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GB 2327571 A **EP 1164774 A1**
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(54) Abstract Title
Group messaging for mobiles

(57) A mobile call centre routes messages between mobiles in a group, managed by an administrator which receives message requests and identifiers of intended recipients to set up a group. The individual mobiles may post text message or multimedia notices back to the sender or to the whole bulletin board group. Thus information may be shared throughout the updateable defined group. Mobiles may be assigned administrator privileges or may subscribe to services which are then delivered to, or made available to predetermined group members. The group controller may be an internet based server.

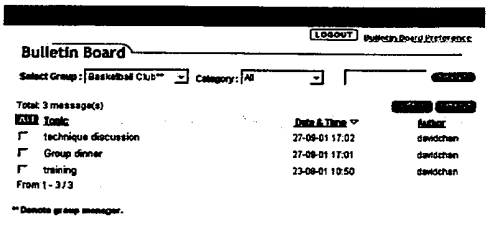

FIGURE 4

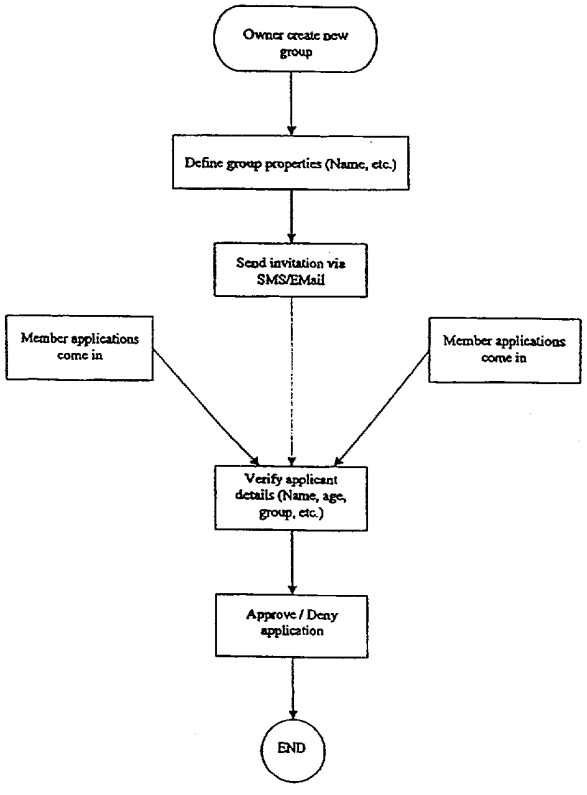

FIGURE 8

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print incorporates corrections made under Section 117(1) of the Patents Act 1977.

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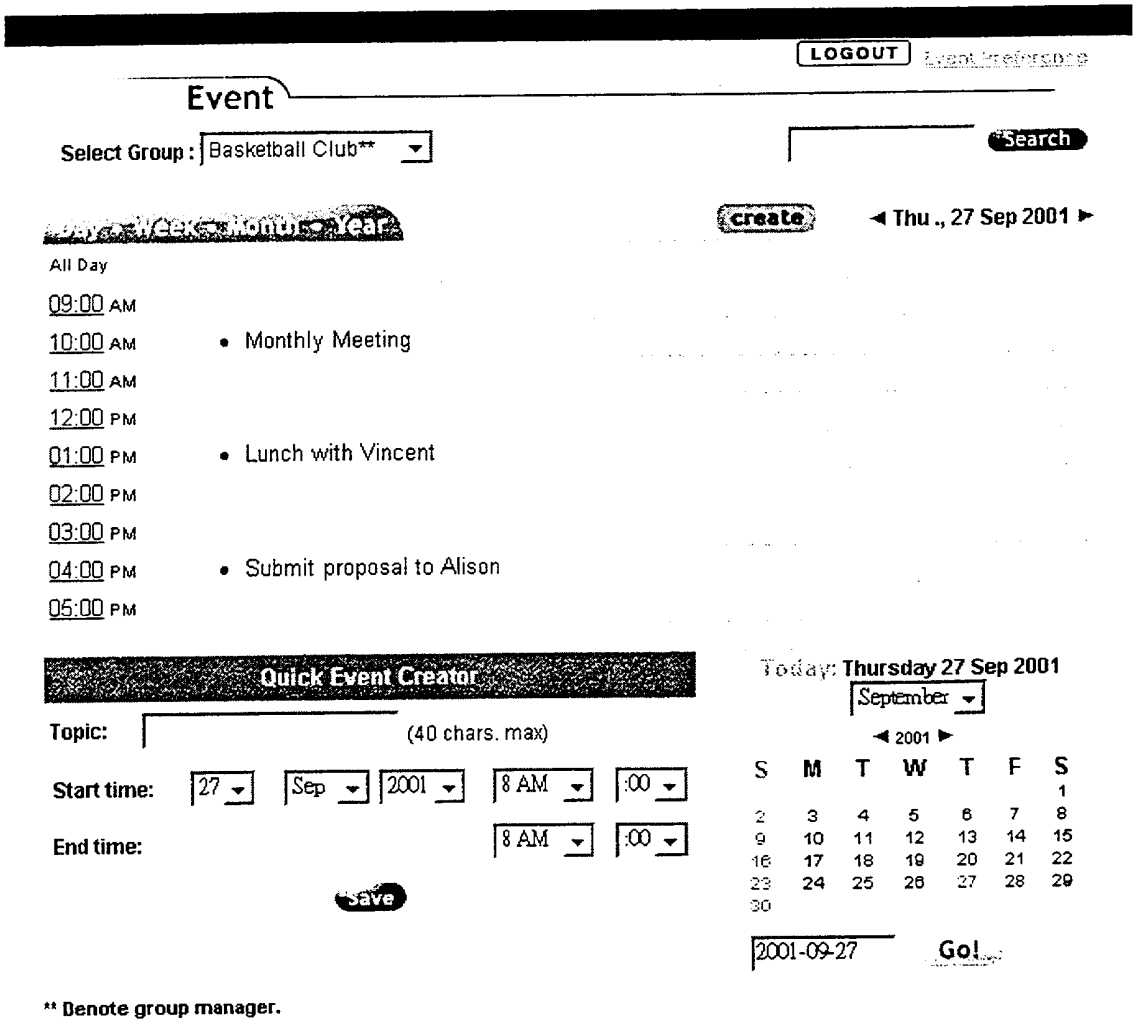
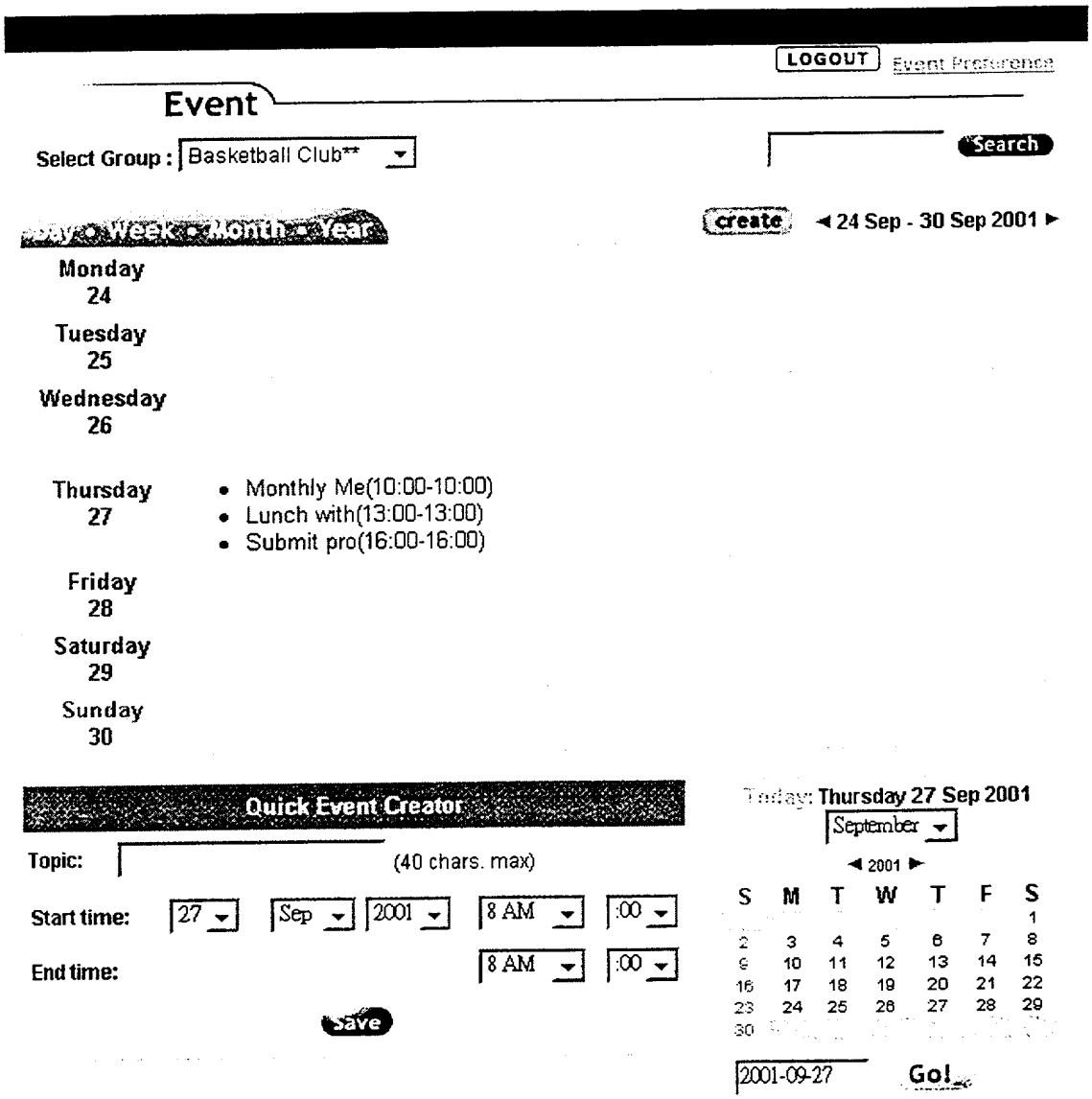


