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(54) Title: MOBILE PHONE BASED METHOD FOR THE NOTIFICATION
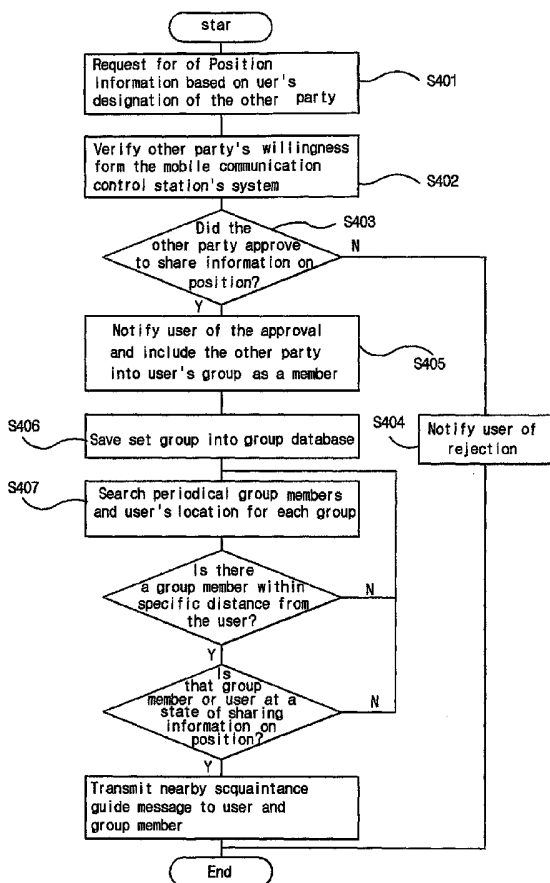
(57) Abstract: The present invention mobile phone based method for the notification of nearby acquaintance can automatically notify information of acquaintance that is positioned within specific distance without using separate Internet site as in the case of hitherto technology and without the need to install separate program, which in turn ensures effective system development, usage and modification. Moreover, from the user's point view, it is possible to register position information sharing and the other party with simple operation of mobile phone without the need of cumbersome registration process. Accordingly, the present invention increases convenience of use by facilitating operation since position information sharing can be stopped temporarily. Then, the present invention shall enable sharing of information on the position among the acquaintances that are positioned within set distance to enable the users who share position information to meet with ease. Moreover, information on the position of the user who is positioned at remote distance shall be precluded from sharing, which prevents leakage of personal privacy.

MOBILE PHONE BASED METHOD FOR THE NOTIFICATION

BACKGROUND OF THE INVENTION

<u>Field of the Invention</u>:

The present invention pertains to the mobile phone based method for the

5 notification of nearby acquaintance. In particular, if and when the users who approved

mutual verification of position are within set distance, this is notified to each user to

facilitate meeting of users who did not have plans to meet.

<u>Description of the Prior Art</u>:

Recently, mobile phone based service for the tracking of acquaintances is being

10 realized. However, existing methods are executed only when there is specific request to

track down the position of specific acquaintance by the user, and the scope of tracking is

not limited.

The above mentioned type of position tracking service is afflicted with the risk of

infringing upon the privacy of individuals.

15 Moreover, technology that offer mutual tracking service among registered users

was patent applied. An example is the Find Friend Method Based on the Use of

Wireless and Wired Communication (Official Report for Disclosure Patent No. 2002-

0015754).

The above mentioned Find Friend Method Based on the Use of Wireless and

20 Wired Communication (hereafter, hitherto patent application technology) shall be

explained in more detail as follows.

Figure 1 shall be the configuration of the method of finding a friend based on the use of

position disclosure function in accordance to the hitherto patent application technology.

Figure 2 shall be configuration of the Find Friend System in accordance to hitherto

patent application technology.   Hitherto patent application technology shall be

5   comprised of; Database Development Stage (S10), Website Posting Stage (S20), User

Authentication Stage (S30), Position Verification Stage (S40), Standby Stage (S50),

Position Disclosure Stage (S60), Position Information Transmission Stage (S70),

Position Information Reception Stage (S80), and End Stage (S90).

The above mentioned Database Development Stage (S10) shall be comprised of;

10   User Information Build-up Process (S11), Group Information Build-up Process (S12)

and Position Information Build-up Process (S13).

The above mentioned User Information Build-up Process (S11) shall be

comprised of the following saved information; personal profile of the user who uses Find

Friend Service including user's mobile phone number, identification sign on the use as

15   defined by the service system (30) that offers the above mentioned user and the above

mentioned service, and interests of the user such as hobbies.

The above mentioned Group Information Build-up Process (S12) shall be

configured with the following saved information; group name, activity contents, and

member information that are already in the above mentioned Find Friend Service, and

20   information on the newly establishing groups.

The above mentioned Position Information Build-up Process (S13) shall be

configured with the following saved information; position of the user who disclosed own

position by contacting the above mentioned Find Friend Service shall be saved, type of

Client system that can verify information on the position of the disclosing party set on

Position Disclosure Stage (S50), and information pertaining to the group name, name of specific members etc.

The above mentioned Website Posting Stage (S20) shall be comprised of; Authentication Program Posting Process (S21), Group Information Posting Process (S22), Group Generation Program Posting Process (S23), and Position Information Program Posting Process (S24).

The above mentioned Authentication Program Posting Process (S21) shall transmit data with the above mentioned user information database (40), and shall be input with the identification sign that is transmitted through the above mentioned user's Client system (10) to identify user's membership subscription on the above mentioned user information database (40).

Program that can grant authority for the user who is registered as a member to use the service shall be produced to post on the website of the service system that offers the above mentioned service.

The above mentioned Group Information Posting Process (S22) shall post group name, activity contents, characteristics, number of members, detailed group information such as name of members etc that are already operated on the above mentioned service system on the above mentioned website.

Moreover, the above mentioned Group Generation Program Posting Process (S23) shall post the program that can create new group if and when new group that is not yet established on the above mentioned service system onto the above mentioned website.

