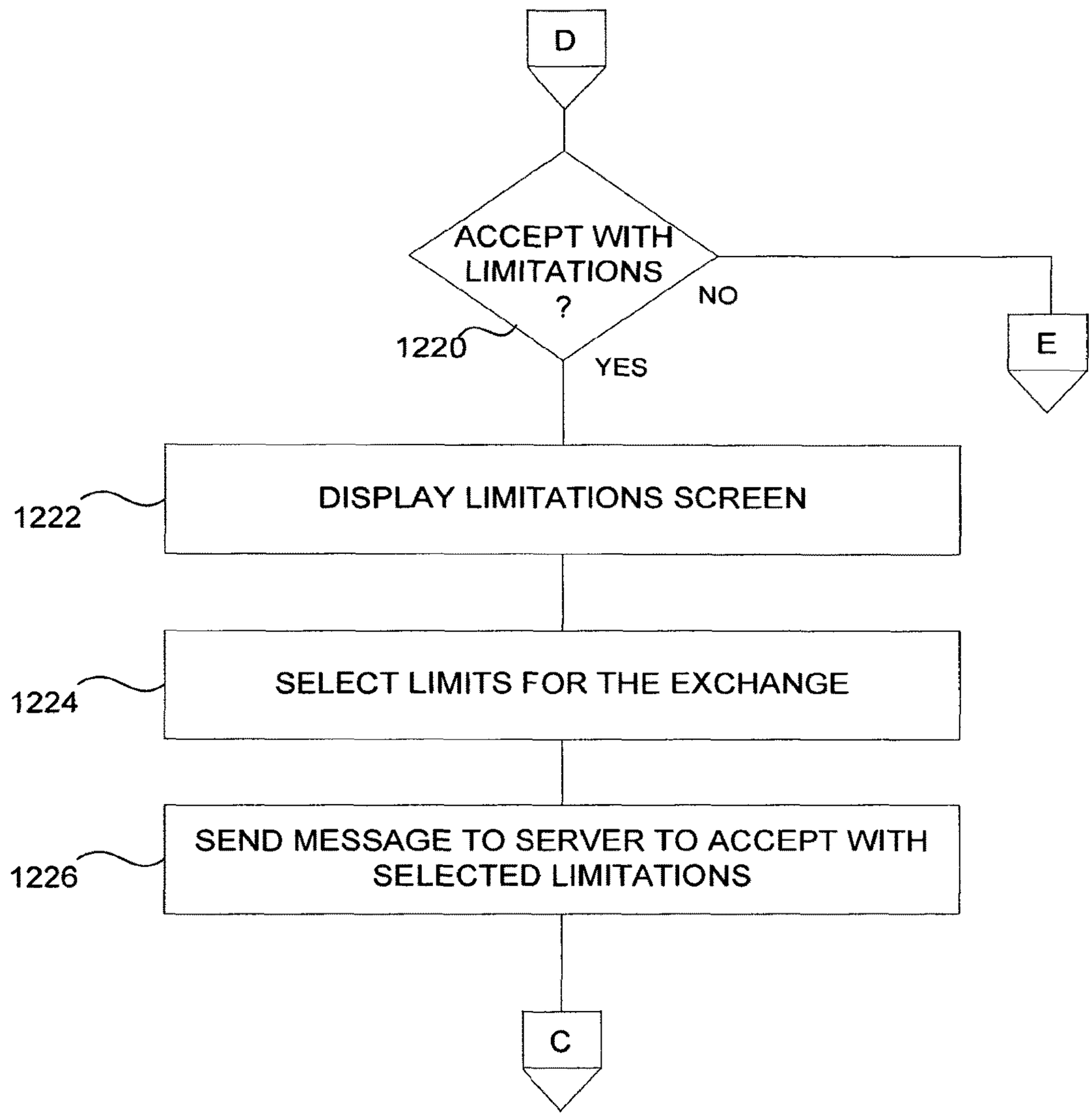
D
ACCEPT WITH LIMITATIONS ?
NO
E
1220
YES
1222
DISPLAY LIMITATIONS SCREEN
1224
SELECT LIMITS FOR THE EXCHANGE
1226
SEND MESSAGE TO SERVER TO ACCEPT WITH SELECTED LIMITATIONS
C

FIG. 12B

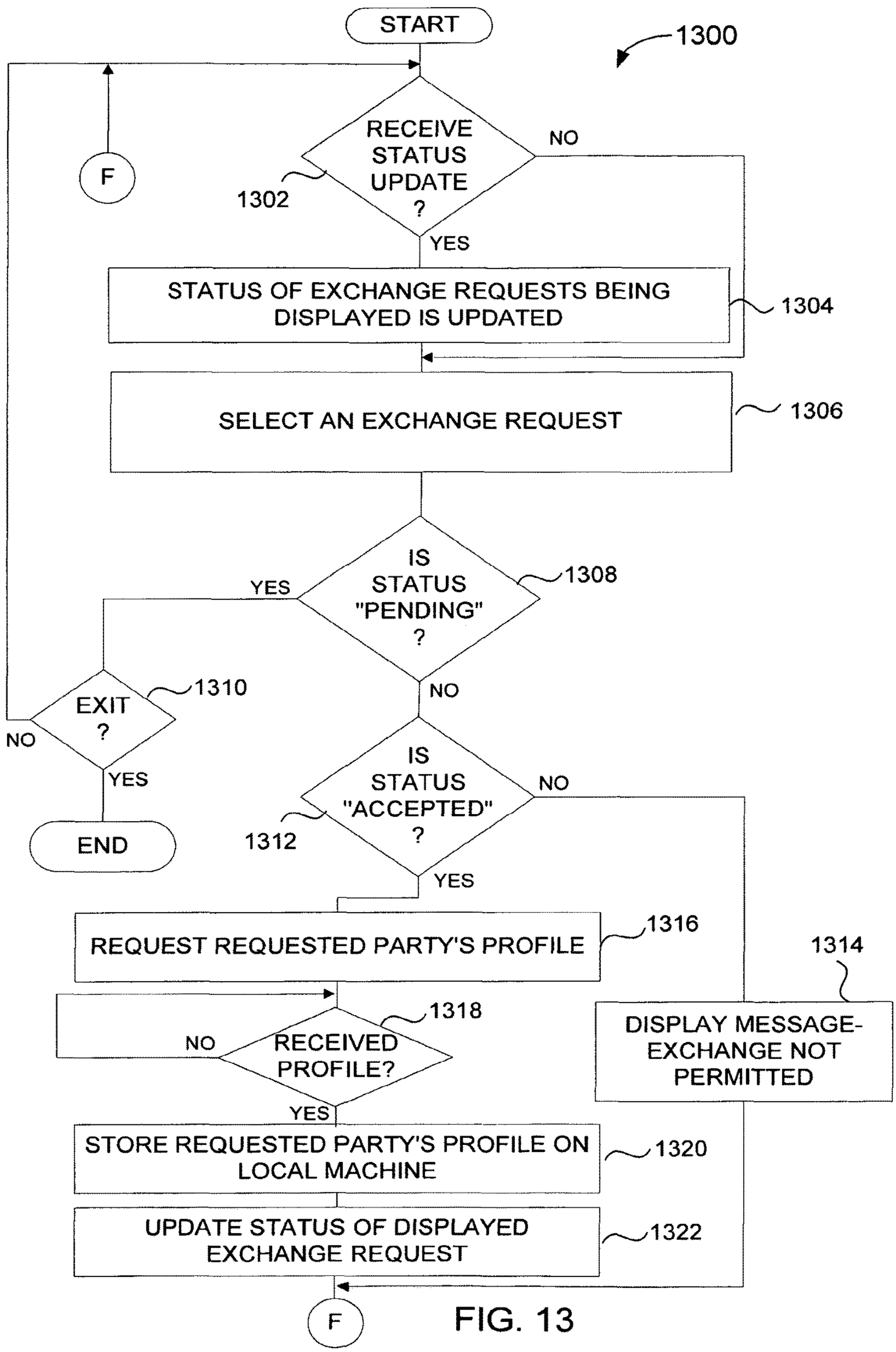
START
1300
RECEIVE STATUS UPDATE ?
1302
NO
YES
F
STATUS OF EXCHANGE REQUESTS BEING DISPLAYED IS UPDATED
1304
SELECT AN EXCHANGE REQUEST
1306
IS STATUS "PENDING" ?
1308
YES
NO
EXIT ?
1310
NO
YES
END
IS STATUS "ACCEPTED" ?
1312
NO
YES
REQUEST REQUESTED PARTY'S PROFILE
1316
1314
DISPLAY MESSAGE-EXCHANGE NOT PERMITTED
RECEIVED PROFILE?
1318
NO
YES
STORE REQUESTED PARTY'S PROFILE ON LOCAL MACHINE
1320
UPDATE STATUS OF DISPLAYED EXCHANGE REQUEST
1322
F

FIG. 13

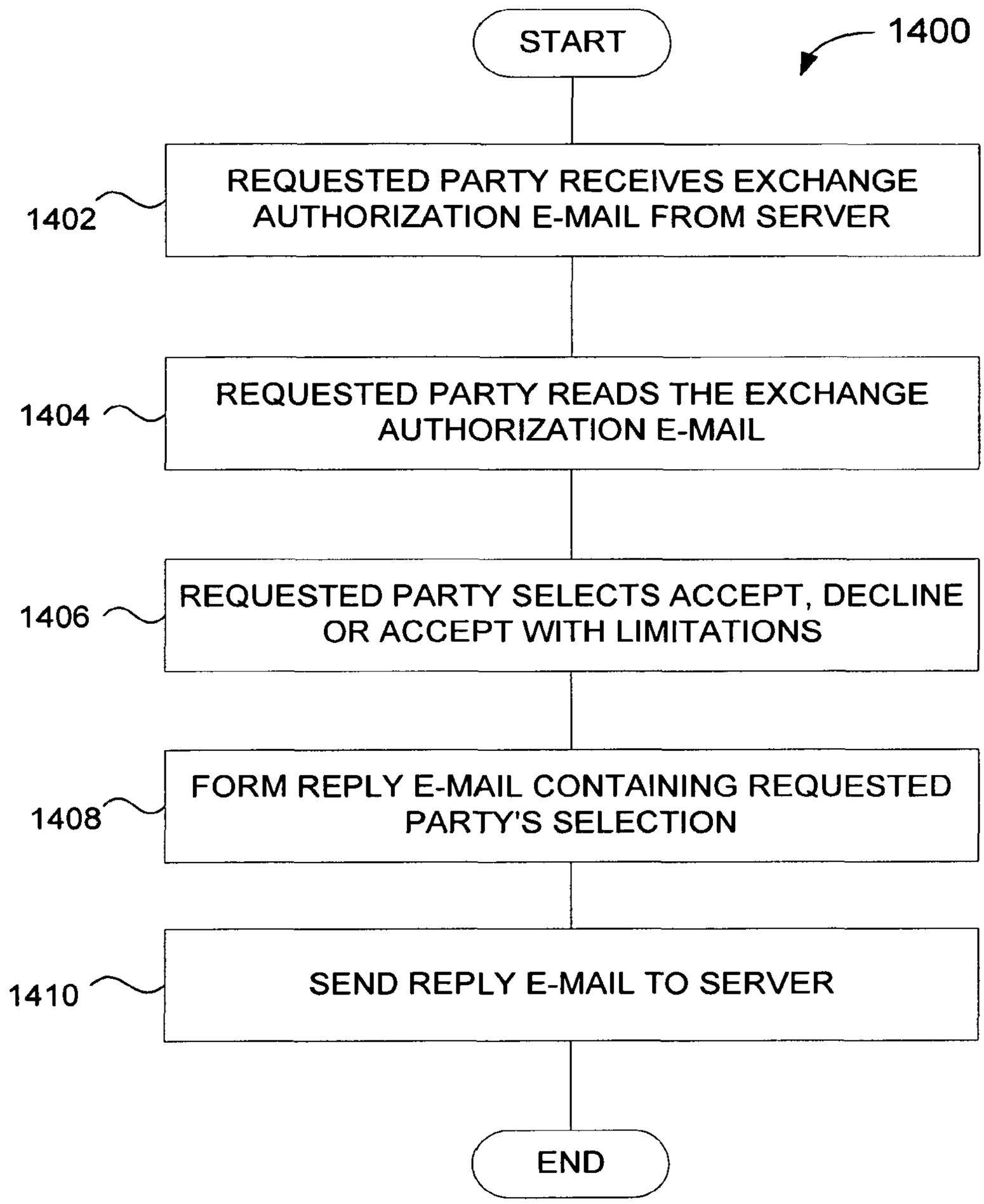
START
1400
1402
REQUESTED PARTY RECEIVES EXCHANGE AUTHORIZATION E-MAIL FROM SERVER
1404
REQUESTED PARTY READS THE EXCHANGE AUTHORIZATION E-MAIL
1406
REQUESTED PARTY SELECTS ACCEPT, DECLINE OR ACCEPT WITH LIMITATIONS
1408
FORM REPLY E-MAIL CONTAINING REQUESTED PARTY'S SELECTION
1410
SEND REPLY E-MAIL TO SERVER
END

FIG. 14

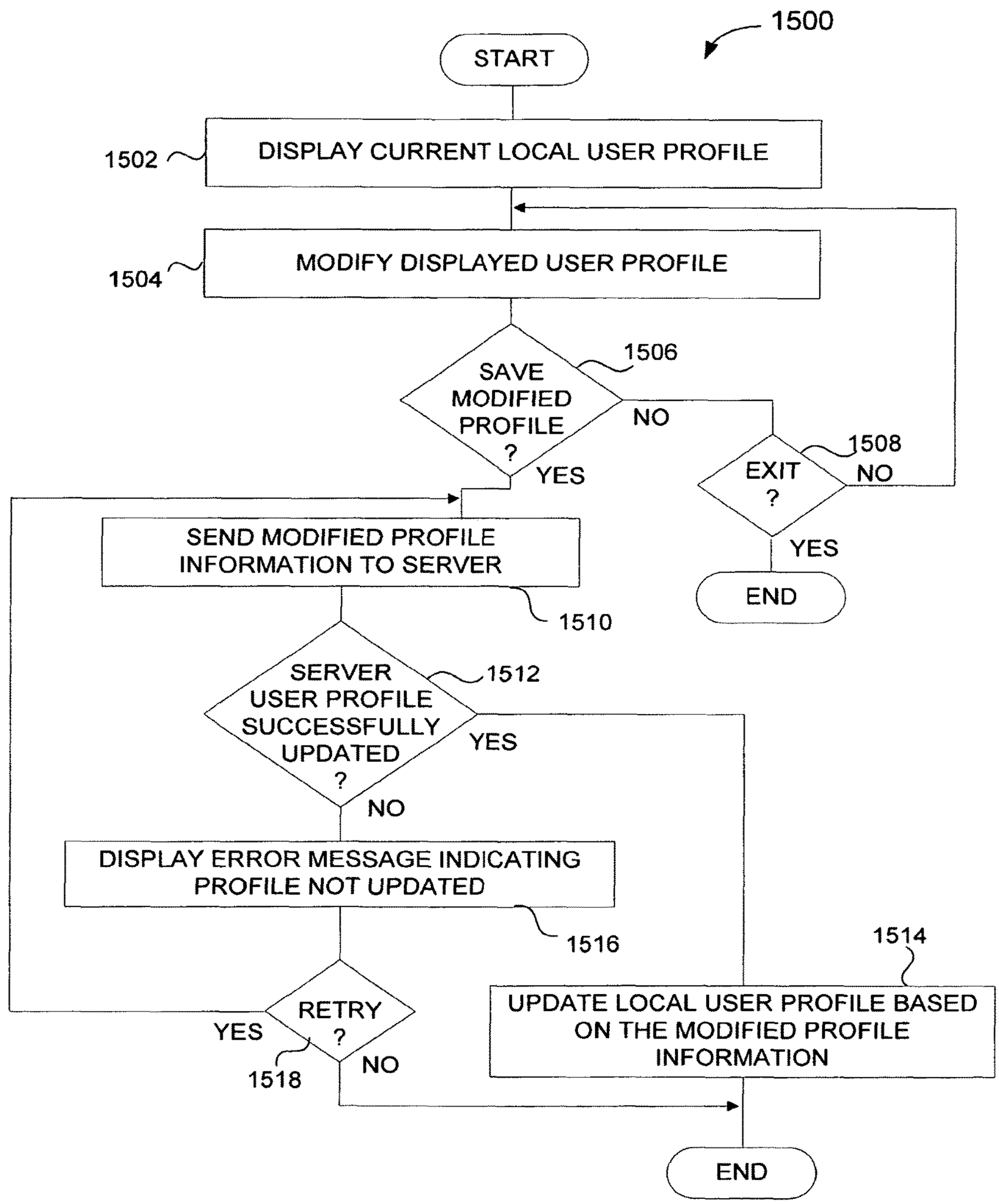
1500
START
1502
DISPLAY CURRENT LOCAL USER PROFILE
1504
MODIFY DISPLAYED USER PROFILE
1506
SAVE MODIFIED PROFILE ?
NO
YES
1508
EXIT ?
NO
YES
END
SEND MODIFIED PROFILE INFORMATION TO SERVER
1510
1512
SERVER USER PROFILE SUCCESSFULLY UPDATED ?
YES
NO
DISPLAY ERROR MESSAGE INDICATING PROFILE NOT UPDATED
1516
1514
RETRY ?
YES
NO
1518
UPDATE LOCAL USER PROFILE BASED ON THE MODIFIED PROFILE INFORMATION
END

FIG. 15

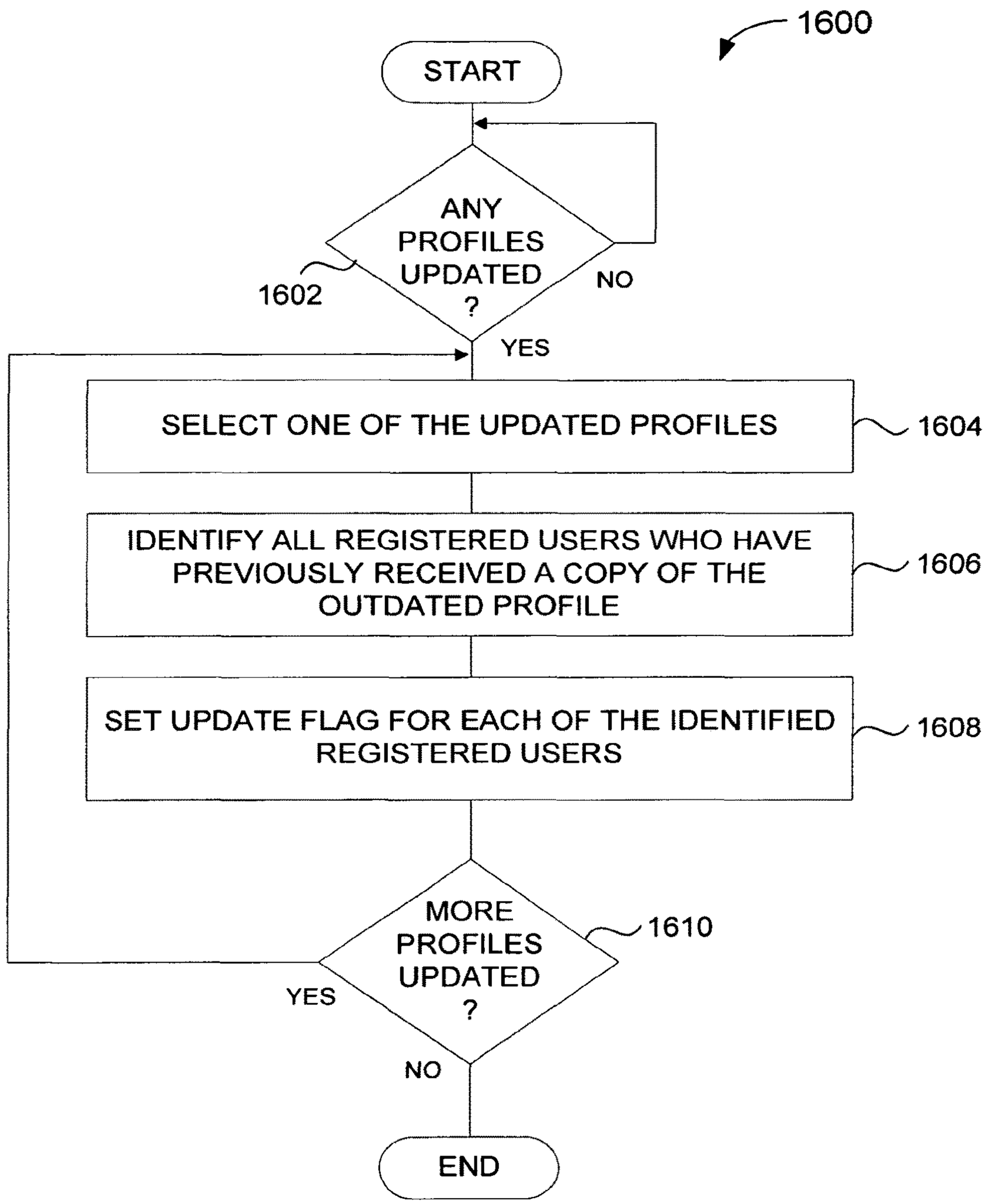
1600
START
ANY PROFILES UPDATED ?
1602
NO
YES
SELECT ONE OF THE UPDATED PROFILES
1604
IDENTIFY ALL REGISTERED USERS WHO HAVE PREVIOUSLY RECEIVED A COPY OF THE OUTDATED PROFILE
1606
SET UPDATE FLAG FOR EACH OF THE IDENTIFIED REGISTERED USERS
1608
MORE PROFILES UPDATED ?
1610
YES
NO
END