** Denote group manager.

FIGURE 1



** Denote group manager.

FIGURE 2

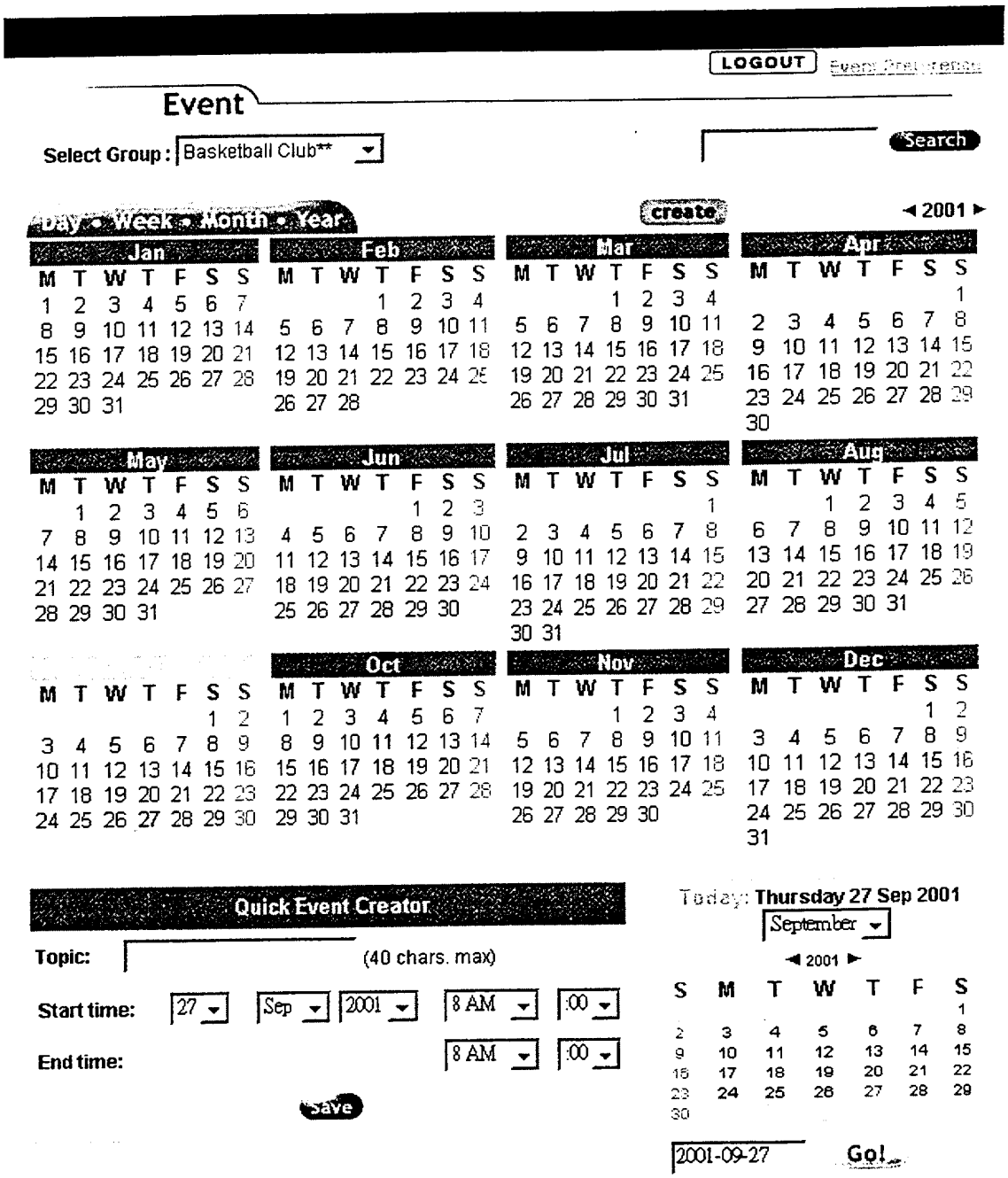

LOGOUT
Event
Select Group : Basketball Club**
Search
Day • Week • Month • Year
create
◄ 2001 ►
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Oct
Nov
Dec
Quick Event Creator
Topic:
(40 chars. max)
Start time:
End time:
Save
Today: Thursday 27 Sep 2001
September
2001-09-27
Go!

FIGURE 3

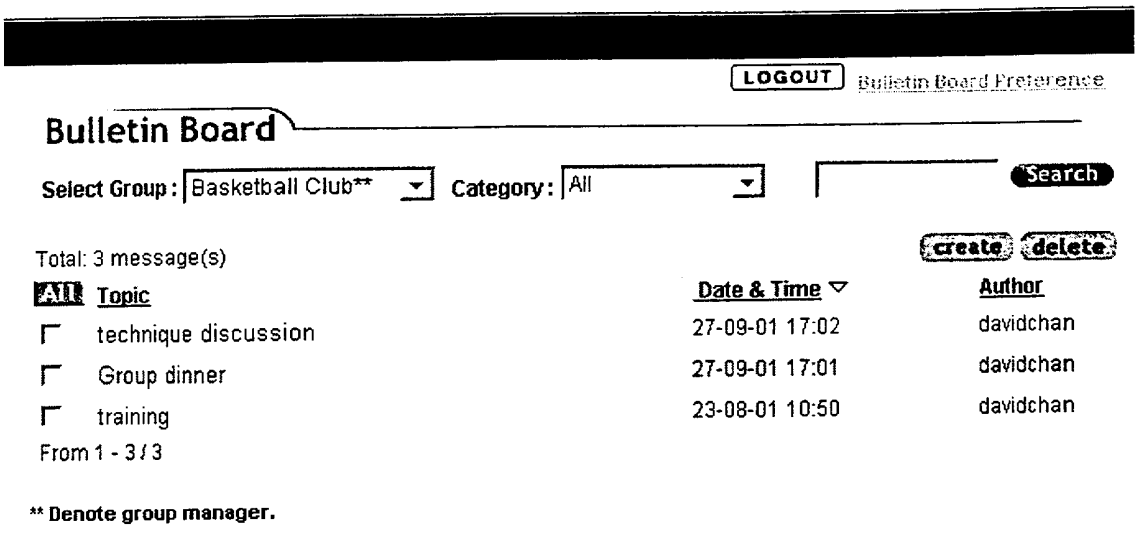


FIGURE 4

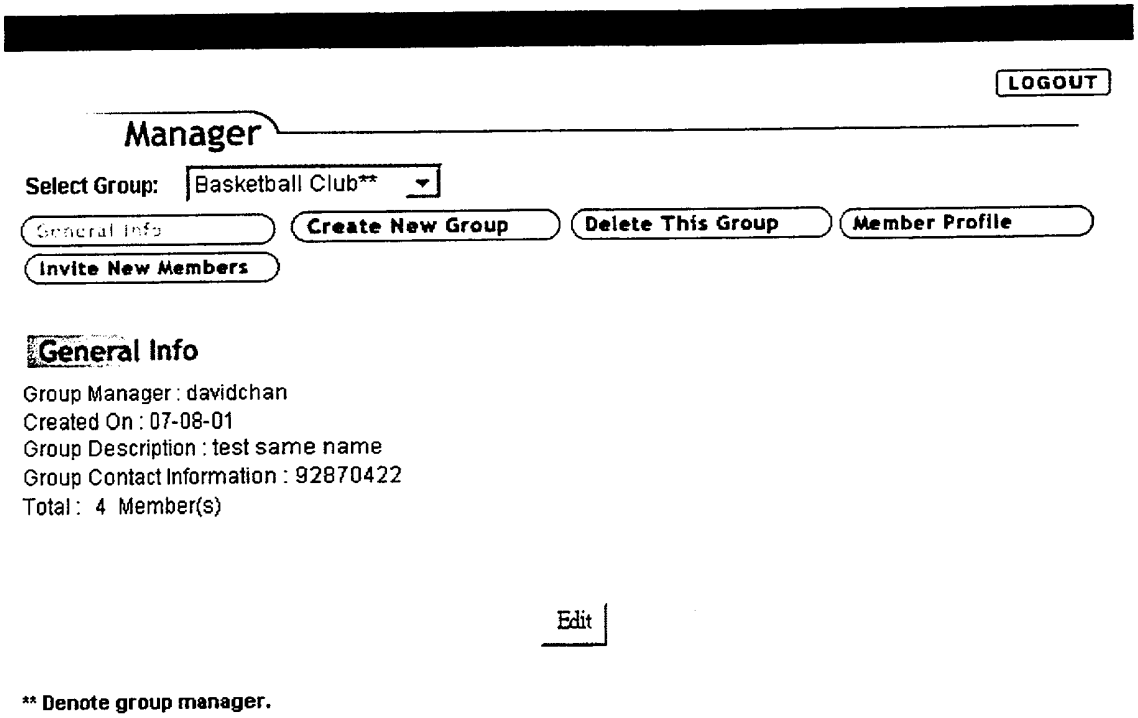


FIGURE 5

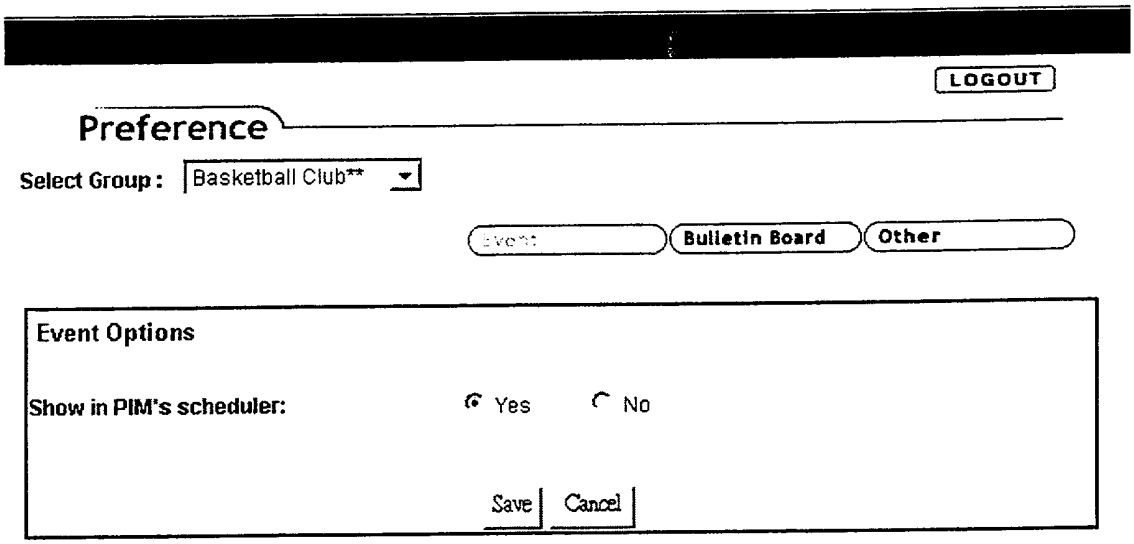

LOGOUT
Preference
Select Group : Basketball Club**
Event
Bulletin Board
Other
Event Options
Show in PIM's scheduler:
Yes
No
Save
Cancel
** Denote group manager.

