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(54) Abstract Title
Pseudo telephone conversation

(57) A system and method for generating a specific verbal response to a telephone without engaging in a two-way conversation is disclosed. When a telephone rings, a user may deliver a verbal message directed toward a network device or network controller. The verbal message is sent directly to the caller via the network controller that is operably connected to a telephone line. A possible option to the invention disclosed is allowing the caller to respond to the user's verbal message before the telephone call is automatically ended after delivery of the verbal message to the caller.

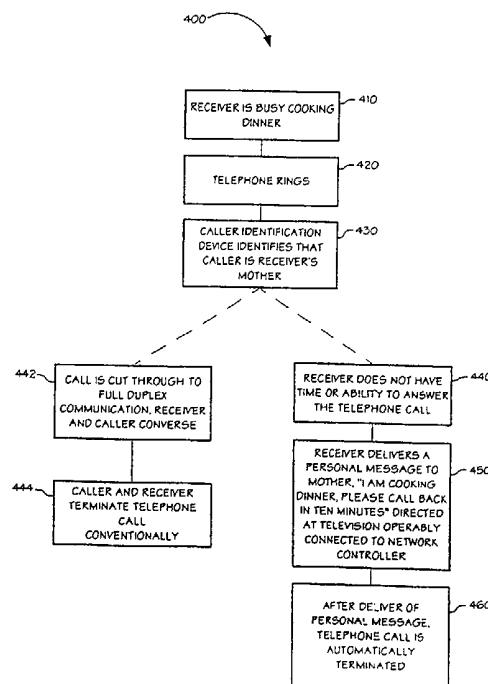


FIG. 4

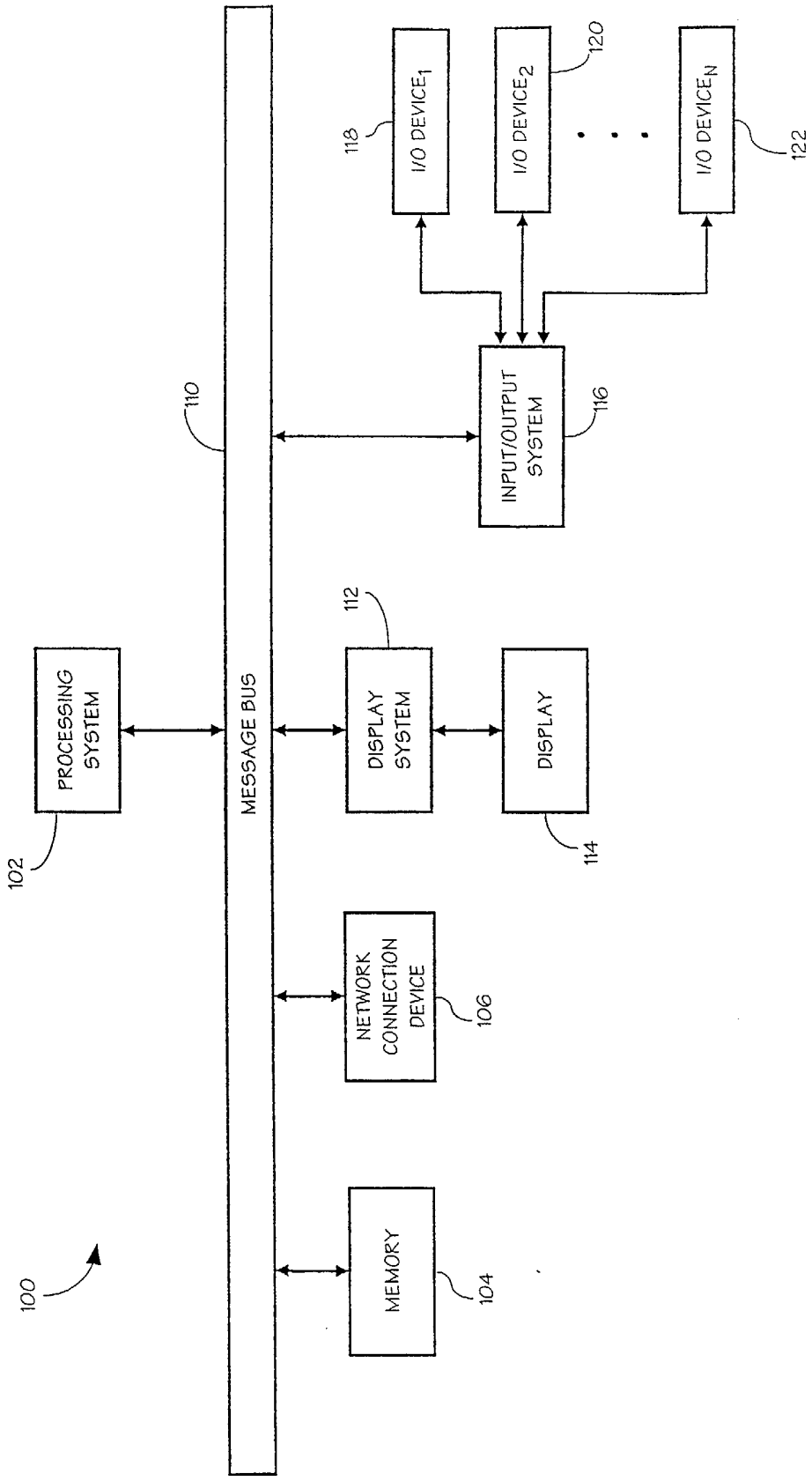


FIG. 1

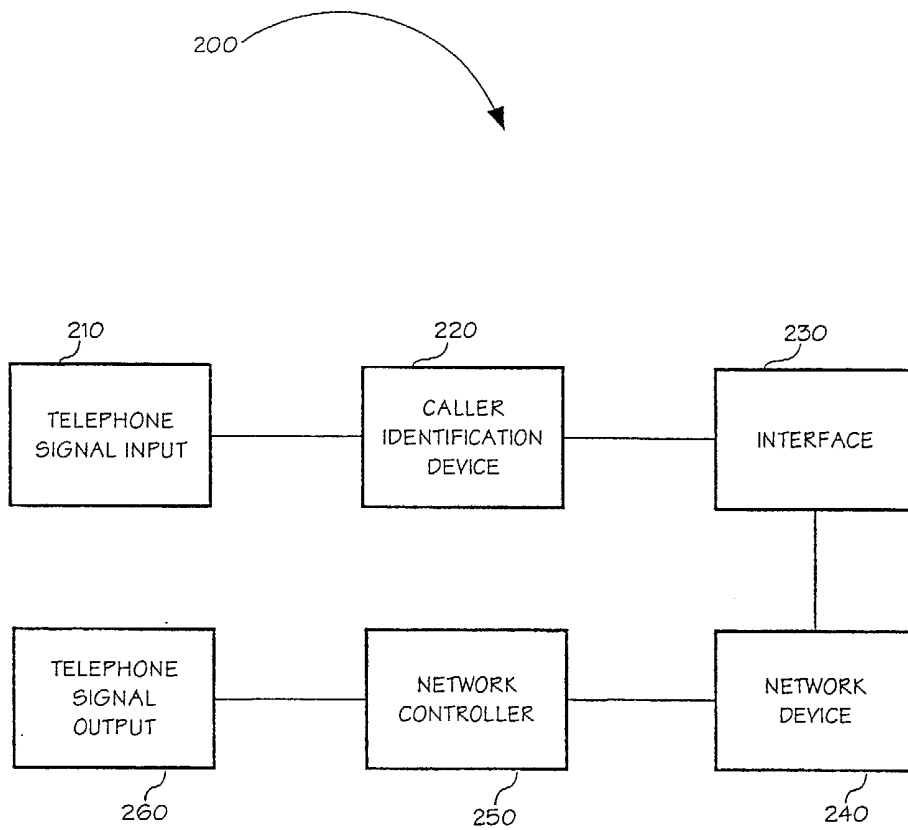


FIG. 2

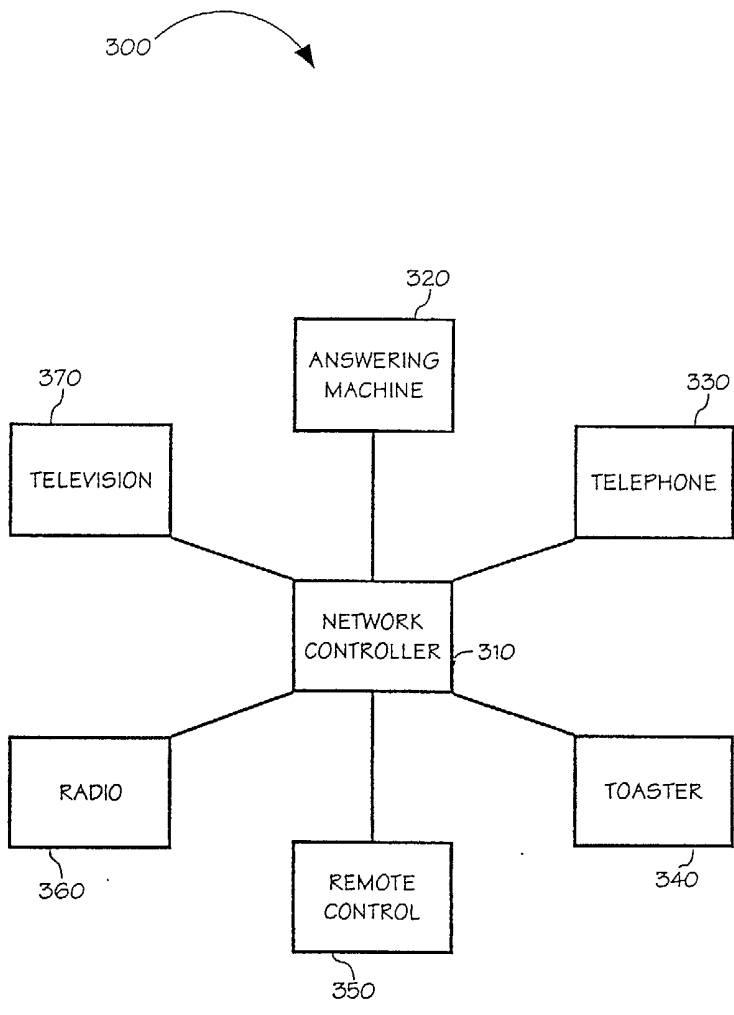


FIG. 3

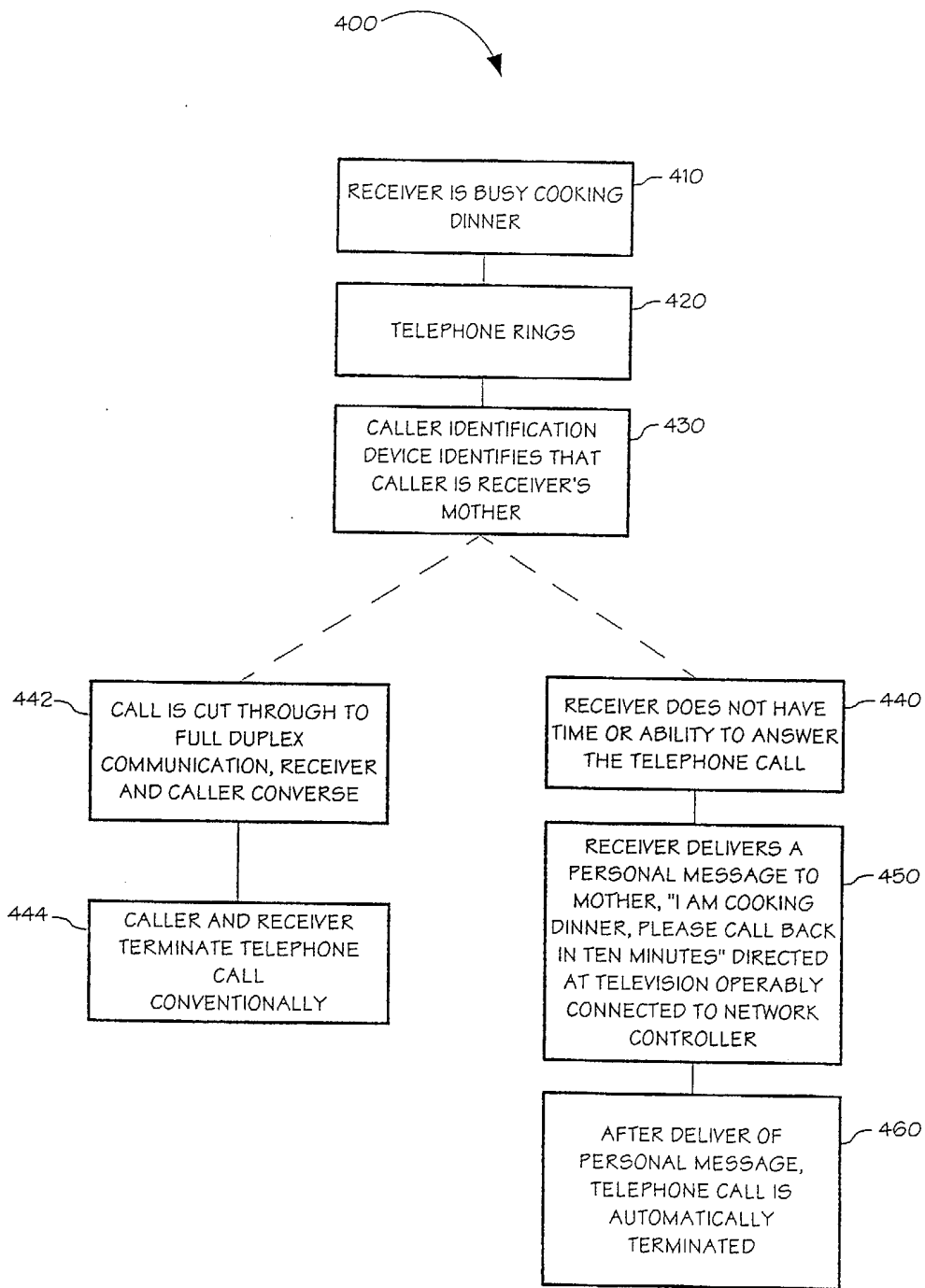


FIG. 4

PSEUDO TELEPHONE CONVERSATION

FIELD OF THE INVENTION

The present invention relates generally to the field of telephone call responding systems and specifically to a system and method of virtually answering a telephone call
5 without engaging in a two-way conversation.

BACKGROUND OF THE INVENTION

Known in the art are devices that allow a caller to leave a message when the person being called (hereinafter the receiver) is unable to answer a telephone call. These devices may be in the form of an answering machine or a voicemail system. Further,
10 systems that allow screening of telephone calls exist that may allow the receiver to disable the telephone or respond with a pre-programmed response during the duration of the telephone call. Yet another related system known to the art is the monitoring of phone calls received and prescribing a personal pre-programmed response dependent upon the identity of the caller. For example, through the utilization of a caller
15 identification device a personal message may be delivered to caller 1 when caller 1's phone is used to call the receiver.

Systems known in the art may be helpful to consumers, however, they are limited in that they may only provide a generic response to a given caller. It would be advantageous if a system existed that would allow a receiver to generate a specific verbal
20 response to a telephone call at the time the telephone call is received. This may allow the receiver to respond to an important phone call with a specific verbal response without requiring the receiver to engage in a two-way conversation and stop what they were doing to answer the telephone call. Further, it would be advantageous if delivery of the verbal response would not require recording and converting of the response prior to the
25 delivery of the response to the caller.

