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Beyer, Jr.

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(54) **CELLULAR PHONE/PDA COMMUNICATION SYSTEM**

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H04Q 7/20 (2006.01)

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See application file for complete search history.

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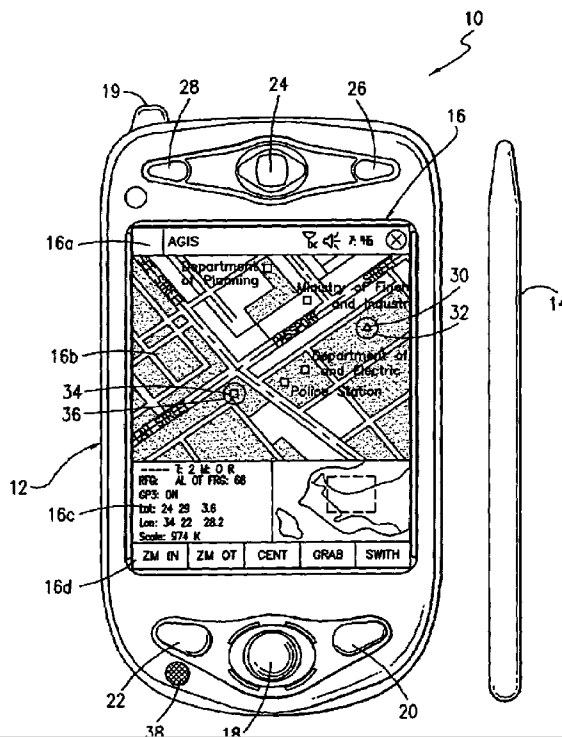
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(57) **ABSTRACT**

A cellular PDA communication system for allowing a plurality of cellular phone users to monitor each others' location and status, to initiate cellular phone calls by touching a symbol on the display screen with a stylus or finger which can also include conferencing calling. The system also provides for remote activation of a cellular phone by an initiator causing the remote cellular phone to announce audio announcements, to call another phone number, to increase the volume of the speaker, to vibrate or to display images or videos. All this is accomplished with a conventional cellular phone PDA that includes GPS navigation with an enhanced improved software program.