FIG. 16

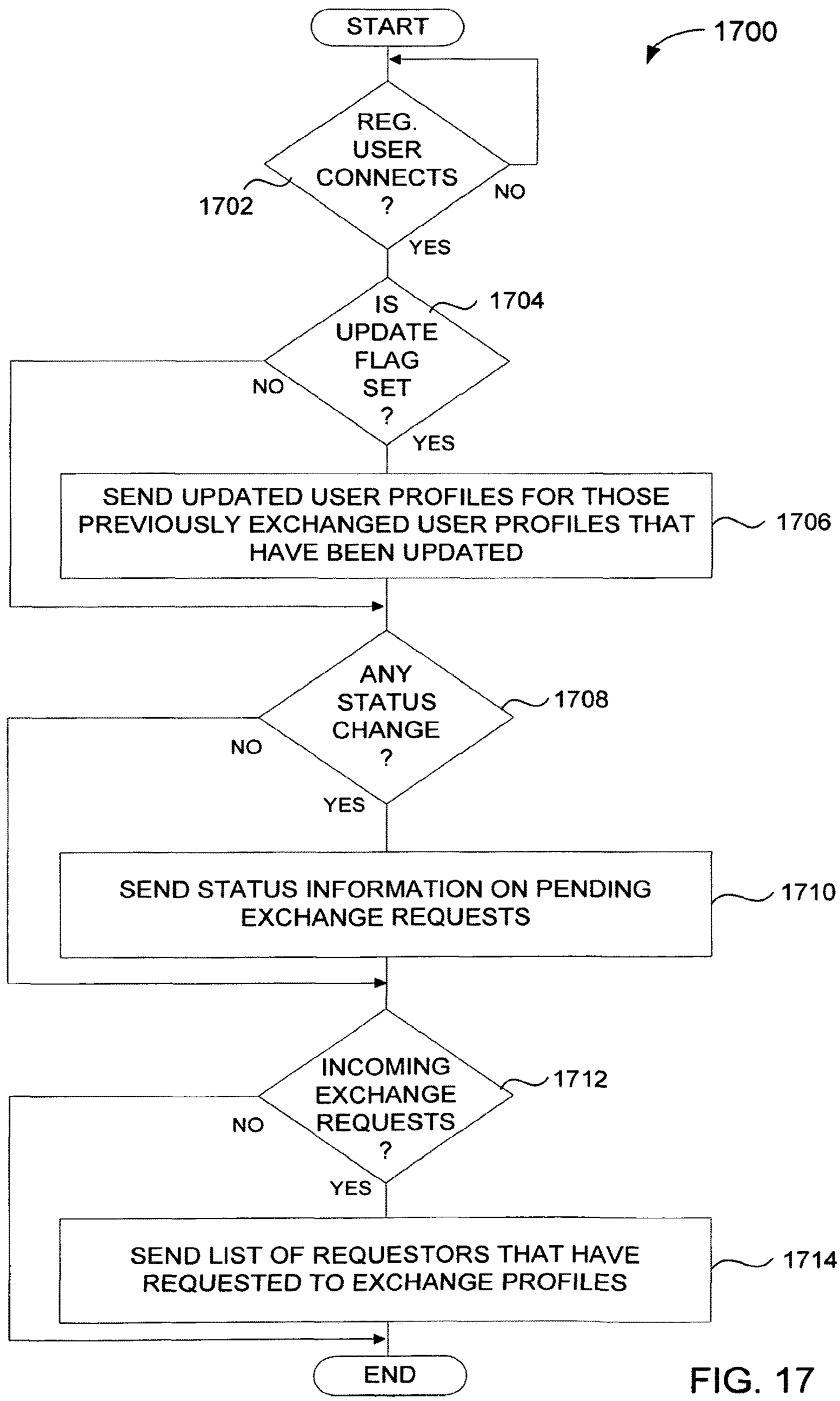
START
1700
REG. USER CONNECTS ?
1702
NO
YES
IS UPDATE FLAG SET ?
1704
NO
YES
SEND UPDATED USER PROFILES FOR THOSE PREVIOUSLY EXCHANGED USER PROFILES THAT HAVE BEEN UPDATED
1706
ANY STATUS CHANGE ?
1708
NO
YES
SEND STATUS INFORMATION ON PENDING EXCHANGE REQUESTS
1710
INCOMING EXCHANGE REQUESTS ?
1712
NO
YES
SEND LIST OF REQUESTORS THAT HAVE REQUESTED TO EXCHANGE PROFILES
1714
END

FIG. 17

Card-To-Card Registration Form

Required Information:

Last Name:
Middle Initial:
First Name:
EMail Address:

Additional Business Information: (Optional)

Title:
Tel: Area Code/#
Company:
Extension:
Address:
Fax: Area Code/#:
City:
State: Select State
Zip:
Mail Stop:
URL:

Personal Information: (Optional)

Home Address:
City:
State: Select State
Zip:
Tel: Area Code/#:
Fax: Area Code/#:

Clear Submit Cancel

FIG. 18A

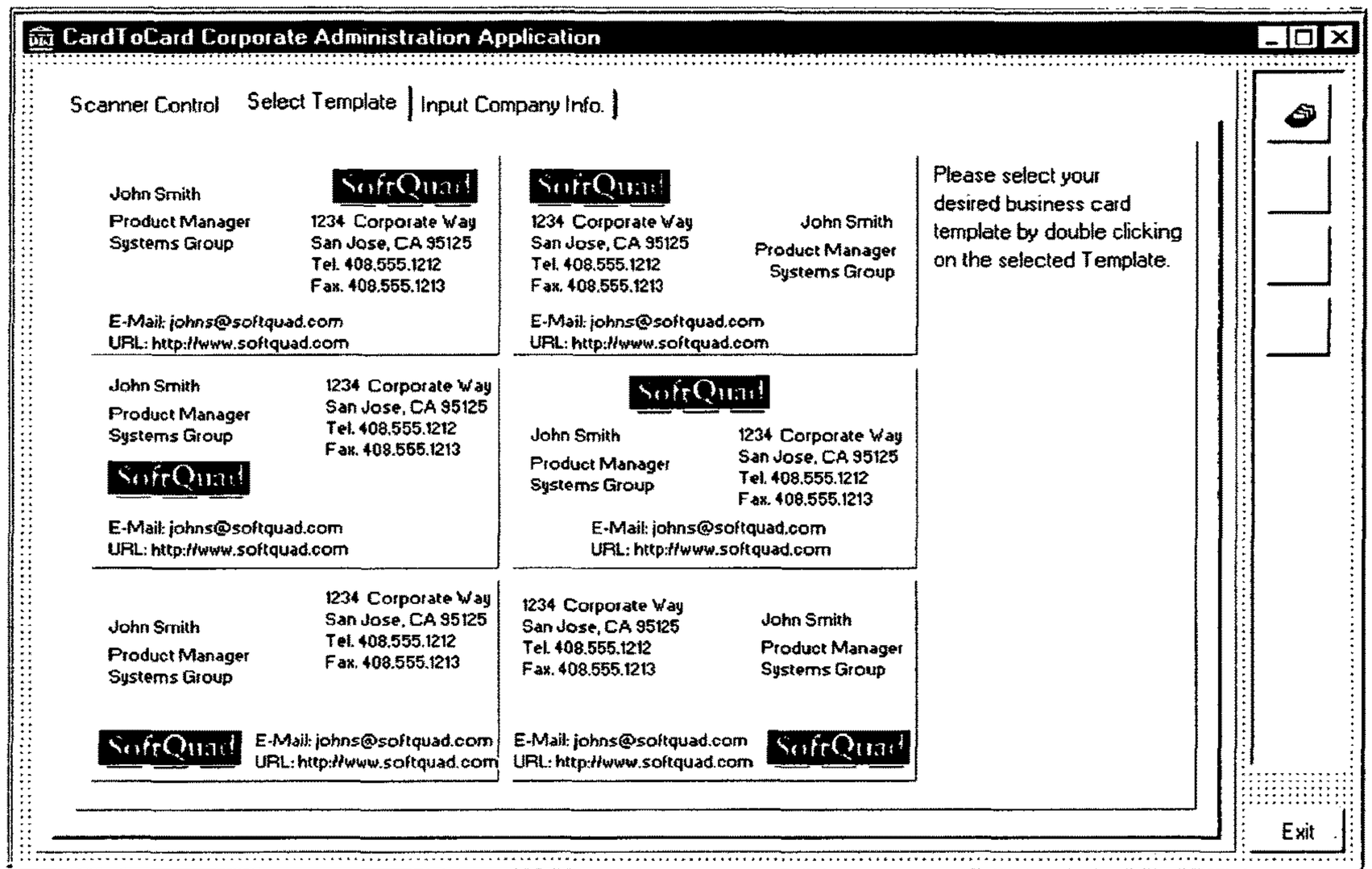
CardToCard Corporate Administration Application
Scanner Control
Select Template
Input Company Info.
John Smith
Product Manager
Systems Group
SoftQuad
1234 Corporate Way
San Jose, CA 95125
Tel. 408.555.1212
Fax. 408.555.1213
E-Mail: johns@softquad.com
URL: http://www.softquad.com
Please select your desired business card template by double clicking on the selected Template.
Exit

FIG. 18B

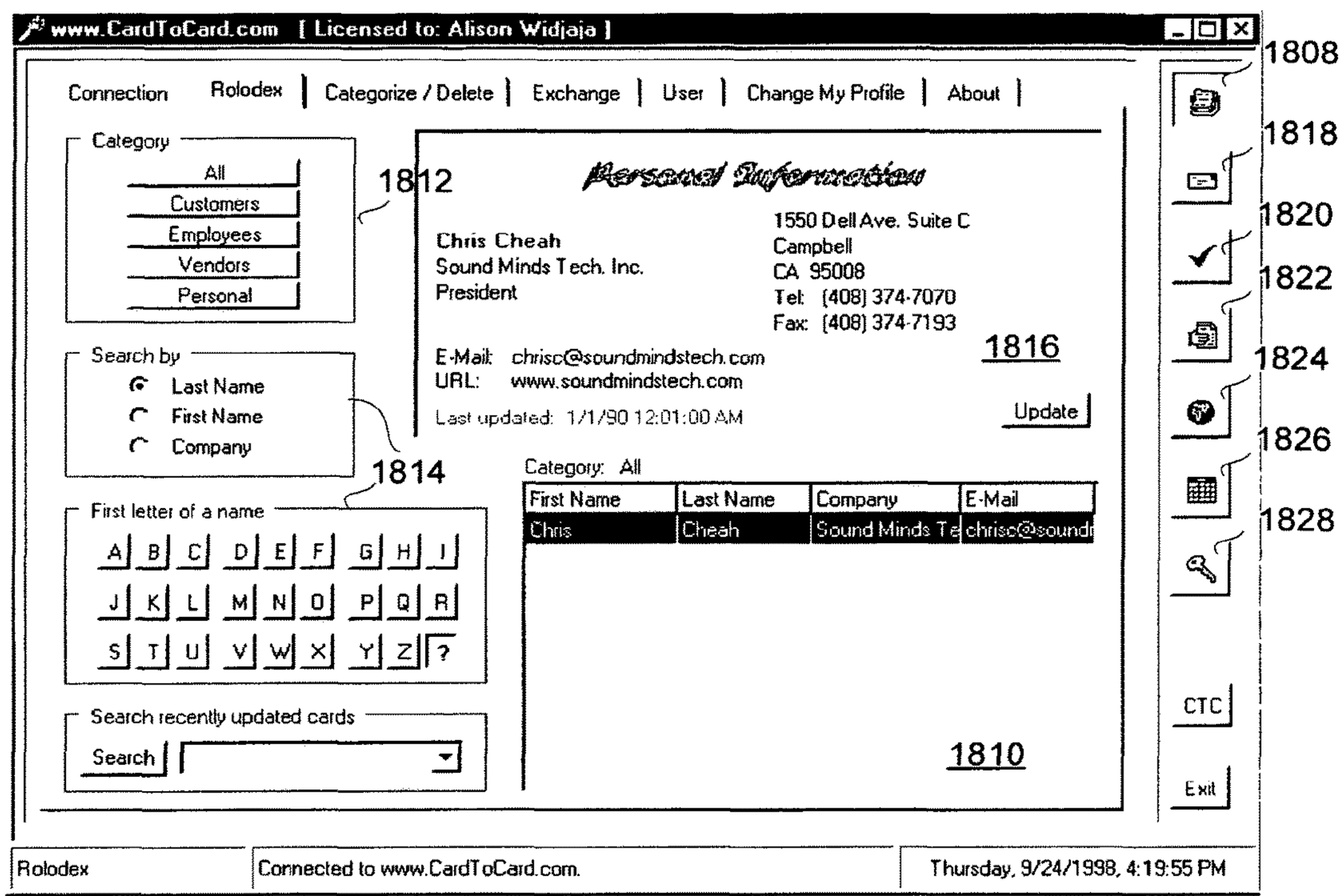
www.CardToCard.com [Licensed to: Alison Widjaja]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
Category
All
Customers
Employees
Vendors
Personal
1812
Personal Information
Chris Cheah
Sound Minds Tech. Inc.
President
1550 Dell Ave. Suite C
Campbell
CA 95008
Tel: (408) 374-7070
Fax: (408) 374-7193
E-Mail: chrisc@soundmindstech.com
URL: www.soundmindstech.com
Last updated: 1/1/90 12:01:00 AM
1816
Update
Search by
Last Name
First Name
Company
1814
First letter of a name
A B C D E F G H I
J K L M N O P Q R
S T U V W X Y Z ?
Category: All
First Name
Last Name
Company
E-Mail
Chris
Cheah
Sound Minds Te
chrisc@soundr
Search recently updated cards
Search
1810
CTC
Exit
1808
1818
1820
1822
1824
1826
1828
Rolodex
Connected to www.CardToCard.com.
Thursday, 9/24/1998, 4:19:55 PM

FIG. 18C

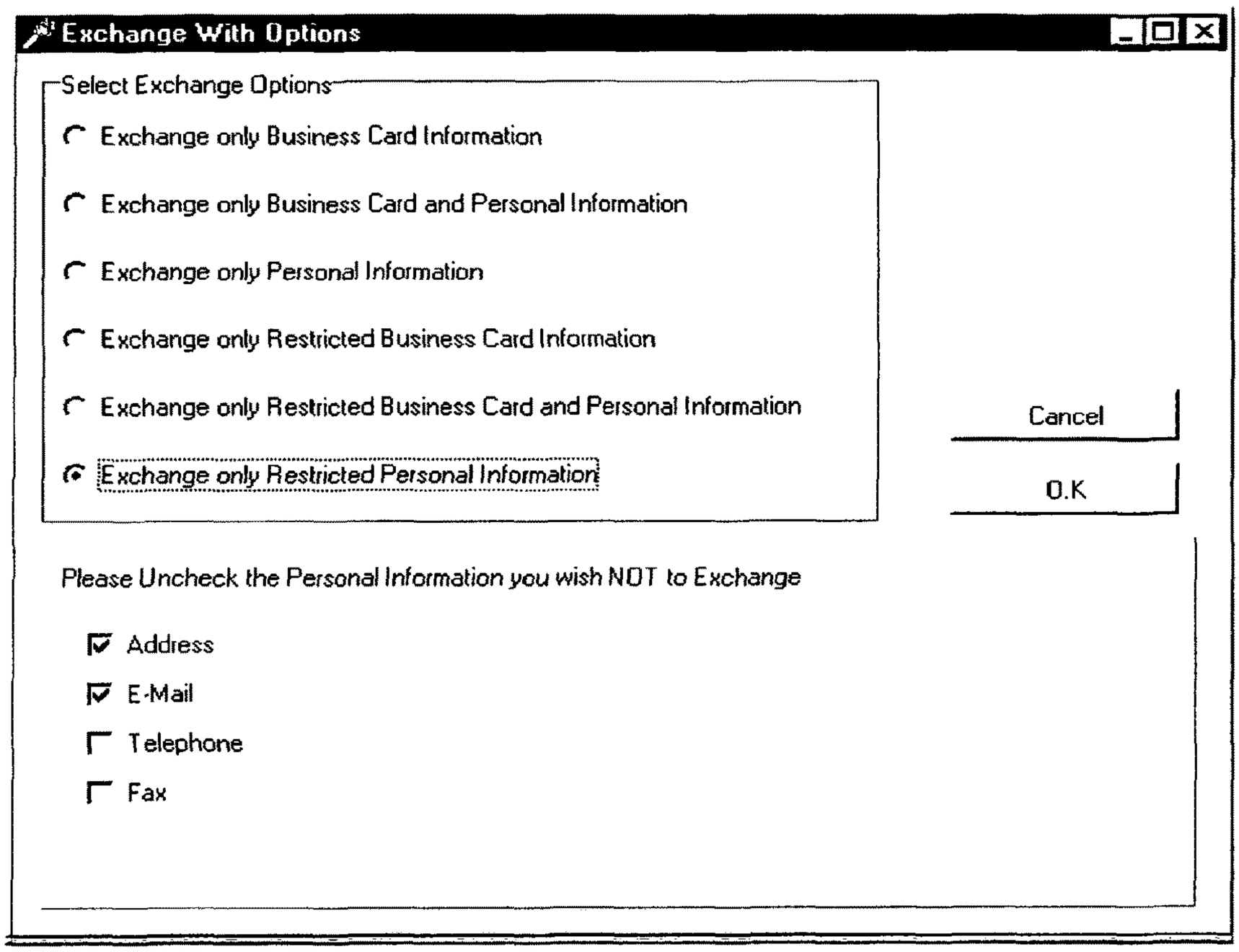
Exchange With Options
Select Exchange Options
Exchange only Business Card Information
Exchange only Business Card and Personal Information
Exchange only Personal Information
Exchange only Restricted Business Card Information
Exchange only Restricted Business Card and Personal Information
Exchange only Restricted Personal Information
Cancel
O.K
Please Uncheck the Personal Information you wish NOT to Exchange
Address
E-Mail
Telephone
Fax

FIG. 18D

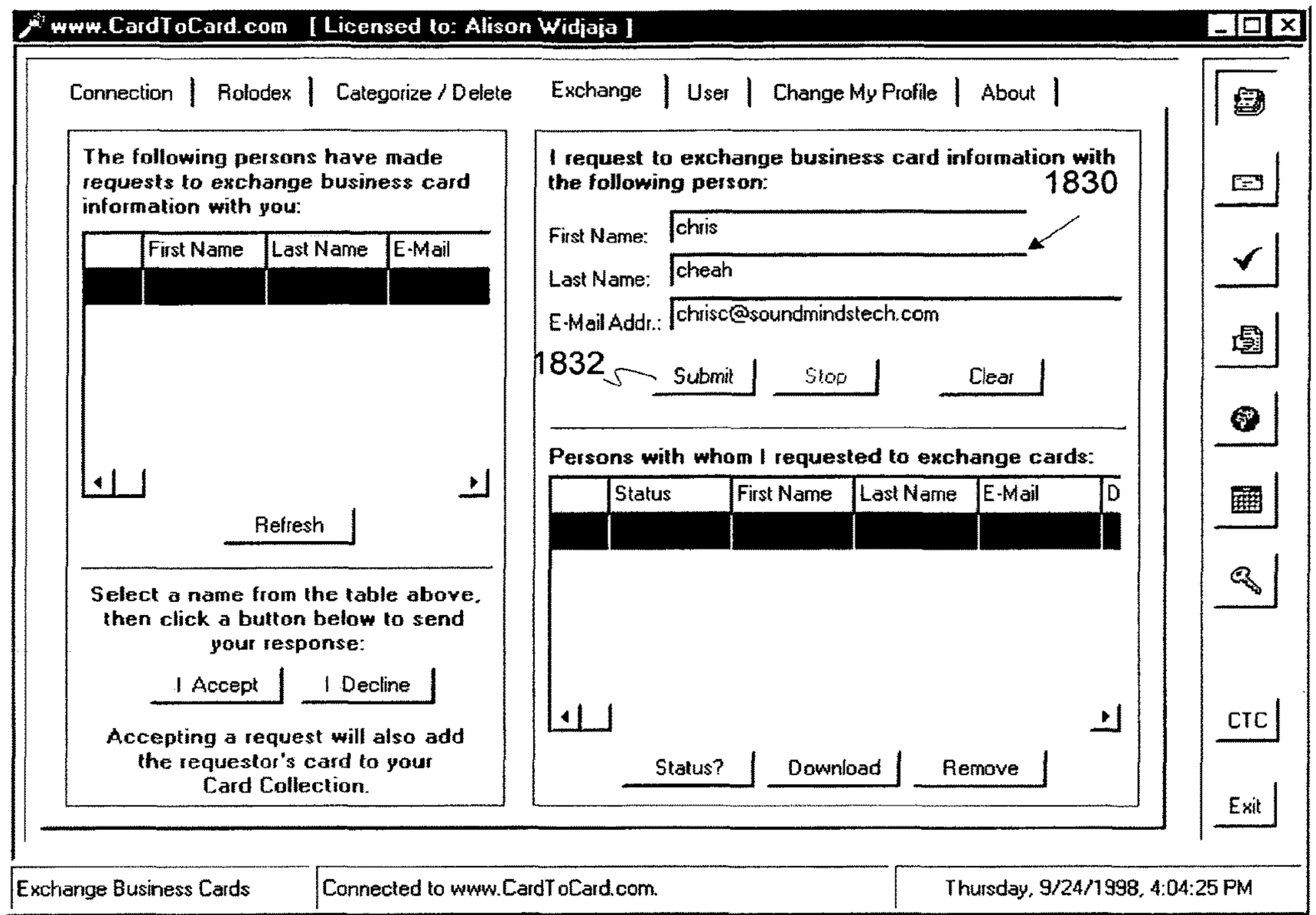
www.CardToCard.com [Licensed to: Alison Widjaja]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
The following persons have made requests to exchange business card information with you:
First Name
Last Name
E-Mail
Refresh
Select a name from the table above, then click a button below to send your response:
I Accept
I Decline
Accepting a request will also add the requestor's card to your Card Collection.
I request to exchange business card information with the following person:
1830
First Name:
chris
Last Name:
cheah
E-Mail Addr.:
chrisc@soundmindstech.com
1832
Submit
Stop
Clear
Persons with whom I requested to exchange cards:
Status
First Name
Last Name
E-Mail
Status?
Download
Remove
CTC
Exit
Exchange Business Cards
Connected to www.CardToCard.com.
Thursday, 9/24/1998, 4:04:25 PM

FIG. 18E

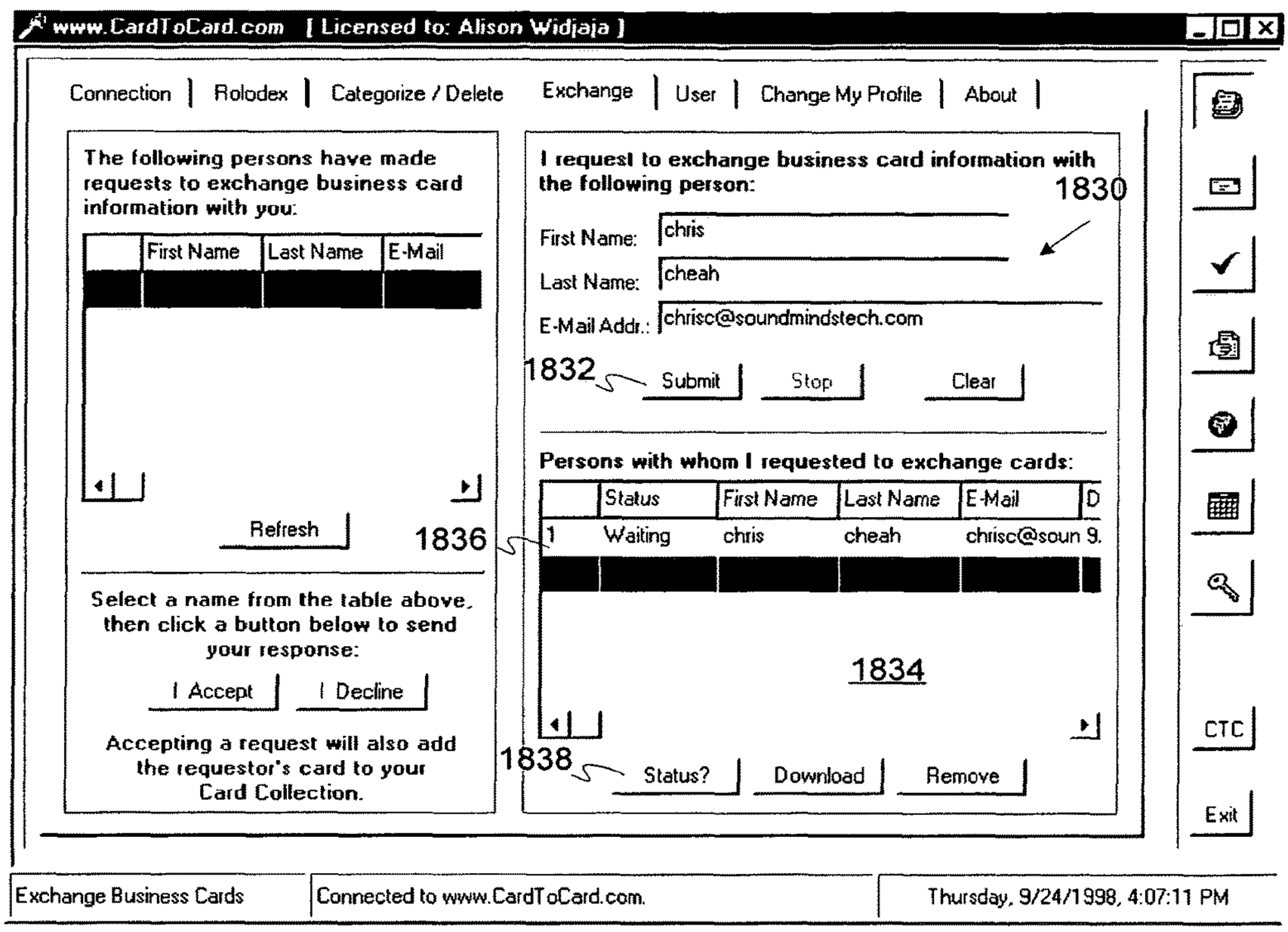
www.CardToCard.com [Licensed to: Alison Widjaja]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
The following persons have made requests to exchange business card information with you:
First Name
Last Name
E-Mail
Refresh
1836
Select a name from the table above, then click a button below to send your response:
I Accept
I Decline
Accepting a request will also add the requestor's card to your Card Collection.
I request to exchange business card information with the following person:
1830
First Name:
chris
Last Name:
cheah
E-Mail Addr.:
chrisc@soundmindstech.com
1832
Submit
Stop
Clear
Persons with whom I requested to exchange cards:
Status
First Name
Last Name
E-Mail
1
Waiting
chris
cheah
chrisc@soun
1834
1838
Status?
Download
Remove
CTC
Exit
Exchange Business Cards
Connected to www.CardToCard.com.
Thursday, 9/24/1998, 4:07:11 PM