It is recommended that the above mentioned group generation program shall input information such as group name, direction of activity, and name of participating members.

3

The above mentioned Position Information Program Posting Process (S24) shall post the program that can save the position identified at the communication company by using mobile phone from the communication company and that can be saved on the above mentioned service system, and the input program that the user can input own position in person shall be posted on the above mentioned website.

The above mentioned User Authentication Stage (S30) shall be comprised of; Registration Process (S31), Identification Information Reception Process (S32), Identification Information Search Process (S33), and Identification Information Authentication Process (S34).

The above mentioned Registration Process (S31) shall enable input of user's personal profile and area of interest such as hobbies and user information such as mobile phone number of the user who contacts the above mentioned website for the first time to use the Find Friend Service that is offered on the above mentioned service system. Moreover, the above mentioned process shall enable selection of the group that is subject of membership subscription, and the user information input as mentioned above, input user information shall be saved on the above mentioned user information database (40).

The above mentioned Identification Information Reception Process (S32) shall transmit user who registered onto the above mentioned service as a member and the above mentioned user's identification sign that is already defined among service systems (30) to the above mentioned service system based on the operation of user's Client system (10), and the above mentioned transmitted user identification information shall be received on the service system (30).

The above mentioned Identification Information Search Process (S33) verifies the question of user's service membership subscription by searching the above mentioned

4

transmitted user identification information on the user information database (40) that can exchange data with the above mentioned service system (30).

The above mentioned Identification Information Authentication Process (S34) grants the authority to use the above mentioned service to the authenticated user based on the

5   results of searching the above mentioned database (40), and provides modified information such as group news and membership subscription of the above mentioned user etc.

The above mentioned User Authentication Stage (S30) applies the same way when the user uses the computer to contact the above mentioned service system as in the case

10   when the user uses mobile phone to contact the above mentioned service system (30).

The above mentioned Position Verification Stage (S40) shall be comprised of; communication company's Position Identification Process (S41), communication company's Position Transmission Process (S42), service system's Position Reception Process (S43), Detailed Position Input Process (S44), and service system's Detailed

15   Position Reception Process (S45).

The above mentioned communication company's Position Identification Process (S41) shall identify the position of the above mentioned user by using the following methods; use of base station at the communication company to identify the position of the user who contacted the above mentioned service by using mobile phone or adding on position

20   tracking function to the handset device etc.

At the above mentioned moment, communication company can identify the current position of the user in more detail when GPS (Global Position System) based on the use of satellite is used.

The above mentioned communication company's Position Transmission Process (S42)

shall transmit information on the user's position identified during the above mentioned communication company ' s Position Identification Process (S41) to the above mentioned service system (30) by using communication company's repeater.

The above mentioned service system (30)'s Position Reception Process (S43) shall receive the above mentioned transmitted user's position information by the above mentioned service system (30) and save the information in the above mentioned position information database.

The above mentioned Detailed Position Input Process (S44) shall entail for the user to directly input own detailed position whether the user inputs own position directly or whether the user uses the computer and not the mobile phone to use the above mentioned service since the position identification function of the communication company cannot input detailed information.

Process for the Reception of Detailed Position of the Above Mentioned Service System (S45) shall entail that the above mentioned service system (30) receive the information on the user's detailed position that was input directly by the above mentioned user to save in the above mentioned position information database.

If and when the information on the position of same group members is disclosed among the users who use the above mentioned service, the above mentioned Standby Stage (S50) is at a state in which it can immediately receive the position information subject to disclosure.

At the above mentioned moment, if and when the user who requested standby as mentioned above does not want to disclose own position, then service contact shall be ended and shall wait for position information subject to disclosure.

The above mentioned Position Disclosure Stage (S60) shall be configured with; Standby

6

Party Verification Process (S61), Decision for Disclosure Process (S62) and Member Setting Process (S63).

The above mentioned Standby Party Verification Process (S61) shall verify number of group members who are at the standby state before the authenticated user selects position disclosure.

When it pertains to the above mentioned Decision for Disclosure Process (S62), user who contacted the above mentioned service system shall decide whether to disclose own position. If and when the above mentioned user decides to disclose, then the user shall select disclosure.

Moreover, the above mentioned Member Setting Process (S63) may set position of group whose desires to be disclosed or specific members if and when disclosure is selected, and may also set Type of Client system that can verify own position.

In other words, setting is such that verification is enabled in the case when contact with mobile phone, contact with computer, or all Client system contacts.

The above mentioned party who discloses position does not need separate procedure after disclosure of position. Instead, transfer into standby state takes place, and becomes the party who stands by position disclosure that can receive position information that is disclosed by different group members.

The above mentioned Position Information Transmission Stage (S70) shall transmit message on the detailed information pertaining to the party who discloses position such as name, mobile phone number, current position etc and the above mentioned party who discloses position to the Client system of standby party from the service system (30) via communication network.

7

To search specific individual, user who uses the above mentioned service may search by using the name or mobile phone number of specific individual.

When the name or mobile phone number of specific individual is input, input information shall search the position information database through the service system (30), and whether the above mentioned specific individual disclosed position.

If and when the above mentioned specific individual disclosed position, position information and message searched on the above mentioned position information database shall be transmitted to the Client system of the user who requested the search.

the above mentioned Position Information Reception Stage (80) shall reach in the form of text or voice message or teleconferencing or motion image onto the computer or user's mobile phone through the communication network when it pertains to the information transmitted from the above mentioned service system or information on the position of friends or group members. User shall verify the above mentioned transmitted position information.

Standby party who received the above mentioned transmitted position information and position disclosure standby party shall move to the location notified by the party that discloses position to meet friends from the group.

If and when the user who requested standby wants to cancel standby state, the above mentioned End Stage (S90) contacts the above mentioned service system to end by selecting the end of standby, or if and when the user who disclosed the above mentioned position wants to end position disclosure after achieving user's intention, the user shall contact the above mentioned service system to delete existing position information for the termination of service by ending standby state.

