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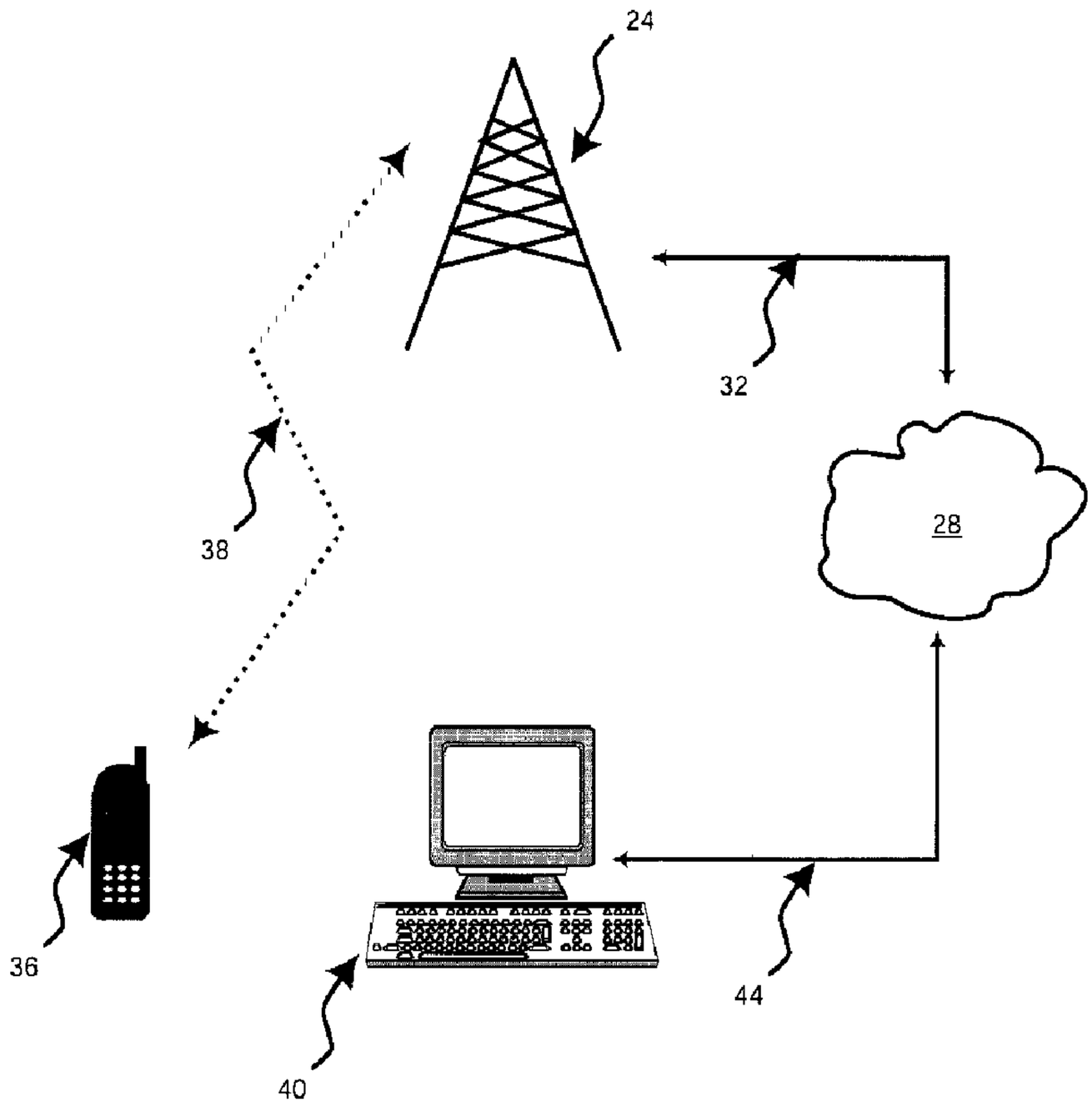
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(71) Demandeur/Applicant:
CURRIER, T. A., CA

(72) Inventeur/Inventor:
CURRIER, T. A., CA

(74) Agent: STRATTON, ROBERT P.

(54) Titre : METHODE ET APPAREIL PERMETTANT DE MODIFIER DES DONNEES REMANENTES
(54) Title: METHOD AND APPARATUS FOR MODIFYING PERSISTENT STORAGE



(57) Abrégé/Abstract:
The present invention provides a system, method and apparatus for modifying persistent storage. In an embodiment of the invention, the persistent storage within a radio phone contains a telephone directory. The telephone directory in the radio phone

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(57) Abrégé(suite)/Abstract(continued):
can be used to automatically dial the number of an individual or entity that exists as an entry in the telephone directory. The phone is operable to send and receive, via a radio base station respective to the radio phone, copies of the telephone directory. A remote client-device, such as a personal computer, is operable to allow a user to modify the telephone directory and to exchange copies of the telephone directory with the radio phone. The present invention thus provides a user-friendly way to backup, modify and restore a telephone directory or other electronic information in a radio phone or other intelligent devices which typically have limited user-interface capabilities.

ABSTRACT

The present invention provides a system, method and apparatus for modifying persistent storage. In an embodiment of the invention, the persistent storage within a radio phone contains a telephone directory. The telephone directory in the radio phone can be used to automatically dial the number of an individual or entity that exists as an entry in the telephone directory. The phone is operable to send and receive, via a radio base station respective to the radio phone, copies of the telephone directory. A remote client-device, such as a personal computer, is operable to allow a user to modify the telephone directory and to exchange copies of the telephone directory with the radio phone. The present invention thus provides a user-friendly way to backup, modify and restore a telephone directory or other electronic information in a radio phone or other intelligent devices which typically have limited user-interface capabilities.