FIG. 18F

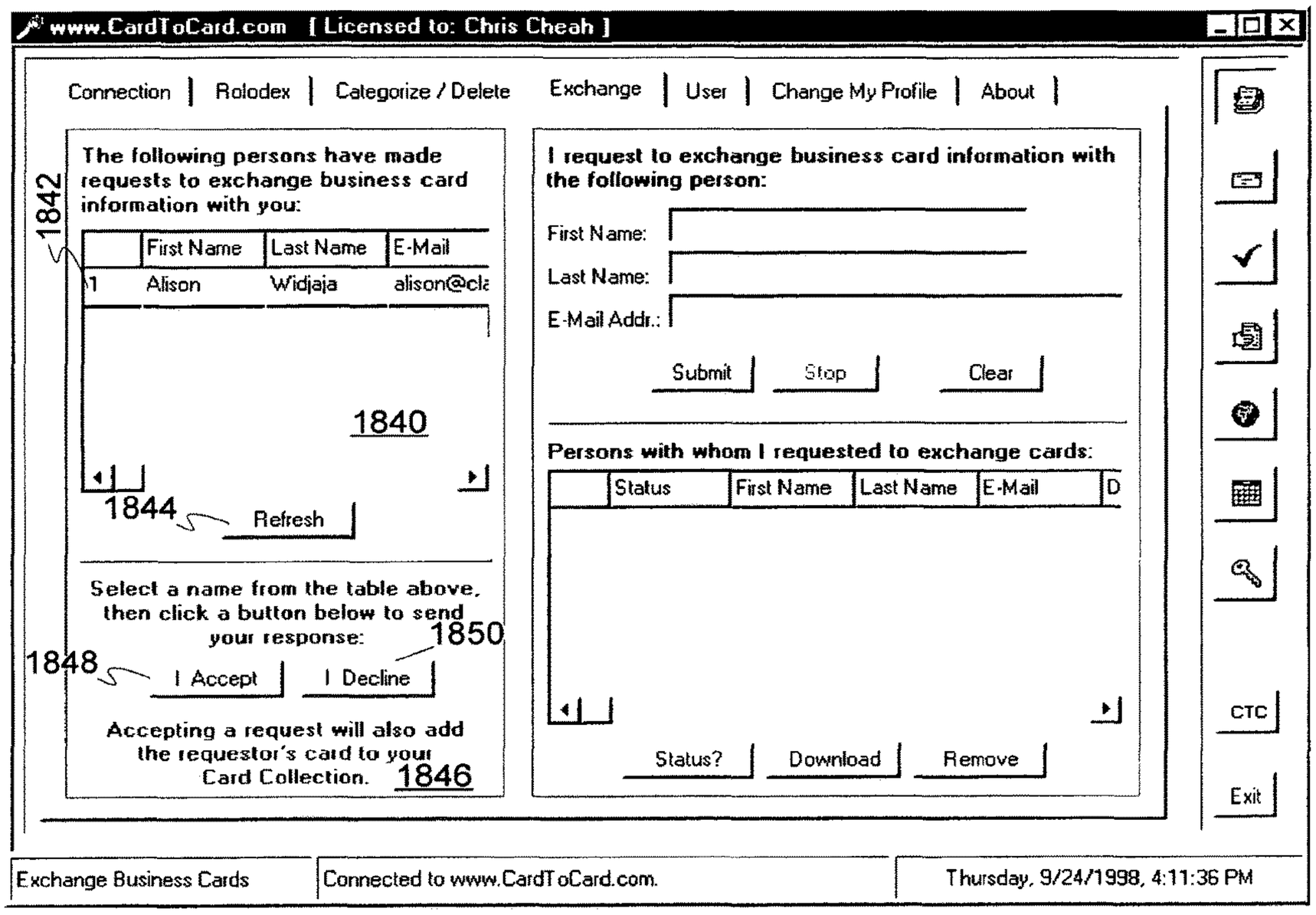
www.CardToCard.com [Licensed to: Chris Cheah]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
The following persons have made requests to exchange business card information with you:
1842
First Name
Last Name
E-Mail
Alison
Widjaja
alison@cl
1840
1844
Refresh
Select a name from the table above, then click a button below to send your response:
1850
1848
I Accept
I Decline
Accepting a request will also add the requestor's card to your Card Collection.
1846
I request to exchange business card information with the following person:
First Name:
Last Name:
E-Mail Addr.:
Submit
Stop
Clear
Persons with whom I requested to exchange cards:
Status
First Name
Last Name
E-Mail
Status?
Download
Remove
CTC
Exit
Exchange Business Cards
Connected to www.CardToCard.com.
Thursday, 9/24/1998, 4:11:36 PM

FIG. 18G

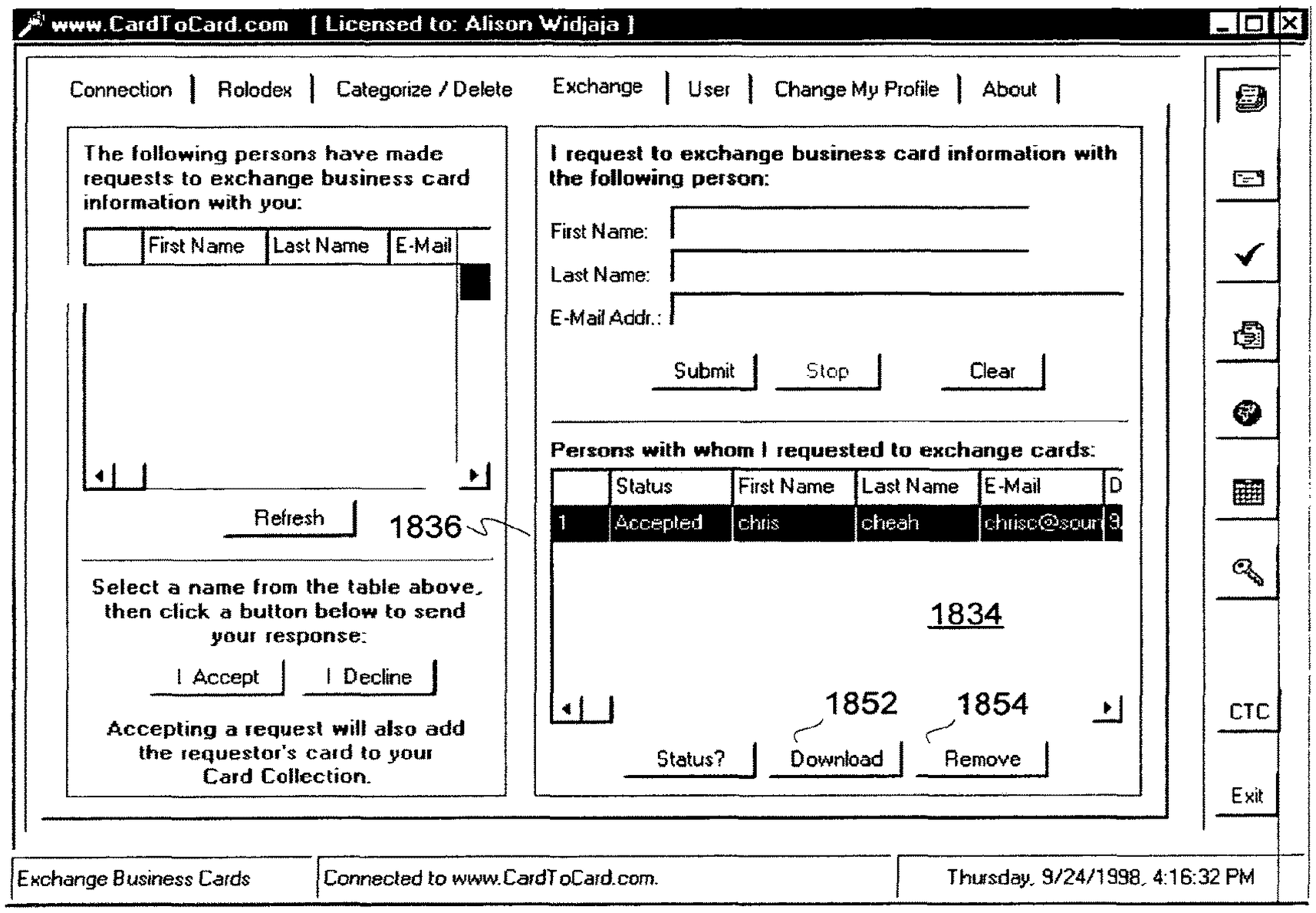
www.CardToCard.com [Licensed to: Alison Widjaja]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
The following persons have made requests to exchange business card information with you:
First Name
Last Name
E-Mail
Refresh
1836
Select a name from the table above, then click a button below to send your response:
I Accept
I Decline
Accepting a request will also add the requestor's card to your Card Collection.
I request to exchange business card information with the following person:
First Name:
Last Name:
E-Mail Addr.:
Submit
Stop
Clear
Persons with whom I requested to exchange cards:
Status
First Name
Last Name
E-Mail
1
Accepted
chris
cheah
chrisc@sour
1834
1852
1854
Status?
Download
Remove
CTC
Exit
Exchange Business Cards
Connected to www.CardToCard.com.
Thursday, 9/24/1998, 4:16:32 PM

FIG. 18H

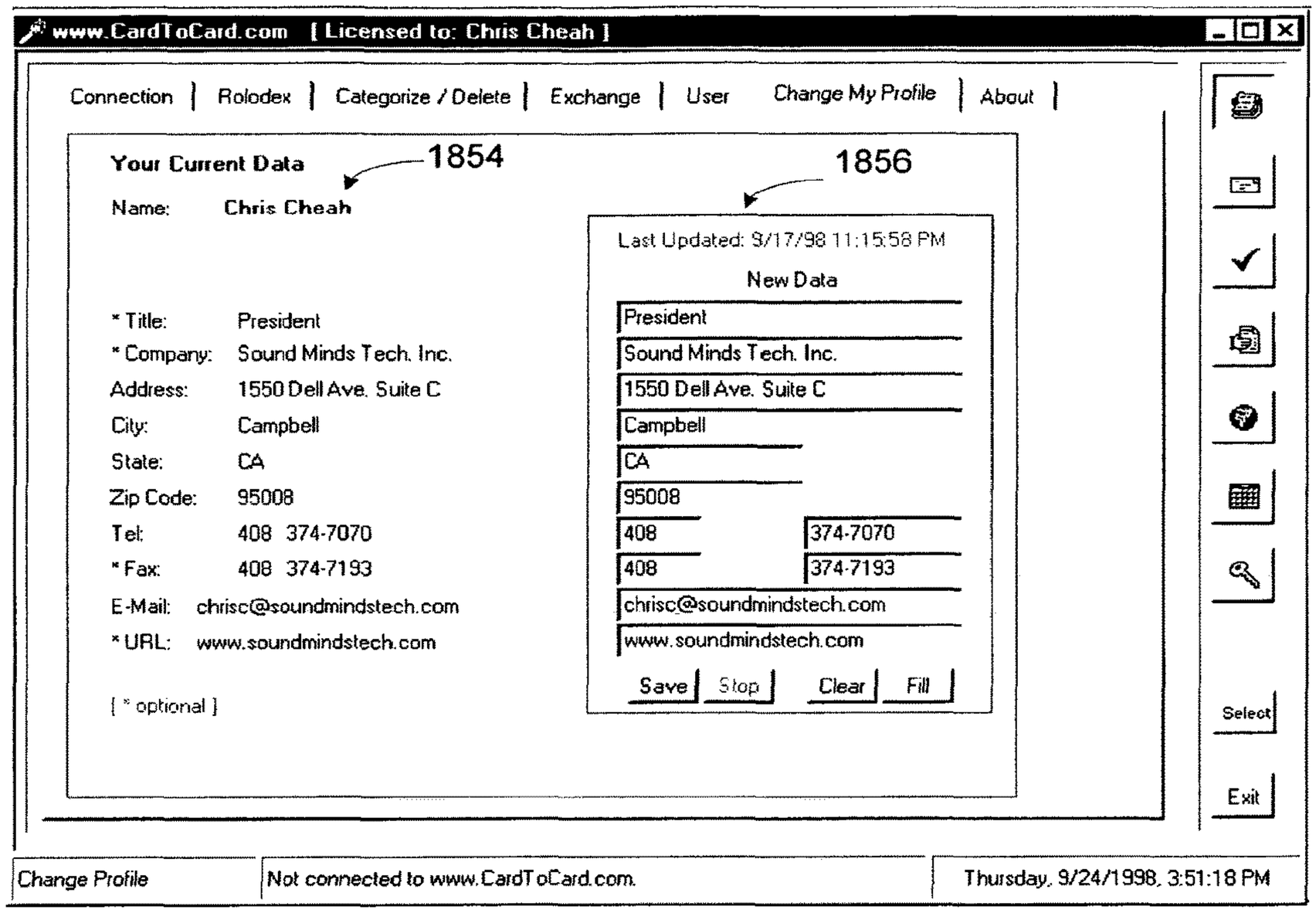
www.CardToCard.com [Licensed to: Chris Cheah]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
Your Current Data
1854
1856
Name: Chris Cheah
* Title: President
* Company: Sound Minds Tech. Inc.
Address: 1550 Dell Ave. Suite C
City: Campbell
State: CA
Zip Code: 95008
Tel: 408 374-7070
* Fax: 408 374-7193
E-Mail: chrisc@soundmindstech.com
* URL: www.soundmindstech.com
[* optional]
Last Updated: 9/17/98 11:15:58 PM
New Data
President
Sound Minds Tech. Inc.
1550 Dell Ave. Suite C
Campbell
CA
95008
408
374-7070
408
374-7193
chrisc@soundmindstech.com
www.soundmindstech.com
Save
Stop
Clear
Fill
Select
Exit
Change Profile
Not connected to www.CardToCard.com.
Thursday, 9/24/1998, 3:51:18 PM

FIG. 18I

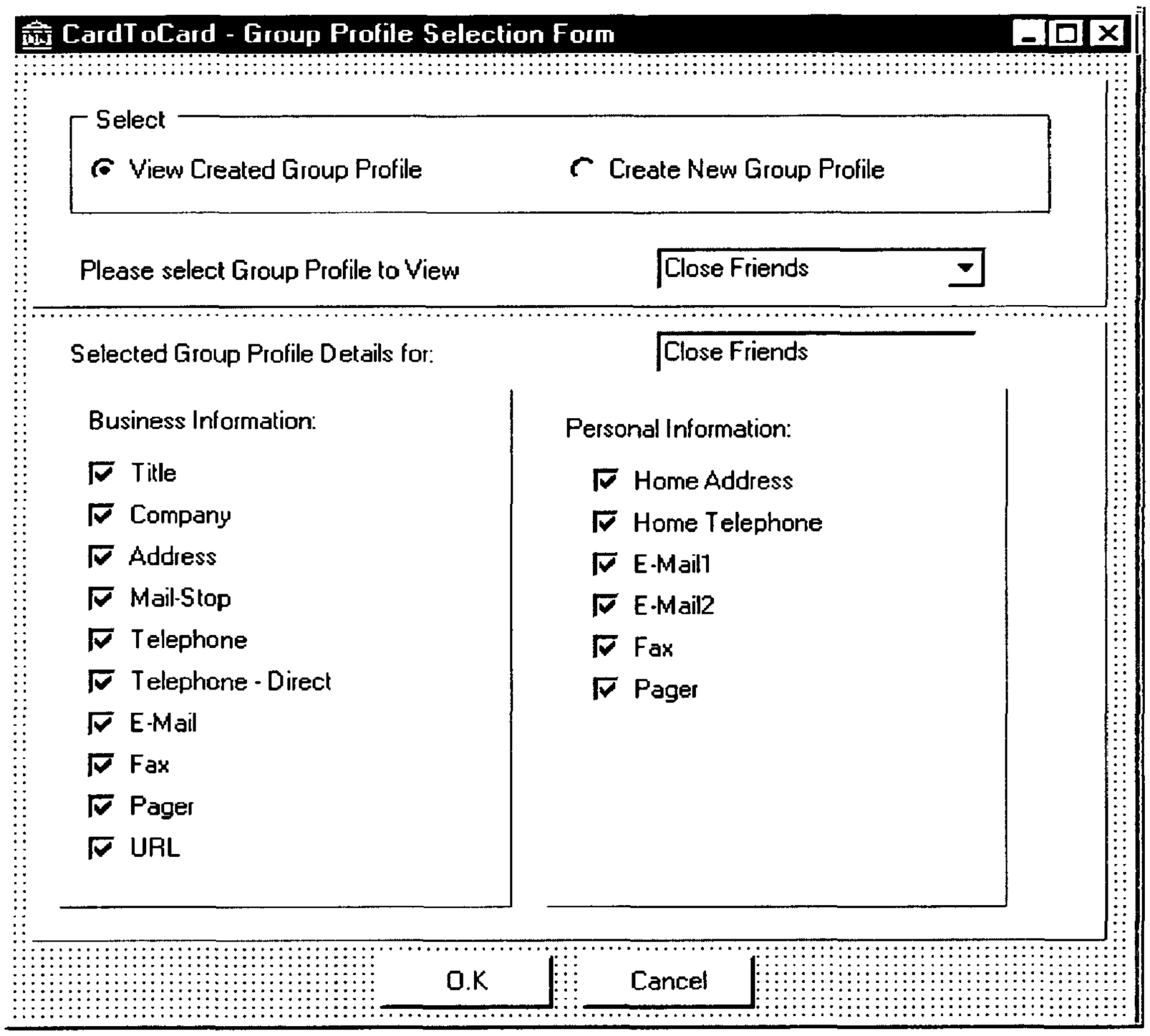
CardToCard - Group Profile Selection Form
Select
View Created Group Profile
Create New Group Profile
Please select Group Profile to View
Close Friends
Selected Group Profile Details for:
Close Friends
Business Information:
Title
Company
Address
Mail-Stop
Telephone
Telephone - Direct
E-Mail
Fax
Pager
URL
Personal Information:
Home Address
Home Telephone
E-Mail1
E-Mail2
Fax
Pager
O.K
Cancel

FIG. 18J

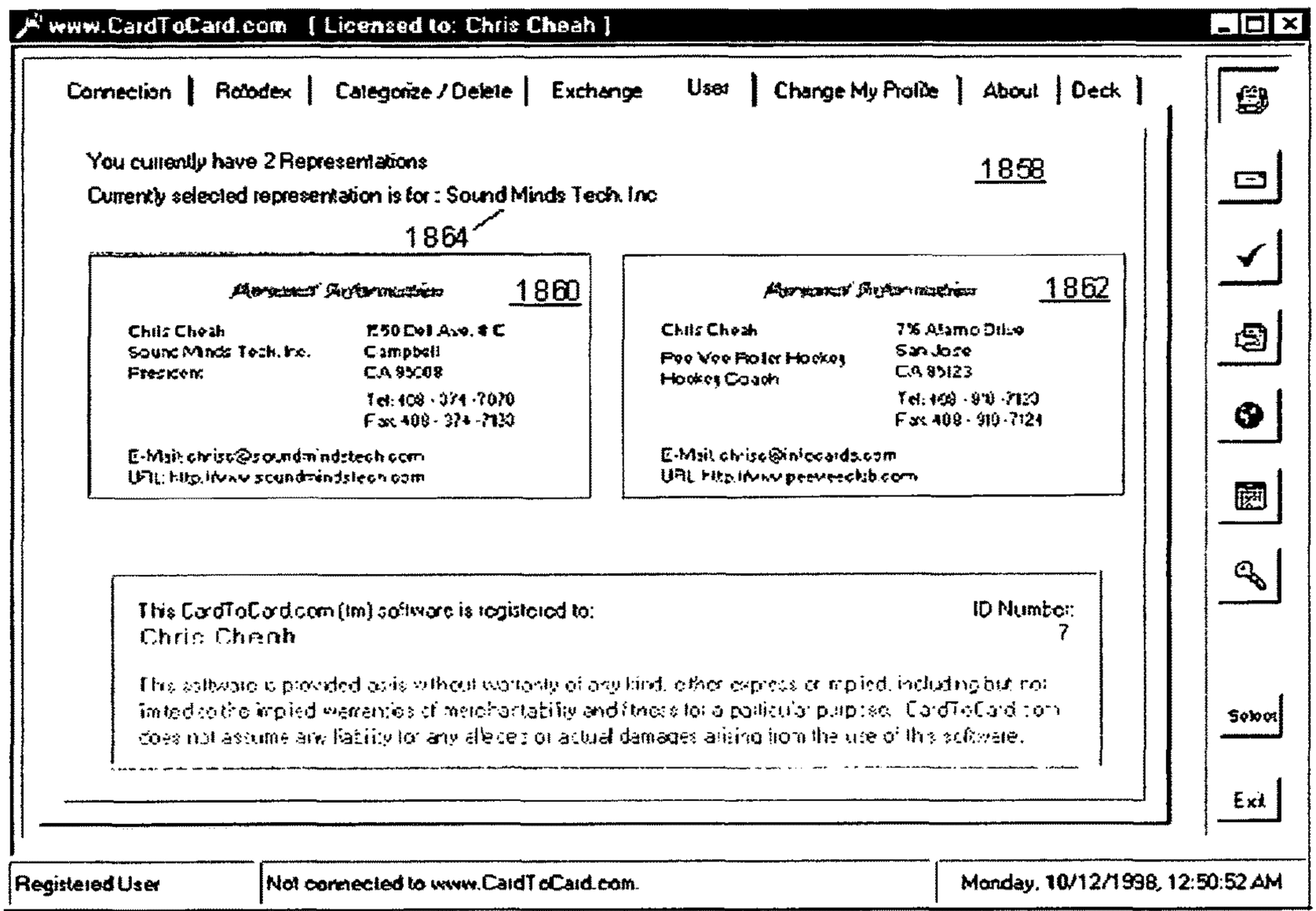
www.CardToCard.com [Licensed to: Chris Cheah]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
Deck
You currently have 2 Representations
1858
Currently selected representation is for : Sound Minds Tech. Inc
1864
1860
Chris Cheah
Sound Minds Tech. Inc.
President
Campbell
CA 95008
1862
Chris Cheah
Pee Wee Roller Hockey
Hockey Coach
San Jose
This CardToCard.com (tm) software is registered to:
Chris Cheah
ID Number:
7
Select
Exit
Registered User
Not connected to www.CardToCard.com.
Monday, 10/12/1998, 12:50:52 AM