System for the realization of Find Friend method based on the use of position disclosure

function shall be comprised of; Client system (10) of disclosing party, communication network (20), service system (30), database (40), and Client system of standby party (50).

The above mentioned party who discloses position (10) shall be comprised of; mobile phone (10) with built-in web browser to enable contact via wireless Internet or computer

5   that enables Internet contact when it pertains to the user who discloses own position.

The above mentioned communication network (20) shall be the communication network where connection by the Client system (10) of the above mentioned party who discloses position shall be enabled. The above mentioned Client system (10) and service system (30) shall use the communication network that can simultaneously achieve contact.

10   If and when standby party exists, the above mentioned service system (30) can transmit position information of the party that discloses position that is in the above mentioned position information database to the Client system of standby party (50), or shall comprise service system's program to exchange of data with user information database (40).

15   The above mentioned database (40) shall record on the fixed saving medium pertaining to the above mentioned service system (30), and provides the information that is saved according to the execution of the above mentioned service system (30).   Moreover, the above mentioned shall be configured so that it can exchange data with the above mentioned service system (30).

20   The above mentioned standby party (50) shall be the user who requested standby by contacting the above mentioned service system (30), and shall be comprised of mobile phone or computer that can receive position information subject to disclosure.

The following is the process pertaining to the Find Friend method that uses the position identification function of mobile phone in accordance to the hitherto patent application

technology configured as mentioned above.

The above mentioned company that wants to offer Find Friend service based on the use of wired and wireless communication shall first save user information on the personal profile that includes user's mobile phone number and group information such as opened

5   group name, activity contents etc onto the database (40).

service system (30) where the above mentioned database (40) is built shall post website for the posting of the above mentioned Find Friend service by contacting communication network (20) where the above mentioned user contacts.

At the above mentioned moment, the above mentioned user shall contact the above

10   mentioned website to input user identification sign, and the input user identification sign shall be transmitted to the above mentioned service system (30) to post up the user authentication program to enable exchange of data with user information database (40) for the user authentication.

Moreover, group information such as group name, activities, characteristics etc that is

15   posted on the above mentioned website shall be posted. Group generation program that can create group by entering in the group name, direction of activity etc shall be posted so that user can create new group.

When it pertains to the Client system (10) that contacted the above mentioned posted website, the above mentioned service system (30) shall request user authentication.

20   When it comes to the above mentioned request for user authentication, the user shall input user identification sign that is defined by the above mentioned service system (30) in advance to transmit to the above mentioned service system (30).

Service system (30) that received the above mentioned user identification sign shall judge the question of the above mentioned user's members membership subscription by

searching the above mentioned user information database (40).

If and when the user uses mobile phone (10) to contact the above mentioned service system (30), user's position that obtained the above mentioned user authentication shall identify information on the user's position that is identified by communication company by transmitting to the service system (30). If and when the user uses computer to contact the above mentioned service system (30), user shall directly input own detailed position to transmit to the service system (30).   User's position shall be identified accordingly.

At the above mentioned moment, it is needless to mentioned that the user who contacted the above mentioned service system (30) can also input own detailed position in person by using mobile phone (10).

The above mentioned transmitted user's position information shall be temporarily saved into the service system (30), and user shall verify the number of group members who are at the standby state, and shall decide whether to standby or to disclose position.

When the above mentioned user selects standby, the above mentioned user shall be at the standby state.   Then, when the group members disclose position, service system (30) transmits position information to the Client system such as the above mentioned standby party's mobile phone or computer.

Moreover, if and when the above mentioned user selects position disclosure, the above mentioned transmitted position information shall be saved in the position information database for disclosure.   At the above mentioned moment, user may select the group or specific individual to whom the user wants to disclose own position information.

Moreover, user shall set Client system of contacting party to whom the user wants to disclose own position information, and the user's own position information may be disclosed only to the members who contacted with mobile phone, and it is also possible

11

to disclose only to the members who contacted with computer. Moreover, the user can choose to disclose to all the members who contacted with all types of Client systems.

The above mentioned user becomes the position disclosure standby party who is at the standby state after disclosing position without the need to undergo separate procedure.

5   If and when different members of the group disclose position, service system (30) transmits position information to the Client system of the above mentioned position disclosure standby party such as mobile phone or computer.

Moreover, when the name or telephone number of specific group name or specific individual subject to search by user is input, the above mentioned service system (30)

10   shall search position information database to search whether the position of specific group or individual for whom search was request is disclosed or not.

If and when the position of the above mentioned specific individual is disclosed, the above mentioned service system transmits the above mentioned disclosure position information to the above mentioned user's Client system.

15   Moreover, the above mentioned position information shall appear in the form of text or voice message, teleconferencing or motion image on the above mentioned user's mobile phone. Accordingly, user can verify information of the position that is received from the above mentioned service system.

When the above mentioned standby party or position disclosure standby party wants to

20   end the standby state and if and when the above mentioned service system is contacted to end standby state, position information subject to disclosure shall not be transmitted to the Client system after ending.

Moreover, when the above mentioned user achieves the goal of disclosing position and if and when the user contacts the above mentioned service system to end position

12

disclosure, position information is no longer disclosed.

Next, actual example pertaining to the hitherto patent application technology configured as mentioned above shall be explained in detail.

First, User No. 1 contacts the company that offers Find Friend Service by using mobile

5   phone.

The above mentioned User No. 1 shall request authentication for the above mentioned website to the above mentioned service system (30), and shall input user identification sign.

The above mentioned service system (30) shall judge the question of service membership

10 subscription of the User No. 1 by searching the data of user information database (40), and the results of search shall be transmitted to the above mentioned User No. 1.

Position of User No. 1 who received user authentication from the above mentioned service system (30) shall identify the communication company by using mobile phone (10) of the above mentioned User No. 1.

15 Position of User No. 1, identified at the above mentioned communication company, shall be transmitted to the above mentioned service system (30) through communication company's repeater, and this transmitted User No. 1's position information shall be saved temporarily on the above mentioned service system (30).