FIGURE 6

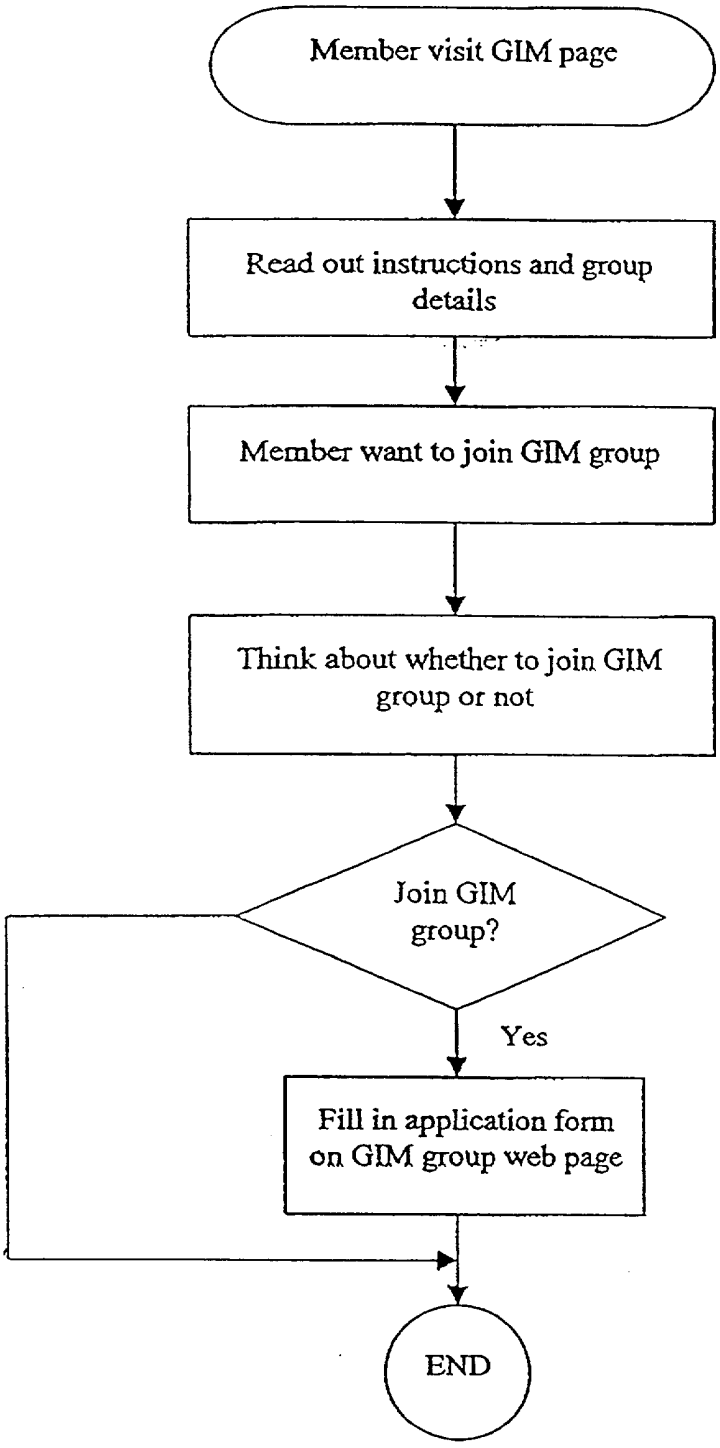

Member visit GIM page
Read out instructions and group details
Member want to join GIM group
Think about whether to join GIM group or not
Join GIM group?
Yes
Fill in application form on GIM group web page
END

FIGURE 7

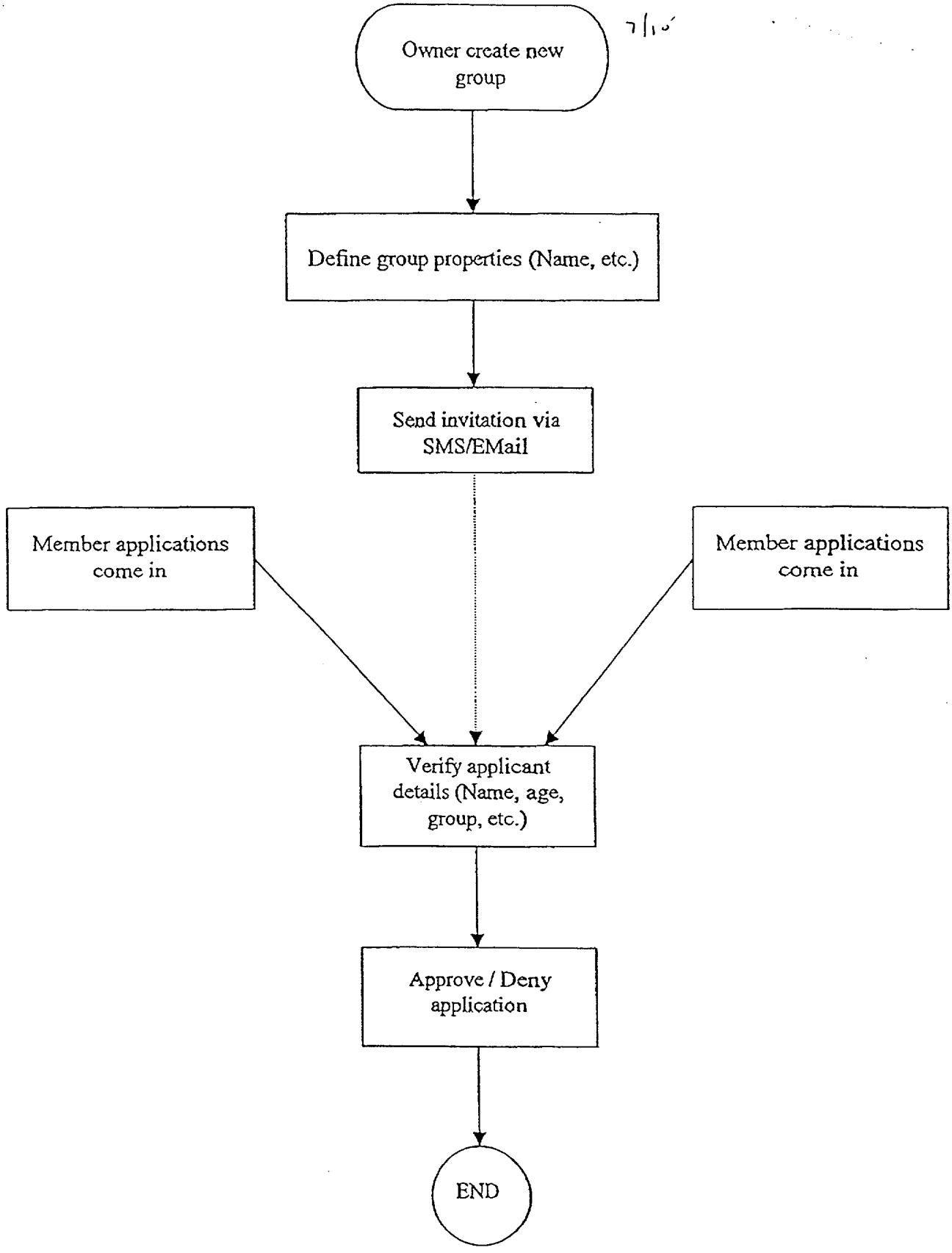

Owner create new group
Define group properties (Name, etc.)
Send invitation via SMS/EMail
Member applications come in
Member applications come in
Verify applicant details (Name, age, group, etc.)
Approve / Deny application
END