METHOD AND APPARATUS FOR MODIFYING PERSISTENT STORAGE

FIELD OF THE INVENTION

The present invention relates to a system, apparatus and method of providing enhanced features in a radio phone or other intelligent device. More specifically, the present invention relates to a method and apparatus for modifying the persistent storage in a radio phone or other inteligent device.

BACKGROUND OF THE INVENTION

Wireless radio phones are now a common tool for business and personal use. The evolution from analog cellular to modern GSM and CDMA based cellular systems has accompanied a vast improvement in the services and features in radio phones. For example, certain radio phones are equipped with telephone directories, calendars, web-browsers and email. Indeed, as persistent memory technology improves, radio phones are becoming more capable of storing data. It is now common for phones to hold a hundred or more names and numbers in a telephone directory.

However, the user-interfaces on radio phones are fairly limited, usually including a low resolution LCD screen and about 15-20 keys. The limited physical size of these interfaces is necessary to provide the desired portability of the phone. The limitations of the user-interfaces makes the programming of the telephone directory, and overall modification of the telephone's persistent storage awkward and tedious. For instance, each key on the radio phone must represent a number of different ASCII characters, and thus programming is done using an awkward sequence of key-strokes, e.g. – the "2" key is pressed once for the letter "A", twice for the letter "B", etc. In addition, the LCD screen can be difficult to read during such programming. Thus, a subscriber who has just purchased a radio phone must spend a great deal of time programming each memory location of the telephone directory. Furthermore, in the event that the phone is lost or stolen, valuable information may be lost, and in any event, this information must be reprogrammed into a replacement phone.

More recently, certain radio phones have been combined with personal digital assistants to allow

subscribers to carry one device for both organizational and communications needs. For example, the Qualcomm pdQ smartphone from Kyocera Wireless Corp., 10300 Campus Point Drive,San Diego, CA 92121 is essentially a CDMA phone with a 3Com Palm Pilot built in. The address book features in the PalmPilot portion of the pdQ can be linked to the speed-dial features within theradio phone portion of the device. Updating the address book can be performed on a personal computer. However, the personal computer must be equipped with software complementary to the pdQ, and a special Hot Sync cable, cradle and software must be used to establish a wired link between a hardware port on the personal computer and pdQ smartphone. Accordingly, the ability to update the address book within the telephone is still somewhat tedious and cumbersome and/or requires additional hardware.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a novel system, apparatus and method of modifying persistent storage in a radio device that obviates or mitigates at least one of the above-identified disadvantages of the prior art.

In a first aspect of the invention, there is provided a system for modifying the contents of persistent storage comprising a radio base station having a modem, a microprocessor, a radio for connection to a radio link and a backhaul for connection to a public communication network. The base station is operable to relay messages between the link and the network. The system also comprises a radio device having a modem, a microprocessor, a radio for connection to the link and persistent storage for maintaining a telephone directory. The radio device is operable to receive electronic messages over the link that instruct the microprocessor to modify the telephone directoryor other information stored in the persistent storage. The system also includes a computer, or other type of client-device remote to the radio device, that is connectable to the public communication network. The computer has a microprocessor, a user-inputdevice and a user-output device for modifying the telephone directory or other information stored in the persistent storage and is operable to send the modified telephone directory or other information over the network, to the base station, over the radio link and to the radio device.

In another aspect of the invention, there is provided a radio device comprising a radio for receiving

a radio message from a radio base station and a modem connected to the radio for demodulating the radio message received by the radio. The device also includes a microprocessor connected to the radio for processing the message and persistent storage connected to the microprocessor that maintains a telephone directory or other data application, such as a calendar, to-do list or memo pad. The device also has a user-output device connected to the microprocessor for presenting the telephone directory to a user, and a user-input device connected to the microprocessor to allow the user to browse the telephone directory. The microprocessor within the device is operable to modify the telephone directory or other data application according to instructions contained within the message.

In a specific embodiment of the invention, the radio device is a radio telephone that is operable to automatically dial a number contained within the telephone directory.

In another aspect of the invention, there is provided a method for modifying information stored in persistent storage in a radio device comprising the steps of:

preparing, at said radio device, a message containing a copy of at least a portion of information stored in said persistent storage;

sending, over a radio link, said message from said radio device to a radio base station associated with said device;

sending said message to a client-device;

receiving said message at said client-device;

modifying, at a client-device remote from said radio device, said first message to prepare a second message containing desired information for storage in said persistent storage;

addressing said second message to said radio device;

sending said second message to said radio base station;

sending said second message from said base station to said radio device;

receiving said second message at said radio device; and,

modifying said persistent storage according to said second message.

The present invention provides a system, method and apparatus for modifying information stored in

persistent storage in a radio device, which is typically part of a radio phone that maintains electronic information, which in an embodiment is a telephone directory. The telephone directory in the radio phone can be used to automatically dial the number of an individual or entity that exists as an entry in the telephone directory. The phone is operable to send and receive, via a radio base station respective to the radio phone, copies of the telephone directory or portions thereof A remote client-device, (such as a personal computer locally executing an application for modifying the directory or a web-browser operable to access the application on a remote-webserver), is operable to allow a user to modify the telephone directory and to exchange copies of the telephone directory with the radio phone. The present invention can thus provide a user-friendly way to backup, modify and restore a telephone directory or other electronic information in a radio phone or other intelligent devices which typically have limited user-interface capabilities, and without the need for a hardware cable to connect the radio device to the personal computer. Also, in certain embodiments of the invention, the need for a personal computer dedicated to the radio device can be eliminated, as the modification of the telephone directory can simply be done using an email client program at the personal computer or a web-based service or interface provided by a third party such as the operator of the radio network.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the present invention will now be described, by way of example only, with reference to the attached Figures, wherein:

Figure 1 is a schematic representation of a system for modifying information stored in persistent storage in an intelligent device in accordance with an embodiment of the invention;

Figure 2 is a block diagram representative of the radio device and the base station of the system of Figure 1; and,

Figure 3 is a flowchart showing a method for modifying information stored in persistent storage in a radio device accordance with another embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to Figure 1, a system for modifying persistent storage in a radio phone or other intelligent device is indicated generally at 20. System 20 includes a radio base station 24 which is preferably connected to telecommunications network 28, such as a land line-based switched telephone network and/or data network such as the Internet, by an appropriate gateway (not shown) and one or more backhauls 32. Backhaul 32 can be a T1, T3, E1, E3, OC3 or other suitable land line link, or can be a satellite or other radio or microwave channel link or any other link suitable for operation as a backhaul as will occur to those of skill in the art.