The above mentioned User No. 1 shall select standby, and stay in the standby state by

20 ending contact with the above mentioned service system (30).

User No. 2 who is a member of the group that the User No. 1 belongs to shall use mobile phone (10), using the same method as User No. 1, to contact the above mentioned service system to receive user authentication.

The above mentioned User No. 2 shall verify number of standby group members, and select position disclosure.

At the above mentioned moment, the above mentioned User No. 2 shall become position disclosure standby party that is at the standby state after disclosing position without the need for separate procedure.

The above mentioned User No. 2 shall select position disclosure and shall select the name of group that wants to be disclosed, or the above mentioned position information shall be made to search only the members who contacted using mobile phone.

The position information of the above mentioned disclosed User No. 2 shall be saved in the position information database, or the above mentioned service system shall transmit the above mentioned User No. 2's position information to the mobile phone of standby party or different members who are position disclosure standby parties including User No. 1 who is at the standby state in the form of text or voice message or teleconferencing or motion image.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shall be the configuration of the method of finding a friend based on the use of position disclosure function in accordance to the hitherto patent application technology.

Figure 2 shall be configuration of the Find Friend System in accordance to hitherto patent application technology.

Figure 3 shall be the system configuration for the realization of the present invention.

Figure 4 shall be the Figure that shows the sequence of the mobile phone based method for the notification of nearby acquaintance in accordance to the present invention.

Figure 5 shall be one actual example of the group database that shall be applied on the present invention.

5   *Explanation on the Signs Pertaining to Key Parts of Figure *

310: mobile communication control station   320: group database

330: position tracking system   340,350: base station

DETAILED DESCRIPTION

10   The above mentioned hitherto patent application technology requires user to contact the applicable communication company's service system whenever the user wants disclosure of position information.   Moreover, another problem lies in the inconvenient use that requires user to select the group that is the target of disclosing own position.

15   Moreover, service cannot be executed using mobile phone alone.   Moreover, the website where user information can be input is needed.   Another problem is the need to develop software that is necessary for group generation, membership subscription, authentication etc.   Moreover, preparation and execution of service is not easy.

In spite of members' position, position information is displayed, which displays even the

20   position of the members who are at position where they cannot meet directly.   Accordingly, hitherto technology may infringe upon personal privacy of members.

he present invention, which accounted in the above mentioned problems,

registers onto service that can exchange position information with simple operation, using only mobile phone. Moreover, the present invention offers mobile phone based method for the notification of nearby acquaintance that can set environment for the use of service.

5   Another purpose of the present invention shall be to offer mobile phone based method for the notification of nearby acquaintance that can prevent infringement upon personal privacy by transmitting information of the users who approved exchange of mutual position information within set distance.

Composition and Reaction of the Invention

10   To achieve the above mentioned purposes, the present invention shall enable only the users who are close to each other within set distance to transmit mutual position information in case of users who approved mutual sharing of position information.

Moreover, the present invention does not require the user to use services that are offered by Internet businesses. Instead, user can merely use mobile phone to transmit to user's

15   position information to other users who approved mutual disclosure of information of their position.

Actual example of the present invention that shall be comprised as mentioned above shall be explained in detail, using attached figures.

       Figure 3 shall be the system configuration for the realization of the present

20   invention. As shown on the figure, users (A,B,C, D) who are within each communication scope shall enable use of mobile phone. Moreover, the present invention shall be comprised of; mobile communication base station (340) (350) that can transmit the message that can guide different user's position on the mobile phone of the users (A,B,C,

D).   If and when the approval is notified to the other party after receiving the request for

exchange of information pertaining to position that is transmitted through the above

mentioned mobile communication base station (340), (350), the present invention shall

be comprised of; mobile communication control station (310) that sets the users to the

5   same group and the group database (320) that saves the user list by group that is set on

the above mentioned mobile communication control station (310).   If and when

necessary,   position tracking system (330) that can track the position of each user 's (A,

B, C, D) mobile phone shall be included.

Figure 4 shall be the Figure that shows the sequence of the mobile phone based

10   method for the notification of nearby acquaintance in accordance to the present invention.

As shown on the figure, the above mentioned shall be comprised of; Stage (S401) in

which specific user requests position information sharing by designating the other party,

Stage (S402) that asks the above mentioned user whether to approve the notified request

for the sharing of information pertaining to position by transmitting the message to the

15   other party who was designated on the mobile communication control station (310)

transmitted with the above mentioned user' s request; Stage (S403) in which entails

judging whether the other party approved the sharing of information on the position; the

Stage (S404) that notifies the above mentioned user of the rejection and that ends the

process if and when the above mentioned other party does not approve; Stage (S405) that

20   registers the other party and user to each of the group pertaining to the user and the other

party and that notifies the user of approval if and when the other party approves; Stage

(S406) that saves group of the above mentioned user and the other party to the group

database (320); Stage (S407) that search the position of group members in a periodical

manner pertaining to each of the groups that are saved in the above mentioned group

25   database (320); Stage (S408) that returns to the above mentioned S407 Stage if and when

17

there is no nearby group members after checking whether there is any group member who is near the user within the set distance; Stage (S409) that returns to the above mentioned S407 Stage if and when the state is not that of position information sharing state after judging whether the state of mobile phone of the nearby group members is at

5   the state of sharing if and when there is nearby group member based on the above mentioned judgment; and

Stage (S410) that enables mutual disclosure of position between group member and user who are at the state of sharing if and when the group members are at the state of sharing information on their position is judged as such during the above mentioned stage.

10   Hereafter, the above mentioned present invention shall be explained in more detail.

First, user designates the other party and requests position information sharing during S401 Stage.

In other words, User A shall use own mobile phone to contact the communication control station (310) through the base station (340), and shall input the telephone number

15   of User B into the mobile phone to discharge and shall make the request to the above mentioned mobile communication control station (310) to mutually share information on the position with the User B.