FIG. 18K

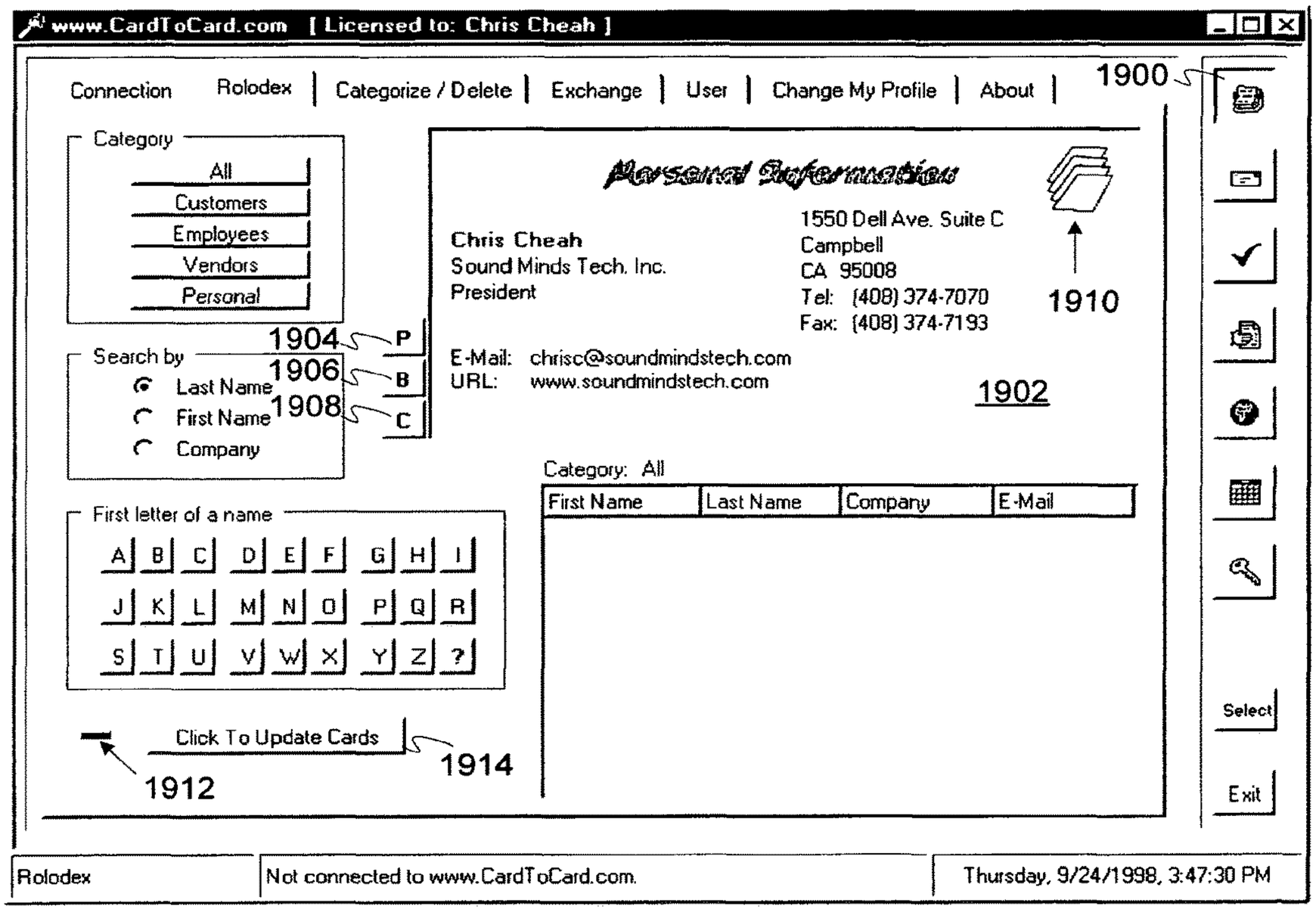
www.CardToCard.com [Licensed to: Chris Cheah]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
1900
Category
All
Customers
Employees
Vendors
Personal
Search by
Last Name
First Name
Company
1904
1906
1908
P
B
C
Personal Information
Chris Cheah
Sound Minds Tech. Inc.
President
1550 Dell Ave. Suite C
Campbell
CA 95008
Tel: (408) 374-7070
Fax: (408) 374-7193
1910
E-Mail: chrisc@soundmindstech.com
URL: www.soundmindstech.com
1902
Category: All
First Name
Last Name
Company
E-Mail
First letter of a name
A B C D E F G H I
J K L M N O P Q R
S T U V W X Y Z ?
Click To Update Cards
1912
1914
Select
Exit
Rolodex
Not connected to www.CardToCard.com.
Thursday, 9/24/1998, 3:47:30 PM

FIG. 19A

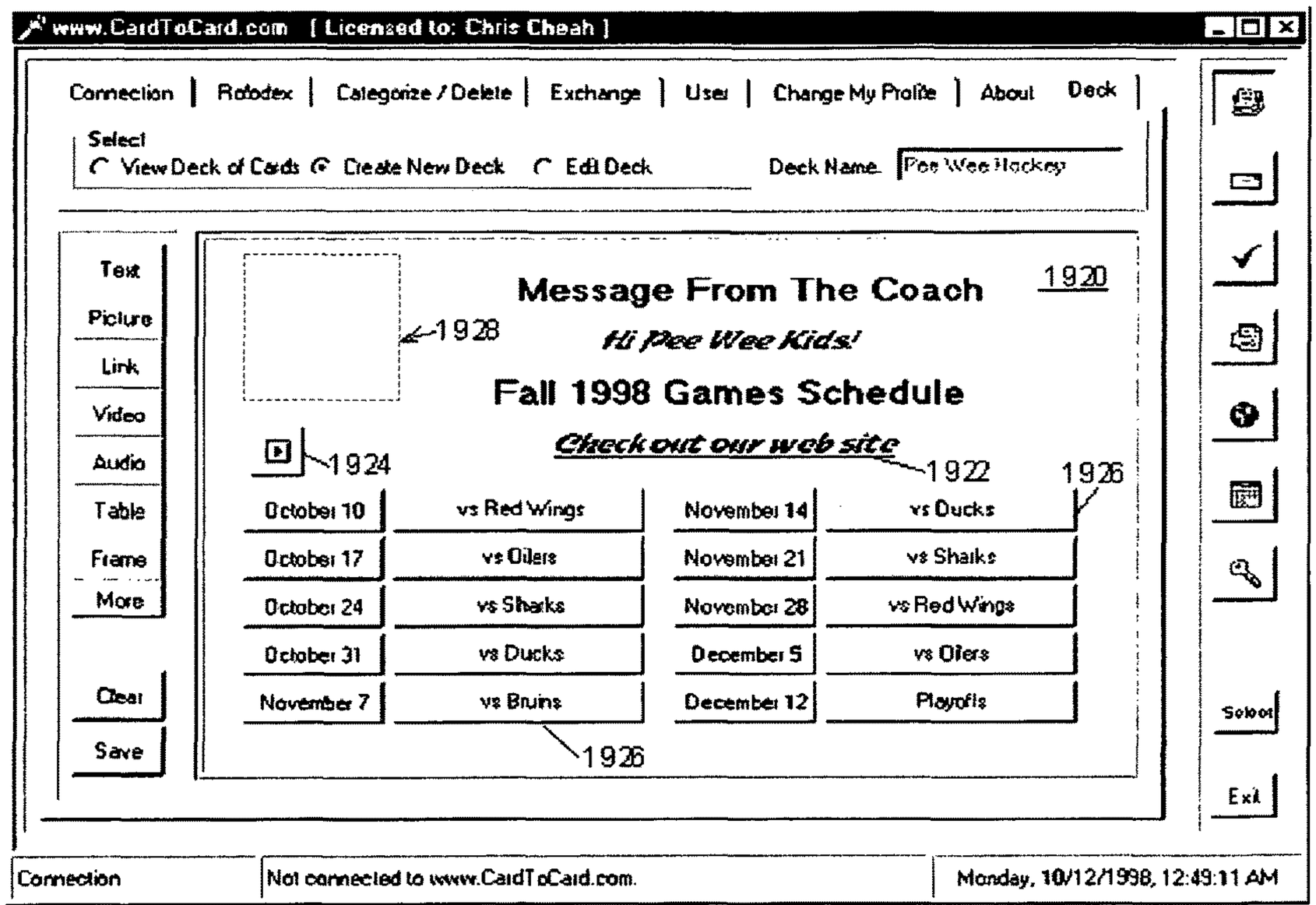
www.CardToCard.com [Licensed to: Chris Cheah]
Connection
Rolodex
Categorize / Delete
Exchange
User
Change My Profile
About
Deck
Select
View Deck of Cards
Create New Deck
Edit Deck
Deck Name
Pee Wee Hockey
Text
Picture
Link
Video
Audio
Table
Frame
More
Clear
Save
Message From The Coach
1920
1928
Hi Pee Wee Kids!
Fall 1998 Games Schedule
Check out our web site
1924
1922
1926
October 10
vs Red Wings
November 14
vs Ducks
October 17
vs Oilers
November 21
vs Sharks
October 24
vs Sharks
November 28
vs Red Wings
October 31
vs Ducks
December 5
vs Oilers
November 7
vs Bruins
December 12
Playoffs
1926
Select
Exit
Connection
Not connected to www.CardToCard.com.
Monday, 10/12/1998, 12:49:11 AM

FIG. 19A-1

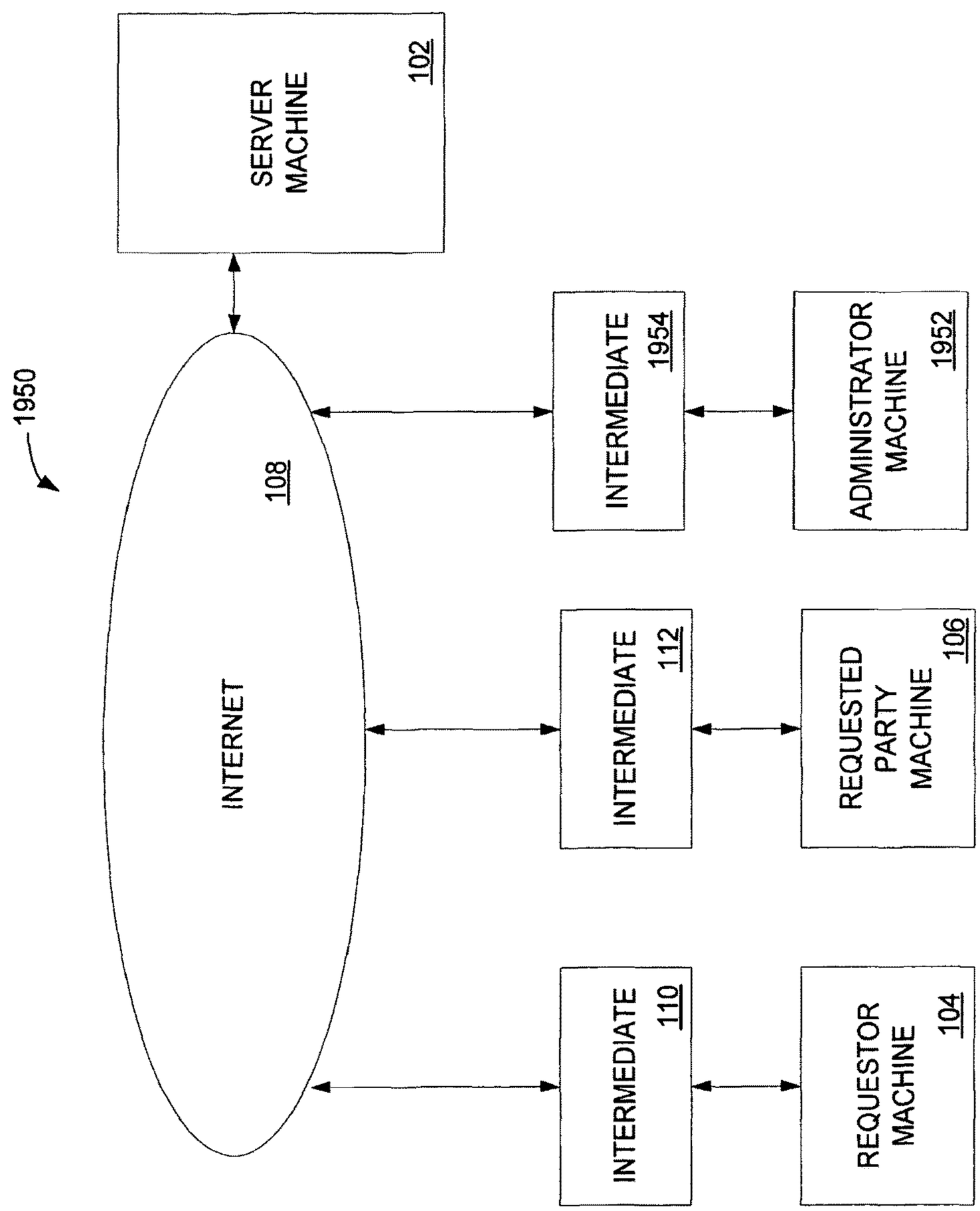
1950
SERVER MACHINE
102
INTERNET
108
INTERMEDIATE
1954
ADMINISTRATOR MACHINE
1952
INTERMEDIATE
112
REQUESTED PARTY MACHINE
106
INTERMEDIATE
110
REQUESTOR MACHINE
104

FIG. 19B

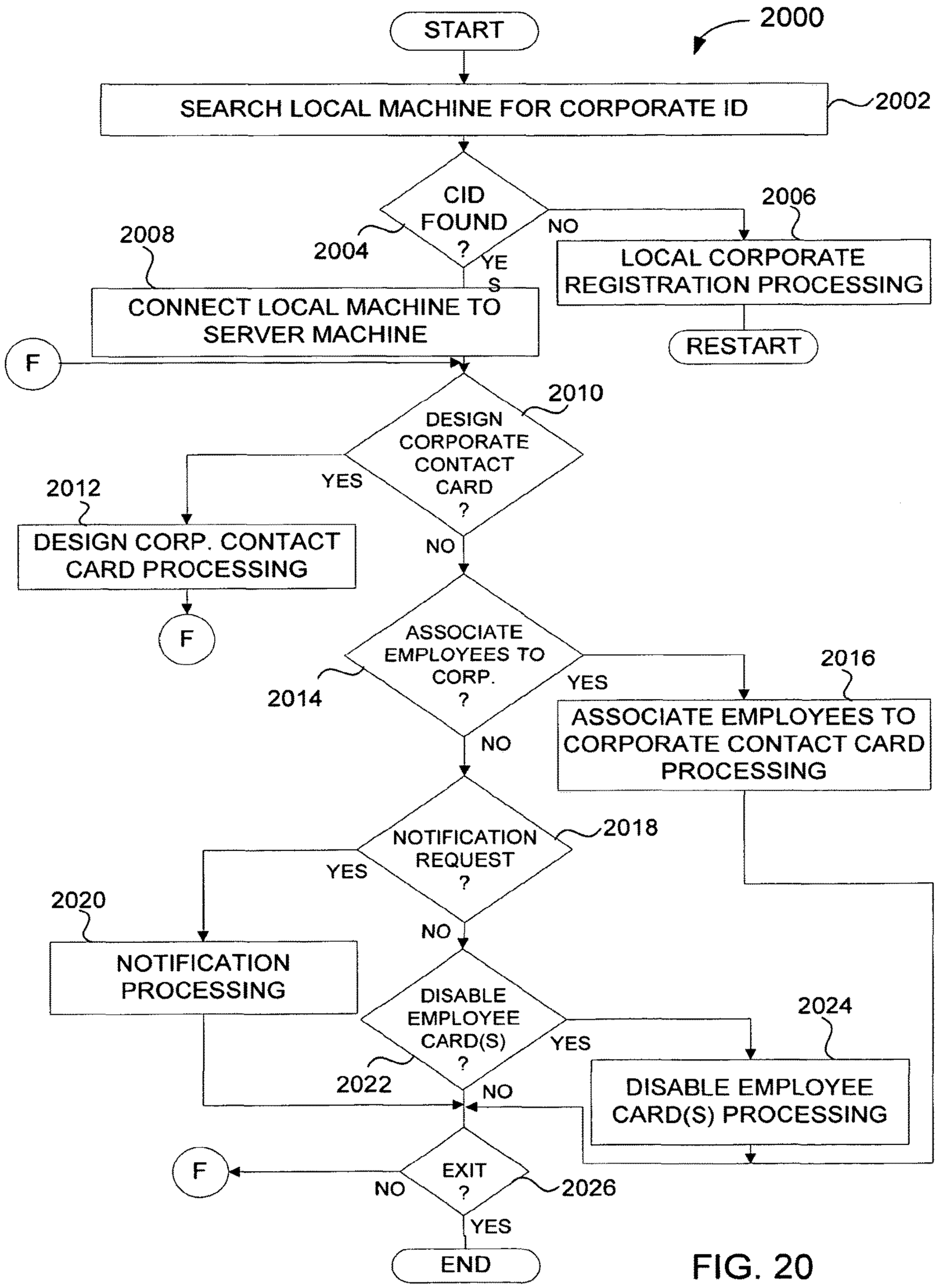
START
2000
SEARCH LOCAL MACHINE FOR CORPORATE ID
2002
CID FOUND ?
2004
NO
YES
2006
LOCAL CORPORATE REGISTRATION PROCESSING
RESTART
2008
CONNECT LOCAL MACHINE TO SERVER MACHINE
F
2010
DESIGN CORPORATE CONTACT CARD ?
YES
NO
2012
DESIGN CORP. CONTACT CARD PROCESSING
F
ASSOCIATE EMPLOYEES TO CORP. ?
2014
YES
NO
2016
ASSOCIATE EMPLOYEES TO CORPORATE CONTACT CARD PROCESSING
NOTIFICATION REQUEST ?
2018
YES
NO
2020
NOTIFICATION PROCESSING
DISABLE EMPLOYEE CARD(S) ?
2022
YES
NO
2024
DISABLE EMPLOYEE CARD(S) PROCESSING
EXIT ?
2026
NO
YES
F
END

FIG. 20

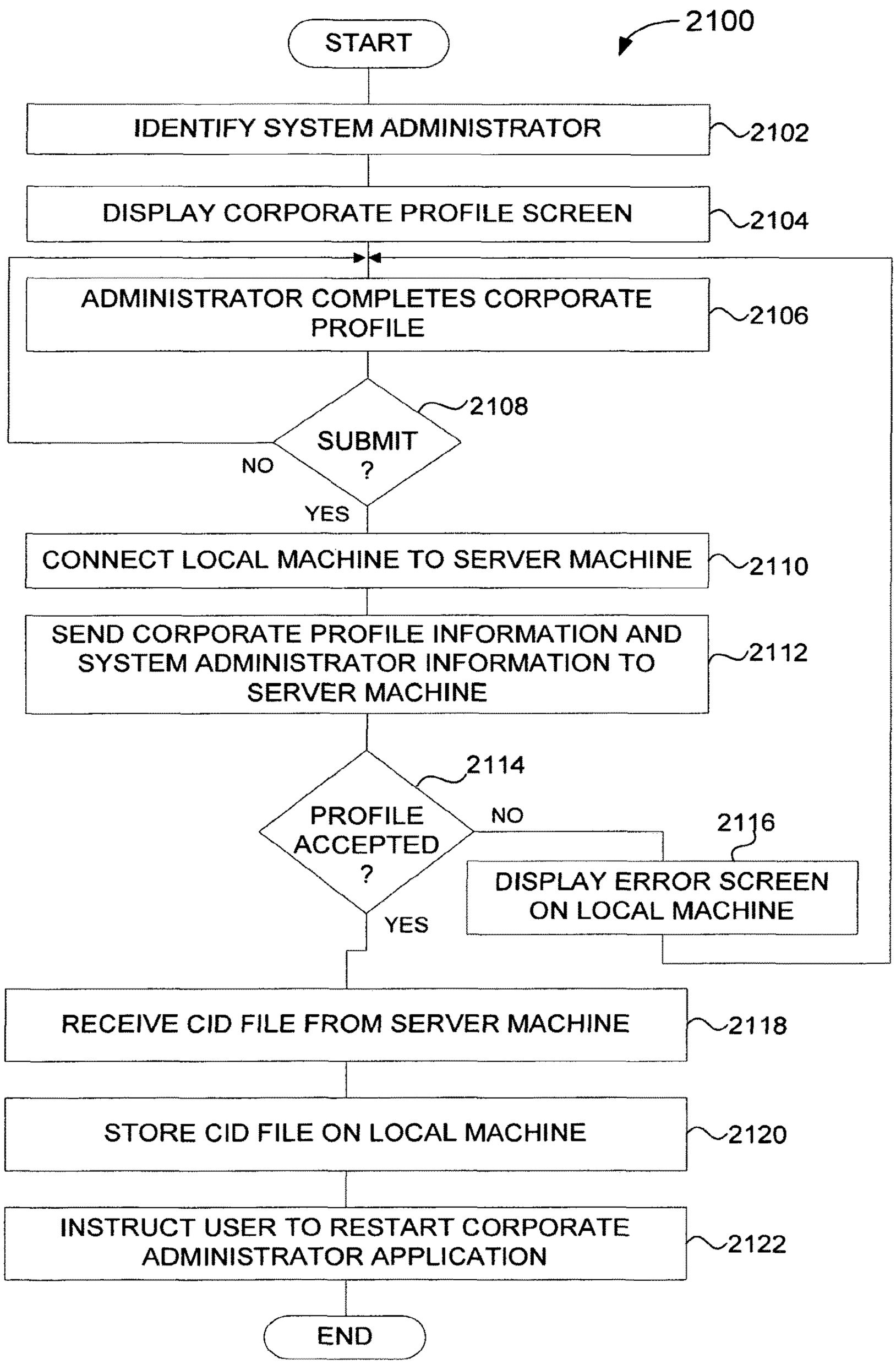
2100
START
IDENTIFY SYSTEM ADMINISTRATOR
2102
DISPLAY CORPORATE PROFILE SCREEN
2104
ADMINISTRATOR COMPLETES CORPORATE PROFILE
2106
SUBMIT ?
2108
NO
YES
CONNECT LOCAL MACHINE TO SERVER MACHINE
2110
SEND CORPORATE PROFILE INFORMATION AND SYSTEM ADMINISTRATOR INFORMATION TO SERVER MACHINE
2112
PROFILE ACCEPTED ?
2114
NO
2116
DISPLAY ERROR SCREEN ON LOCAL MACHINE
YES
RECEIVE CID FILE FROM SERVER MACHINE
2118
STORE CID FILE ON LOCAL MACHINE
2120
INSTRUCT USER TO RESTART CORPORATE ADMINISTRATOR APPLICATION
2122
END