Consequently, the present invention is directed to a system and method for generating a specific verbal response to a telephone call without engaging in a two-way conversation. Further, the present invention is directed to a system and method of responding to a telephone call with a specific verbal response without allowing the caller
30 to speak.

SUMMARY OF THE INVENTION

Accordingly, the present invention is directed to a system and method for generating a specific verbal response to a telephone call without engaging in a two-way conversation. The present invention is further directed to a system and method for
5 responding to a telephone call with a specific personal verbal response without allowing the caller to speak. The present invention is suitable for allowing a caller to respond to a verbal message delivered by a receiver in an alternative embodiment. Utilizing caller identification devices, the receiver may know the identity of a caller and verbalize a response to a network device. The verbal message may be delivered to a network
10 controller that may send it to a telephone line to be heard by the caller without being recorded and converted from an analog to digital format.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention as claimed. The accompanying drawings, which are incorporated in and
15 constitute a part of the specification, illustrate an embodiment of the invention and together with the general description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The numerous advantages of the present invention may be better understood by those skilled in the art by reference to the accompanying figures in which:

20 FIG. 1 depicts an exemplary embodiment of a network controller of the present invention;

FIG. 2 depicts an exemplary block diagram of the components of an exemplary embodiment of the present invention;

FIG. 3 depicts an exemplary home network with exemplary network devices; and

25 FIG. 4 is a flow diagram representing an exemplary process of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Reference will now be made to the presently preferred embodiment of the invention, an example of which is illustrated in the accompanying drawings.

30 Referring now to FIG. 1, a hardware system in accordance with the present invention is shown. The hardware system shown in FIG. 1 is generally representative of

the hardware architecture of a network controller of the present invention. A controller, for example, a processing system 102, controls the network controller 100. The processing system 102 includes a central processing unit such as a microprocessor or microcontroller for executing programs, performing data manipulations and controlling the tasks of the network controller 100. Communication with the processing system 102 may be implemented through a message or system bus 110 for transferring information among the devices of the network controller 100. The system bus 110 may include a data channel for facilitating information transfer between storage and other peripheral devices of the network controller 100. The system bus 110 further provides the set of signals required for communication with processing system 102 including a data bus, address bus, and control bus. The system bus 110 may comprise any state of the art bus architecture according to promulgated standards, for example industry standard architecture (ISA), extended industry standard architecture (EISA), Micro Channel Architecture (MCA), peripheral device interconnect (PCI) local bus, standards promulgated by the Institute of Electrical and Electronics Engineers (IEEE) including IEEE 488 general-purpose interface bus (GPIB), IEEE 696/S-600, and so on. Furthermore, the system bus 110 may be compliant with any promulgated industry standard. For example, the system bus 110 may be designed in compliance with any of the following bus architectures: Industry Standard Architecture (ISA), Extended Industry Standard Architecture (EISA), Micro Channel Architecture, Peripheral Device Interconnect (PCI), Universal Serial Bus (USB), Access bus, IEEE P6394, Apple Desktop Bus (ADB), Concentration Highway Interface (CHI), Fire Wire, Geo Port, or Small Computer Systems Interface (SCSI), for example.

Additionally, the network controller 100 includes a memory 104. In one embodiment, memory 104 is provided on SIMMs (Single In-line Memory Modules), while in another embodiment, memory 104 is provided on DIMMs (Dual In-line Memory Modules), each of which plugs into suitable sockets provided on a motherboard holding many of the other devices shown in FIG. 1. Memory 104 includes standard DRAM (Dynamic Random-Access Memory), EDO (Extended Data Out) DRAM, SDRAM (Synchronous DRAM), or other suitable memory technology. Memory 104 may also include auxiliary memory to provide storage of instructions and data that are loaded into

the memory 104 before execution. Auxiliary memory may include semiconductor based memory such as read-only memory (ROM), programmable read-only memory (PROM) erasable programmable read-only memory (EPROM), electrically erasable read-only memory (EEPROM), or flash memory (block oriented memory similar to EEPROM).