The above mentioned User A shall request for the sharing of position information with User C and User D by using the following method.

20   The above mentioned User A shall find the target party with whom sharing of position information is desired from the telephone number list saved on own mobile phone. Then, the above mentioned information shall be transmitted to the mobile communication control station (310) to request sharing of position information. If and when request for the sharing of position information is made for the target party who is

not on the telephone number list, then it is possible to set so that the name and telephone number of the target party are saved automatically on the telephone number list of the mobile phone.

Then, during S402 Stage, message shall be transmitted to the other party designated at the mobile communication control station (310) transmitted with the above mentioned user's request to notify the other party that the above mentioned user requests position information sharing.

In other words, message that includes User A's telephone number or/and name shall be transmitted to User B's mobile phone.

Contents of the above mentioned message could include the function keys that shall be pressed in each of the cases in which approval was made or when the approval was rejected or the contents could provide instruction on other different approval or rejection of approval method.

Then, during S403 Stage, judgment is made whether the other party approved position information sharing.

At the above mentioned moment, verification shall take place to find out whether the User B entered in the key that was designated on the above mentioned S403 Stage. After the lapse of specified period of time, it is assumed that the rejection of approval was made, or it is possible to judge the willingness to approve or reject without being confined to other method.

Then, when approval or rejection takes place during S404 Stage based on the results of judgment made during the above mentioned S403 Stage, notification is made to the above mentioned User A that the User B rejected request for position information sharing.

Moreover, during S405 Stage, if and when the approval was made during the above mentioned S403 Stage, User B shall be included in the User A's group, and setting shall be set so that User A is included in the User B's group.

Then, the above mentioned User A and User B's group shall be saved into the group database (320) during S406 Stage.

Group of users registered on the mobile communication control station is on the above mentioned group database (320), and user and telephone number and/or name of the user who approved sharing of position information shall be saved on the group by each user.

The above mentioned example shall be depicted on Figure 5.

Figure 5 shall be one actual example of the group database that shall be applied on the present invention. As shown on the figure, User A's group 에는 User B, C, D shall be included in the User A's group whereas User A is the only member of the User B's group. User A and D shall be included on User C's group, and only A and C manifest state of registration on the User D's group.

In other words, User A, C, D are acquaintances of each other, and User B is the acquaintance of User A who only knows A.

Then, after the setting is executed as mentioned above, mobile communication control station (310) conducts periodical search on the group user pertaining to each group, and whether the user registered on the group is within the set distance during S407 Stage.

At the above mentioned moment, set distance shall be communication scope of same base station (340), (350), and judges whether there is group member who is within the same communication scope.

Then, during S408 Stage, judgment is made as to whether group member who is

within the same group is within the set distance based on the results of the search mentioned above.

If and when there is no group member who is nearby as result of judging, search is conducted periodically by returning to the above mentioned S407 Stage.

5   Then, if and when there is group member who is nearby based on the judgment made during the above mentioned S408 Stage, judgment shall be made during S409 Stage to decide whether all the nearby group members are at the state in which they shared position information.   If and when all group members are not at the state of position information sharing, then shall return to the above mentioned S407 Stage.

10   Each user can set not to disclose position information by using own mobile phone, and the mobile communication control station (310) that receives the set information operates to prohibit disclosure of user's position.

Stoppage of the above mentioned position information disclosure can be set for each and each or all of the group members.   At the above mentioned moment, list of disclosure
15   prohibited position information shall be displayed on the telephone number list that is saved in the above mentioned mobile phone.

In other words, sharing status of the position information shall be displayed on the telephone number book of the mobile phone where telephone number and name are included. Accordingly, user can easily check who is disclosed and who is blocked from
20   the current own position information.

Then, if and when the state of nearby positioned users' mobile phone who are the group members who belong to specific user group is set for the state of sharing position information based on the results of the judgment conducted during S410 Stage, it is during 410 Stage that message is transmitted to the group user and group member to

notify that user and specific group member is at nearby location.

As shown on the above mentioned Figure 3 and Figure 5, User B, C, D are registered on the User A's group as group members. User A shall be registered in the User B's group. User A, and D are registered on the User C's group, and User A and C are registered on the User D's group as group member. A and B are both within the region that is covered by the base station (340). User C shall be positioned within the region that is covered along with the two base stations (340, 350). User D shall be positioned in the region covered by the base station (350). Detailed explanation on the above mentioned shall be provided related to the service method pertaining to the present invention.

First, mobile communication control station (310) shall conduct periodical search on the position of each group's user and members.

Based on the above mentioned search, it is possible to see that the User B and User C who are the members of User A group are within the scope of communication pertaining to the same base station (340) during the process of searching User A's group.

In the above mentioned state, verification of whether User A, B, C are in the state of position information sharing stoppage shall be conducted. If and when they are not in the state of stoppage as shown by the results of verification, then message shall be transmitted to the User A's mobile phone that shows that User B and User C are nearby. Another message shall be transmitted to the mobile phones of User B and User C that shows that User A is nearby.

If and when the User B is at a state when the position information sharing is stopped, message to the mobile phones of User A and C shall be sent to notify that User C and User A are nearby.

Likewise, if and when User B who belongs to the User A's group, and User C are

22

positioned near the User A who is the owner of the group, notification shall be sent to User A, B and C that their acquaintance is nearby. Users who receive the above mentioned message shall be able to meet acquaintance who is nearby by calling the acquaintance.

5   Moreover, if and when User C's group is searched while conducting position search on the above mentioned each group, information on the position of User A and User D who are the members of User C's group shall be transmitted to the User C. At the above mentioned moment, position information shall not be transmitted since the distance between User A and User D is each within the scope of different base station (340, 350).

10   Likewise, the present invention offers convenience of use since user can receive information on the nearby acquaintance when the registered acquaintance is at a nearby position. In particular, the present invention offers increased convenience of use since operations such as special registration, setting, and disclosure of own position is not necessary.