FIG. 21

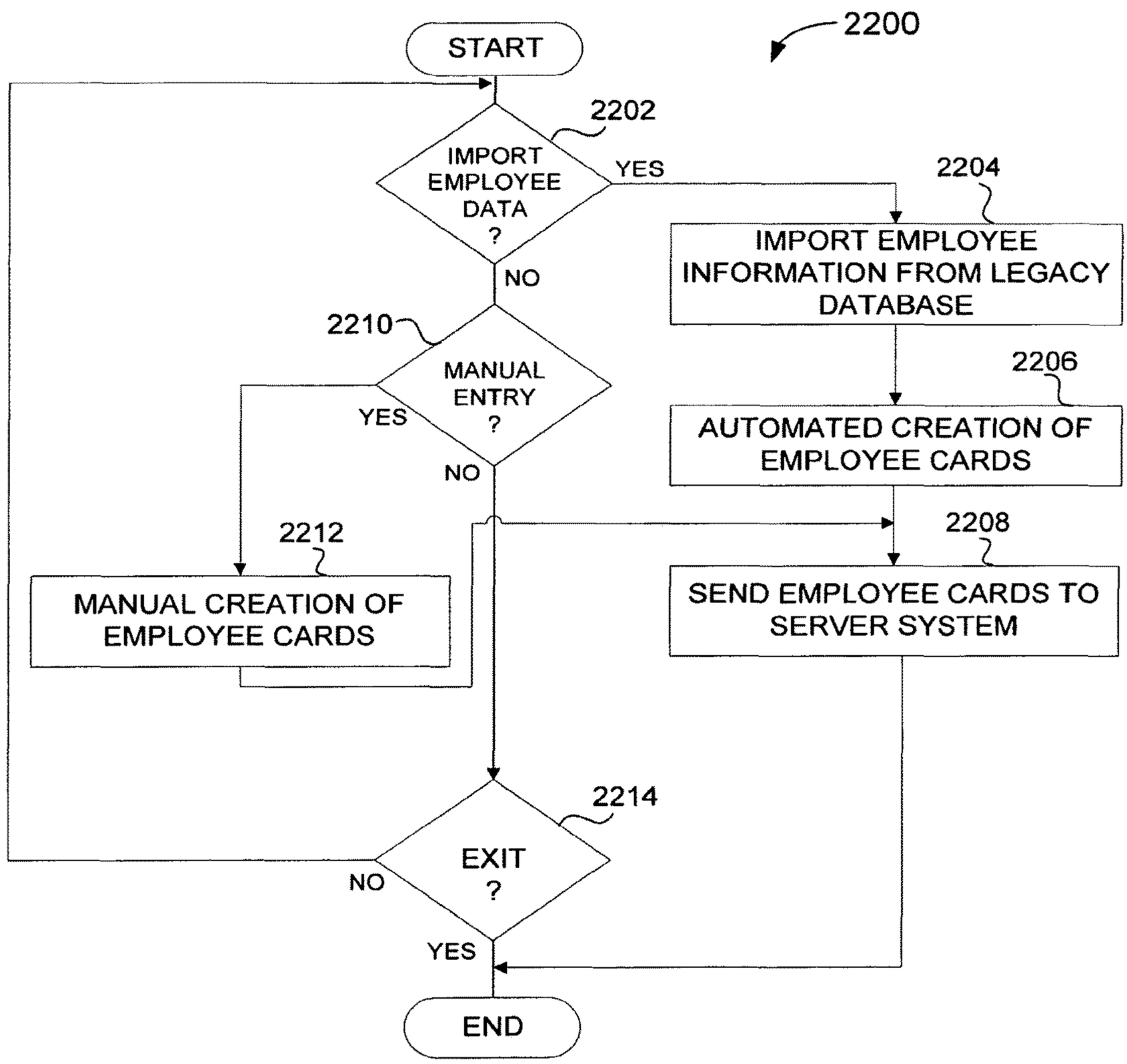
2200
START
2202
IMPORT EMPLOYEE DATA ?
YES
NO
2204
IMPORT EMPLOYEE INFORMATION FROM LEGACY DATABASE
2210
MANUAL ENTRY ?
YES
NO
2206
AUTOMATED CREATION OF EMPLOYEE CARDS
2212
MANUAL CREATION OF EMPLOYEE CARDS
2208
SEND EMPLOYEE CARDS TO SERVER SYSTEM
2214
EXIT ?
NO
YES
END

FIG. 22

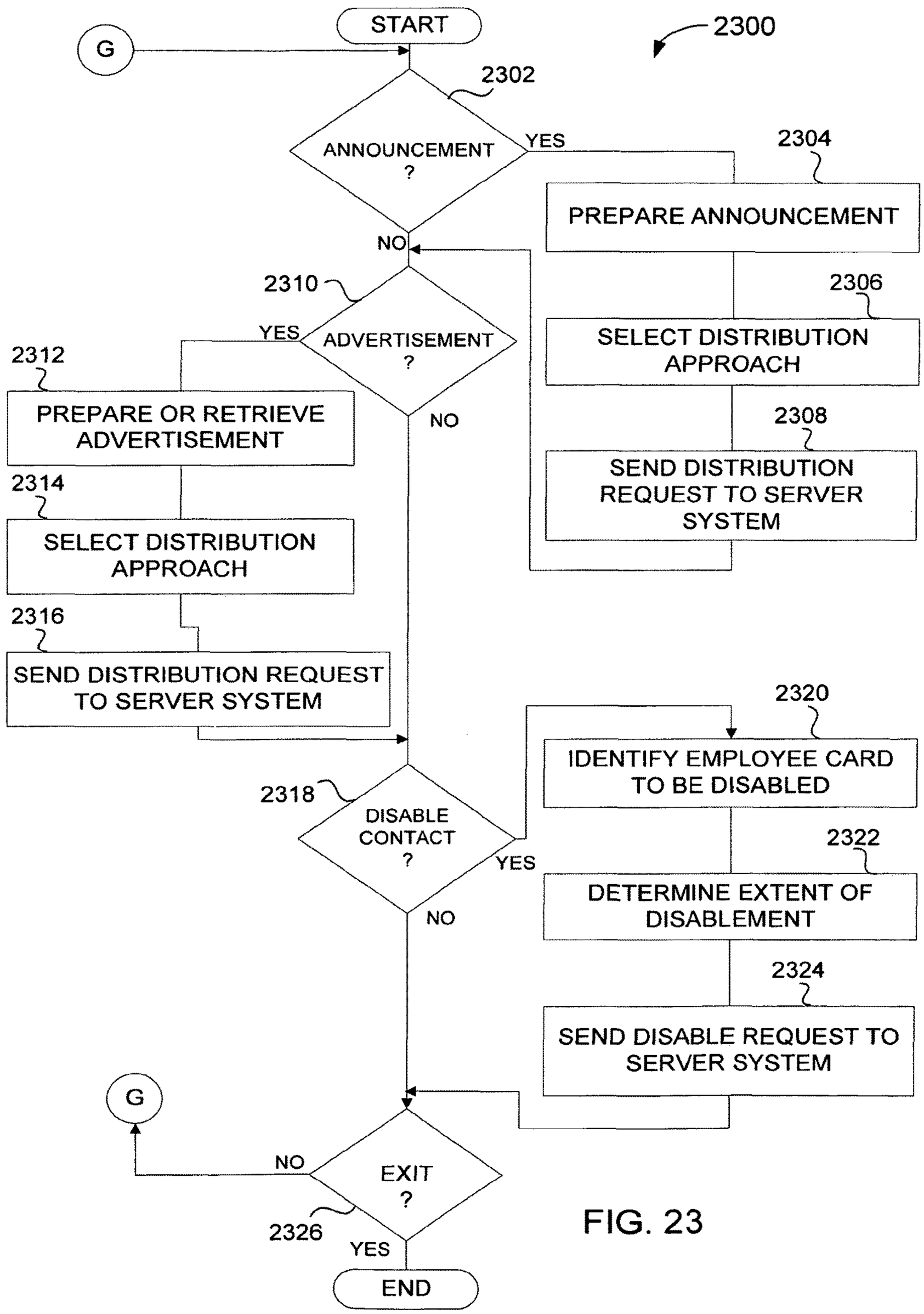
G
START
2300
2302
ANNOUNCEMENT ?
YES
2304
PREPARE ANNOUNCEMENT
NO
2310
ADVERTISEMENT ?
YES
2306
SELECT DISTRIBUTION APPROACH
2312
PREPARE OR RETRIEVE ADVERTISEMENT
NO
2308
SEND DISTRIBUTION REQUEST TO SERVER SYSTEM
2314
SELECT DISTRIBUTION APPROACH
2316
SEND DISTRIBUTION REQUEST TO SERVER SYSTEM
2320
IDENTIFY EMPLOYEE CARD TO BE DISABLED
2318
DISABLE CONTACT ?
YES
2322
DETERMINE EXTENT OF DISABLEMENT
NO
2324
SEND DISABLE REQUEST TO SERVER SYSTEM
G
NO
EXIT ?
2326
YES
END

FIG. 23

METHOD AND SYSTEM FOR CONTROLLED DISTRIBUTION OF INFORMATION OVER A NETWORK

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 11/840,968, entitled "METHOD AND SYSTEM FOR CONTROLLED DISTRIBUTION OF INFORMATION OVER A NETWORK", and filed on Aug. 19, 2007, which is a continuation of U.S. patent application Ser. No. 11/170,370, entitled "METHOD AND SYSTEM FOR CONTROLLED DISTRIBUTION OF INFORMATION OVER A NETWORK", filed on Jun. 28, 2005, and issued as U.S. Pat. No. 7,277,911 on Oct. 2, 2007, which is a continuation of U.S. patent application Ser. No. 09/417,456, entitled "METHOD AND SYSTEM FOR CONTROLLED DISTRIBUTION OF INFORMATION OVER A NETWORK",filed on Oct. 13, 1999, and issued as U.S. Pat. No. 7,003,546 on Feb. 21, 2006, which claims the benefit of U.S. Provisional Application No. 60/104,311, entitled "METHOD AND SYSTEM FOR CONTROLLED DISTRIBUTION OF INFORMATION OVER A NETWORK", and filed on Oct. 13, 1998. The disclosures of each of these related applications are incorporated herein by reference for all purposes.

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BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to the management and exchange of information and, more particularly, to information management and exchange over networks.

Description of the Related Art

It is very common today for individuals to distribute or exchange business cards with others. Normally, the distribution or exchange of business cards occurs during the course of business; however, such distributions or exchanges can also occur in more personal settings.

Business cards contain information pertaining to an individual who is normally associated with a business entity. The information on business cards typically includes a company name, an individual's name, title, phone number, facsimile number, mail address, and email address. Business cards thus record the information that is needed to not only identify but also contact the individuals represented by the business cards.

One problem with conventional approaches to distributing or exchanging business cards is that the information on the business cards often becomes outdated after their distribution. Typically, business cards become outdated when the individuals move offices, change employers, obtain promotions, etc. When the information on a particular business card does become outdated, the information no longer facilitates the contacting of the individual associated with the particular business card. The outdated information is

often misleading. In general, the persons receiving the business cards cannot determine from the business cards whether the information on the business cards is still accurate.

Another problem with conventional business cards is that their distribution is manual. As a result, for one's business card to be distributed, the business card needs to be physically handed to another person. Also, when a revised business card with updated information is to be distributed, often there is no way to know who currently holds an older version of the business card. As a result, inaccurate business cards remain in circulation long after being outdated.

Thus, there is a need for improved approaches to automatically distribute and update contact information.

SUMMARY OF THE INVENTION

Broadly speaking, the invention pertains to an information management and distribution system. The information management and distribution system include a client-side application and a server application that interact to facilitate the controlled exchange of contact information over a network. The client-side application can provide creation and design, rolodex, exchange, and update features. The information management and distribution system can also include a corporate administrator application.

One aspect of the invention pertains to techniques for electronically distributing contact information over a network in a controlled manner. In one embodiment, the contact information includes information that is useful for identifying or contacting a registered user (e.g., person or entity). As an example, the contact information for a registrant can include name, telephone number, facsimile number, mail address, and email address. When the registration pertains to a business, the contact information can also include a title, business name, and a Universal Resource Locator (URL) to an associated business website. A registered user that has received contact information pertaining to another registered user can contact the registered user using the contact information.

Additionally, since contact information is dynamic and needs to be maintained, another aspect of the invention is the automatic update of the previously distributed contact information. Hence, should the contract information change after its distribution to certain registered users, then the updated contact information is able to be distributed to the certain registered users in an automated manner.

Still another aspect of the invention is that contact information can be distributed to registered users in a common format. A common format for the distributed contact information can be used to facilitate a consistent type of contact information as well as a consistent presentation of the contact information to registered users. In one example, the common format is provided by a business card arrangement. Further, the common format facilitates the association or attachment of additional information to the basic contact information. This additional information can include a wide variety of items. For example, the additional information can include text, data, hyper links, audio objects, video objects, etc. The additional information can also be used for a variety of purposes, including announcements, messages, notifications, and advertisements.

Yet another aspect of the invention is the corporate administrator application. The corporate administrator application enables an administrator to control the use of corporate (i.e., business entity) information. The corporate administrator application can include many of the features

associated with the client-side application, including creation and design, rolodex, exchange, and update features. For example, the administrator may wish to update the corporate information that has been previously distributed or exchanged. In addition, the corporate administrator application can facilitate registration of employees of a business entity with the information management and distribution system. The corporate administrator application can also disable certain employees from further use of the corporate information.

The invention can be implemented in numerous ways, including as a method, an apparatus, a computer readable medium, and a computer system. Several embodiments of the invention are discussed below.

As a computer-implemented method for creating and exchanging information over a network, one embodiment of invention includes at least the acts of: registering a plurality of users, each of the users providing a contact profile that is stored in a data repository; permitting the users to associate one or more container elements to their contact profiles; and permitting controlled exchange of the contact profiles and any of the associated container elements between the users through the network.

As a computer readable medium including at least computer program code for creating and exchanging information over a network, one embodiment of the invention includes at least: computer program code for registering a plurality of users, each of the users providing a contact profile that is stored in a data repository; computer program code for permitting the users to associate one or more container elements to their contact profiles; and computer program code for permitting controlled exchange of the contact profiles and any of the associated container elements between the users through the network.

Other aspects and advantages of the invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings which illustrate, by way of example, the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be readily understood by the following detailed description in conjunction with the accompanying drawings, wherein like reference numerals designate like structural elements, and in which:

FIG. **1** is a block diagram of a network information management and distribution system according to an embodiment of the invention;

FIG. **2** is a block diagram of a server machine according to an embodiment of the invention;

FIG. **3** is a block diagram of a local machine according to an embodiment of the invention;

FIG. **4** is a flow diagram of automatic contact information distribution processing according to an embodiment of the invention;

FIG. **5** is a flow diagram of client on-line registration processing according to an embodiment of the invention;

FIGS. **6**A and **6**B are flow diagrams of server registration processing according to an embodiment of the invention;

FIG. **7** is a flow diagram of general client-side application processing according to an embodiment of the invention;

FIG. **8** is a flow diagram of local registration processing according to an embodiment of the invention;

FIG. **9** is a flow diagram of business card creation processing according to an embodiment of the invention;

FIG. **10** is a flow diagram of rolodex processing according to an embodiment of the invention;

FIG. **11** is a flow diagram of requestor exchange processing according to an embodiment of the invention;

FIGS. **12**A and **12**B are flow diagrams of requested party exchange processing according to an embodiment of the invention;

FIG. **13** is a flow diagram of requestor exchange completion processing according to an embodiment of the invention;

FIG. **14** is a flow diagram of requested party exchange processing through electronic email according to an embodiment of the invention;

FIG. **15** is a flow diagram of change profile processing according to an embodiment of the invention;

FIG. **16** is a flow diagram of update profile processing;

FIG. **17** is a flow diagram of initial server connection processing according to an embodiment of the invention;

FIG. **18**A-**18**K are screen illustrations associated with a representative embodiment of the invention;

FIG. **19**A is a representative screen illustration of a rolodex feature according to another embodiment of the invention;

FIG. **19**A-**1** is a representative screen illustration of an additional card of information according to an exemplary embodiment of the invention;

FIG. **19**B is a block diagram of a network information management and distribution system according to another embodiment of the invention;

FIG. **20** is a flow diagram of corporate administrator application processing according to an embodiment of the invention;

FIG. **21** is a flow diagram of local corporate registration processing according to an embodiment of the invention;

FIG. **22** is a flow diagram of employee association processing according to an embodiment of the invention; and

FIG. **23** is flow diagram of notification and disable processing according to an embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

The invention relates to techniques for electronically distributing contact information over a network in a controlled manner. In one embodiment, the contact information includes information that is useful for identifying or contacting a registered user (e.g., person or entity). As an example, the contact information for a registrant can include name, telephone number, facsimile number, mail address, and email address. When the registration pertains to a business, the contact information can also include a title, business name, and a Universal Resource Locator (URL) to an associated business website. A registered user that has received contact information pertaining to another registered user can contact the another registered user using the contact information.

Additionally, since contact information is dynamic and needs to be maintained, the invention can also cause the automatic update of the previously distributed contact information. Hence, should the contract information change after its distribution to certain registered users, then the updated contact information is able to be distributed to the certain registered users in an automated manner. Further, the contact information can be distributed to registered users to have a common format. A common format for the distributed contact information can be used to facilitate a consistent type of contact information as well as a consistent presen-

tation of the contact information to registered users. In one example, the common format is provided by a business card arrangement.

In one embodiment, a requestor requests to receive the contact information from a requested party, and the requested party is asked whether the requestor can receive the contact information of the requested party. The contact information of the requested party is then distributed to the requestor only when the requested party agrees to the request. Once receiving the contact information pertaining to the requested party, the requestor can use the contact information to contact the requested party. If the contact information were to subsequently be changed by the requested party, the previously distributed contact information can be updated.

Embodiments of this aspect the invention are discussed below with reference to FIGS. **1-23**. However, those skilled in the art will readily appreciate that the detailed description given herein with respect to these figures is for explanatory purposes as the invention extends beyond these limited embodiments.

FIG. **1** is a block diagram of a network information management and distribution system **100** according to an embodiment of the invention. The network information management and distribution system **100** includes a server machine **102**, a requestor machine **104** and a requested party machine **106**. The Internet **108** is used to interconnect the server machine **102** with the requestor machine **104** and the requested party machine **106**. The requestor machine **104** connects to the Internet **108** through an intermediate **110**, and the requested party machine **106** connects to the Internet **108** through an intermediate **112**. The intermediates **110** and **112** can refer to any of a number of networks or network devices, including a Local Area Network (LAN), a corporate Intranet, a Wide Area Network (WAN), a wireless data network, and an Internet Service Provider (ISP). It should be noted that other networks besides the Internet can be used to interconnect the server machine **102** with the requestor machine **104** and the requested party machine **106**.

The server machine **102** provides for storage and management of content information. The content information pertains to a plurality of users, including the user of the requestor machine **104** and the user of the requested party machine **106**. For example, content information for the user of the requestor machine **104** can be supplied to the server machine **102** through the intermediate **110** and the Internet **108**. Likewise, content information for the user of the requested party machine **106** can be supplied to the server machine **102** through the intermediate **112** and the Internet **108**. The server machine **102** stores the received content information for subsequent distribution.

The distribution of the content information at the server machine **102** can be performed as follows. First, the user of the requestor machine **104** makes a request for contact information to the server machine **102** through the Internet **108**. Second, when the server machine **102** receives the request from the requestor machine **104**, the server machine **102** determines that the requestor is seeking to receive the contact information for the user of the requested party machine **106**. The server machine **102** than proceeds to query the user of the requested party machine **106** whether the distribution of its contact information is permitted. If the user of the requested party machine **106** replies that the distribution is permitted, then the server machine **102** forwards the contact information for the user of the requested party machine **106** from the server machine **102** to the requestor machine **104** through the Internet **108**. Upon receiving the contact information for the user of the requested party machine **106**, the requestor machine **104** locally stores the contact information in the requestor machine **104**. Alternatively, if the user of the requested party machine **106** replies that the distribution is not permitted, then the server machine **102** sends a notification to the requestor machine **104** to inform the user that the request for contact information from the user of the requested party machine **106** is denied. Optionally, instead of the one-way distribution of the contact information, contact information of both users of the requestor machine **104** and the requested party machine **106** can be exchanged (i.e., two-way distribution).

Accordingly, the distribution of contact information is controlled by the "owner" of the information. As such, contact information is able to be electronically transmitted to those users that are approved and not to those users that are not approved. Additionally, should the contact information need to be changed, the changes can be made and then the server machine can proceed to update the previously transmitted contact information. As an example, the updating of the contact information at the requested party machine **106** produces altered contact information that is forwarded and stored on the server machine **102**. Then, the server machine **102** can distribute the altered content information through the Internet **108** to all of those requestors machines that previously received (and this store) the contact information which is now outdated, thereby updating the content information for the user of the requested party machine **106** on the various requestor machines.

The network information management and distribution system **100** is described in more detail below as an information management and exchange system wherein the contact information is exchanged (two-way distribution) between the users of the requestor machine **104** and the requested party machine **106**. Also described in detail below are the creation and modification of contact information, and the use of the contact information on the local machines.

FIG. **2** is a block diagram of a server machine **200** according to an embodiment of the invention. The server machine **200** is, for example, suitable for use as the server machine **102** illustrated in FIG. **1**. The server machine is also referred to as a remote server or a system server.

The server machine **200** includes a server controller **202** that controls the operation of the server machine **200** with respect to providing the operations of the invention. The server controller **202** couples to the Internet **108** through a network interface **204**. The server controller **202** also interacts with a registration manager **206**, an exchange manager **208**, and a contact information manager **210**. The registration manager **206** manages the registration of users with the information management and exchange system. The registration manager **206** makes use of a client application (client-side application) that is available for download to the users that have (or will) register with the information management and exchange system. The registration manager **206** also makes use of a personal identifier (PID) generator **214**. The PID generator **214** is used to generate unique identifiers for the users that are registered with the information management and exchange system. The exchange manager **208** and the contact information manager **210** couple to a server contact information storage **216**. The server contact information storage **216** provides storage for the contact information for each of the registered users. In one embodiment, the contact information is profile information. The exchange manager **208** manages the exchange of particular contact information between registered users.

The contact information manager **210** manages the storage of the contract information for the registered users as well as the subsequent update to the contact information.

The server controller **202** can include a Hyper Text Transfer Protocol (HTTP) server that allows assess and retrieval of information with respect to a website associated with the information management and exchange system. The website is stored in website storage **218**.

FIG. **3** is a block diagram of a local machine **300** according to an embodiment of the invention. The local machine **200** is, for example, suitable for use as the requestor machine **104** and the requested party machine **106** illustrated in FIG. **1**.

The local machine **300** includes a client controller **302** that controls the operation of the local machine **300** with respect to the operation of the invention. The client controller **302** couples to the Internet **108** through a communication manager **304**. The client controller **302** runs or executes a client-side application **306** and displays information for a user on a display device **308**. The client-side application **306** includes a registration process **310**, an exchange process **312**, and contact information creation/update process **314**. The registration process **310** is used by a user of the local machine to register with the information management and exchange system. The exchange process **312** manages communications between the client-side application **306** and the server machine **102** so as to request and then, if approved, to receive contact information for a particular user. The contact information that may be received is stored in a local contact information storage **316**. The contact information creation/update processing **314** allows the user of the local machine **300** to create and update their own contact information. The contact information creation/update processing **314** also communicates with the server machine **102** so that the various local machines of the information management and exchange system can have their previously exchanged contract information updated. The local contact information storage **316** also stores the contact information for the user of the local machine **300**. Additionally, the local machine **300** typically includes a network browser **318** that allows the local machine to access the website of the information management and exchange system, such as provided by the server machine **102**.

FIG. **4** is a flow diagram of automatic contact information distribution processing **400** according to an embodiment of the invention. The automatic contact information distribution processing **400** is, for example, performed by the network information management and distribution system **100**.

The automatic contact information distribution processing **400** begins by registering **402** a plurality of users with their contact information (e.g., profile information). Then, at the request of users, contact information is electronically exchanged **404** between consenting users. The exchange of the contact information takes place over a network (e.g., the Internet). The contact information being exchanged pertains to the parties participating in a particular exchange. In one embodiment, each particular exchange of the contact information is between a pair of users that have consent to the particular exchange. After the contact information is exchanged, the consenting users have the contact information of each other and thus are able to thereafter utilize the contact information to contact the user associated with the contact information.