Base station 24 communicates with a radio phone 36, typically intended for use by mobile subscribers. Communications between base station 24 and radio phone 36 occur over a radio link 38, which allows voice and/or data information to be transferred between base station 24 andradio phone 36 as needed. In a present embodiment, the radio-communication protocol employed for radio link 38 is digitally based, such as CDMA or GSM. The implementation/type of packet protocol employed is not particularly limited, and can include IP (with TCP or UDP) and/or modifications thereof or any other suitable packet implementation as will occur to those of skill in the art.

Furthermore, it will be understood that system 20 can have additional base stations 24 and/orradio phones 36, as desired, and that, where more than one base station 24 exists,radio phone 36 can be within range of two or more base stations 24, and that communications between multiple base stations 24 and radio phones 36 can be managed using known handoff techniques. Other known radio architectures can be employed. For example, base station 24 can be multi-sectored, each sector being defined by directional antennas, each sector comprising a different reception footprint and thus allowing reuse of available spectrum between sectors serviced from a single base station 24.

System 20 also includes a data entry terminal, such as personal computer 40, which connects to network 28. Personal computer 40 includes a monitor (and/or other user-output device), a keyboard (and/or other user-input device), and a processing unit (such as a microprocessor and related components) operably connected to the monitor and keyboard. The processing unit within computer 40 includes a network interface card connected to network 28 via a communication link 44. Using the keyboard,

monitor and appropriate software, computer 40 is operable to modify the persistent storage of the radio phone 36 via network 28 and link 38, the details of which will be discussed in greater detail below. It is to be understood that, in general, computer 40 acts as a client device operable to process email, however other types of client devices and forms of electronic data, other than email, will occur to those of skill in the art and are within the scope of the invention.

Figure 2 shows base station 24 and radio phone 36 in greater detail. Base station 24 comprises an antenna 100 for receiving and transmitting radio-communications over radio link 38. In turn, antenna 100 is connected to a radio 104 and a modem 108. Modem 108 is connected to a microprocessor-router assembly 112. A suitable microprocessor would be a SPARC processor system manufactured by SUN Microsystems. It will be understood that assembly 112 can include multiple microprocessors, as desired.

The router within microprocessor-router assembly 112 is connected to backhaul 32 in any suitable manner, which in turn connects base station 24 to network 28.

Radio phone 36 comprises an antenna 200 for receiving and transmitting radio-communications over radio link 38. In turn, antenna 200 is connected to a radio 204 and a modem 208, which in turn is connected to a microprocessor-assembly 212.

Microprocessor-assembly 212 can include, for example, a StrongARM processor manufactured by Intel, and performs a variety of functions, including implementing A/D-D/A conversion, voice codecs, filters, encoders, data compressors and/or decompressors, packet assembly/disassembly. Accordingly, microprocessor-assembly 212 is operable to process voice-telephone calls between an earpiece 216, a mouthpiece 218 and modem 208.

Radio phone 36 also includes a keypad 224 or other user-input device operably connected to provide input to microprocessor 212, and a display 220 other user-output device operably connected to present output from microprocessor 212.

Radio phone 36 further includes rewriteable persistent storage 228, such as a smart card or an EEPROM or static RAM, etc., that is connected to microprocessor assembly 212 and is operable to store at least a user's telephone directory, but in other embodiments may also store other data, such as calendar appointments, to do lists, memo pads, as desired, which can be browsed using display 220 and keypad

224. The telephone directory is usable for automatically dialing an entry in the directory, simply by hitting a single key, such as the "send" key, following the selection of a particular entry that is browsed and/or displayed on display 220. While not a critical feature of radio phone 36, it is contemplated that keypad 224 and display 220 can be used, via microprocessor 212, to modify the telephone directory of callers (or other types of data stored) stored in persistent storage 228.

Microprocessor 212 is further operable to send and receive emails (or other forms of electronic data) over network 28 via link 38 and base station 24. In particular, microprocessor 212 is operable to, on receipt of a predefined sequence of keystrokes on keypad 224, assemble an email or other message incorporating at least a portion of the telephone directory or other data stored in persistent storage 228, and to send that email to a user-specified email address, or other user-specified destination appropriate to the data service (ie. SMS, caller ID)

In turn, microprocessor 212 is further operable to receive an email message, (or short messaging service, SMS, messages or other type of data message, such as Caller ID), incorporating an amended telephone directory, or an individual telephone directory entry or other information that will be incorporated into the telephone directory or other information stored in persistent storage 228.

Referring now to Figure 3, a method of modifying persistent storage in accordance with another embodiment of the invention is shown. For purposes of assisting in explaining the method, reference will be made to system 20 and Figures 1 and 2. At step 300, the telephone directory is prepared. In a present embodiment, this is performed on a terminal device, such as personal computer 40, which is executing software that allows a user to add, delete and modify various entries and fields in the telephone directory or other information. The telephone directory can be created from scratch or imported from some other database resident on personal computer 40. It is presently preferred that the user-interfaces on the software executing on personal computer 40 are easy and intuitive to use. Any type of software that allows a user to prepare a desired telephone directory or other information for storage on radio phone 36 can be used.