FIGURE 8

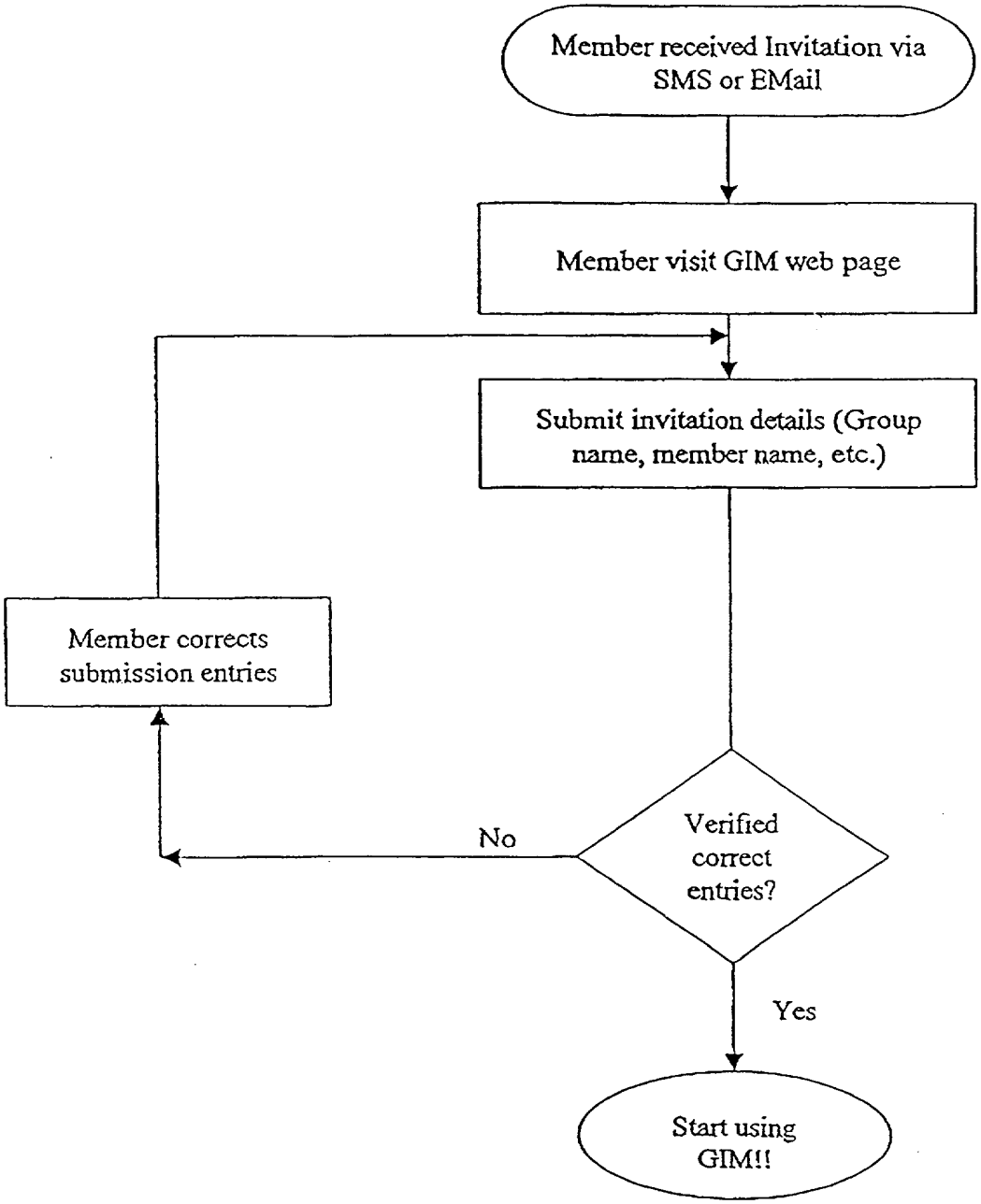

Member received Invitation via SMS or EMail
Member visit GIM web page
Submit invitation details (Group name, member name, etc.)
Verified correct entries?
No
Member corrects submission entries
Yes
Start using GIM!!

FIGURE 9

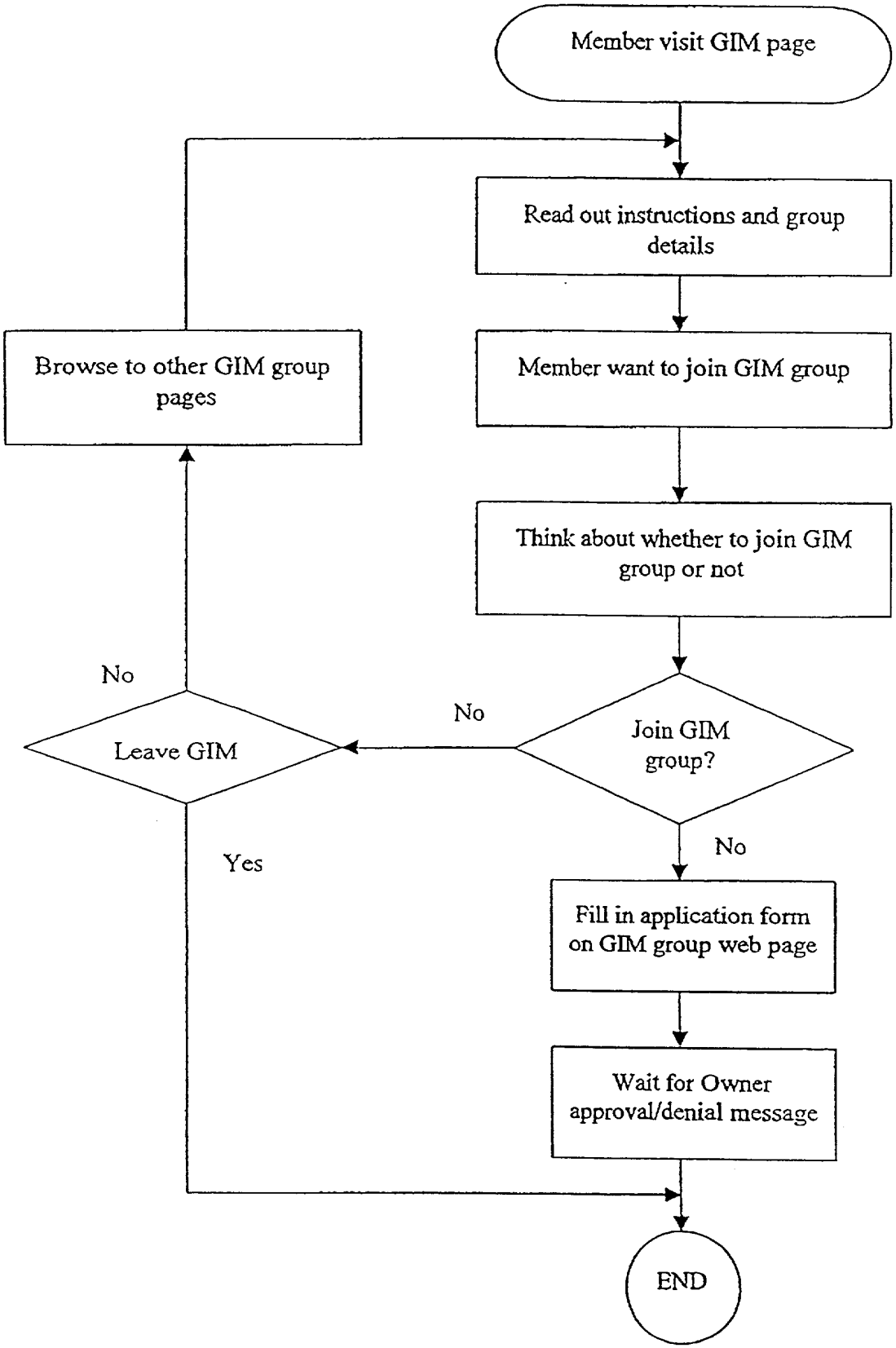

Member visit GIM page
Read out instructions and group details
Member want to join GIM group
Think about whether to join GIM group or not
Join GIM group?
No
Leave GIM
No
Yes
Browse to other GIM group pages
No
Fill in application form on GIM group web page
Wait for Owner approval/denial message
END

FIGURE 10

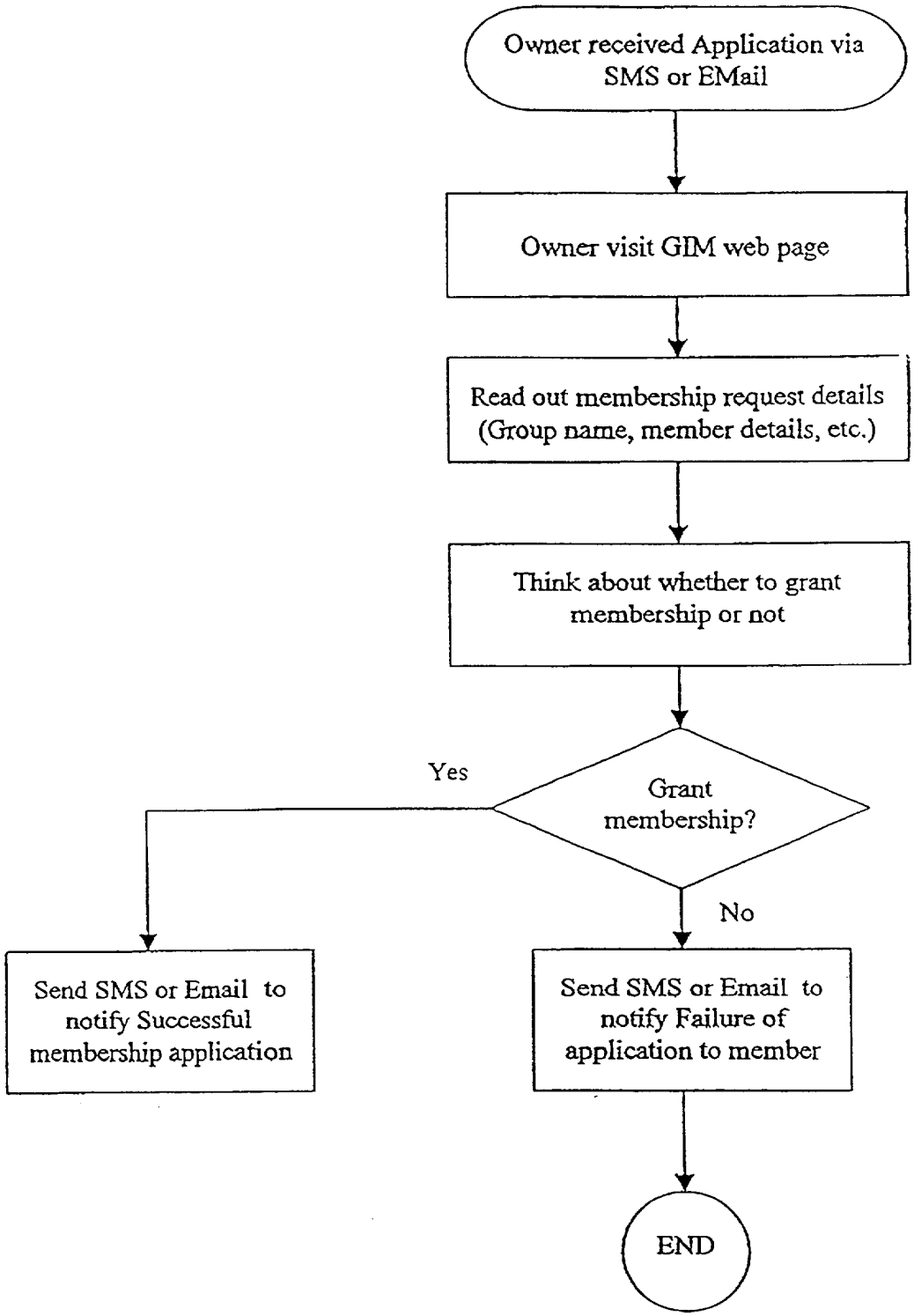

Owner received Application via SMS or EMail
Owner visit GIM web page
Read out membership request details (Group name, member details, etc.)
Think about whether to grant membership or not
Grant membership?
Yes
No
Send SMS or Email to notify Successful membership application
Send SMS or Email to notify Failure of application to member
END