The users that have distributed their contact information with others may subsequently alter their contact information in any of a number of ways. For example, the contact information can include a name, mail address, telephone number, facsimile number, and email address. If the telephone number of a particular user changes, then the particular user is able to update their contact information so as to contain the correct telephone number. However, at least the portion of the contact information that has been changed needs to be distributed to those of the users that have previously received the contact information of the particular user. In any case, with respect to the automatic contact information distribution processing **400**, when users do subsequently alter their contact information, the altered contact information is received **406** from the associated users. Then, the previously exchanged contact information is electronically updated **408** to be consistent with the altered contact information. Following block **408**, the automatic contact information distribution processing **400** is complete and ends.

The operations of the information management and exchange system is described in greater detail below with respect to FIGS. **5-23**.

FIG. **5** is a flow diagram of client on-line registration processing **500** according to an embodiment of the invention. The client on-line registration processing **500** is, for example, performed by a network browser (i.e., web browser) running on a local machine.

The client on-line registration processing **500** initially visits **502** a server website that is hosting an information management and exchange system, such the server machine **200**. Next, the network browser receives and displays **504** a registration page (e.g., HTML page). The registration page allows a user to not only download a client-side application but also register on-line with the information management and exchange system.

After the registration page is displayed **504**, a decision block **506** determines whether the user has requested on-line registration. When the user has requested on-line registration, the network browser requests **508** a profile page from the server website. The network browser then receives and displays **510** the profile page provided by the server website. The profile page is a form that is displayed and permits data entry into various fields. As an example, the profile page can be a Hyper Text Markup Language (HTML) page. FIG. **18**A is a screen illustration of a representative profile page according to an embodiment of the invention in which various fields are provided for data entry of business and/or personal information.

The user then completes **512** the profile page which queries the user for profile information. The profile information is, for example, descriptive information that the user represents about themselves. As an example, the profile information can include name, title, business name, mail address, email address, telephone number, facsimile number, and Universal Resource Locator (URL). After the user has completed the profile page, the profile information is submitted **514** to a system server via a submitted profile page request. The profile information defines a profile for the registrant (user). The system server manages the profile information and may be the same server, or group of servers, as providing the server website. In one embodiment, the submitted profile page request can be considered a POST operation in Hyper Text Transfer Protocol (HTTP).

Next, a decision block **516** determines whether the profile has been accepted by the system server. When the decision block **516** determines that the profile has not been accepted, the network browser receives and displays **518** an error page. Following block **518**, the client on-line registration processing **500** returns to repeat block **512** and subsequent

blocks such that the user can again repeat the completion of the profile page or modify previously entered data (profile information).

Once the decision block **516** determines that the system server has accepted the profile, the network browser requests **520** a registration download application page from the system server. The registration download application page is a page (e.g., HTML page) that facilitates the user in downloading the client-side application from the system server. Next, the network browser receives **522** the downloaded client-side application, a personal identifier (PID) file, and profile information pertaining to the user's profile. The client-side application is an application program that executes on the local machine as the client side of the information management and exchange information. The PID file contains a unique identifier that is associated to the user (requestor). The profile information is the information about the user that has been previously submitted by the user. In other words, the profile information is the self-represented data provided by the user in block **512**. Next, the downloaded client-side application, the PID file and the profile information that have been received **522** are stored **524** on the local machine. Following block **524**, the client on-line registration processing **500** is complete and ends.

On the other hand, when the decision block **506** determines that the user has not selected or requested on-line registration, then the client on-line registration processing **500** allows the user to obtain the client-side application without undergoing on-line registration. In such case, a decision block **528** initially determines whether the user is requesting to download the client-side application. When the decision block **528** determines that the user is not requesting to download the client-side application, then other processing is performed in block **526**. The other processing can be a variety of different processes or operations that are either conventionally performed or not related to the invention. As an example, the other processing can be viewing other pages available from the server website via the network browser. Following block **526**, the client on-line registration processing **500** returns to repeat the decision block **506** and subsequent blocks so that the server machine is essentially awaiting the user to select either on-line registration or to select a request for downloading the client-side application.

When the decision block **528** determines that the user has selected to download the client-side application, then an unregistered download application page is requested **530** from the system server. Then, the downloaded application is received **532** at the network browser. Once the downloaded application is received, the client-side application is stored **534** on the local machine. Following block **534**, the client on-line registration processing **500** is complete and ends.

FIGS. **6**A and **6**B are flow diagrams of server registration processing **600** according to an embodiment of the invention. The server registration processing **600** is, for example, performed by the server machine (server system) in connection with the invention.

The server registration processing **600** begins with a decision block **602** that determines whether a page request has been received. If a page request has not yet been received, the decision block **602** causes the server registration processing **600** to await the receipt of a page request. In other words, the server registration processing **600** is invoked when a page request is received.

Once a page request has been received, a decision block **604** determines whether the received page request is a registration request. When the decision block **604** determines that the received page request is a registration page request, a registration page is sent **606** to the requestor. Here, for example, the registration page request can be a HTTP request to the server machine which, in response, supplies the registration page (HTTP response) to the requestor. Following block **606**, the server registration processing **600** returns to repeat the decision block **602** and subsequent blocks so that additional page requests can be processed by the server machine.

On the other hand, when the decision block **604** determines that the received page request is not a registration page request, a decision block **608** determines whether the received page request is a profile page request. When the decision block **608** determines that the received page request is a profile page request, then the server machine sends **610** a profile page to the requestor. The profile page allows the requestor (user) to profile him/herself and then return the completed profile to the server machine. As an example, the profile page request is a HTTP request. Following block **610**, the server registration processing **600** returns to repeat the decision block **602** and subsequent blocks so that additional page requests can be processed by the server machine.

Alternatively, when the decision block **608** determines that the received page request is not a profile page request, then a decision block **612** determines whether the received page request is a submitted profile page request. The submitted profile page request represents a submission of a profile by the requestor in accordance with a previously supplied profile page that has been completed. As an example, the submitted profile page request is a HTTP request. When the received page request is determined to be a submitted profile page request, then the server registration processing **600** operates to process the submitted profile provided by the requestor. Specifically, the server machine examines **614** the submitted profile. Then, a decision block **616** determines whether there are errors or deficiencies associated with the submitted profile. When the decision block **616** determines that there are errors or deficiencies in the submitted profile, then an error page is sent **618** to the requestor. Following block **618**, the server registration processing **600** returns to repeat the decision block **602** and subsequent blocks. The requestor is then able to correct and resubmit his/her profile information.

On the other hand, when the decision block **616** determines that there are no errors or deficiencies with the submitted profile, then a decision block **620** determines whether the associated requestor is already registered with the system. When the decision block **620** determines that the requestor is already registered with the system, then the server machine sends **622** an already registered page to the requestor. The already registered page informs the requestor that he or she is already registered with the system and thus the submitted profile is not utilized. Following block **622**, the server registration processing **600** returns to repeat the decision block **602** and subsequent blocks.

Alternatively, when the decision block **620** determines that the requestor is not yet registered with the system, then the profile information provided in the submitted profile is stored **624** in the system database (e.g., server contact information storage **216**). Next, the server machine operates to assign **626** a PID to a requestor. The PID is a unique number for each requestor (user). Next, the PID is associated **628** with the profile information for the requestor in the system database. The association **628** operates to link together the profile information of the requestor with the PID of the requestor such that future references to the requestor can be achieved using the PID. Following block **628**, a registered download page is sent **630** to the requestor.

Following block **630**, the server registration processing **600** returns to repeat the decision block **602** and subsequent blocks.

On the other hand, when the decision block **612** determines that the received page request is not a submitted profile page request, a decision block **632** determines whether the received page request is a registered download application page request. The registered download application page request is a request (e.g., HTTP request) to download the client-side application to the requestor. When the decision block **632** determines that the received page request is a registered download application page request, then the server machine downloads **634** the client-side application along with the PID file and profile information to the requestor. Following block **634**, the server registration processing **600** returns to repeat the decision block **602** and subsequent blocks.

Alternatively, when the decision block **632** determines that the received page request is not a registered download application page request, then a decision block **636** determines whether the received page request is an unregistered download application page request. The unregistered download application page request is a request (e.g., HTTP request) to download the client-side application to the requestor. When the decision block **636** determines that the received page request is an unregistered download application page request, then the server machine downloads **638** the client-side application to the requestor. Following block **638**, or following the decision block **636** when the received page request is determined not to be an unregistered download application page request, the server registration processing **600** returns to repeat the decision block **602** and subsequent blocks. While the server machine may also service additional page requests beyond those illustrated and described with the respect to FIGS. **6**A and **6**B, such additional page requests are not associated with the present invention and therefore are not discussed herein because they would obscure the operation of the invention.

Upon receiving the client-side application at the local machine, a requestor would install the client-side application on their local machine. As is well known in the art, the client-side application can be downloaded from the server machine (system server) to the local machine in a self-extracting format such that a user simply executes a file and the installation of the client-side application is performed. The client-side application would install itself in a predetermined directory and would also store the PID file and profile information in that same directory if such additional information was also downloaded from the server machine. Additionally, after the installation procedure has installed the program, typically a desktop icon would be provided in a start menu as well as on the visible desktop.

FIG. **7** is a flow diagram of general client-side application processing **700** according to an embodiment of the invention. The general client-side application processing **700** is, for example, performed by the client-side application running on the local machine.

The general client-side application processing **700** initially begins upon execution of the client-side application. Once the client-side application is started, the general client-side application processing **700** operates to search **702** for a PID file on the local machine. The presence or absence of PID file indicates whether or not the user of the local machine has already registered with the system server of the information management and exchange system. A decision block **704** determines whether the PID file has been found on the local machine. When the decision block **704** determines that the PID file has not been found, local registration processing is performed **706** so that the user can register with the system server of the information management and exchange system (see FIG. **8**). Following block **706**, the general client-side application processing **700** is restarted. Hence, only registered users are able to use the client-side application in its normal operating sense.

On the other hand, when the decision block **704** determines that the PID file has been found on the local machine, the local machine is connected **708** to the server machine. Here, the connection of the local machine to the server machine can be performed in a variety of ways. For example, the connection is often through ports of the local machine and the server machine using some sort of communication protocol, such as HTTP or TCP/IP. In one embodiment, as shown in FIG. **1**, the connection is provided using the Internet. The connection can also be established at least in part over a public telephone network (PTN), a wireless network, a LAN or WAN.

Once the general client-side application **700** is executing, the client-side application is able to process both user events and server events. The user events are provided by a user of the local machine, and the server events are provided by the server machine to the local machine via the connection. Following the connection (block **708**) of the local machine to the server machine, a decision block **710** determines whether a user event has been received. When the decision block **710** determines that a user event has been received, the user event is processed **712**. Alternatively, when the decision block **710** determines that a user event has not been received, a decision block **714** determines whether a server event has been received. When the decision block **714** determines that a server event has been received, the server event is processed **716**. The user and server events cause the client-side application to perform actions that are associated with processing performed by the client-side application, such processing includes business card creation, rolodex operations, exchange operations, and update operations. Then, following the block **712**, the block **716**, or the decision block **714** when a server event is not received, a decision block **718** determines whether the user is requesting to exit the general client-side application processing **700**. When the decision block **718** determines that an exit is requested, the general client-side application processing **700** is complete and ends. On the other hand, when the decision block **718** determines that the user is not requesting to exit, then the general client-side application processing **700** returns to repeat the decision block **710** and subsequent blocks.

As previously noted, a user of the information management and exchange system is required to register with the system in order to participate in using its information management and exchange features. As was explained with respect to FIGS. **6**A and **6**B, the registration processing can be initiated and performed through a website server. Alternatively, the registration processing can be performed by the client-side application. Specifically, upon initially invoking the client-side application on a local machine, the client-side application can request that the user register with the information management and exchange system (see block **706**, FIG. **7**).

FIG. **8** is a flow diagram of local registration processing **800** according to an embodiment of the invention. The local registration processing **800** is, for example, performed by the block **706** illustrated in FIG. **7** for the general client-side application **700**.

The local registration processing **800** initially displays **802** a profile screen on the local machine. The profile screen

would contain a form that the user would complete by entering profile information. Typically, the profile screen would be visually similar to the profile page used above with respect to FIGS. **6**A and **6**B. For example, a representative profile screen can be similar to the screen illustration shown in FIG. **18**A.

A user then completes **804** their profile using the profile screen. Next, a decision block **806** determines whether the user has submitted their profile to the server system. When the user has not yet submitted their profile to the server system, the decision block **806** causes the local registration processing **800** to await the user's request to submit the profile. Once the decision block **806** determines that the user has submitted their profile, the local machine is connected **808** to the server machine. Once connected, the profile information is sent **810** to the server machine.

A decision block **812** then determines whether the profile has been accepted by the server system. When the decision block **812** determines that the server system rejects the profile, then an error screen is displayed **814** on the local machine. The error screen informs the user of the local machine that the profile that has been submitted is not acceptable. Following block **814**, the local registration processing **800** returns to repeat the block **804** and subsequent blocks so that the user is able to modify their profile so as to eliminate the errors identified by the server system.

On the other hand, when the decision block **812** determines that the profile has been accepted by the server system, a PID file is received **816** from the server machine. Here, the server system operates, after receiving the submitted profile, to generate a suitable PID file. The PID file is then sent from the server system to the local machine. After receiving **816** the PID file, the PID file is stored **818** in the local machine. The user is then instructed **820** to restart the client-side application. Upon restart, the client-side application processing **700** will identify the stored PID file on the local machine (block **702**, FIG. **7**) and thus allow the client-side application to perform the operations associated with information management and exchange system. Following block **820**, the local registration processing **800** is complete and ends.

The client-side application provides a number of features that are available to a user. One such feature pertains to the design and creation of electronic business cards. Electronic business cards are used as a medium for containing information. The information contained in the cards is, for example, contact information about the individual represented by a particular business card. In effect, the electronic business cards are containers for information that has a common format. More generally, the contact information is presented to the users in a common format. With the common format, a consistent presentation of contact information (e.g., profile information) can be made to registered users. Electronic business cards are one example of the common format.

FIG. **9** is a flow diagram of business card creation processing **900** according to an embodiment of the invention. The business card creation processing **900** is, for example, utilized by a user of the client-side application in designing and creating a business card that would contain their profile information and be used to distribute to others in a controlled fashion.

The business card creation processing **900** initially displays **902** business card format templates. FIG. **18**B is a representative screen illustration showing exemplary business card format templates. A user of the client-side application at the local machine is then able to select one of the business card formats (or layouts) to be used for their business card. Hence, a decision block **904** determines whether a template has been selected. When the decision block **904** determines that a template has not been selected then, presumably, the user has decided to custom design their own business card format. In this case, the user designs **906** the business card format using conventional text and line drawing tools. Following the block **906**, or directly following the decision block **904** when the user has selected a template, a decision block **908** determines whether the user desires to include graphics within their business card design. When the decision block **908** determines that graphics are to be included in the business card design, a graphic image is obtained **910**. A graphic image can be obtained in a variety of ways, including scanning an image, selecting an image from pre-stored images, or otherwise importing an image. As an example, the graphic image can be a company logo or some other symbol to be provided on the business card design. Once the graphic image is obtained **910**, the graphic image is fitted and placed **912** on the business card design. Following block **912**, as well as following the decision block **908** when graphics are not desired, a decision block **914** determines whether additional text is desired. When the decision block **914** determines that additional text is requested, then text can be added **916** to the business card design. Again, the addition of text onto the business card design can use conventional text tools. Following block **916**, as well as following the decision block **914** when additional text is not to be added, a decision block **918** determines whether the user has requested to submit their business card design. Here, a submission of the business card design means that the design is finalized and the user is ready to transmit it to the server system for subsequent use and exchange with others. When the decision block **918** determines that the user has not requested to submit the business card design, the user is able to edit **920** the business card design and make any desired changes to the design. Following block **920**, the business card creation processing **900** returns to repeat the decision block **918**. Once the decision block **918** determines that the user has requested to submit the business card design, the business card design is sent **922** to the server system. At the server system, the business card design will be stored so that the server system has access to the business card designs for all the users. The business card design is also saved **924** at the local machine so that it is locally available. Following block **924**, the business card creation processing **900** is complete and ends. The user of the client-side application is also able to subsequently change their business card design or profile information thereon as described below.

Another feature of the client-side application is a rolodex feature. The rolodex feature allows a user of the client-side application to view the various profiles (e.g., business cards) it has received during exchanges. In addition to viewing the various profiles, the rolodex feature can be used to contact the individuals associated with the profiles. These various profiles can also be categorized, deleted, referenced and searched in a variety of ways. Additionally, when the profiles have been subsequently changed or otherwise updated, these updates can occur in a variety of different ways as discussed below.

FIG. **10** is a flow diagram of rolodex processing **1000** according to an embodiment of the invention. The rolodex processing **1000** is performed on the client-side application. The rolodex processing **1000** initially selects a contact card associated with an entity to be contacted. The client-side application typically stores numerous contact cards. Hence,

the selection may make use of some searching through the cards or placing the cards into categories to facilitate the selection of a desired one of the contact cards.

The contact card is a card that includes contact information for an entity. The entity is typically an individual, but the individual may be associated a personal side or a business side. In one embodiment, the contact card appears as a small, hand-sized electronic business card that contains contact information when displayed. Examples of the contact information (or profile information) include name, company, title, address, telephone number, facsimile number, email address, and URL.

FIG. **18**C is a screen illustration of a representative rolodex feature according to an embodiment of the invention. An icon **1808** is used to select the rolodex feature. In the screen illustration, the selection of the contact card is performed in contact card selection window **1810**. Category area **1812** and search area **1814** are used by a user to narrow the number of possible contact cards to choose from in the contact card selection window **1810**. Once the contact card is selected, the selected contact card is displayed in a card display area **1816**. The card display area **1816** displays the selected contact card with its contact information. In this embodiment, the selected contact cards are all displayed in the card display area in a common format, namely, an electronic business card format.

Next, the rolodex processing **1000** determines **1004** those communication mechanisms available to the operating system and also the selected contact card. Here, the individual contact cards can control whether certain communication mechanisms are able to be used to contact the individual associated with the contact card. For example, the communication mechanisms may include telephone, facsimile, and email. Other possible communication mechanisms are video conference, on-line chat, and Internet telephony. In one embodiment, the block **1004**, those communication mechanisms that the operating system can support are first determined, and then from the communication mechanisms that the operating system supports, it is determined which are permitted by the selected contact card.

In FIG. **18**C, the communication mechanisms is a screen illustration of a representative rolodex feature according to an embodiment of the invention. In the screen illustration, icons **1818-1828** represent potentially available communication mechanisms for the representative rolodex feature. Following block **1004**, the identified or determined communication mechanisms that are available are distinguishably displayed **1006** from those communication mechanisms that are unavailable. As an example, if the contact card specifies that facsimile and email are permitted but telephone is not permitted, then visual indicators representing the communication mechanisms associated with facsimile and email would indicate availability while the communication mechanism associated with telephone would be disabled. In one embodiment, the visual indicators representing the communication mechanisms are icons (e.g., icons **1818-1828**) that are displayed by the client-side application of a display screen. These icons are then either "grayed-out" or shown as active depending upon their availability (with respect to the both the operating system and the selected contact card).

Following block **1006**, a decision block **1008** determines whether a user has selected one of the available communication mechanisms. When the user has not selected one of the available communication mechanisms, then the rolodex processing **1000** is able to return to repeat the block **1002** such that the user is able to select a different contact card than the one previously selected and continue the processing. On the other hand, when the decision block **1008** determines that the user has selected one of the available communication mechanisms, the rolodex processing **1000** initiates **1010** communication to the entity associated with the selected contact card via the selected communication mechanism. For example, if the user selected the visual indicator representing the communication mechanism for email, the initiation **1010** of the email communication would present a message generation screen where a user would enter a message for the email to be sent. Thereafter, the email message would be sent to the email address associated with the selected contact card. As another example, if the user selected the visual indicator representing the communication mechanism for telephone, the initiation **1010** for the telephone communication would, for example, dial the phone number associated with the selected contacts card via computer or Internet telephony. Following block **1010**, the rolodex processing **1000** is complete and ends.

Hence, the rolodex processing **1000** allows a user of the client-side application to easily and rapidly identify an entity (e.g., a person, company or group) that he/she wishes to contact (or at least reference information on the entity for other purposes). The rolodex processing **1000** additionally allows the user of the client-side application to also initiate communication with the entity associated with a selected contact card. This facilitates the ease of use of the system because the same application not only identifies the appropriate contact persons but also permits the communication to those entities in a manner in which they have previously authorized.

As noted above, a registered user can select communication mechanisms (channels) using the client-side application. However, the availability of the communication mechanisms is limited by those supported by the operating system and by those communication mechanisms that have been permitted by the associated contact information. The client-side application is able to connect to the system server by making a socket connection as is well known in the art. The communication protocol being used between the system server and the client-side application as implemented by a network interface can, for example, utilize communication protocol such as COM, CORBA, or TCP/IP. When accessing the server website through a network browser, users access the website server using HTTP requests.

The information management and exchange system also provides for automatic distribution (e.g., exchange) of profile information between registered users in a controlled manner. The requested exchanges of profile information are made between one client-side application and another client-side application located on different local machines. These different client-side applications are utilized by different users and communicate with one another through the server system. When the requested party receives an exchange request, the requested party is able to accept or deny the exchange request. FIGS. **11-13** are provided to explain the exchange processing according to the invention.

FIG. **11** is a flow diagram of requestor exchange processing **1100** according to an embodiment of the invention. The requestor exchange processing **1100** is, for example, performed by the client-side application running on a local machine when a user of the client-side application desires to exchange contact information with another.

The requestor exchange processing **1100** begins with a decision block **1102**. The decision block **1102** determines whether an exchange is requested. When the decision block **1102** determines that an exchange has not been requested, then the requestor exchange processing **1100** awaits such a

request. In other words, the requestor exchange processing **1100** is not invoked until an exchange request is received.

Once an exchange has been requested, the requested party for the exchange is identified **1104**. In one embodiment, the requested party with which the requestor desires to exchange profile information (e.g., business card information) is identified by first and last name as well as an email address. In other embodiments, more or less information can be used so long as the requested party is able to be determined without ambiguity. After identifying the requested party, an exchange request is submitted **1106** to the server system. The server system can then process the exchange request and inform the requestor exchange processing **1100** whether a response has been received to the exchange request. A decision block **1108** determines whether a server response has been received to the exchange request. When the decision block **1108** determines that a server response has not yet been received, the requestor exchange processing **1100** awaits the reception of such a response. Once the decision block **1108** determines that a server response has been received, the status of the exchange request is displayed **1110**. As an example, the status of the exchange request can be either: accepted, waiting or denied. Often, there will be more than one exchange request pending, so that the status of each of the exchange requests are displayed **1110**. Hence, the requestor is able to observe the status of the one or more uncompleted exchange requests that it has made. Following block **1110**, the requestor exchange processing **1100** is complete and ends.

FIGS. **12**A and **12**B are flow diagrams of requested party exchange processing **1200** according to an embodiment of the invention. The requested party exchange processing **1200** is, for example, performed by the client-side application running on the local machine associated with the requested party.

The requested party exchange processing **1200** initially displays **1202** a list of requestors that have requested to exchange profile information. The requested party is then able to select **1204** one of the requestors in the list of requestors being displayed. Then, the requested party exchange processing **1200** awaits a user selection. A decision block **1206** waits for the requested party to make a user selection. Once the decision block **1206** determines that a user selection has been received, a decision block **1208** determines whether the user selection is to exit the requested party exchange processing **1200**. When the decision block **1208** determines that the user selection is to exit, then the requested party exchange processing **1200** is complete and ends without having operated to accept or decline any of the requestors that have requested to exchange profile information.