For example, suitable software can be an appropriately modified version of Palm Desktop Software from 3Com, or Microsoft Outlook, that is capable of assembling a message containing the

desired contents of the telephone directory and that is recognizable toradio phone 36. Another example is that the software can be executing in some distributed manner, between, for example, a browser client and a web server. In this example, the server may be resident at base station 24, and the client may be personal computer 40. However, it is contemplated that, in a presently preferred embodiment of the invention, the telephone directory or other information can be created using a simple email client program, such as Eudora or Netscape Messenger, or using the email interface on an internet-based email service such as Yahoo mail or Hotmail. It will be thus understood that the software executing on personal computer 40 can either be software dedicated to for use with radio phone 36, or it can be a generic email, or other messaging program such as a SMS messaging programaccessed via a web browser executing on personal computer 40. In the situation of a generic email program, the creator of the email message at personal computer 40 will generate an email message in a predefined format recognizable to radio phone 36. An example of a suitable format is given in Appendix 1 wherein ASCII text "tags" are employed torecognize and use the contents of the email. In this example the <DIRECTORY>, </DIRECTORY> tags are used to define the start and end of the information to be treated as telephone directory entries. The number tags <1>, </1> are used to indicate the directory position in which the entry should be stored and the slash "/" character is used to delimit the name from the telephone number. As will be apparent, the actual format employed is not limited to this example, and a wide variety of useful formats in accordance with the present invention will occur to those of skill in the art. In general, however, other ways of providing a user-interface on personal computer 40 that allows a user to remotely modify the contents of persistent storage 228 will also occur to those of skill in the art.

Once the telephone directory has been prepared, the method advances to step 305, where the telephone directory is packaged for transfer. In a present embodiment, software executing on personal computer 40, such as an email client program, will, upon receipt of predetermined user input, allow the user to assemble the telephone directory into an email message, either as an attachment or directly asembedded ASCII text. The addressee on the email message is unique to radio phone 36. For example, the email address may be 555-555-5555@serviceprovider.com, where 555-555-5555 is the telephone number assigned for radio phone 36. In addition, the subject line of the email message can be a unique string,

recognizable to radio phone 36, that identifies the contest of the email message to microprocessor 212 which can then appropriately process the contents of the email message. For example, the subject line of the email message may read "ADD TO TELEPHONE DIRECTORY". It is thus contemplated that the present invention can be readily applied to existing radio phones 36 having the ability to receive emails.

Next, at step 310, the packaged telephone directory is sent to the base station 24 (via an appropriate email server in network 28, as will be understood by those of skill in the art) in communication with radio phone 36. Since radio phone 36 is a mobile phone, it is contemplated that, using known email routing techniques, the packaged telephone directory is sent as an email that was prepared at personal computer 40 and is sent over network 28 to base station 24.

Next, at step 315, the packaged telephone directory is sent over radio link 38. In a present embodiment, known radio email or other messaging technology (SMS, Caller ID, WAPI, etc.) is employed to send the packaged telephone directory from base station 24 to radio phone 36 over radio link 38.

The method then advances to step 320, where the packaged telephone directory is received by radio phone 36. Radio 204 receives the packaged telephone directory and transfers it to modem 208.

At step 325, the packaged telephone directory is unpackaged. In a present embodiment, modem 208 and microprocessor 212 cooperate to decode the email containing the packaged telephone directory or other information. As previously discussed, the email can include a unique subject-line, or other content, that indicates to microprocessor 212 that the email or other message contains all or part of an updated telephone directory or other information, intended for storage in persistent storage 228.

The method then advances to step 330, where the receipt and unpackaging of the telephone directory is reported as an event on display 220, and a request is generated asking for confirmation that the existing telephone directory stored in persistent storage 228 is to be modified. If, by entering the appropriate keystroke on keypad 224, confirmation is indicated, then the method advances to step 335 and the received telephone directory is transferred into persistent storage 228 thus modifying the existing telephone directory accordingly. If, however, confirmation is denied, then the method advances to step 340 and the received telephone directory is discarded.

Assuming confirmation was given at step 330, and the directory was stored at step 335, then the

modified telephone directory is now available for viewing and automatic dialing by the user of radio phone 36.

While the embodiments discussed herein are directed to specific implementations of the invention, it will be understood that combinations, sub-sets and variations of the embodiments are within the scope of the invention. For example, it is contemplated that simultaneous, but different, modifications made to the telephone directory in radio phone 36 and modifications made to a copy of the telephone directory in personal computer 40 or elsewhere can be "synchronized" using, for example, Hot Sync technology available on the Palm Pilot from 3Com corporation or the like.

It is contemplated that the present invention can be used on other intelligent devices, in addition to a radio phone. For example, a personal digital assistant.

It is contemplated that other data stored in persistent storage 228 can be modified using the embodiments discussed herein. For example, other types of data can include calendars, to-do lists, memo pads, operating and configuration information, etc.

It is contemplated that the telephone directory can include a variety of fields, such as the name, address, telephone number, fax number, email address, website address. The radio device can made be operable to access the contents of the telephone directory and automatically determine a recipient's telephone number or address to accompany a corresponding message prepared using the radio device. For example, where the radio device is operable to prepare an email message, then the radio device can be operable to automatically extract a known recipient's email address from the telephone directory and attach that address to the email message. Similarly, where the radio device is operable to prepare a fax, then the radio device can be operable to automatically extract a known recipient's fax number from the telephone directory and attach that address to the fax message.

It is contemplated that individual entries in the telephone directory, or the entire telephone directory can be modified, as desired.

It is contemplated that the present invention can be used to modify configuration data in the intelligent device. For example, in a radio phone, it is contemplated that the present invention can be used to change, for example, the ringing tones of the phone.