FIGURE 11

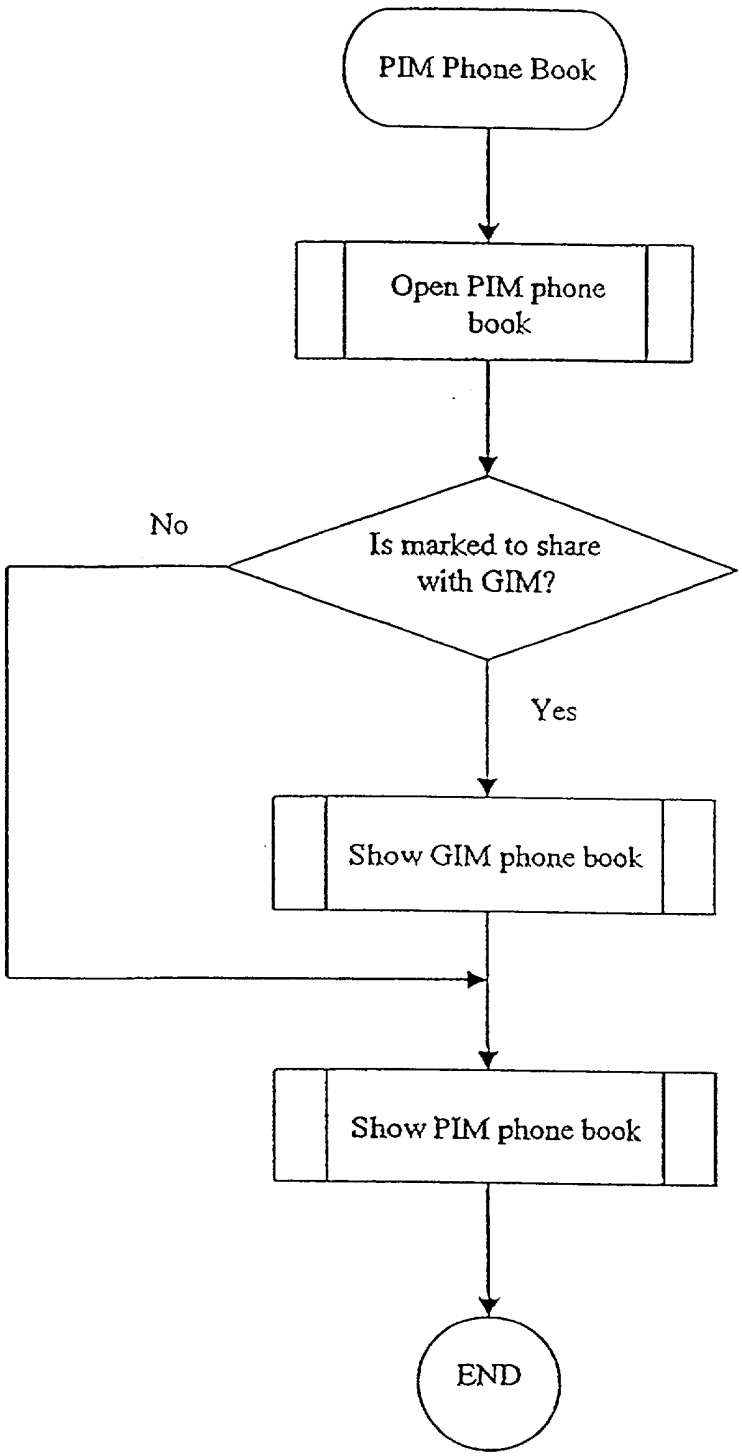

PIM Phone Book
Open PIM phone book
Is marked to share with GIM?
No
Yes
Show GIM phone book
Show PIM phone book
END

FIGURE 12

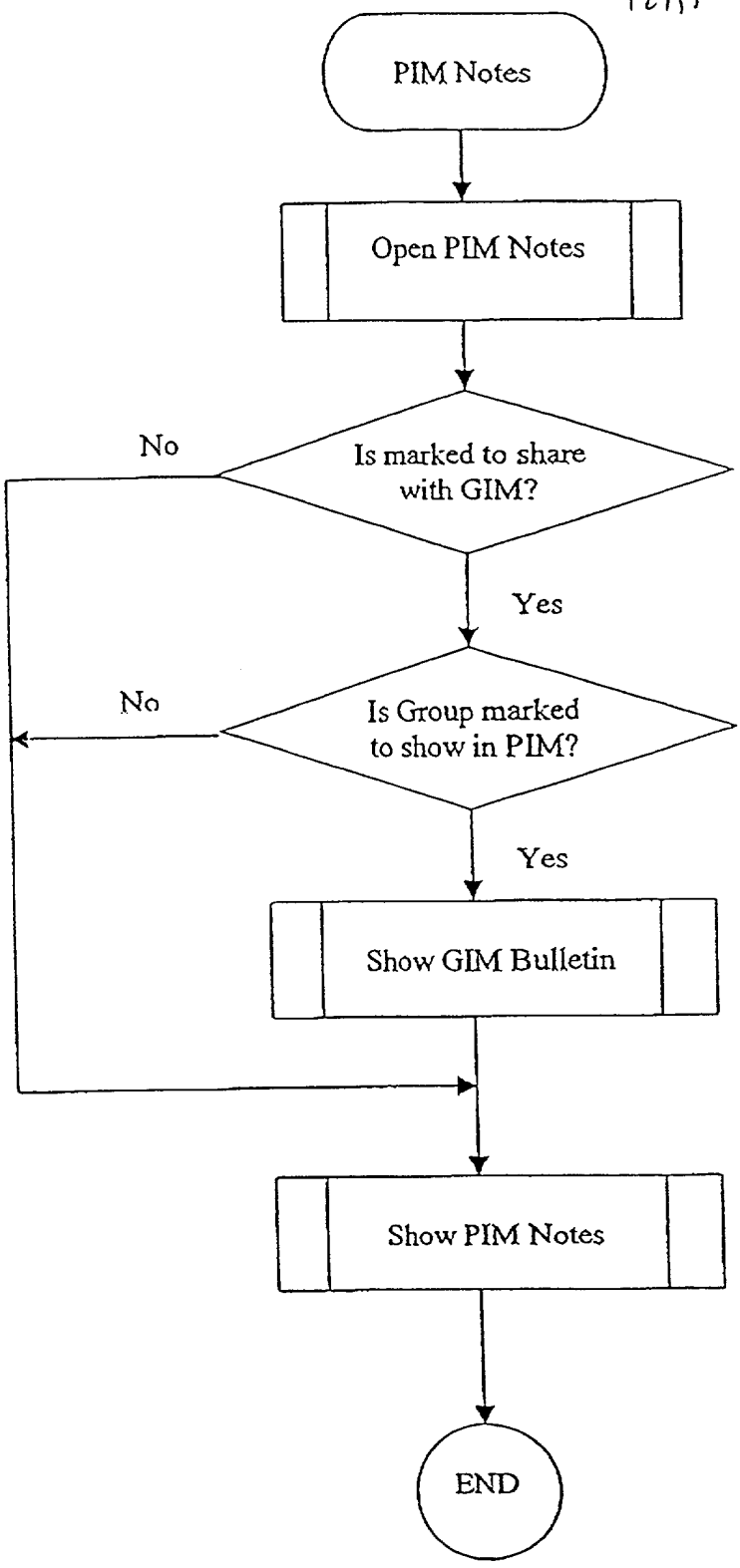

PIM Notes
Open PIM Notes
Is marked to share with GIM?
No
Yes
Is Group marked to show in PIM?
No
Yes
Show GIM Bulletin
Show PIM Notes
END