15 Claims, 3 Drawing Sheets



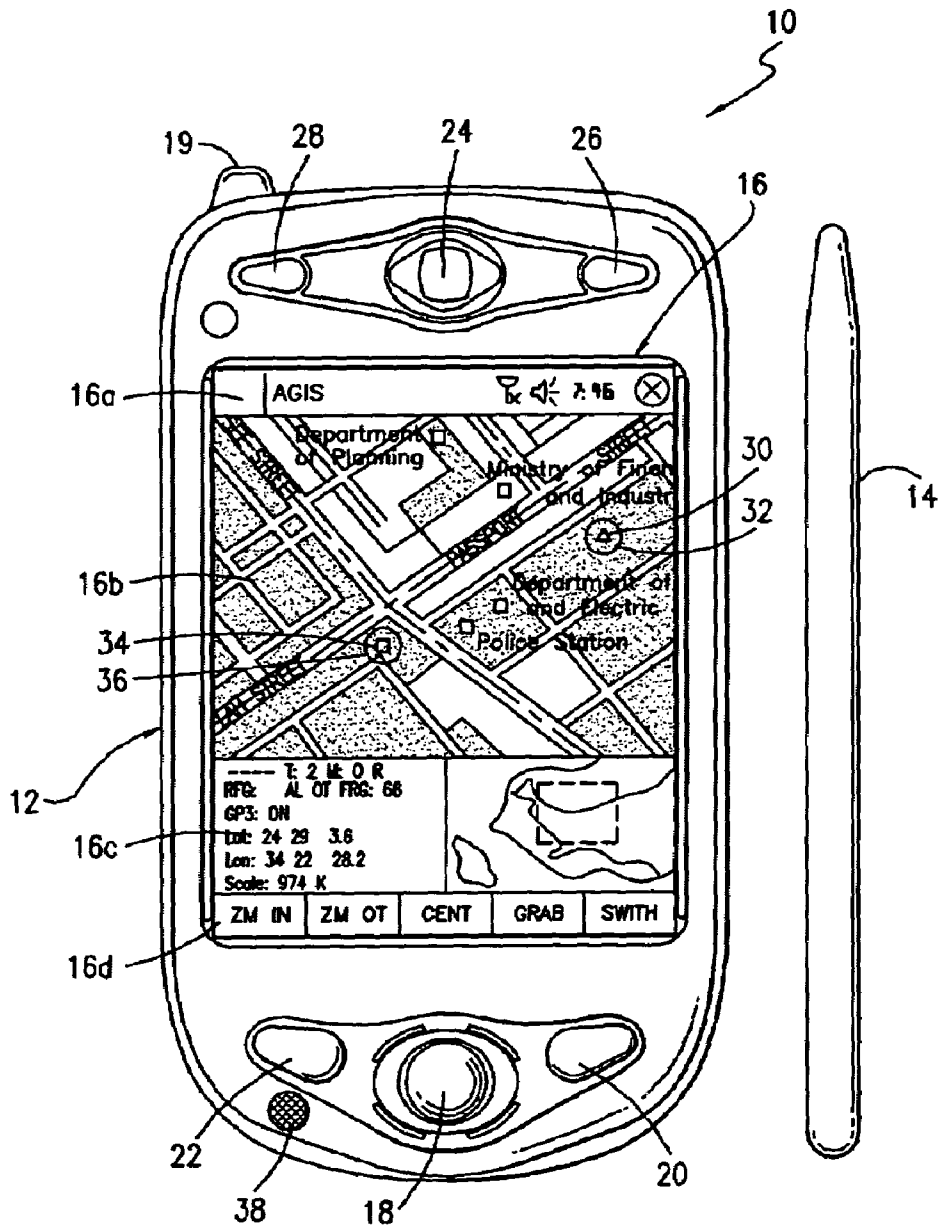


FIG. 1

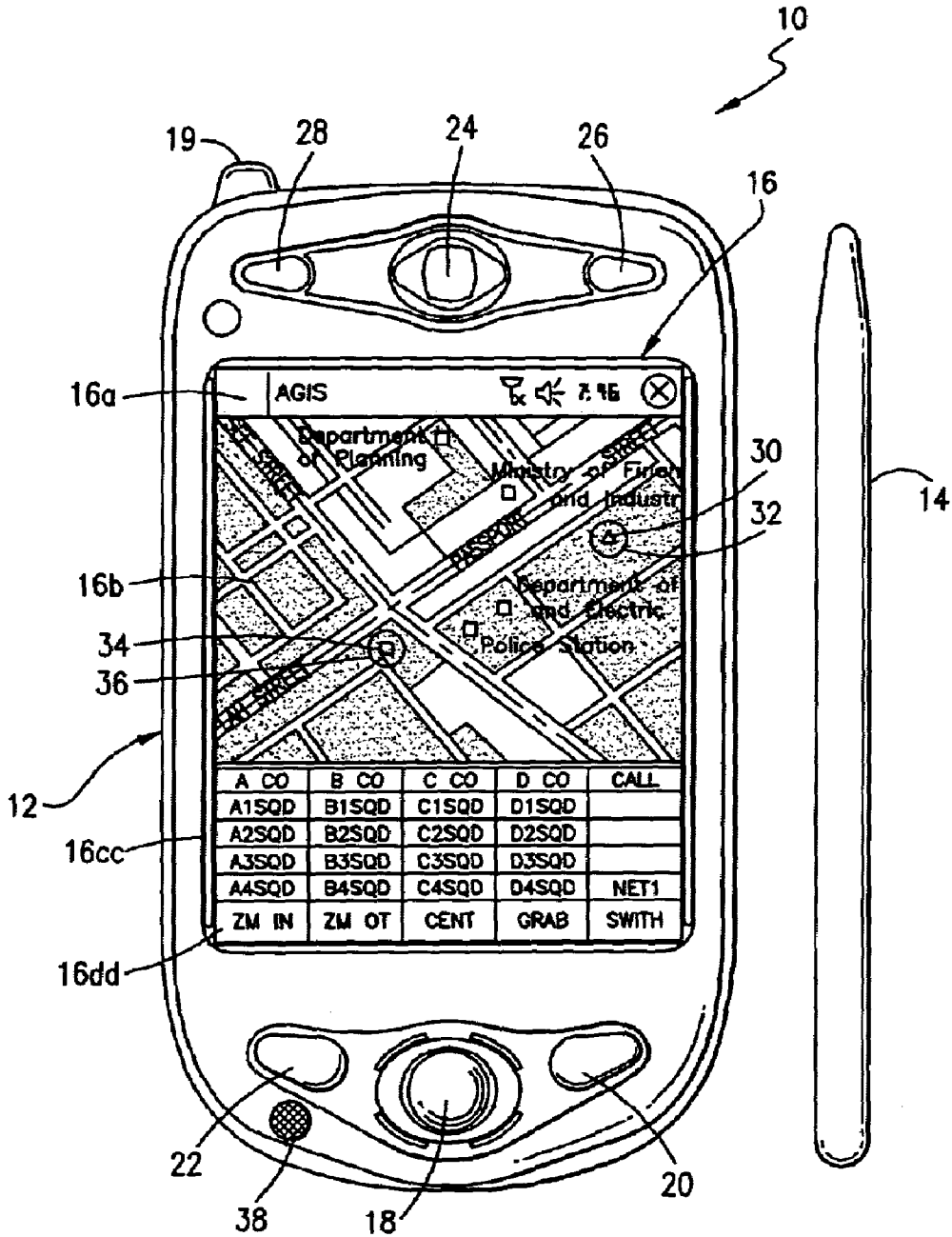


FIG. 2

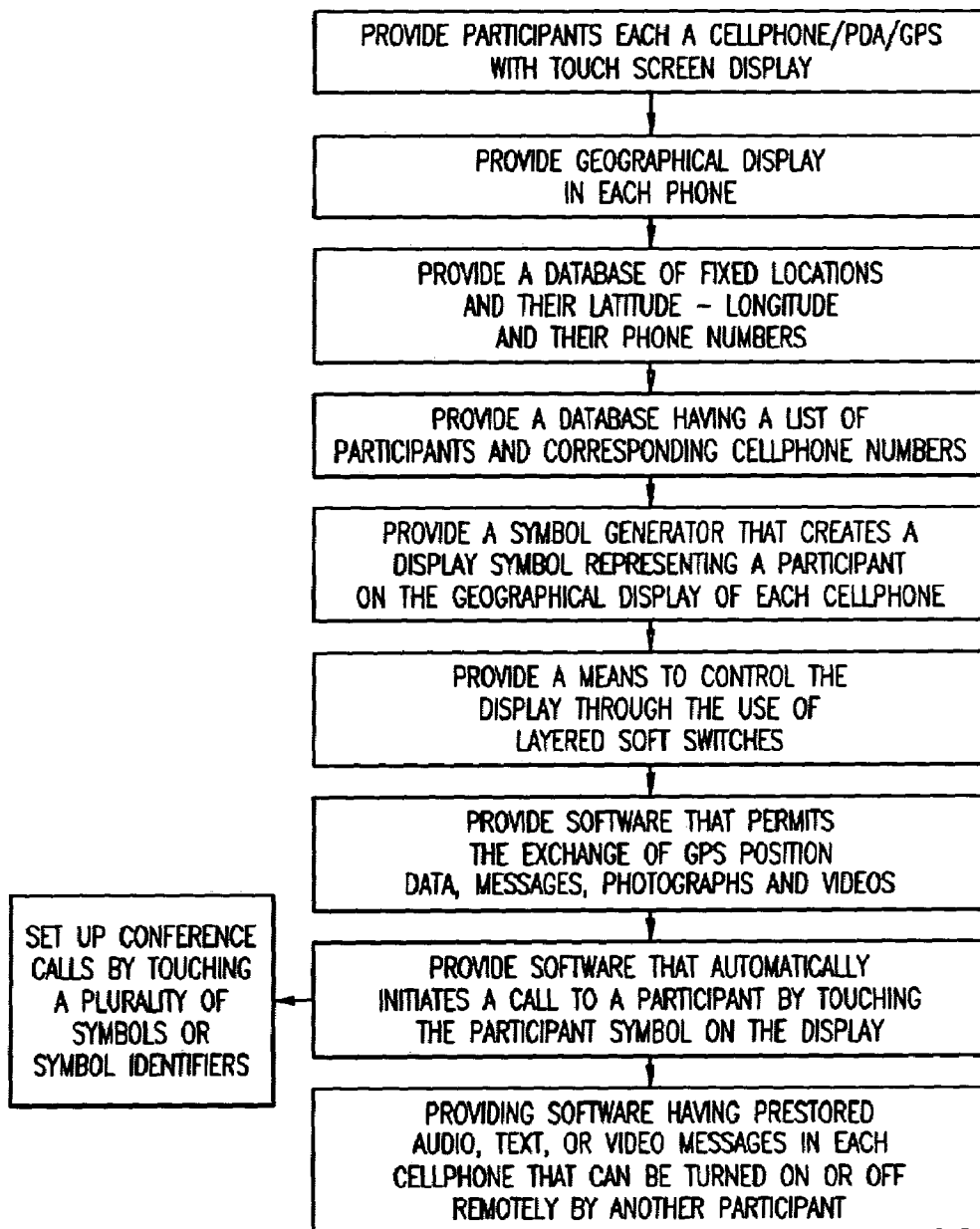


FIG. 3

CELLULAR PHONE/PDA COMMUNICATION SYSTEM

FIELD OF THE INVENTION

This invention relates generally to an integrated communications system using a plurality of cellular PDA/GPS phones for the management of a group of people through the use of a communications net and, specifically, provide each user with a cellular phone that has features that permit all the users to know each other's locations and status, to rapidly call and communicate data among the users by touching display screen symbols and to enable the users to easily access data concerning other users and other database information.