5 The network controller 100 further includes a network connection device or a network interface 106. The network interface 106 communicates between the network controller 100 and a remote device, such as external devices, networks, information sources, or host systems that administer a plurality of network controller s. For example, host systems such as a server or information handling system, may run software
10 controlling the network controller 100, serve as storage for a network controller 100, or coordinate software running separately on each network controller 100. The network interface 106 may provide or receive analog, digital, or radio frequency data. The network interface system 106 preferably implements industry promulgated architecture standards, including Recommended Standard 232 (RS-232) promulgated by the Electrical
15 Industries Association, Infrared Data Association (IrDA) standards, Ethernet IEEE 802 standards (e.g., IEEE 802.3 for broadband and baseband networks, IEEE 802.3z for Gigabit Ethernet, IEEE 802.4 for token passing bus networks, IEEE 802.5 for token ring networks, IEEE 802.6 for metropolitan area networks, 802.66 for wireless networks, and so on), Fibre Channel, digital subscriber line (DSL), asymmetric digital subscriber line
20 (ASDL), frame relay, asynchronous transfer mode (ATM), integrated digital services network (ISDN), personal communications services (PCS), transmission control protocol/Internet protocol (TCP/IP), serial line Internet protocol/point to point protocol (SLIP/PPP), and Universal Serial Bus (USB), as examples. For example, the network interface system 106 may comprise a network adapter, a serial port, parallel port, printer
25 adapter, modem, universal asynchronous receiver-transmitter (UART) port, etc., or use various wireless technologies or links such as an infrared port, radio-frequency (RF) communications adapter, infrared transducers, or RF modem.

The network controller 100 further includes a display system 112 for connecting to a display device 114. The display system 112 may comprise a video display adapter
30 having all of the devices for driving the display device, including video random access memory (VRAM), buffer, and graphics engine as desired. The display device 114 may

comprise a cathode ray tube (CRT) or liquid-crystal display (LCD), or may comprise alternative type of display technologies, such as a light-emitting diode (LED) display, gas or plasma display, or employ flat-screen technology.

A network controller 100 may further include an input/output (I/O) system 116
5 for connecting to one or more I/O devices 118, 120, and up to N number of I/O devices
122. Input/output system 116 may comprise one or more controllers or adapters for
providing interface functions between one or more of I/O devices 118-122. For example,
input/output system 116 may comprise a serial port, parallel port, network adapter,
printer adapter, radio-frequency (RF) communications adapter, universal asynchronous
10 receiver-transmitter (UART) port, etc., for interfacing between corresponding I/O devices
such as a mouse, joystick, trackball, trackpad, trackstick, infrared transducers, printer,
modem, RF modem, bar code reader, charge-coupled device (CCD) reader, scanner,
compact disc (CD), compact disc read-only memory (CD-ROM), digital versatile disc
(DVD), video capture device, touch screen, stylus, electroacoustic transducer,
15 microphone, speaker, etc. It should be appreciated that modification or reconfiguration
of the network controller 100 of FIG. 1 by a person of ordinary skill in the art would not
depart from the scope or the spirit of the present invention.