When the decision block **1208** determines that the user selection is not to exit, a decision block **1210** determines whether the user selection is to accept the requested exchange by the selected requestor. When the decision block **1210** determines that the user selection is to accept the requested exchange, then a message is sent **1212** to the server system informing the server system to accept the particular exchange. Following block **1212**, the displayed list of requestors is updated **1214**. In one embodiment, the update to the displayed list operates to remove the selected entry in the list of the requestors being displayed. Following block **1214**, the requested party exchange processing **1200** returns to repeat the block **1204** and subsequent blocks.

On the other hand, when the decision block **1210** determines that the user selection is not to accept the exchange request from the selected requestor, a decision block **1216** determines whether the user selection is to decline the exchange request from the selected requestor. When the decision block **1216** determines that the user selection is to decline the exchange request from the selected requestor, a message is sent **1218** to the server system to decline the exchange. Following block **1218**, the requested party exchange processing **1200** returns to repeat the block **1214** and subsequent blocks where the list of the requestors being displayed is updated and then processing for another of the requestors can be performed.

Alternatively, when the decision block **1216** determines that the user selection is not to decline, then a decision block **1220** determines whether the user selection is to accept the exchange request with limitations. When the decision block **1220** determines that the user selection is not to accept with limitations, then the requested party exchange processing **1200** returns to repeat the block **1204** and subsequent blocks. When the decision block **1220** determines that the user selection is to accept the exchange request with limitations, a limitation screen is displayed **1222**. Then, the requested party is able to select **1224** limits for the exchange. Next, a message is sent **1226** to the server system informing the server system to accept the exchange request by the selected requestor with the selected limitations. Following block **1226**, the requested party exchange processing **1200** returns to repeat the block **1214** and subsequent blocks.

Once the server system is notified that a requested party has agreed to accept an exchange request, the server system operates to send a status update to the particular requestor. The status update can, for example, be forwarded to the client-side application of the requestor when next connected with the server system. The status update will update the status of the pending exchange requests of the particular requestor.

FIG. **18**D is a screen illustration of a representative limitations screen according to an embodiment of the invention in which various exchange options can be selected (block **1222**). In the screen illustration, the requested party is accepting the request to exchange profile information with the limitations that only the restricted personal information of address and email (as well as name) are permitted to be exchanged. Other limitations screens can be used.

Further, the users could process the limitations of exchanges by categorizing the requestors into groups. Exemplary groups are family, business associates, and friends. Each of the groups would have the exchange settings set based on the type of group. For example, family might be exchanged without limitations, friends might be exchanged with minor limitations, and business associates might have more limitations. Then, when accepting an exchange request, the requested party simply selects the appropriate for the requestor and the limitations on the exchange are thereby determined.

Additional modification to the requested party exchange processing can limit the number of requests for exchanging information a requested party has to respond to. One approach is for the requested party to set a preference that a password be required to be entered by a requestor of an exchange. Here, upon submitting a request for exchange, the server would determine that the requested party has required a particular password in order to permit such requests. Hence, the server would cause the client-side application to query the requestor to enter the password. If the requestor enters the correct password, then the server forwards the request to the requested party. On the other hand, if the requestor fails to enter the correct password, the request is never sent to the requested party. This approach is, for

example, suitable for a requested party that wants to limit the exchanges to persons it has provided the password.

FIG. **18**J is a screen illustration of a representative limitations screen according to an embodiment of the invention in which various exchange options can be selected based on groups. The client-side application enables the user to profile himself with information ranging from business to personal information. Because of the nature of contacts, such information may not be equally shared with all contacts. Therefore, the client-side application can allow a user to create different groups of contacts, each with a list of user selectable exchange options for that group profile. For example, a user may create a Business Group that contains only Business information and another group called Close Friends that contains both Business and Personal information. FIG. **18**J, for example, illustrates the user exchange selections being made for the group denoted Close Friends. Thereafter, whenever a request for contact information is received by the user, the user is free to select that particular profile group that the requestor should be designated. The profile information related to the selected group can then be sent to the system server together with the permission to distribute (or exchange). The system server then deliver the appropriate profile information to the requestor. As noted above, a password control option can also be implemented. The password control can be associated with the definition of the group profiles. For example, if the user is well known in her industry, she can be given the option of picking a password such that when a request for contact information arrives at the server system, the server system will first ask the requestors to provide the password. If the requestor does not enter the correct password, no request (e.g., exchange request) is forwarded to the user. The password option would allows for increased privacy and reduction in unwanted requests (e.g., spam).

Another approach is for the requested party to pre-approve exchange requests. For example, a sales person often wants a wide distribution of their contact information to anyone willing to accept it. Hence, by pre-authorizing such exchanges of such business information, the sales person need not individually approve the exchange requests.

FIG. **13** is a flow diagram of requestor exchange completion processing **1300** according to an embodiment of the invention. The requestor exchange completion processing **1300** is, for example, performed by the client-side application running on the local machine associated with the requestor.

The requestor exchange completion processing **1300** begins with a decision block **1302**. The decision block **1302** determines whether a status update has been received. Here, the status update is supplied by the server system to the client-application running on the local machine. When the decision block **1302** determines that a status update has been received, the status of the one or more exchange requests being displayed are updated **1304** in accordance with the status update. Otherwise, when the decision block **1302** determines that status update has not been received, the block **1304** is bypassed and the client-side application may otherwise operate to display the previous status of the one or more exchange requests. In any case, once the one or more exchange requests are displayed and updated as appropriate, the requestor is able to select **1306** one of the exchange requests.

A decision block **1308** then determines whether the status of the selected exchange request is "pending". When the decision block **1308** determines that the status of the selected exchange request is "pending", then a decision block **1310** determines whether the requestor desires to exit the requestor exchange completion processing **1300**. When the decision block **1310** determines that the user does desire to exit, then the requestor exchange completion processing **1300** is complete and ends. On the other hand, when the decision block **1310** determines that the user does not desire to exit, then the requestor exchange completion processing **1300** returns to repeat the decision block **1302** and subsequent blocks.

Alternatively, when the decision block **1308** determines that the status of the selected exchange request is not "pending", then a decision block **1312** determines whether the status of the selected exchange request is "accepted". When the decision block **1312** determines that the status of the selected exchange request is not "accepted", then a message indicating that the exchange is not permitted is displayed **1314**. In this case, the status of the selected exchange request is "denied". Hence, following block **1314**, the requestor exchange completion processing **1300** returns to repeat the decision block **1302** without completing the selected exchange request.

On the other hand, when the decision block **1312** determines that the status of the selected exchange request is "accepted", then the requested party's profile is requested **1316** from the server system. Then, a decision block **1318** determines whether the requested profile has been received. The decision block **1318** causes the requestor exchange completion processing **1300** to await the arrival of the requested party's profile. Once the requested party's profile has been received, the requested party's profile is stored **1320** on the local machine. At this point, the requested party's profile (e.g., business card) is stored on the local machine and therefore available to the rolodex feature and thus available to the client-side application program. The status of the displayed exchange request is also updated **1322**. Namely, the entry in the list of the displayed exchange requests that are pending can be removed since the exchange of profile information has been completed. Following block **1322**, the requestor exchange completion processing **1300** returns to repeat the decision block **1302**.

As discussed above with respect to FIGS. **12**A and **12**B, the requested party exchange processing **1200** can be performed via the client-side application. In which case, the requested party can choose to accept, decline or accept with limitations each of the particular requests for exchange of profile information. An alternative approach is for the requested party to perform similar actions upon receiving an email message from the system server. FIG. **14** is a flow diagram of requested party exchange processing **1400** through electronic email according to an embodiment of the invention. The requested party exchange processing **1400** begins when the requested party receives **1402** an exchange authorization email from the system server. The requested party then reads **1404** the exchange authorization email and decides how to respond to it with respect to a particular authorization type. Then, the requested party selects **1406** one of accept, decline or accept with limitations. An email reply is formed **1408** containing the requested party's authorization selection. The reply email is then sent **1410** to the system server. Following block **1410**, the requested party exchange processing **1400** is complete and ends. For each exchange request, the server system would cause an exchange authorization email to be sent to the appropriate requested party in the manner discussed above.

FIGS. **18**E-**18**H are screen illustrations of representative screens provided to users during the exchange processing pertaining to FIGS. **11**-**13** according to an embodiment of

the invention. FIG. **18**E illustrates a representative exchange screen in which a requestor identifies (block **1104**) the requested party they desire to exchange profile information with. Specifically, a requested party identification area **1830** is provided on the representative exchange screen and the requestor enters the identifying information (e.g., first name, last name, and email address). To submit (block **1106**) the exchange request to the system server, the requestor selects a submit button **1832**. FIG. **18**E illustrates a representative exchange screen in which an exchange status area **1834** displays the status of those exchanges that the requestor has requested and which are in process (block **1110**). Here, an entry **1836** in the exchange status area **1834** indicates that currently a single exchange request (the one just submitted) is "waiting". To refresh the status information provided in the exchange status area **1834** a status button **1838** can be depressed. Alternatively, the server system could refresh the status information as desired when the requestor is connected to the server system. FIG. **18**G illustrates a representative exchange screen for the requested party of the exchange request. The representative exchange screen for the requested party includes a requested exchange area **1840**. In this example, the requested exchange area **1840** includes an entry **1842** that indicates that a particular requestor has submitted a request to exchange profile information with the requested party (block **1202**). The particular requestor is identified by the entry **1842** (e.g., first name, last name, and email address). To refresh the requested exchange area **1840** a refresh button **1844** can be depressed. Upon selecting the entry **1842** in the requested exchange area **1840**, the requested party then decides whether to accept or decline the request. A authorization area **1846** on the representative exchange screen of FIG. **18**G includes an accept button **1848** and a decline button **1850**. The requested party selects the accept button **1848** to permit the requested exchange (block **1210**), and selects the decline button **1850** to deny the requested exchange (block **1216**). In another embodiment, a third button can be provided to accept with limitations, where the limitations are provided by a limitations screen such as shown in FIG. **18**D. Finally, FIG. **18**H illustrates a representative exchange screen for the requested party in which the exchange status area **1834** has been updated (block **1304**) after the requested party has authorized the requested exchange. Namely, displayed status of the outstanding exchange that the requestor has requested (the entry **1836**) is now "accepted". At this point, the requestor can depress a download button **1852** to complete the exchange request by causing the requested profile of the requested party to be received at the local machine of the requestor (block **1316**). Alternatively, if the requestor should change their mind and no longer desire the exchange, then the requestor can depress a remove button **1854** to cancel the exchange request.

During the registration process, a user or registrant will enter his/her contact or profile information. However, if at any time after registering the registrant desires to change their profile information, the client-side application facilitates such modifications. Additionally, the updated profile will be able to be automatically distributed to all of those registered users that have previously received the profile that has now been updated.

FIG. **15** is a flow diagram of change profile processing **1500** according to an embodiment of the invention. The change profile processing **1500** is, for example, performed by the client-side application on the local machine.

The change profile processing **1500** initially displays **1502** a current local user profile. The user of the local machine can then determine how to modify the current local user profile. The displayed user profile is then modified **1504**. The use is able to modify any of the information forming part of the profile that they previously provided.

FIG. **18**I illustrates a representative update profile screen that can be displayed by the client-side application (block **1502**). The representative update profile screen includes a current profile data section **1854** that displays current data, and a new profile data section **1856** where the user can enter the modifications to the profile (block **1504**).

Following block **1504**, a decision block **1506** determines whether the user has requested to save the modified profile. When the user does not wish to save the modified profile, then a decision block **1508** determines whether an exit is being requested. When the decision block **1508** determines that an exit is requested, then the change profile processing **1500** is complete and ends without modifying the user profile. On the other hand, when the decision block **1508** determines that the user is not requesting an exit, then the processing returns to repeat the block **1504** and subsequent blocks so that additional modifications can be made to the displayed user profile.

Alternatively, when the decision block **1506** determines that the modified profile is to be saved, then the modified profile information is sent **1510** to the server system. Then, a decision block **1512** determines whether the server user profile has been successfully updated in accordance with the modified profile information that was sent **1510** to the system server. When the decision block **1512** determines that the server user profile has been successfully updated, then the local user profile is updated **1514** based on the modified profile information.

At this point, the appropriate user profile has been updated on both the system server and the local machine. Following block **1514**, the change profile processing **1500** is complete and ends.

On the other hand, when the decision block **1512** determines that the server user profile has not been successfully updated, an error message is displayed **1516** on the display screen of the local machine to indicate that the profile has not been updated. Then, a decision block **1518** determines whether a retry is desired. When a retry of the update to the user profile is requested, the change profile processing **1500** returns to repeat the block **1510** and subsequent blocks. Alternatively, when the decision block **1518** determines that a retry is not desired, then the change profile processing **1500** is complete and ends without having updated the user profile.

In FIG. **15**, the user profile was updated by way of the client-side application running on the local machine. However, an alternative approach would allow a registrant to modify his/her user profile using the server website associated with the information management and exchange system. In such a case, the user at the local machine could use a network browser (e.g., web browser) to access the server website. Then, the user could sufficiently identify him/herself to the server website (such as with his/her name and PID and possibly password). Once identified to the server website, the current user profile would then be displayed and the user would be allowed to modify and submit the modified user profile to the system server.

At this point, the user profiles that have been modified are stored on the system server, but the outdated user profiles that have been previously exchanged with other registered users remain out of date. FIGS. **16** and **17** described below indicate one embodiment for updating the user profiles that have been previously exchanged in an automated fashion.

FIG. **16** is a flow diagram of update profile processing **1600**. The update profile processing **1600** is performed on the system server. The update profile processing **1600** can be initiated every time a modified user profile is submitted to the system server or can periodically operate on the system server. As illustrated in FIG. **16**, the update profile processing **1600** initially begins with a decision block **1602** that determines whether any profiles have been updated. When there are no profiles that have been updated, the update profile processing is not invoked. However, when the decision block **1602** determines that one or more profiles have been updated on the system server, then the update profile processing **1600** is invoked.

Once the update profile processing **1600** is invoked, one of the updated profiles is selected **1604**. Then, all registered users who have previously received a copy of the outdated profile are identified **1606**. As an example, the user profiles can be stored in the server contact information storage **216** such that each registrant is stored in a database along with a list of those registered users that previously obtained a copy of the now outdated profile. Next, an update flag is set **1608** for each of the identified registered users. For each registrant, the update flag indicates that one or more of the user profiles it has stored locally needs to be updated. This update flag will be used to subsequently update the user profiles stored on the local machine.

A decision block **1610** then determines whether there are more profiles to be updated. When the decision block **1610** determines that there are more profiles to be updated, then the update profile processing **1600** returns to repeat the block **1604** and subsequent blocks. On the other hand, when the decision block **1610** determines that there are no more profiles to be updated, then the update profile processing **1600** is complete and ends.

FIG. **17** is a flow diagram of initial server connection processing **1700** according to an embodiment of the invention. The initial server connection processing **1700** is, for example, performed by the server system. The initial server connection processing **1700** communicates with the local machines to manage profile updates and exchange requests.

The initial server connection processing **1700** is invoked when a user of the client-side application connects to the system server. A decision block **1702** determines whether a registered user has connected. When the decision block **1702** determines that a registered user has not connected, then the initial server connection processing **1700** is not invoked. Once a registered user has connected to the system server, the initial server connection processing **1700** is invoked.

When the initial server connection processing **1700** begins, a decision block **1704** determines whether an update flag is set. The update flag for the various registrants is set in block **1608** of FIG. **16** to signal that one or more user profiles that have previously been exchanged have been modified. Hence, the decision block **1704** determines whether the registrant that has connected to the system server needs to be sent user profiles that have been modified. When the decision block **1704** determines that the update flag is set, then updated user profiles for those previously exchanged user profiles that have been updated are sent **1706**. On the other hand, when the decision block **1704** determines that the update flag is not set, then block **1706** is bypassed because the user profiles that have been exchange with the registrant have not been modified.

In an alternative embodiment, instead of sending **1706** the updated user profiles, the server system could merely send an update notification to the client-application of the local machine that there are updated profiles to be delivered. This approach allows the user to decide if and when the updated user profiles are to be sent. In one implementation, the update notification could display a flashing update indicator to signal the user that updated profiles are waiting to be delivered. For example, in FIG. **19**A, an indicator **1912** can be used to signal the user of the client-side application when updates are waiting. In another implementation, the update notification could display the names of the registrants having the updated profiles that are waiting to be delivered. As an example, in FIG. **19**A, an update button **1914** is then available for the user to depress when the user desires to receive the updates. In still another implementation, the server system could resend all of the user profiles that have been previously exchanged with the registrant; however, such an approach would be less efficient.

Following block **1706**, as well as following the decision block **1704** when the update flag is not set, a decision block **1708** determines whether there has been a status change. The status change pertains to the status of pending exchange requests which the registrant that has connected to the system server has previously requested. When the decision block **1708** determines that there have been status changes, then status information on the pending exchange requests is sent **1710** to the local machine. This status information is, for example, used in the block **1110** of FIG. **11** where the status of the one or more pending exchange requests is displayed. Alternatively, when the decision block **1708** determines that there has been no status change, then the block **1710** is bypassed.

Following the block **1710**, as well as following the decision block **1708** when there has been no status change, a decision block **1712** determines whether there are any incoming exchange requests. The incoming exchange requests are those exchange requests in which the registrant that has connected to the system server is the requested party. When the decision block **1712** determines that there are incoming exchange requests, a list of requestors that have requested to exchange profiles is sent **1714** to the local machine associated with the registrant that has connected to the server system. As noted above, the list of requestors is displayed to the registrant so that the requested party exchange processing can be performed as shown in FIGS. **12**A and **12**B. When the decision block **1712** determines that there are no incoming exchange requests, then the block **1714** is bypassed. Following block **1714**, as well as following the decision block **1712** when there are no incoming exchange requests, the initial server connection processing **1700** is complete and ends.

Previously, as discussed above, the contact information provided by a user was self-representative by the user. The self-representative nature of the contact information means that the user is able to claim association with any organization or no organization at all. However, in some cases, some or all of the contact information is not set by the user but is instead set and controlled by an administrator of an entity.

It is not uncommon for an individual to desire to have multiple representations depending upon the particular setting in which he/she is operating. For example, an individual may have a personal setting in which he/she wishes to distribute contact information, may also have a small business in which he/she operates, and may further be associated with a corporation of which he/she is an employee and thus be associated with contact information associated with the corporation. Hence, the information and exchange system allows a user to create multiple profiles of him/herself using the same client-side application.

The users of the client-side application are able to represent themselves irrespective of employment (current or future). The user first and foremost represents himself primarily because of his unique ID (PID) assigned to him by the server system. The user profiles himself with his self-represented contact (profile) information. The user can also create further representations (profile) of himself. For example, the user may want to create another profile of himself as coach of his son's roller hockey team. FIG. **18**K is a representative screen illustration **1858** of a user that has multiple representations according to an exemplary embodiment of the invention. The representative screen illustration **1858** includes a first representation **1860** pertaining to a business entity associated with the user, and a second representation **1862** pertaining to a personal association for the user. Here, the user can be represented, and thus exchange or distribute contact information, as either the president of Sound Minds Tech, Inc. or the coach of Pee Wee Roller Hockey. As shown in the representative screen illustration, a select representation is designated by a representation indicator **1864** or by the depression of the first representation **1860**. The selected representation in a multiple representation situation is the one used during exchanges of contact information. In addition, the same user can also be officially represented as an employee of a corporation that has subscribed for the information management and distribution service. The user is subscribed as an employee and uses an official company business card, complete with company logo and only company editable employee information. The user now has an additional representation and is still uniquely identified as the same person to the server system; irrespective of changes in personal represented information or business entity information.

Typically, the system can distinguish between the different profiles by using the PID which is shared among the profiles together with the email address associated with the different profiles. In such case, the email address is different for each of the different profiles. Alternatively, an expanded PID could be used as a sub-profile reference to identify one of the different profiles. For example, if the user had a PID of 010, then the expanded PID for a business profile could be referenced as 010-1 ("-1" can be considered an extension), the expanded PID for a personal profile could be referenced as 010-2, and the expanded PID for a corporation profile could be referenced as 010-3.

FIG. **19**A is a representative screen illustration of a rolodex feature according to another embodiment of the invention. The screen illustration shows a rolodex icon **1900** as being selected, thus indicating that the client-side application is in the rolodex feature mode. The screen illustration includes a card display area **1902** that displays the contact card for the registered user. In a case of multiple representations, the registered user could have a personal contact card, a business contact card and a corporation contact card. To facilitate the registered user in selecting between the multiple profiles on the client-side application, selection buttons **1904**-**1908** are displayed on the screen illustration shown in FIG. **19**A. The selection button **1904** selects the personal profile, the selection button **1906** selects the business profile, and the selection button **1908** selects the corporation profile. As shown in FIG. **19**A, the card display area **1902** is displaying the business profile associated with the registered user.

Each of the one or more profiles that are associated with a registered user can contain information beyond the contact information. This additional information can be of a variety of types and formats. For example, the additional information can pertain to text, images, graphics, video and other multimedia types. The additional information also could be packaged within a HTML wrapper that would contain references or links to the additional information. The additional information could also be provided as additional cards. As shown in FIG. **19**A, the card display area **1902** includes an additional information designation area **1910** that informs the user whether there is additional information associated with the currently selected contact card being displayed in the card display area **1902**. The additional information designation area **1910** illustrated in FIG. **19**A shows that the selected contact card has four additional cards of information associated therewith. By selecting one of the additional cards, the additional information or links to the additional information are displayed in the card display area **1902**. In the case of links, the links can point to either a local database of information or a remote server.

FIG. **19**A-**1** is a representative screen illustration of an additional card **1920** of information according to an exemplary embodiment of the invention. The additional card **1920** contains a link **1922** to a website, a multimedia button **1924** for an audio or video clip, various text objects **1926**, and a graphic (picture) **1928**. Additional cards (or deck) can thus be created, edited and viewed using the client-side application. The additional cards can be composed to include objects such as text, graphics (pictures), links, video, audio, tables, frames, etc.

Hence, while the contact information may be represented in the form of a common display format (such as a business card format), additional information can be associated with the common display format. The common display format serves as a reference point for information that originates from a user or a business entity; essentially the point of contact. Every user and their contacts would use the same display format to reference their contacts. In one embodiment, the common display format is a card. Those cards holding additional information can be referred to as container cards. The invention also allows the users to embed additional information when they exchange or impart their contact information or profile through use of cards. The additional information may contain any number of data types, including text, graphics, images, multimedia (audio/video), telephony, fax, HTML, XML, Applets, and http links. These data types can reference datatypes or data objects within the same card or within a deck of cards (local or remote). The user may also add multiple cards, each card may be linked to the previous card. The ability to embed new datatypes within the context of additional container cards referenced to the reference card truly makes all data types representable and presentable to all parties in a consistent manner. The ability of container cards to embed common datatypes that possess the ability to affect other datatypes within the same container card, or within the same deck or on remote machines provides an extremely powerful architecture.