DESCRIPTION OF RELATED ART

The purpose of a communications system is to transmit information bearing signals from a source, located at one point, to a user destination, located at another point some distance away. A communications system is generally comprised of three basic elements: transmitter, information channel and receiver. One form of communication in recent years is cellular phone telephony. A network of communication cells set up around an area such as the United States allows multiple users to talk to each other, either on individual calls or on group calls. Some cellular phone services enable a cellular phone to engage in conference calls with a small number of users. Furthermore, cellular conference calls can be established through 800 number services. Cellular telephony also now includes systems that include Global Positioning System (GPS) navigation that utilizes satellite navigation. These devices thus unite cellular phone cellular technology with navigation information and computer information transmission and receipt of data.

Digital SMS (Smart Message Service) and TCP/IP messages can be transmitted using cellular technology such as the various versions of GSM and CDMA or via a WiFi local area network. One implementation of these GPS location reporting cellular systems is for the data to go to a central site where the information is displayed for a person to monitor the locations of the units that have the combined GPS cellular phone. Another implementation permits the cellular phone users to also view the location of other GPS equipped units. A drawback of the current implementation is that these systems are either all on or all off. There is no way to selectively activate participants or to stop the participants from participating in the network. Another drawback of the use of the current combined cellular phone PDA technology is that when using the PDA to display a map (that also may depict georeferenced businesses, homes and other facilities' locations and phone numbers), and the operator wants to place a call, the cellular phone/PDA operator is required to obtain the phone number by touching the display screen at the correct location of that entity on the map to obtain the phone number, then the operator has to memorize the phone number, then go to a different display to enter the phone number, to make the call and then, if desired, go back to the map display. Needless to say, this is a cumbersome process. Sending a text message to a location, business, home or facility that appears on a PDA map display to another cellular phone can also be a cumbersome process as the PDA operator has to find the phone number on the map display, memorize the phone number, then go to a different display

Furthermore, for a phone to send data concerning a new entity of interest (car, person, tank, accident, or other entity) the operator must type in the information and the latitude and longitude of the entity.

In spite of the rapid advance in cellular phone technology, it would also be desirable to actuate a remote cellular phone to announce an audio message to alert the remote user that there is an emergency (or for another reason) and that the calling cellular phone should be called immediately. Furthermore, it would be desirable to cause the remote phone to display a text message, photograph, video clip or video transmission, to announce the caller's name and to be able to control a remote phone and cause the remote phone to call another phone number (as an example, to automatically establish an 800 number conference call), to vibrate, or increase the loudness of an announcement without any action by the remote phone operator.

The present software invention overcomes many of these problems shown in the prior art by providing a cellular phone/PDA/GPS user: a) the ability to selectively poll each of the other PDA/GPS phones to start reporting their positions and status information directly to all or selected users equipped with cellular phone/PDA communication/GPS system in the communications net so that each of the systems that the data is transmitted to is provided a display of the location, status and other information of the other users; b) the ability to exchange other entities of interest information and to assign these entities a category (car, person, tank, accident, or other entity) by touching the display screen at their locations on the map, and selecting the appropriate category switch; c) the ability to make rapid voice and data call initiation to locations, businesses, homes and facilities whose phone number is available in a georeferenced database including the cellular phone/PDA/GPS systems in a communications net by touching the display screen at the appropriate location on the PDA display and selecting a call switch; d) the ability to make rapid voice and data conference call initiation to locations, businesses, homes and facilities whose phone number is available in a georeferenced database including the cellular phone/PDA/GPS systems in a communications net by touching the display screen at the appropriate locations on the PDA display and selecting a conference call switch; e) the ability to remotely control from one cellular phone/PDA/GPS any of the other cellular phone/PDA/GPS systems phones including the ability to control remote cellular phones to make verbal prerecorded announcements, place return calls, place calls to another phone number, vibrate, execute text to speech software, change sound intensity and process and display information by touching the display screen at their location on the PDA display and selecting the appropriate switch; and f) the ability to layer a sufficient number of switches or buttons on the PDA display to perform the above functions without overlaying the map.

U.S. Patent Application No. 2003/0139150 published Jul. 24, 2003 shows a portable navigation and communication system. In one embodiment, the system combines within a single enclosure a GPS satellite positioning unit, mobile telephony using cellular phone technology and personal computing capable of wired or wireless internet or intranet access using a standard operating system. The purpose of this invention is to provide portable navigation for an individual. However, to operate the device, one still needs to utilize a keypad with the telephone functions. U.S. Patent Application No. 2003/0139150 described a wireless com-

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