15   The reason that the position tracking system (330) is depicted in the above mentioned Figure 3 is that the above mentioned example that was explained is an example of setting the communication scope of the base station into nearby position. To narrow down the nearby position among users, it is necessary to obtain information on the distance of smaller unit   compared to the one that cannot be judged by base station.

20   If and when the position tracking system (330) is used as mentioned above, user and the group member who belongs to the mentioned user' group can guide by showing accurate measures such as within 300m and within 200m.

CLAIMS

WHAT IS CLAIMED IS:

1.   Mobile phone based nearby acquaintance guidance method characterized by the inclusion of; approval stage for the sharing of position information where user with

5   group and acquaintance of the above mentioned user approve mutual sharing of position information by using mobile phone; group designation stage during which information on the acquaintance is added onto the group of the above mentioned user, and during which user's information is added onto the group of the acquaintance to save onto group database; Nearby Acquaintance Search Stage that searches whether member of group

10   that is saved on the above mentioned group database is within a position of set distance from the position of group user from the mobile communication control station; and Nearby Acquaintance Notification Stage in which the mobile communication control station transmits the message to the user that the mentioned acquaintance is nearby if and when the above mentioned acquaintance is nearby and in which the group user is notified

15   that specific acquaintance is at a position nearby.

2.   When it pertains to Claim 1, mobile phone based nearby acquaintance guidance method characterized by the composition of; Position Information Sharing Approval Stage in which user or acquaintance uses mobile phone to contact the mobile communication control station, Position Information Sharing Request Stage that

20   transmits the telephone number of the other party after entering it, and the approval stage in which the mobile communication control station transmits message to the other party's mobile phone to notify that the user or acquaintance requested sharing of information on the position, and that verifies approval.

3.   When it pertains to Claim 1, mobile phone based nearby acquaintance guidance method characterized by the fact that the scope within the set distance used in the above mentioned Find Nearby Acquaintance Stage shall be the communication scope that is covered by each base station, or within the scope of measurement that can be judged by

5   the position tracking system

4.   When it pertains to Claim 1, mobile phone based nearby acquaintance guidance method characterized by the Nearby Acquaintance Notification Stage that does not transmit message that notifies the position of both acquaintance and user if and when one of the acquaintance or user temporarily stopped the sharing of information pertaining to

10   the position

5.   When it pertains to Claim 4, mobile phone based nearby acquaintance guidance method that is characterized by the setting based on the transmission of specific signal to the mobile communication control station by using function key of user or/and acquaintance's mobile phone when it pertains to the temporary stoppage of the above

15   mentioned sharing of information pertaining to position

FIG. 1


```
        ┌─────────────────────────┐
        │ DATABASE BUILD-UP       │ ～ S10
        │   STAGE                 │
        └────────────┬────────────┘
        ┌────────────┴────────────┐
        │ WEBSITE POSTING         │ ～ S20
        │ STAGE                   │
        └────────────┬────────────┘
        ┌────────────┴────────────┐
        │ USER AUTHORIZA-         │ ～ S30
        │ TION STAGE              │
        └────────────┬────────────┘
        ┌────────────┴────────────┐
        │ POSITION VERFICA-       │ ～ S40
        │ TION STAGE              │
        └────────────┬────────────┘
   S50               │
     ┌───────────────┴──────────────────────┐
┌────┴──────────────┐          ┌────────────┴───────────┐
│  STANDBY STAGE    │          │ POSITION DISCLO-       │ ～ S60
└────┬──────────────┘          │ SURE STAGE             │
     │                         └────────────┬───────────┘
     │                         ┌────────────┴───────────┐
     │                         │                        │ ～ S70
     │                         └────────────┬───────────┘
     │                         ┌────────────┴───────────┐
     │                         │ POSITION INFORMATION   │ ～ S80
     │                         │ RECEPTION STAGE        │
     │                         └────────────┬───────────┘
     └──────────────┬───────────────────────┘
           ┌────────┴────────┐
           │   END STAGE     │ ～ S90
           └─────────────────┘
```
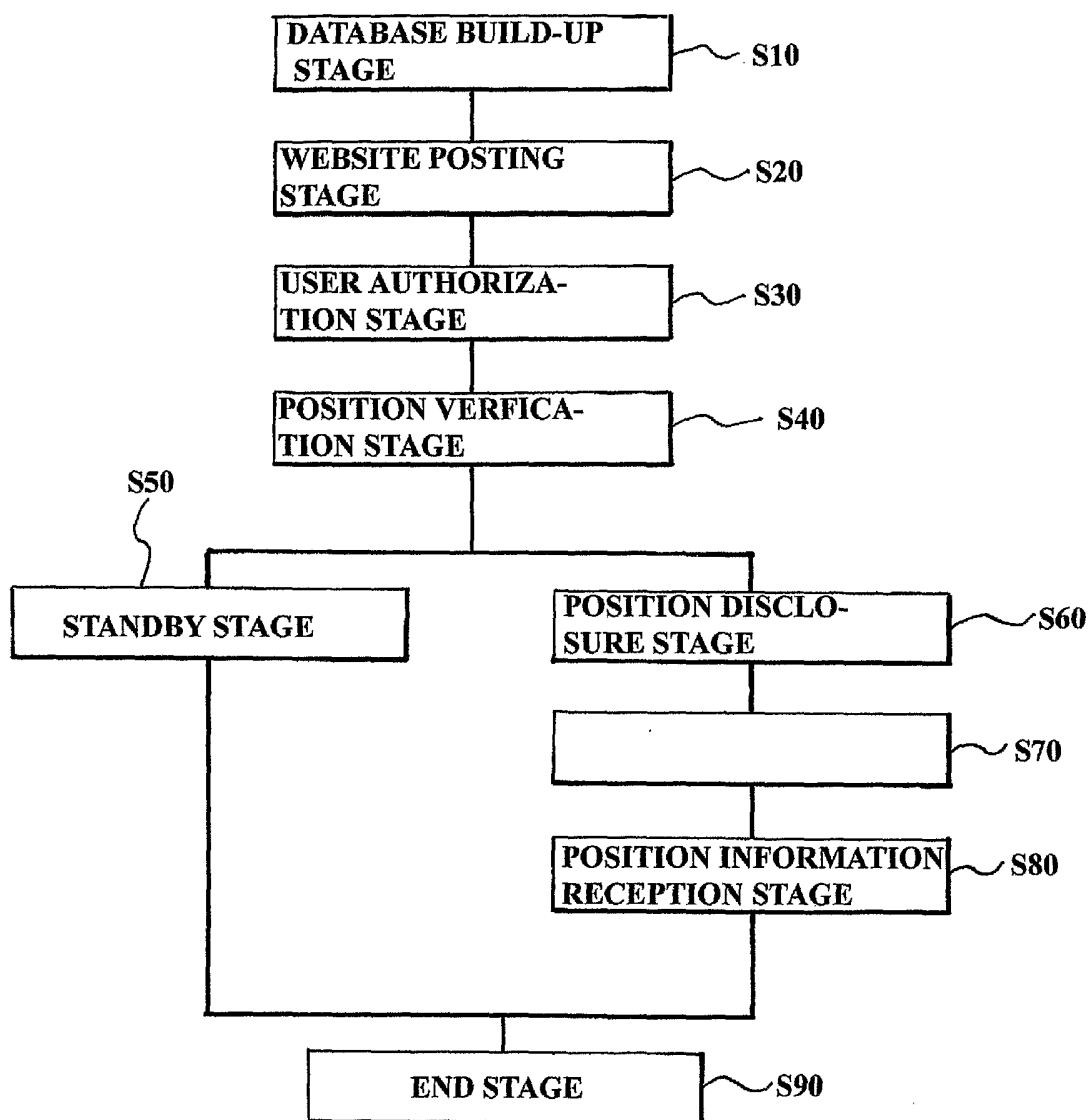
S70 : STAGE FOR THE TRANSMISSION OF INFORMATION ON POSITION
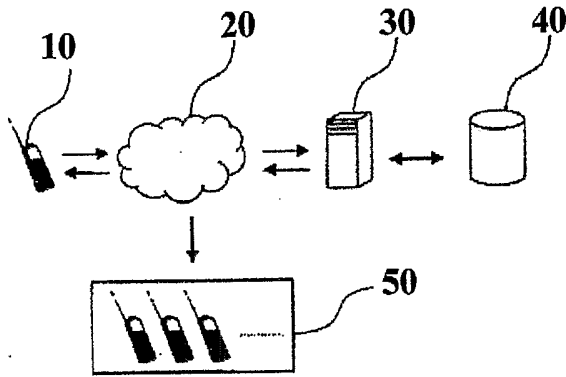
FIG. 2