While it is presently preferred that the telephone directory or other electronic data in persistent storage 228 are transferred between radio phone 36 and personal computer 44 using email, it will be understood that other types of data packaging and/or messaging techniques can be used, as desired.

It will be understood that the exact sequence of steps discussed in the method shown in Figure 3 can be changed, and the individual steps modified, as desired. For example, confirmation of a request to modify the directory based on a received directory need not be obtained, thus eliminating steps 330 and 340 from the method. Other variations will occur to those of skill in the art.

The present invention provides a novel, system, method and apparatus for modifying persistent storage. In an embodiment of the invention, the persistent storage within a radio phone contains a telephone directory. The telephone directory in the radio phone can be used to automatically dial the number of an individual or entity that exists as an entry in the telephone directory. The phone is operable to send and receive, via a radio base station respective to the radio phone, copies of the telephone directory. A remote client device, such as a personal computer, is operable to allow a user to modify the telephone directory and to exchange copies of the telephone directory with the radio phone. The present invention thus provides a user-friendly way to backup, modify and restore a telephone directory or other electronic data information in a radio phone or other intelligent devices that has limited user-interface capabilities.

The above-described embodiments of the invention are intended to be examples of the present invention and alterations and modifications may be effected thereto, by those of skill in the art, without departing from the scope of the invention which is defined solely by the claims appended hereto.

APPENDIX 1

<DIRECTORY>

<1> JOHN SMITH / 416-555-1212 </1>

<2> BILL JONES / 415-555-1212 </2>

<3> MARY WHITE / 904-555-1212 </3>

</DIRECTORY>

I Claim:

1. A system for modifying persistent storage comprising:

a radio base station having a modem, a microprocessor, a radio for connection to a radio link and a backhaul for connection to a public communication network, said base station operable to relay messages between said link and said network;

a radio device having a modem, a microprocessor, a radio for connection to said link and persistent storage for maintaining a telephone directory, said radio device operable to receive electronic messages over said link that instruct said microprocessor to modify said telephone directory;

a computer connectable to said public communication network, said computer having a microprocessor, a user-input device, a user-output device for modifying said telephone directory and operable to send said telephone directory to said radio device.

2. The system according to claim 1 wherein said radio device microprocessor is further operable to assemble an outgoing electronic message having at least a portion of said telephone directory and said radio device radio is further operable to send said outgoing message to said computer via said base station and said network, said computer being further operable to receive said outgoing message and extract said at least a portion of said telephone directory therefrom.

3. The system according to claim 1 wherein said device is a radio telephone and said microprocessor is further operable to automatically dial a number selected from said telephone directory based on input from said user.

4. The system according to claim 1 wherein said device is a personal digital assistant and said persistent storage is operable to store a calendar.

5. The system according to claim 1 wherein said message is an e-mail having a subject line containing an instruction how to modify said telephone directory.

6. The system according to claim 1 wherein said radio link is based on a CDMA structure.

7. A radio device comprising:

a radio for receiving a radio message from a radio base station;

a modem connected to said radio for demodulating said radio message received by said radio;

a microprocessor connected to said radio for processing said message;

persistent storage connected to said microprocessor and for maintaining a telephone directory;

a user-output device connected to said microprocessor for presenting said telephone directory to a user;

a user-input device connected to said microprocessor to allow said user to browse said telephone directory;

said microprocessor operable to modify said telephone directory according to instructions contained within said message.

8. The device according to claim 7 wherein said device is a radio telephone and said microprocessor is further operable to automatically dial a number selected from said telephone directory based on input from said user.

9. The device according to claim 7 wherein said device is a personal digital assistant and said persistent storage is operable to store a calendar.

10. The device according to claim 7 wherein said message is an e-mail having a subject line containing an instruction how to modify said telephone directory.

11. The device according to claim 7 wherein said microprocessor is further operable to assemble an outgoing electronic message having at least a portion of said telephone directory and said radio is further operable to send said outgoing message to said radio base station.

12. A method for modifying persistent storage in a radio device comprising the steps of:

preparing, at a client-device remote from said radio device, a message containing desired persistent storage information;

addressing said message to said radio device; and,

sending said message over a public communication network to a radio base station in radio communication with said radio device.

13. The method according to claim 12 further comprising the steps of:

sending said message over a radio link from said base station to said radio device;

receiving said message at said radio device; and,

modifying said persistent storage based on said message.

14. The method according to claim 12 wherein said radio device is a radio telephone.

15. A method for placing a telephone call using a radio telephone comprising the steps of:

receiving at said radio device a radio message containing at least one telephone directory entry;

storing said at least one telephone directory entry in a persistent storage area of said radio telephone;

receiving, from a user, a selection said at least one telephone directory; and

dialing a telephone number associated with said selected telephone directory entry.

16. The method according to claim 15 wherein said step of dialing is automatically performed by a microprocessor in said radio telephone.

17. A method for modifying persistent storage in a radio device comprising the steps of:

preparing, at said radio device, a message containing a copy of at least a portion of said persistent storage;

sending, over a radio link, said message from said radio device to a radio base station associated with said device;

sending said message to a client-device via a public communication network;

receiving said message at said client-device;

modifying, at a client-device remote from said radio device, said first message to prepare a second message containing desired persistent storage information;

addressing said second message to said radio device;

sending said second message over said public communication network to said radio base station;

sending said message over said radio link from said base station to said radio device;

receiving said message at said radio device; and,

modifying said persistent storage based on said message.