FIGURE 13

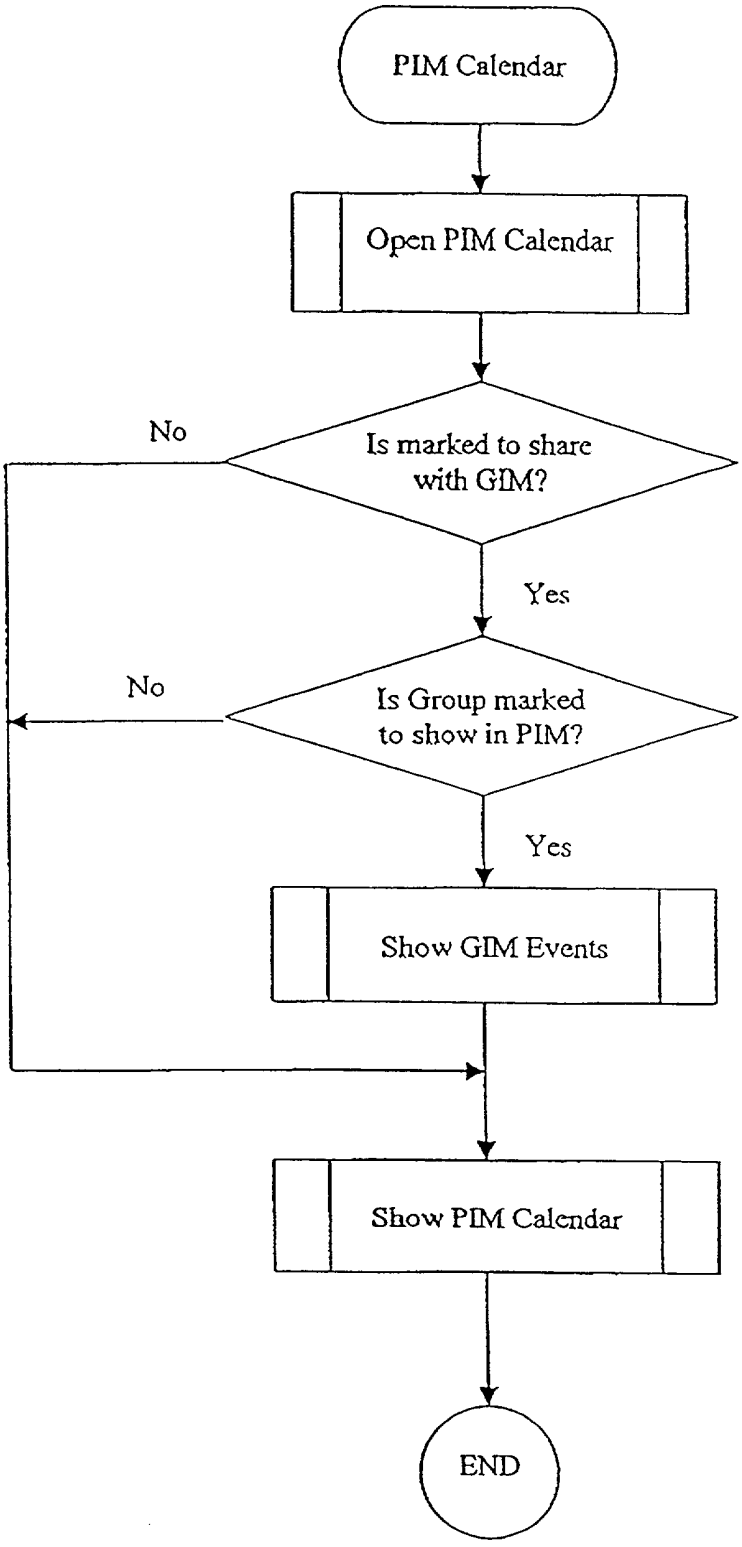

PIM Calendar
Open PIM Calendar
Is marked to share with GIM?
No
Yes
Is Group marked to show in PIM?
No
Yes
Show GIM Events
Show PIM Calendar
END

FIGURE 14

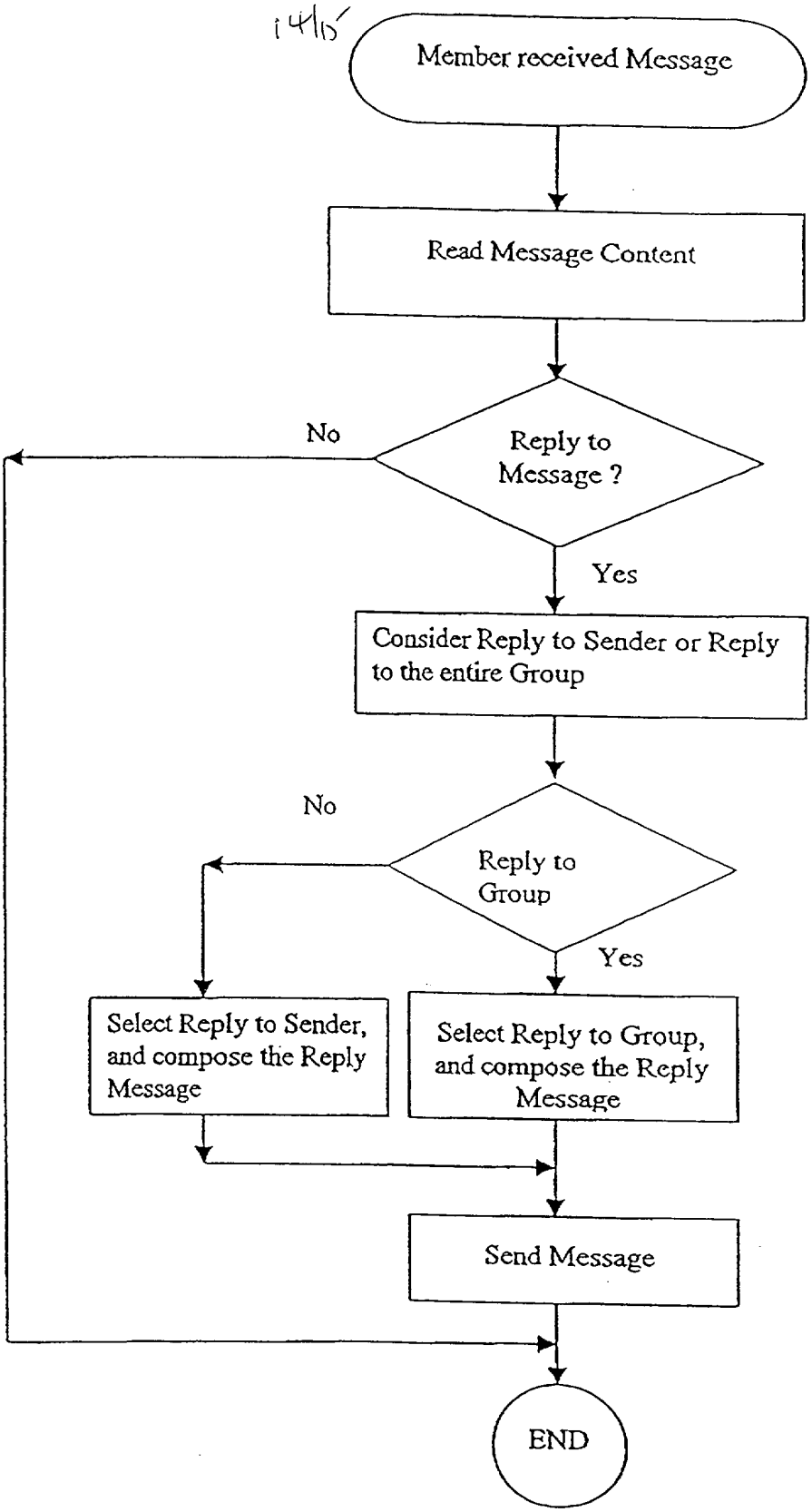

Member received Message
Read Message Content
Reply to Message ?
No
Yes
Consider Reply to Sender or Reply to the entire Group
Reply to Group
No
Yes
Select Reply to Sender, and compose the Reply Message
Select Reply to Group, and compose the Reply Message
Send Message
END

FIGURE 15

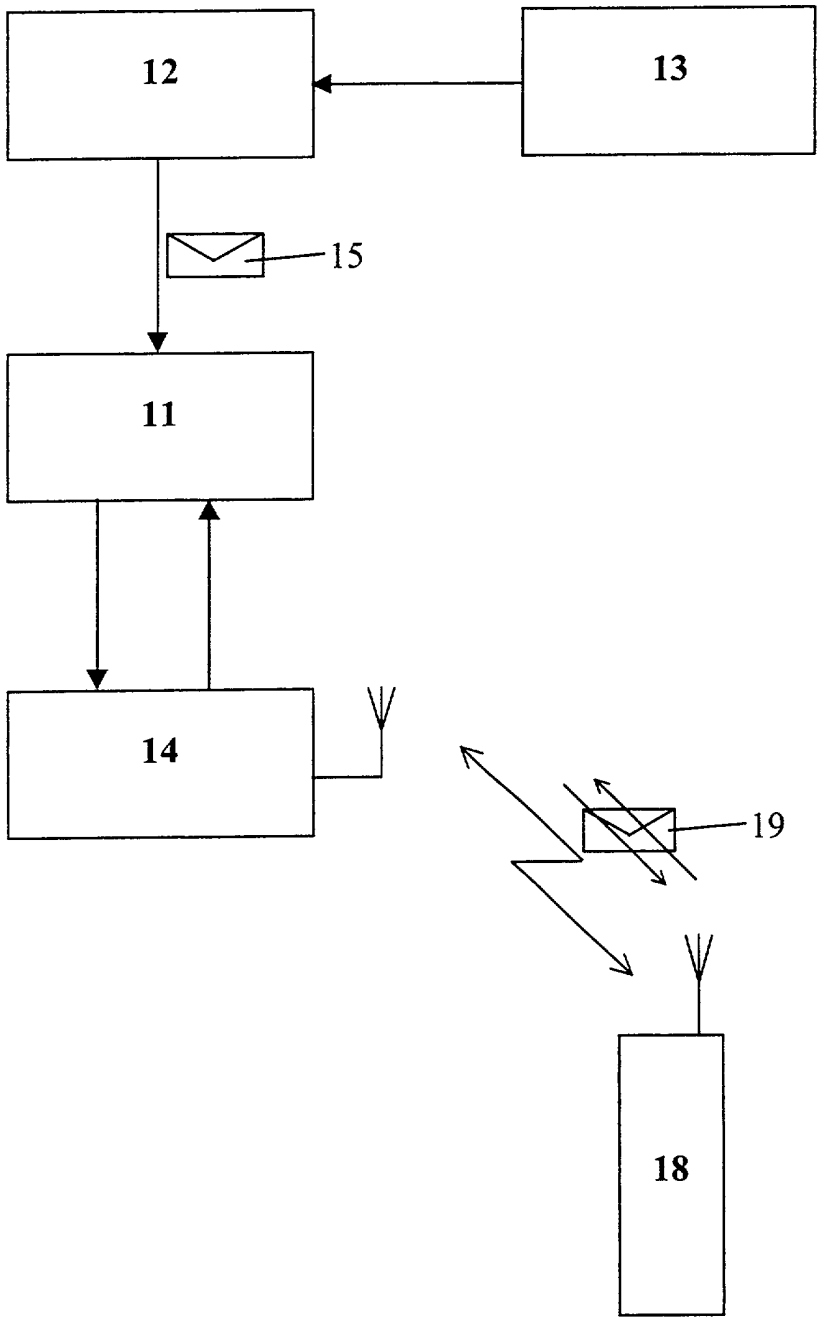


Figure 16

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Mobile Communications System

Field of the Invention

The invention relates to mobile communications systems, and in particular it relates to a mobile communications system for sending messages to a group of mobile network subscribers, and to sharing information via a mobile communications system.