FIG. 3
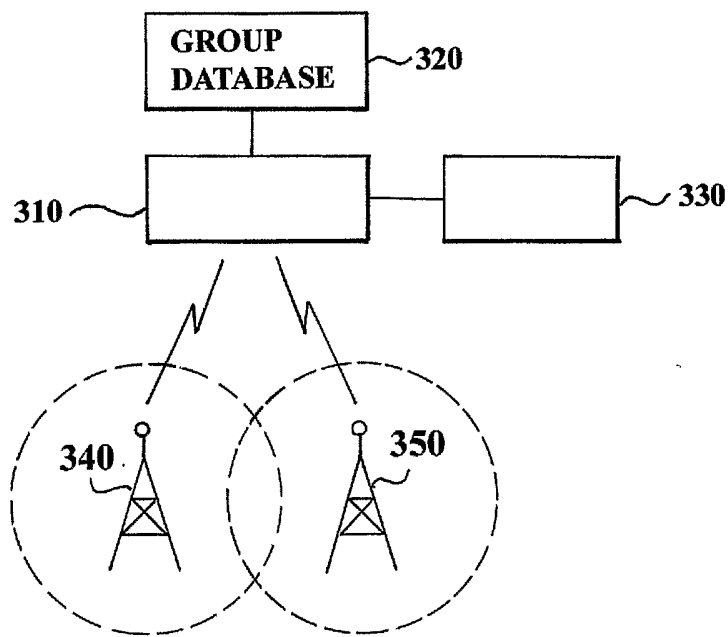
310 : MOBILE COMMUNICATION CONTROL STATION SYSTEM
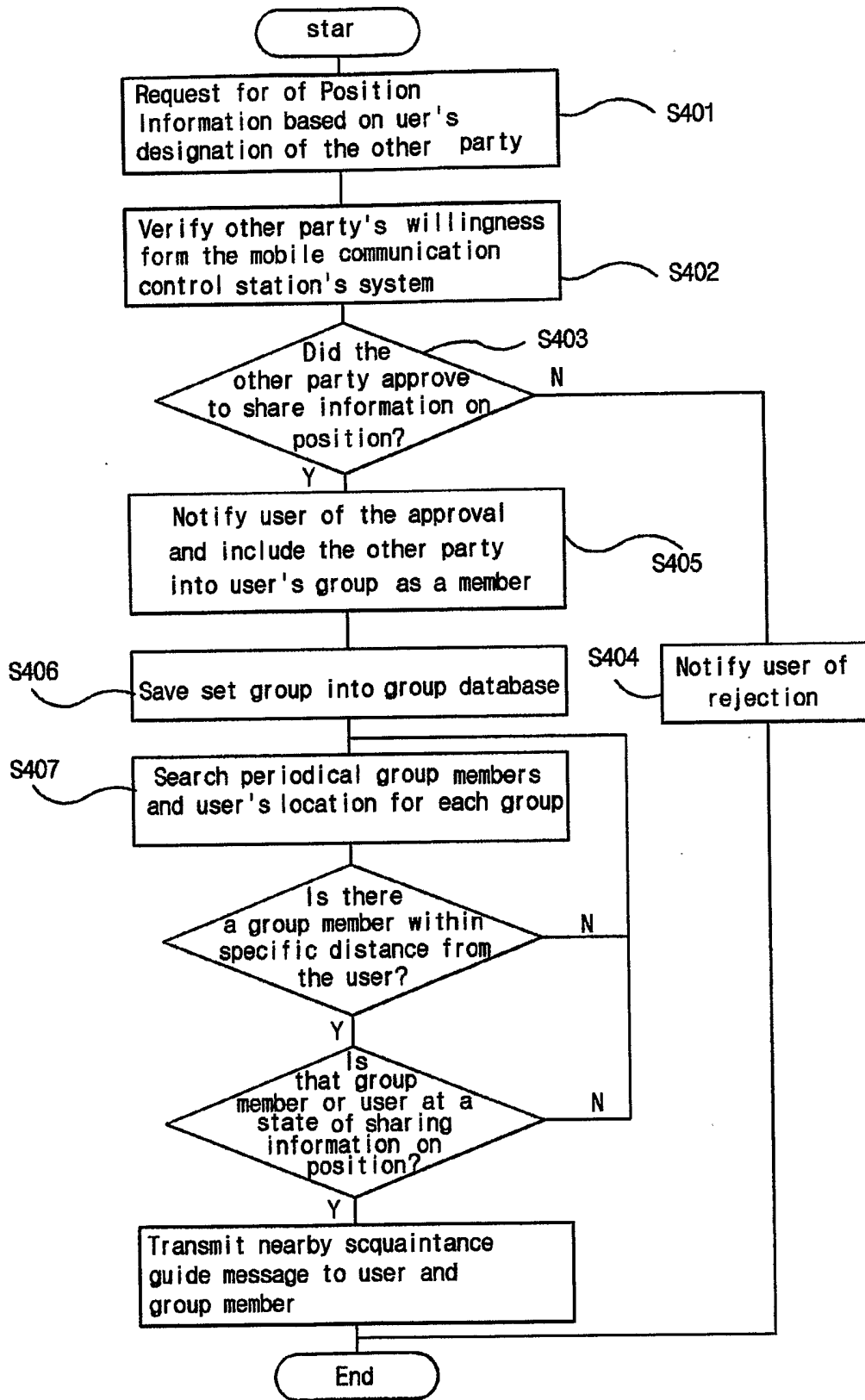330 : POSITION TRACKING SYSTEM