18. A method of synchronizing a radio device persistent storage with a personal computer persistent storage, comprising the steps of:

sending, from said radio device, a first message containing a copy of said radio device persistent storage to said personal computer via a radio link, a radio base station and a public communications network;

receiving said first message at said personal computer;

comparing, at said personal computer, said first message with said personal computer persistent

storage;

updating said personal computer persistent storage in accordance with variations between said first message and said personal computer persistent storage;

preparing, at said personal computer, a second message containing a copy of said updated personal computer persistent storage;

sending, from said personal computer, said second message to said radio device via said network, said base station, and said radio link;

receiving, at said radio device, said second message; and,

updating said radio device persistent storage according to the contents of said second message.

19. The method according to claim 20 wherein said persistent storages contain a telephone directory and said radio device is a radio telephone operable to automatically dial telephone numbers stored within said radio device persistent storage.

20. An intelligent device comprising:

a user-input device;

a user-output device;

a microprocessor operably connected to present data on said user-output device and receive input via said user-input device;

persistent storage for storing user-data and operably connected to said microprocessor for retrieval and storage of said user-data;

said microprocessor operable to assemble at least a portion of said persistent storage for transmission;

a radio and a modem for exchanging transmissions with a client-device that is operable to backup and modify said user-data;

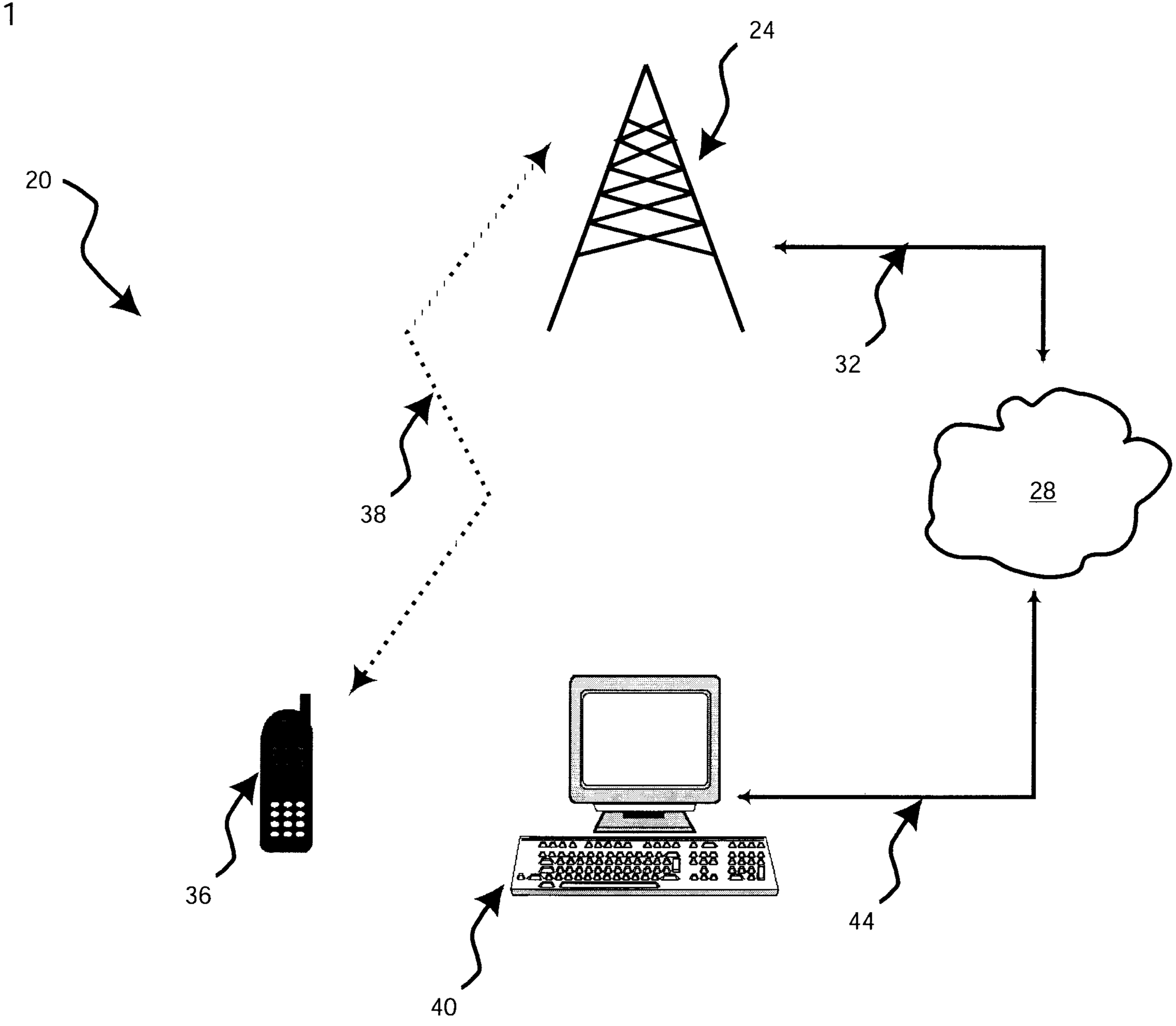
wherein said client-device and said intelligent device cannot be connected over a wired link.

21. The intelligent device according to claim 20 wherein said device is a radio phone.

22. The intelligent device according to claim 20 wherein said user data is a telephone directory.

23. The intelligent device according to claim 21 wherein said user-data is a telephone directory and said intelligent device is operable to automatically dial a number in said telephone directory.