Background to the Invention

Personal Information Managers (PIMs) are known. PIMs keep track of an individual's personal information such as calendar, address book (contacts) and electronic mail (email or text messages). They can also be used to subscribe to third party services for the delivery of information such as news, weather, stock-market updates and the like. A typical PIM might be personal computer or Internet based software that can be used to keep track of the individual's information in the home, office or on the road via an internal terminal.

Mobile PIMs, such as Personal Digital Assistants (PDAs), are also known. PDAs, sometimes called Pocket Personal Computers, allow a user to access their information at any location. PDAs can be linked to personal computers to synchronise data and some have mobile communications capability to enable messages to be sent and received via email.

The problem with known PIMs and PDAs is that they are expensive, and, except to the extent of email, they have

limited capability to share information between a group of users.

Mobile communications devices, such as mobile phones, have become very popular and their use is widespread. Mobile phones allow one to one communications through normal "voice" contact as well as messages such as short message service (SMS).

Group messaging (where one subscriber can send messages to two or more other subscribers) is known. However, the disadvantage is that the groups are predefined/pre-programmed into the subscriber identity module (SIM). This system can be advantageous for business, but not for private individuate or social groups where membership might change regularly.

Summary of the Invention

It is an object of the present invention to provide a mobile communications system for distributing messages within a group of users.

It is a further object of the present invention to provide a mobile communications system for sharing information amongst a group of user.

It is yet a further object of the present invention to at least ameliorate disadvantages with the prior art or to provide the public with a useful alternative.

According to a first aspect of the invention there is provided a mobile communications system for the exchange of information amongst a group of users including:

a mobile call center operable to route messages between mobile communications devices, and

a group message manager in communication with the mobile call center and operable to receive a message request including a message to be sent and identifiers of a sender and two or more recipients, and to bring about a group message session wherein the message is sent to the recipients, any reply being sent back to the group message manager for distribution to the recipients and/or to the sender.

Preferably, upon receiving the message request the message manager assigns a session number to the group message session, the session number including at least a session identifier and a session status code, wherein the session status code identifies the type of messages within the session.

Preferably, the session status code identifies a message type selected from a group including: the message to be sent, a reply to the sender, and a reply to the sender and the recipients (reply to all).

Preferably, the message manager selects, or has been pre-

assigned, an identifier associated with the mobile call center network.

Preferably, when a recipient replies to the message they send a reply message to the message manager with a reply identifier for reply to sender, or for reply to sender and recipients (reply to all), and upon receipt of the reply message the message manager sends it to the sender or to the sender and recipients as required.

Preferably, the message is a text message or multimedia message.

Preferably, the identifier associated with the mobile call center network is a mobile phone number.

Preferably, the group message manager is a sub-system of the mobile call center.

According to a second aspect of the invention there is provided a mobile communications system for the sharing of information within a defined group of users including:

a computer system for the storage, access and manipulation of information relating to a defined group of users and information common to said users, and

a mobile communications device associated with each user and operable to communicate, via a communications network, with the computer system and/or other communications devices,

wherein users can access the computer system, via a mobile communications device or an access terminal, to create or modify a defined group of users and to store or retrieve information common to said users.

Preferably, users in the defined group can send a message to one or more other users in the group via mobile communications devices

Preferably, at least one user is defined as a group leader, the group leader being able to control the privileges of other group members to store, retrieve and/or manipulate information relating to the defined group of users and information common to the group.

Preferably, the group can subscribe to mobile communications services provide by one or more non group members, said services being delivered to, or accessible by, predetermined group members.

Preferably, the computer system is an internet based server.

According to a third aspect of the invention there is provided a mobile communications system for distributing a message amongst a defined group of users including:

a mobile call center operable to communicate with a plurality of mobile communications devices,

a group message manager in communication with the mobile

call center and operable to bring about a group message session, and

a computer system for the storage of information relating to a defined group of subscribers to a mobile communications network, and wherein

upon receipt of a message request including a message to be sent and identifiers of a sender and two or more recipients, the message manager brings about a group message session and sends the message to the recipients, any reply being sent back to the group message manager for distribution to the recipients and/or to the sender.

Preferably, the user sends the message request from a mobile communications device or the computer system.

Preferably, upon receiving the message request the message manager assigns a session number to the group message session, the session number including at least a session identifier and a session status code, wherein the session status code identifies the type of messages within the session.

Preferably, the session status code identifies a message type selected from a group including: the message to be sent, a reply to the sender, and a reply to the sender and the recipients (reply to all).

Preferably, the message manager selects, or has been pre-

assigned, an identifier associated with the mobile call center network.

Preferably, when a recipient replies to the message they send a reply message to the message manager with a reply identifier for reply to sender, or for reply to sender and recipients (reply to all), and upon receipt of the reply message the message manager sends it to the sender or to the sender and recipients as required.

Preferably, the message is a text message or multimedia message.

Preferably, the identifier associated with the mobile call center network is a mobile phone number.

Preferably, the group message manager is a sub-system of the mobile call center.

Preferably, the computer system is an internet based server.

Further aspect of the invention will become apparent from the following description, which is given by way of example only.

Brief Description of the Drawings

Embodiments of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 illustrates an Events page from an Internet site

according to the invention,

Figure 2 illustrates an alternative view for the Events page,

Figure 3 illustrates yet a further view for the Events page,

Figure 4 illustrates a Message Board from an Internet site according to the invention,

Figure 5 illustrates a Manager page from an Internet site according to the invention.

Figure 6 illustrates a Preference page from an Internet site according to the invention,

Figure 7 illustrates a scheme for applying to join an unrestricted (open) membership group,

Figure 8 illustrates a scheme for inviting and approving membership to an invitation only group,

Figure 9 illustrates a scheme for applying to join an invitation only group,

Figure 10 illustrates a scheme for applying to join a free membership group,

Figure 11 illustrates a scheme for approval of members to a

free membership group,

Figure 12 illustrates a scheme for managing personal and group phone books in an information manager,

Figure 13 illustrates a scheme for managing personal and group notes in an information manager,

Figure 14 illustrate a scheme for managing personal and group calendars in an information manager,

Figure 15 illustrate a scheme for managing message replies in a Group Information System (GIM) according to the invention, and

Figure 16 illustrates a schematic overview of a mobile communications system for group text messaging according to the invention.

Description of the Preferred Embodiments

In the preferred embodiment there is a computer system running Group Information Manager (GIM) software that can keep track of calendar events, contacts, notice board messages, and to-do lists common to a defined group of members. The GIM interfaces with a group message manager that can distribute and facilitate notices and/or messages within the group. Messages may be text messages and/or multimedia messages containing such things as images, voice

music and data. The GIM can also subscribe to third party information services that are delivered to all, or a selected number, of members through the message manager.

In the preferred embodiment the computer system is an internet based server. In other embodiments the computer system is a personal computer. The personal computer can be accessed via a modem connection, local area network (LAN), wide area network (WAN) or other known means.

In the preferred embodiment access to the GIM is through an internet web browser or mobile communications device, such as a wireless applications protocol (WAP) handset (e.g. a PDA) or mobile phone. Information, notices and messages are delivered to non-WAP handsets through a short-message-service (SMS) call center.

One novel aspect of the invention is the ability to dynamically form and modify groups or sub-groups of members. Subscribers to the mobile communications network can create their own groups of friends or acquaintances or join groups created by other subscribers. Within groups there can be sub-groups. Once a group is established, members can be added and/or removed via email, WAP handset, web-browser or SMS message.

Each group has a group leader who can set privileges for other group members and define the group joining procedure

(to be discussed later).

Referring to Figures 1 to 6, the features of the Internet server based GIM will now be described.

An Events page (group event calendar), Figure 1, allows group members to view/update details of group activities. In addition to the group events page each group member can have a personal calendar, as part of his or her PIM, that synchronises with the group events calendar.

The Events page, or for that matter the personal calendar, can be set to send reminders to group members. Reminders can be sent by way of SMS to mobile phones or as emails to emails accounts, or both. Members can visit the Events page and add themselves to an event reminder, or alternatively those members with the required privilege can set the reminder to alert any or all members.

The Events page can be viewed in different formats, for example by the day or month as illustrated in Figures 2 and 3.

A Bulletin (Notice Board) page, Figure 4, allows group members to compose and post articles and notices. Notices can also be sent to group members via email or SMS.

A group message manager controls messages to individuals or

the entire group. Messages can be notices posted on the bulletin board, information notices/messages provided by third parties, for example stock-market updates, or email/SMS messages forwarded by individuals. The message manager is in communication with a SMS call center for the transmission of group SMS messages between members. This is described later.

A Manager page, Figure 5, allows members to view general group information and member profiles. It is used to create new sub-groups and to apply for membership.

A Preference page, Figure 6, allows members with the required privilege to set the group setting. It also allows individual members to customise their personal screen settings.

Each members profile records that they have one of the following four privilege profiles. Each profile includes the privileges of the profile below it.

Group leader: Creates the group. Can invite members to join and delete members from the group. Can also terminate the group and modify other members privilege profiles.

Editor: Can invite members to join and delete members from the group.

Contributor: Can post information and modify, delete self-posted information.

Viewer: Can view all information and reply to messages in the discussion forum.

Figure 7 illustrates the procedure for gaining membership of a group that has unrestricted (open) membership. The person visits the Internet site and fills in an application form on the GIM group page. The application is automatically processed and the person gets immediate access.