FIG. 4

```
                        ( star )
                           |
       ┌───────────────────────────────────────┐
       │ Request for of Position               │
       │ Information based on uer's            │ ────~ S401
       │ designation of the other   party     │
       └───────────────────────────────────────┘
                           |
       ┌───────────────────────────────────────┐
       │ Verify other party's willingness      │
       │ form the mobile communication         │ ────~ S402
       │ control station's system              │
       └───────────────────────────────────────┘
                           |
                      ╱─────────╲  ────~ S403
                    ╱   Did the    ╲
                  ╱  other party approve ╲    N
                 ╱  to share information on ╲────────────────────┐
                  ╲      position?        ╱                      │
                    ╲                  ╱                         │
                      ╲─────────╱                                │
                          Y│                                     │
       ┌───────────────────────────────────────┐                │
       │ Notify user of the approval           │                │
       │ and include the other party           │ ────~ S405      │
       │ into user's group as a member         │                │
       └───────────────────────────────────────┘                │
                           |                                     │
S406   ┌───────────────────────────────────────┐  S404  ┌──────────────────┐
   ~───│ Save set group into group database    │   ~    │ Notify user of   │
       └───────────────────────────────────────┘        │ rejection        │
                           |                             └──────────────────┘
S407   ┌───────────────────────────────────────┐                │
   ~───│ Search periodical group members       │                │
       │ and user's location for each group    │                │
       └───────────────────────────────────────┘                │
                           |                                     │
                      ╱─────────╲                                │
                    ╱  Is there    ╲                             │
                  ╱ a group member within ╲    N                 │
                 ╱ specific distance from  ╲────────────────────┤
                  ╲     the user?         ╱                      │
                    ╲                  ╱                         │
                      ╲─────────╱                                │
                          Y│                                     │
                      ╱─────────╲                                │
                    ╱    Is        ╲                             │
                  ╱  that group      ╲                           │
                 ╱ member or user at a ╲    N                    │
                  ╲ state of sharing   ╱────────────────────────┤
                  ╲ information on     ╱                         │
                    ╲  position?    ╱                            │
                      ╲─────────╱                                │
                          Y│                                     │
       ┌───────────────────────────────────────┐                │
       │ Transmit nearby scquaintance          │                │
       │ guide message to user and             │                │
       │ group member                          │                │
       └───────────────────────────────────────┘                │
                           |─────────────────────────────────────┘
                        ( End )
```

FIG. 5

INTERNATIONAL SEARCH REPORT

A.	CLASSIFICATION OF SUBJECT MATTER

IPC7 H04Q 7/38

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

B.	FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H04B 7/26, G06F 17/60, H04Q 7/16, A63F 9/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Patents and application for inventions since 1975
Korean Utility Models and applications for Utility Models since 1975

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

C.	DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR10-2001-0035405 (Min Byeong-hyeon) May 7, 2001 see claim1, 4, 7, and 9, and Figure 4, 8, and 9	1, 3
Y	JP P2000-167233A (KUJIRADA MASANOBU) June 20, 2000 see paragraph[0007], claim 1, 4, and 8, and Figure 1	1, 3
A	KR10-2001-0025586 (Kim Nam-il) April 6, 2001 see abstract and Figure 3	1, 3

☐ Further documents are listed in the continuation of Box C.	☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents,such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
12 JANUARY 2004 (12.01.2004)	12 JANUARY 2004 (12.01.2004)

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INTERNATIONAL SEARCH REPORT

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
KR10-2001-0035405	May 7, 2001	None	
JP P2000-167233A	June 20, 2000		
		JP10201326	June 30, 1999
		JP10216431	July 14, 1999
		JP10296161	October 1, 1999
KR10-2001-0025586	April 6, 2001	None	