The embedded data types may be visible or invisible and may be added either at design time or added dynamically at run time. The container cards may be as simple as XML/HTML code that can simply be imported from some standard XML/HTML parser or can themselves be entire applications and Applets (Java) wrapped together and represented in the common display format. A data type object is a higher class abstraction of a data type with predefined behavior properties that when executed, perform some pre-defined actions and events. Additionally, these events are able to influence and affect the behavior of other objects within the

same card, deck of cards or within objects embedded in cards on remote servers that are programmed to understand common events and actions. For example, an audio data type object is a class of audio object whose format is of ".wav" and of type: 8 bit compressed. The format and type are properties that may be set at design or run time. The same audio object has multiple predefined events that are fired at the relevant point in the execution of the run time behavior of the object. For example, the audio object has been preset to play ADPCM 16 bit files and has been defined to understand the following events: OnClick, OnStartAudio, OnEndAudio, OnPauseAudio. As an example, this audio object can be embedded in a container card with an image object that is programmed with design/run time properties that will present a 'slide-show' synchronized to the OnClick, OnPauseAudio and OnEndAudio of certain music segments being played.

The client-side application allows these 'Deck of Cards' to be easily created. Each card can be given a name and referenced by that name. For each card, the user may add the required data types by first selecting the data type (e.g., text, graphics, audio, etc.) and then clicking on a canvas area for the card. Once the data type is dropped onto the canvas area, it can be dragged and placed at the desired location. By double clicking that data type icon, a new dialog window is presented that will be used to select additional properties or input data for that data type. For example, when a text data type is dropped on the canvas area, a double click action brings up a dialog window where the text string may be entered, together with the ability to dictate properties such as font size, font color, etc. Similarly, when a link data type is selected and placed onto the canvas area, a double click action brings out a dialog box that permits the user to enter an address related to the text link (or bitmap link) that can be a redirection to a remote web site or it could be a local reference to a HTML file.

The information management and distribution system can also include a corporate administrator application. The corporate administrator application is downloaded or obtained in ways similar to how the client-side application is obtained as discussed above. An administrator operates the corporate administrator application which executes on the local machine associated with the administrator. The corporate administrator application can include many of the features associated with the client-side application, including creation and design, rolodex, exchange, and update features. For example, the administrator may wish to update a corporate contact that has been previously distributed or exchanged.

FIG. **19**B is a block diagram of a network information management and distribution system **1950** according to another embodiment of the invention. The network information management and distribution system **1950** is generally similar to the network information management and distribution system **100** illustrated in FIG. **1**. Additionally, however, the network information management and distribution system **1950** includes an administrator machine **1952** that connects to the Internet **108** through an intermediate **1954**. The administrator machine **1952** administers information and management of information pertaining to a business entity. The intermediate **1954** can refer to any of a number of networks or network devices, including a Local Area Network (LAN), a corporate Intranet, a Wide Area Network (WAN), a wireless data network, and an Internet Service Provider (ISP). It should be noted that other networks besides the Internet can be used to interconnect the server machine **102** with the administrative machine **1952**. Here, the server machine **102** provides for storage and management of content information for a plurality of users. The content information can pertain to not only individuals but also corporate users.

The distribution of the content information at the server machine **102** can be operate as described above. Alternatively, the distribution of the corporate contact information can be performed as follows. First, the user of the requestor machine **104** makes a request for corporate contact information to the server machine **102** through the Internet **108**. Second, when the server machine **102** receives the request from the requestor machine **104**, the server machine **102** determines that the requestor is seeking to receive the corporate contact information for the user of the requested party machine **106**. In this example, the user of the requested party machine is also an employee of the business entity associated with the corporate contact information. As noted above, the user may have multiple representations such as personal, business and corporate. Here, the request would be to receive the corporate representation of the user (employee) with respect to their employer. Such a corporate representation would include the corporate contact information. The server machine **102** then proceeds to query the user of the requested party machine **106** whether the distribution of its corporate contact information is permitted. If the user of the requested party machine **106** replies that the distribution is permitted, then the server machine **102** forwards the corporate contact information for the user of the requested party machine **106** from the server machine **102** to the requestor machine **104** through the Internet **108**. Upon receiving the corporate contact information for the user of the requested party machine **106**, the requestor machine **104** locally stores the corporate contact information in the requestor machine **104**. Alternatively, if the user of the requested party machine **106** replies that the distribution is not permitted, then the server machine **102** sends a notification to the requestor machine **104** to inform the user that the request for corporate contact information from the user of the requested party machine **106** is denied. Optionally, instead of the one-way distribution of the contact information, contact information of both users of the requestor machine **104** and the requested party machine **106** can be exchanged (i.e., two-way distribution).

Accordingly, the distribution of corporate contact information is controlled by the "owner" of the information which would normally be an employee. As such, contact information is able to be electronically transmitted to those users that are approved and not to those users that are not approved. However, the administrator of the corporate contact information is responsible for control over at least the basic corporate contact information so that the corporate image (e.g., appearance, logo, etc.) are consistent and centrally controlled. The administrator also is able to limit availability of the contact information to employees.

Additionally, should the contact information need to be changed, the changes can be made and then the server machine can proceed to update the previously transmitted contact information. As an example, the updating of the contact information at the administrator machine **1952** produces altered contact information that is forwarded and stored on the server machine **102**. Then, the server machine **102** can distribute the altered content information through the Internet **108** to all of those requestors machines that previously received (and this store) the contact information which is now outdated, thereby updating the content information for the user of the requested party machine **106** on the various requestor machines. As an example, the admin-

istrator may update the corporate contract information to change the corporate address. In such case, those registered users having previously received would receive the updated corporate contact information (or at least a notification of its availability). In addition, the administrator can also cause notifications, announcements or advertisements to be distributed to registered users in any of a number of ways. The administrator can also disable contact information for particular employees of the business entity.

FIG. **20** is a flow diagram of corporate administrator application processing **2000** according to an embodiment of the invention. The corporate administrator application processing **2000** is, for example, performed by a corporate administrator application. The corporate administrator application executes on an administrator machine (e.g., administrator machine **1952**) associated with an administrator. More generally, the administrator machine is a local machine. The administrator is charged with administration of the information management and exchange system for the corporation (or other business entity). Although the administrator application is referred to as a corporate administrator application, it should be noted that the corporate administrator application is not limited to a corporation and thus any suitable business entity can be used.

The corporate administrator application processing **2000** initially searches **2002** a local machine for a corporate identifier (CID). The local machine being searched is the local machine on which the corporate administrator application is installed. A decision block **2004** then determines whether the CID has been found. When the decision block **2004** determines that a CID has not been found, then local corporate registration processing is performed **2006**. The local corporate registration processing causes the administrator to perform the corporate registration before the corporate administrator processing **2000** can perform its normal processing. Following block **2006**, the corporate administrator application processing **2000** is restarted.

Alternatively, when the decision block **2004** determines that the CID has been found, then the normal processing provided by the corporate administrator application **2000** can be performed. Namely, the local machine is connected **2008** to a server machine (e.g., the server machine **102**). This connection is performed over a network. In one embodiment, the network includes the Internet. Often, the network will also include a corporate network, such as a LAN, that connects the local machine to the Internet.

Next, a decision block **2010** determines whether the administrator desires to design a corporate contact card. The corporate contact card contains the contact information for the corporation (or other business entity). The corporate information is presented in a contact card that provides a common format for the information. When the decision block **2010** determines that the administrator desires to design a corporate contact card, then processing to design corporate contact card processing is performed **2012**. Following block **2012**, the corporate administrator application **2000** processing returns to repeat the decision block **2010** and subsequent blocks.

On the other hand, when the decision block **2010** determines that the administrator does not desire to design a corporate contact card, then a decision block **2014** determines whether the administrator desires to associate employees to the corporation. When the decision block **2014** determines that the administrator desires to associate employees to the corporation, processing to associate employees to the corporate contact card is performed **2016**. There are a variety of ways to associate employees to a corporation or the corporate contact card. Such ways include importing employee data into the corporate administrator application, manually entering the employee data by the administrator, or having the employees enter their employee information using their client-side application associated with their local machines.

Alternatively, when the decision block **2014** determines that the administrator does not desire to associate employees to the corporation, a decision block **2018** determines whether a notification request is being made. When the decision block **2018** determines that a notification request has been made, then notification and disable processing is performed **2020**.

On the other hand, when the decision block **2018** determines that there has been no notification request, a decision block **2022** determines whether the administrator desires to disable employee cards. When the decision block **2022** determines that the administrator desires to disable employee cards, then disable employee cards processing is performed **2024**. Alternatively, when the decision block **2022** determines that the administrator does not desire to disable employee cards, as well as following the block **2016**, the block **2022** or the block **2024**, a decision block **2026** determines whether an exit has been requested. When the administrator has requested to exit the corporate administrator application, the corporate administrator application processing **2000** is complete and ends. Alternatively, when the decision block **2026** determines that the administrator has not requested to exit the corporate administrator application, the corporate administrator application processing **2000** returns to repeat decision block **2010** and subsequent blocks.

Although not shown in FIG. **20**, the corporate administrator application can also perform some or all of the functions or features of the client-side application. For example, the functions or features include creation and design, rolodex, exchange, and update features.

FIG. **21** is a flow diagram of local corporate registration processing according to an embodiment of the invention. The local corporate registration processing **2100** is, for example, the processing associated with the block **2006** illustrated in FIG. **20**. The local corporate registration processing **2100** is performed on a local machine that is associated with an administrator of the information management and distribution system (e.g., the administrator machine **1952**).

The local corporate registration processing **2100** initially identifies **2102** a system administrator. The system administrator is the individual who will administer the information management and distribution system. In other words, the system administrator will be responsible for maintaining the corporate contact information as well as for supervising and verifying the usage of the corporate contact information by the various employees of the corporation.

Following block **2102**, a corporate profile screen is displayed **2104**. Then, the administrator completes **2106** the corporate profile by interacting with the corporate profile screen being displayed to enter corporate profile information for a corporate profile. Next, a decision block **2108** determines whether the administrator has requested to submit the corporate profile to the server machine. When the decision block **2108** determines that the administrator has not requested to submit the corporate profile, then the processing returns to repeat the block **2106** and subsequent blocks.

On the other hand, once the decision block **2108** determines that the administrator has requested to submit the corporate profile to the server machine, the local machine

that performs the local corporate registration processing **2100** is connected **2110** to the server machine. Then, the corporate profile information along with information pertaining to the system administrator are sent **2112** to the server machine.

Next, a decision block **2114** determines whether the corporate profile has been accepted by the server machine. When the decision block **2114** determines that the server machine has not accepted the corporate profile, then an error screen is displayed **2116** on the local machine. Following block **2116**, the local corporate registration processing **2100** returns to repeat the block **2106** and subsequent blocks so that the administrator can retry the creation and submission of the corporate profile.

On the other hand, when the decision block **2114** determines that the corporate profile has been accepted, the CID file is received **2118** from the server machine. Here, upon receiving the corporate profile that has been submitted, the server machine operates to produce a unique corporate identifier (CID). The CID file is then transmitted from the server machine to the local machine that is performing the local corporate registration processing **2100**. Hence, in block **2118**, the CID file is received **2118** from the server machine. Then, the CID file is stored **2120** on the local machine. The user is next instructed **2122** to restart the corporate administrator application so that the processing performs the corporate administrator application processing **2000** illustrated in FIG. **20**. Following block **2122**, the local corporate registration processing **2100** is complete and ends.

The corporate profile information is typically presented to registered users in a card format (i.e., corporate contact card). Specifically, a representative card format is a business card format. The designing of a corporate contact card is similar to the designing of a personal contact card and thus the processing described above with respect to FIG. **9** is also suitable for designing the corporate contact card. However, typically, a corporate contact card will include a company logo which is a particular graphic image that may be scanned or imported during the business card creation processing and thus placed on the corporate contact card. Additionally, as also noted above, additional information can be added to the contact cards or contact information associated with the cards. The additional information can take a variety of forms, including web page links, HTML documents, various messages, notifications and advertisements.

FIG. **22** is a flow diagram of employee association processing **2200** according to an embodiment of the invention. The employee association processing **2200** is, for example, performed by the block **2016** illustrated in FIG. **20**. The employee association processing **2200** is also performed by the administrator of the information management and distribution system.

The employee association processing **2200** initially begins with a decision block **2202**. The decision block **2202** determines whether the administrator desires to input employee data so as to create employee cards. When the decision block **2202** determines that the administrator does desire to import employee data, then employee information is imported **2204** from a legacy database. Typically, a corporation will have a database that includes information about its employees. Hence, here, the ability to import employee information from such a database results in a substantial time savings in the registration of the employees with the information management and distribution system. Next, the employee association processing **2200** can operate to automatically create **2206** the employee cards (i.e., employee contact cards) using the employee information that has been imported. For example, while the corporate contact card has some common corporate contact information (e.g., corporate name, corporate address, company logo, etc.), the employee cards may need to add information such as employee name, title of job, work telephone number, work facsimile number and work email address. This type of information is often available from a legacy database and thus can be imported then used to automatically create the employee cards. Following block **2206**, the employee cards are sent **2208** to the server system. The server system is the central depository for all of the contact information associated with the information management and distribution system. Hence, the employee cards that have been created are sent **2208** to the server system. Following block **2208**, the employee association processing **2200** is complete and ends.

On the other hand, when the decision block **2202** determines that the administrator does not desire to import employee data, a decision block **2210** determines whether the administrator desires to manually enter one or more employees into the information management and distribution system. When the decision block **2210** determines that manual entry is desired, then one or more employee cards are manually created **2212**. Following block **2212**, the employee association processing **2200** performs the block **2208** and subsequent blocks. Alternatively, when the decision block **2210** determines that manual entry is not desired, then a decision block **2214** determines whether an exit is requested. When the administrator requests to exit the employee association processing **2200**, the employee association processing **2200** is complete and ends. On the other hand, when the administrator does not desire to exit the employee association processing **2200**, the employee association **2200** processing returns to repeat the decision block **2202** and subsequent blocks.

Besides importing data or the administrator manually entering employee data, another approach is to have employees enter their employee information from their local machines. Typically, the employees will also interact with the information management and distribution system using the client-side application executing on their local machine. In FIG. **19**A, for example, the corporate representation (employee card) could be selected for display by the client-side application by selection of the selection button **1908**. Hence, by providing the employees with the corporate identifier (CID) and perhaps a password, the employees are able to individually create their own employee cards using the corporate profile as a base. Although the employee is able to build off of the corporate profile as a base, the corporate profile or card is not able to be altered by the employees. After the employees have created their employee cards using the corporate profile as a base, the employee cards would be sent to the administrator for approval and then, upon approval, the employee cards would be forwarded to the server system for storage.

FIG. **23** is flow diagram of notification and disable processing **2300** according to an embodiment of the invention. The notification and disable processing **2300** is, for example, processing performed by the block **2020** illustrated in FIG. **20**.

The notification and disable processing **2300** begins with a decision block **2302**. The decision block **2302** determines whether an announcement type notification is requested. When the decision block **2302** determines that an announcement type notification is requested, then an announcement is prepared **2304**. After preparing the announcement, a distribution approach is selected **2306**. As examples, the distri-

bution approach can be email, facsimile, or as additional information associated with a contact card (e.g., a notification card). Then, a distribution request is sent **2308** to the server system. The distribution request operates to request that the server system distribute the announcement using the distribution approach selected to one or more of the registered users.

On the other hand, when the decision block **2302** determines that an announcement-type notification is not requested, as well as following the block **2308**, a decision block **2310** determines whether an advertisement-type notification is requested. When the decision block **2310** determines that an advertisement-type notification is requested, then the notification and disable processing **2300** operates to prepare or retrieve **2312** an advertisement. Then, a distribution approach is selected **2314** for the advertisement. As examples, the distribution approach can be email, facsimile, or as additional information associated with a contact card (e.g., a notification card). Next, a distribution is sent **2316** to the server system, requesting the distribution of the advertisement.

Alternatively, when the decision block **2310** determines that an advertisement-type notification is not requested, as well as following the block **2316**, a decision block **2318** determines whether there is a request to disable a contact. When the decision block **2318** determines that there is a request to disable a contact, the employee card to be disabled is identified **2320**. Then, the extent of disablement is determined **2322**. For example, the disablement could be temporary or permanent. Also, the disablement could render the card inactive but still viewable, or could render the card totally unviewable, or could superimpose graphics or text on the card indicating that the card should no longer be used, etc. Following block **2322**, a disable request is sent **2324** to the server system.

On the other hand, when the decision block **2318** determines that a disable request has not been received, as well as following the block **2324**, a decision block **2326** determines whether an exit has been requested. When the decision block **2326** determines that an exist has not been requested, then the notification and disable processing **2300** returns to repeat the decision block **2302** and subsequent blocks. On the other hand, when the decision block **2326** determines that an exit has been requested, then the notification and disable processing **2300** is complete and ends.

In general, any of the processing that could be done by the client-side application or administrator application by either the requestor or the requested party could also be done by interacting with the website server using a network browser. The registration, rolodex, exchange (including request, authorization and completion), and update could, for example, all be achieved by either or both of the client-side application or the network browser together with the website server. In the case of a network browser implementation, local storage (e.g., local contact information storage **316**) of the contact information (and additional information) is not needed because such information is stored centrally not locally. In one network browser implementation, the client-side application (e.g., client-side application **306**) is performed by scripts (e.g., JavaScript or VB script) or plug-ins operating on the network browser or the website server, thus there is no need in such an implementation to download and install a client-side application. The client controller (e.g., client controller **302**) can also be performed by scripts or plug-ins with the network browser. For example, in the case of an exchange request as noted above, the exchange of contact information can be initiated (blocks **1104-1106**) by a requestor interacting with the client-side application. In such case, the requestor can, for example, enter the first name, last name and email address of the individual with whom an exchange of contact information is desired. However, when the exchange of contact information is initiated through the website server, the requestor would also need to identify him/herself to the website server. As an example, to initiate an exchange by way of the website server, the requestor would additionally need to indicate the first name, last name, the PID, and email address of the requestor himself. However, in all likelihood, the requestor would also be required to enter a password so that unauthorized exchanges do not occur.

Security features can also be optionally provided with the invention. The security features can ensure that the registered users are provided with the opportunity to encode or encrypt information being transferred between the client-side application and the system server. The receiving side would then also be able to decode or decrypt the received information.

Moreover, in some cases, a registered user may desire to interact with the system server using different remote machines. In such case, a password protected log in can be used to permit the user to access the system server. However, to keep the various client-side applications synchronized with the other client-side application or the interactions with the website server, the system server will store and eventually echo back all changes made during the remote log in.

The advantages of the invention are numerous. Several advantages that embodiments of the invention may include are as follows. One advantage of the invention is that the distribution of information takes place in an automated fashion, which is particularly advantageous when large numbers of users are involved. Another advantage of the invention is that the parties involved in the distribution can control the distribution process so that only approved distributions occur. Still another advantage of the invention is that updates to previously distributed information can also be automated. Yet another advantage of the invention is that the information being exchanged is useful for enabling registered persons to efficiently contact the persons associated with the information using a mechanism which they have prescribed. Another advantage of the invention is that contact and additional information can be distributed to users in a common format. Still yet another advantage of the invention is that an administrator can control the distribution and use of corporate (i.e., business entity) information.

The many features and advantages of the present invention are apparent from the written description, and thus, it is intended by the appended claims to cover all such features and advantages of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation as illustrated and described. Hence, all suitable modifications and equivalents may be resorted to as falling within the scope of the invention.

What is claimed is:

1. A method comprising:

by a client device, determining whether a personal identifier exists on the client device, the personal identifier being a unique identifier associated with a user who is registered with an information management and distribution system, wherein the personal identifier is based on an email address for the user;

by the client device, when it is determined that the personal identifier does not exist on the client device:

sending, to one or more computer servers associated with an information management and distribution system, a request to register the user of the client device, the request comprising identifying information for the user;

receiving a response to the request to register the user, the response comprising the personal identifier for the user, the personal identifier having been generated by the one or more computer servers associated with the information management and distribution system in response to receiving the request to register the user and determining that the user has not previously registered with the information management and distribution system; and

storing the personal identifier in a local data store of the client device; and

by the client device, once the personal identifier exists on the client device, sending, to the one or more computer servers associated with the information management and distribution system, the personal identifier during user profile exchange operations with one or more other users who are registered with the information management and distribution system.

2. The method of claim **1**, wherein the response further comprises information to download a client-side application.

3. The method of claim **1**, wherein the response further comprises a web page.

4. The method of claim **1**, when the personal identifier does not exist on the client device, further comprising:

receiving profile information for the user; and

storing a user profile for the user in the local data store of the client device, wherein the request to register the user comprises the profile information, and wherein the response to the request to register the user comprises the user profile for the user.

5. The method of claim **4**, wherein the user profile comprises a plurality of profiles for the user, each of the profiles having a different email address, wherein all of the profiles are associated with the personal identifier.

6. The method of claim **5**, wherein each of the plurality of profiles are associated with a respective expanded version of the personal identifier.

7. The method of claim **1**, wherein storing the received personal identifier in a local data store comprises storing a file in a persistent storage area on the client device.

8. The method of claim **1**, wherein the personal identifier is a unique string of characters.

9. The method of claim **1**, wherein:

the user profile comprises two or more profiles for the user; and

the personal identifier is an expanded personal identifier that indicates a particular one of the user's two or more profiles.

10. One or more computer-readable non-transitory storage media embodying software that is operable when executed to:

determine whether a personal identifier exists on the client device, the personal identifier being a unique identifier associated with a user who is registered with an information management and distribution system, wherein the personal identifier is based on an email address for the user;

when it is determined that the personal identifier does not exist on the client device:

send, to one or more computer servers associated with an information management and distribution system, a request to register the user of the client device, the request comprising identifying information for the user;

receive a response to the request to register the user, the response comprising the personal identifier for the user, the personal identifier having been generated by the one or more computer servers associated with the information management and distribution system in response to receiving the request to register the user and determining that the user has not previously registered with the information management and distribution system; and

store the personal identifier in a local data store of the client device; and

once the personal identifier exists on the client device, send, to the one or more computer servers associated with the information management and distribution system, the personal identifier during user profile exchange operations with one or more other users who are registered with the information management and distribution system.

11. The media of claim **10**, when the personal identifier does not exist on the client device, further comprising:

receiving profile information for the user; and

storing a user profile for the user in the local data store of the client device, wherein the request to register the user comprises the profile information, and wherein the response to the request to register the user comprises the user profile for the user.

12. The media of claim **11**, wherein the user profile comprises a plurality of profiles for the user, each of the profiles having a different email address, wherein all of the profiles are associated with the personal identifier.

13. The media of claim **12**, wherein each of the plurality of profiles are associated with a respective expanded version of the personal identifier.

14. A client device comprising:

one or more processors; and

a memory coupled to the processors comprising instructions executable by the processors, the processors operable when executing the instructions to:

determine whether a personal identifier is stored on the client device, the personal identifier being a unique identifier associated with a user who is registered with an information management and distribution system, wherein the personal identifier is based on an email address for the user;

when it is determined that the personal identifier is not stored on the client device:

send, to one or more computer servers associated with an information management and distribution system, a request to register the user of the client device, the request comprising identifying information for the user;

receive a response to the request to register the user, the response comprising the personal identifier for the user, the personal identifier having been generated by the one or more computer servers associated with the information management and distribution system in response to receiving the request to register the user and determining that the user has not previously registered with the information management and distribution system; and

store the personal identifier in a local data store of the client device;

once the personal identifier exists on the client device, send, to the one or more computer servers associated with the information management and distribution system, the personal identifier during user profile exchange operations with one or more other users who are registered with the information management and distribution system.

15. The device of claim **14**, wherein the processors operable to store the received personal identifier in a local data store are further operable to store a file comprising the personal identifier in a persistent storage area on the client device.

16. The device of claim **14**, wherein the response further comprises information to download a client-side application.

17. The device of claim **14**, wherein the processors are further operable when executing the instructions to:

receive profile information for the user; and

store a user profile for the user in the local data store of the client device, wherein the request to register the user comprises the profile information, and wherein the response to the request to register the user comprises the user profile for the user.

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