Figures 8 and 9 illustrate the process for gaining membership of a group that has membership by invitation only. To set up an invitation only group, Figure 8, the group owner creates a group and sends invitations via SMS or email. As the invited members respond the applications are approved or denied.

According to Figure 9 an invited person receives an invitation via email or SMS, the person then visits the group GIM page and submits the invitation details. If they are approved by the group leader he can start using the GIM.

Figures 10 and 11 illustrate the joining procedure for a "Free Membership" group. Perspective members visit the group site and decide whether or not to joint the group. If they decide to join they fill in an application form and submit it for group leader (owner) approval. According to Figure 11

the owner visits the GIM web page and views the application forms. An email or SMS message in sent to the applicant with the decision on whether they have been approved.

Figures 12 to 14 illustrate phonebook, note, and calendar (Event) access to group GIM services. When a subscriber opens their personal information manager (PIM) it checks to see whether they are marked (tagged) to have access to a group GIM. If so then this is also made available to the subscriber (group member).

Figure 15 illustrate how members can send and receive group messages, and thus create a discussion forum. The flow diagram is self-explanatory. Messages can be via email or SMS. Group SMS messaging is one of the novel features of invention.

Referring to Figure 16, a mobile communications system for group messaging includes a group message manager in the form of a Short message Dialogue Sub-system (SDS) 11 that provides a group messaging interface to a mobile call center, which in the preferred embodiment is a Short Message Service (SMS) call center 14. The SDS 11 sets up and maintains a series of group messages 19 that are forward to/received from mobile communications devices 18 via the SMS call center 14.

A user can initiate a group message session by sending a message request from a mobile communications device, such as

mobile phone, or the internet to the SDS 11. For the purpose of the following description it is assumed that the message request is send from the internet based GIM of the preferred embodiment.

When a user 13 initials a group message the GIM 12 sends a message request 15 to the SDS 11 (the message request could be sent via mobile phone). The message request 11 contains identifiers (for example, mobile phone numbers) for the sender and all group members to receive the message, and the actual text message.

When the SDS 11 receives a message request 15 it initiates (brings about) a group messaging session. The SDS 11 becomes a relay point of all the SMS messages 19 being sent/received during the session. Each session has a predetermined "life-time" which in the preferred embodiment is one day.

A group message session is assigned a session serial number. For illustrative purposes the number might be 95009530-0001-0. The serial number comprises three parts. A reserved SDS identifier (95009530), a session identifier (id) code (0001) and a status code (0). The length and format of these identifiers is not critical to the invention and may be varied.

The SDS identifier is associated with the SMS 14 network and is used to recognise the SDS 11 on the SMS 14 network. A

variety of identifier types will be apparent to the skilled addressee. In the preferred embodiment the SDS identifier is a mobile phone number selected from a list of reserved numbers.

The SDS 11, via the SMS call center 14, sends the message, using mobile number 95009530, to all recipients listed in the message request 15.

In the preferred embodiment, if the recipient wants to reply they send a reply message to the SDS 11. By prefixing the reply message with a reply identifier, say an asterisk "*" for example, the recipient indicates to the SDS whether the reply is intended for the sender (reply to sender) or the sender and other recipients (reply to all). If the reply message starts with the character "*", then the reply message will be sent to the sender only. Otherwise, if the reply message does not start with the character "*", then the reply message will be sent to the sender and other recipients.

In an alternative embodiment reply messages are handled by updates to the source address status code. The message sent by the SDS 11 contains the session number and appended to the text is a message to reply with "1 to reply to all" or "2 to reply to sender only". If a recipient wants to reply to all they reply with the reply identifier "1" and the SDS 11 accept the message directed at 95009530. The SDS 11 updates the source address status code to "1", e.g. 95009530-001-1,

and sends a message back to the recipient requesting that they respond again with the text for the reply to all message. When the SDS 11 receives the text it sends the message to all other recipients plus the sender of the original message.

If a recipient wants to reply to the original sender only, they reply with "2" and the SDS 11 accepts the message directed back to 95009530. The SDS 11 responds to the recipient with a request that they reply again with the text for the message. When the SDS 11 receives the text it forwards the message to the original sender.

Other recipients of the original message can also respond to the original message at the source mobile phone number, e.g. 95009530, by repeating the above steps. A source address with status "1" lets the SDS 11 know that the message is to go to all recipients and the original sender, whereas a source address with status code "2" is to only go to the original sender.

The SDS 11 will continue to accept and forward messages in the group session until it expires, for example in one day. Thus, members can send and receive messages within the group with standard message equipped mobile phones. The members of the group are dynamic, being the members of the GIM group and not members pre-programmed into a SIM.

The invention has been described by way of example only and with reference to particular embodiments, it is envisaged the modifications and or improvements can take place without departing from the scope of the appended claims.

Where in the description and claims reference has been made to particular elements or integers having known equivalents then such equivalents are considered within the scope of the language used.

CLAIMS:

1. A mobile communications system for the exchange of information amongst a group of users including:

a mobile call center operable to route messages between mobile communications devices, and

a group message manager in communication with the mobile call center and operable to receive a message request including a message to be sent and identifiers of a sender and two or more recipients, and to bring about a group message session wherein the message is sent to the recipients, any reply being sent back to the group message manager for distribution to the recipients and/or to the sender.

2. A system as claimed in claim 1 wherein upon receiving the message request the message manager assigns a session number to the group message session, the session number including at least a session identifier and a session status code, wherein the session status code identifies the type of messages within the session.

3. A system as claimed in claim 2 wherein the session status code identifies a message type selected from a group including: the message to be sent, a reply to the sender, and a reply to the sender and the recipients (reply to all).

4. A system as claimed in any one of claims 1 to 3 wherein

the message manager selects, or has been pre-assigned, an identifier associated with the mobile call center network.

5. A system as claimed in any one of claims 1 to 4 wherein when a recipient replies to the message they send a reply message to the message manager with a reply identifier for reply to sender, or for reply to sender and recipients (reply to all), and upon receipt of the reply message the message manager sends it to the sender or to the sender and recipients as required.

6. A system as claimed in any on of claims 1 to 5 wherein the message is a text message or multimedia message.

7. A system as claimed in any on of claims 1 to 6 wherein the identifier associated with the mobile call center network is a mobile phone number.

8. A system as claimed in any one of claims 1 to 7 wherein the group message manager is a sub-system of the mobile call center.

9. A mobile communications system for the sharing of information within a defined group of users including:

a computer system for the storage, access and manipulation of information relating to a defined group of users and information common to said users, and

a mobile communications device associated with each user

and operable to communicate, via a communications network, with the computer system and/or other communications devices,

wherein users can access the computer system, via a mobile communications device or an access terminal, to create or modify a defined group of users and to store or retrieve information common to said users.

10. A mobile telecommunication system as claimed in claim 9 wherein users in the defined group can send a message to one or more other users in the group via mobile communications devices

11. A mobile communications system as claimed in claim 9 or 10 wherein at least one user is defined as a group leader, the group leader being able to control the privileges of other group members to store, retrieve and/or manipulate information relating to the defined group of users and information common to the group.

12. A mobile communications system as claimed in any one of claims 9 to 11 wherein the group can subscribe to mobile communications services provide by one or more non group members, said services being delivered to, or accessible by, predetermined group members.

13. A mobile communications system as claimed in any one of claims 9 to 12 wherein the computer system is an internet based server.

14. A mobile communications system for distributing a message amongst a defined group of users including:

a mobile call center operable to communicate with a plurality of mobile communications devices,

a group message manager in communication with the mobile call center and operable to bring about a group message session, and

a computer system for the storage of information relating to a defined group of subscribers to a mobile communications network, and wherein

upon receipt of a message request including a message to be sent and identifiers of a sender and two or more recipients, the message manager brings about a group message session and sends the message to the recipients, any reply being sent back to the group message manager for distribution to the recipients and/or to the sender.

15. A mobile communications system as claimed in claim 14 wherein the user sends the message request from a mobile communications device or the computer system.

16. A mobile communications system as claimed in claim 14 or 15 wherein upon receiving the message request the message manager assigns a session number to the group message session, the session number including at least a session identifier and a session status code, wherein the session status code identifies the type of messages within the

session.

17. A mobile communications system as claimed in any one of claims 14 to 16 wherein the session status code identifies a message type selected from a group including: the message to be sent, a reply to the sender, and a reply to the sender and the recipients (reply to all).

18. A mobile communications system as claimed in any one of claims 14 to 17 wherein the message manager selects, or has been pre-assigned, an identifier associated with the mobile call center network.

19. A mobile communications system as claimed in any one of claims 14 to 18 wherein when a recipient replies to the message they send a reply message to the message manager with a reply identifier for reply to sender, or for reply to sender and recipients (reply to all), and upon receipt of the reply message the message manager sends it to the sender or to the sender and recipients as required.

20. A mobile communications system as claimed in any one of claims 14 to 19 wherein the message is a text message or multimedia message.

21. A mobile communications system as claimed in any one of claims 14 to 20 wherein the identifier associated with the mobile call center network is a mobile phone number.

22. A mobile communications system as claimed in any one of claims 14 to 21 wherein the group message manager is a sub-system of the mobile call center.

23. A mobile communications system as claimed in any one of claims 14 to 22 wherein the computer system is an internet based server.

24. A mobile communications system as herein described with reference to Figures 1 to 15.

25. A mobile communications system as herein described with reference to Figure 16

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Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.T): H4L (LDPC, LDPD, LDPPX, LDGX)

Int Cl (Ed.7): H04Q 7/22, /38, H04M 3/56, 13/00

Other: Online: WPI, EPODOC, JAPIO, INSPEC

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
A, E	GB 2363036 A	(NOKIA) See abstract	-
A, E	GB 2361602 A	(HIT) See abstract	-
X	GB 2327571 A	(ORANGE) See	1-3, 6-10, 14-17, 20-22
A, E	EP 1164774 A1	(INTELLPROP) See abstract	-
A	WO 01/31964 A1	(ERICSSON) See page 4 paragraph 1	-

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