Fig. 1



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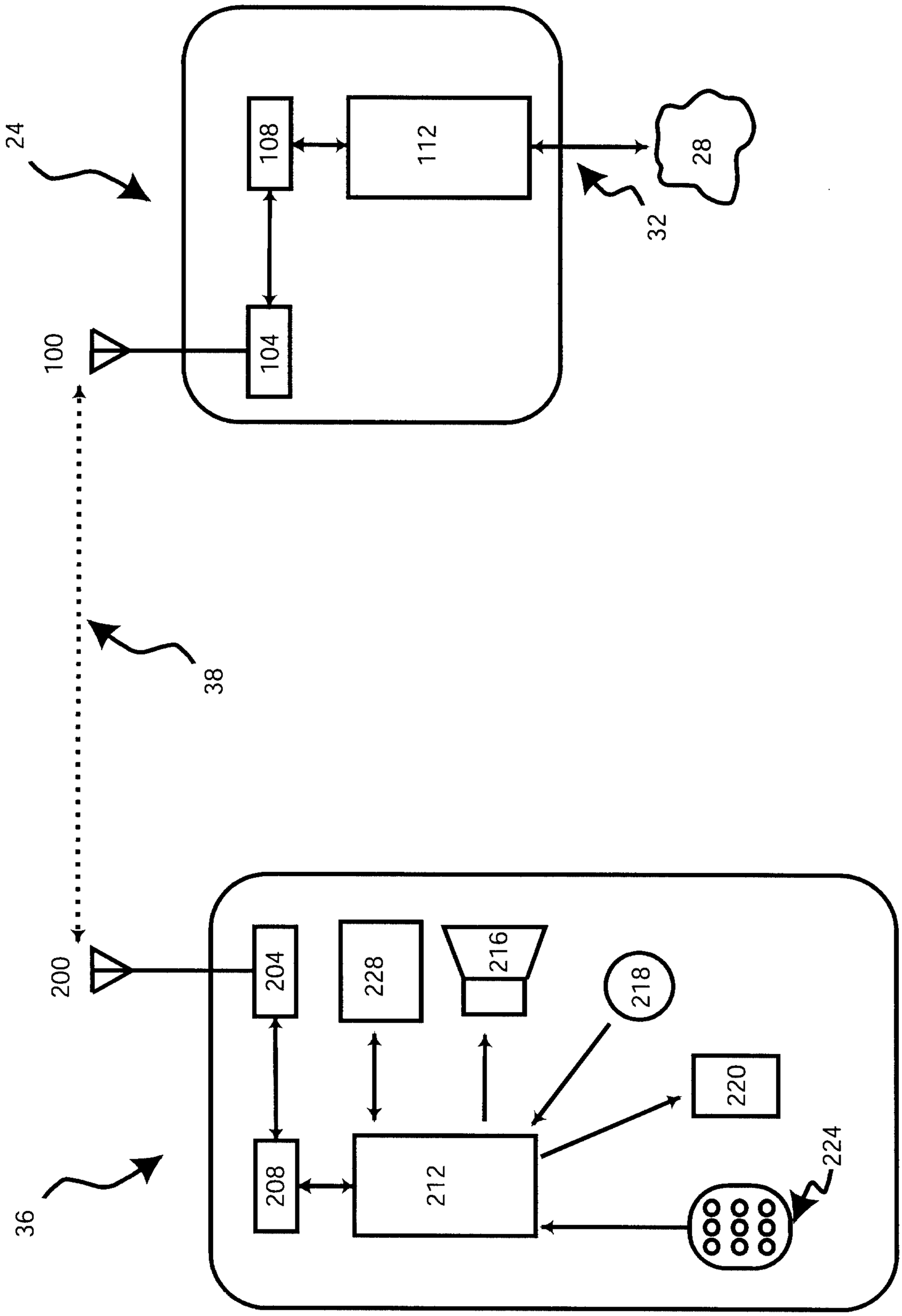
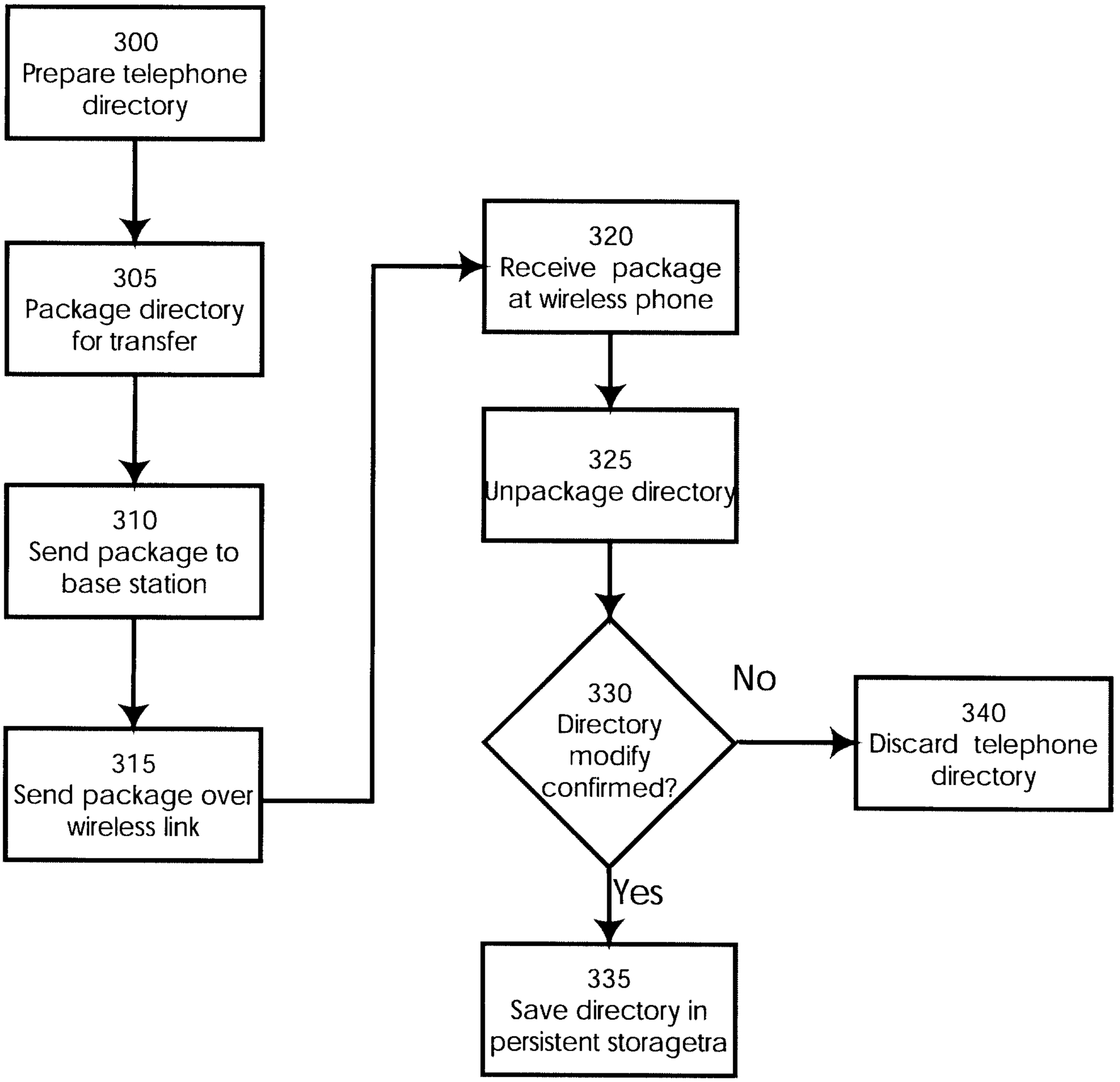
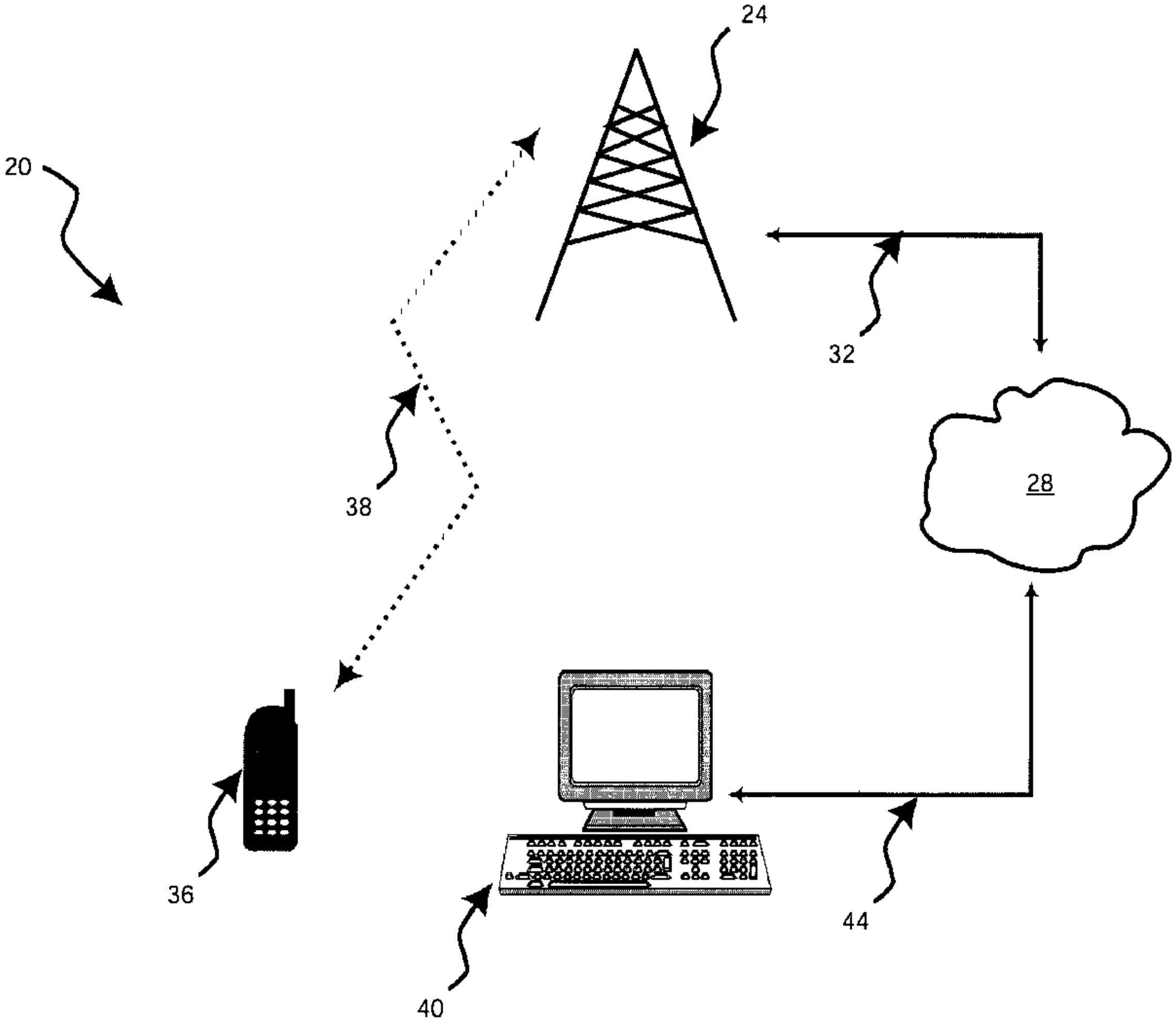


Fig. 2

Fig. 3


300
Prepare telephone directory
305
Package directory for transfer
310
Send package to base station
315
Send package over wireless link
320
Receive package at wireless phone
325
Unpackage directory
330
Directory modify confirmed?
No
340
Discard telephone directory
Yes
335
Save directory in persistent storagetra


20
24
32
28
38
36
40
44