Although the invention has been described with a certain degree of particularity, it
should be recognized that elements thereof may be altered by persons skilled in the art
20 without departing from the spirit and scope of the invention. One of the embodiments of
the invention can be implemented as sets of instructions resident in the memory 104 of
one or more network controller s configured generally as described in FIG. 1. Until
required by the network controller 100, the set of instructions may be stored in another
readable memory device, for example in a hard disk drive or in a removable memory
25 such as an optical disk for utilization in a CD-ROM drive, a floppy disk for utilization in
a floppy disk drive, a floptical disk for utilization in a floptical drive, or a personal
computer memory card for utilization in a personal computer card slot. Further, the set of
instructions can be stored in the memory of an information handling system and
transmitted over a local area network or a wide area network, such as the Internet, when
30 desired by the user. Additionally, the instructions may be transmitted over a network in
the form of an applet that is interpreted or compiled after transmission to the computer

system rather than prior to transmission. One skilled in the art would appreciate that the physical storage of the sets of instructions or applets physically changes the medium upon which it is stored electrically, magnetically, chemically, physically, optically or holographically so that the medium carries computer readable information.

5 Referring now to FIG. 2, an exemplary embodiment 200 of a block diagram representing components of the present invention is shown. In order to receive a telephone call, a telephone signal input 210 may be present. The telephone signal input 210 may be in the form of a hardwire telephone line entering a home or in the form of a wireless signal. In preferred embodiments, a device for identifying the caller may be
10 employed so that the receiver may properly respond to a telephone call without actually answering the telephone call. Thus, a caller identification device 220 may be incorporated within the present invention in order to identify the caller.

In order to accommodate the delivery of a specific verbal message, an interface 230 may be operably connected to a network controller 250 via a network device 240.
15 An interface 230 may include a microphone and speaker suitable for delivery and acceptance of verbal messages. It should be noted that the present invention may be utilized without a network device by maintaining an operable connection between the interface 230 and the network controller 250.

In an another exemplary embodiment, the interface 230 may be included within a
20 network device 240. For example, a television may be operably connected to the network controller 250 and may include an interface for delivery and acceptance of verbal communication. An advantage of utilizing a network devices lies in the ability to provide total home and workplace access to the present invention cost-effectively because various network devices may be present throughout a home or office. Thus, a user may deliver a
25 verbal message directed towards a network device in every room of his or her home. Examples of network devices 300 that may be utilized with the present invention are shown in FIG. 3. An answering machine 320, telephone 330, toaster 340, computer 350, radio 360, and television 370 may be operably connected to a network controller 310 and function as a network device of the present invention.

30 Referring once again to FIG. 2, a network controller 250 may be operably connected with a network device 240 if a network device is present. The network

controller 250 may accept the verbal message from an interface 230 and network device 240 and may deliver it to a telephone signal output 260. The network controller 250 may be capable of directly receiving the verbal message in real-time and delivering it to a telephone signal output without having to first convert the message and record the message. This may be advantageous as it results in improved sound quality, less processor time, and less processor power required to support delivering the message. The telephone signal output 260 may be in the form of a hardwire telephone line or a wireless telephone line.

Referring now to FIG. 4, an exemplary process of the present invention is described. A receiver may be busy cooking dinner 410 trying to coordinate various servings so that each is ready by a given time. When a receiver is engaged in this type of endeavor, it may be unfeasible or not worthwhile to break from the cooking process. When a telephone rings 420, persons generally do not like to let it ring because there is a chance the phone call may be extremely urgent. Under the present invention, when a telephone rings 420, a caller identification device may be able to identify the telephone number of the caller and the caller's identity. For example, the caller may be the receiver's mother 430.

Unable to conventionally answer the telephone call 440, the receiver may engage in a pseudo telephone conversation utilizing verbal commands. By directing his or her voice towards a network device of the present invention, the receiver may verbally "pick up" the telephone call and deliver a specific verbal message to his or her mother 450. As an example, a television may be located in proximity to the receiver in the kitchen where the receiver may be preparing dinner. By virtually answering the telephone call, the receiver's mother knows to call back in ten minutes while the receiver may continue cooking without having to drop what they were doing. The system of the present invention may allow a receiver to respond to a telephone call "hands free" and without losing concentration on the task at hand. In some embodiments, if the receiver chooses and is able to answer the telephone call 440, the telephone connection is cut through to full-duplex communication 442, which then may proceed as hands free communication continuing until the call is terminated 444 in the conventional manner.

Although the invention has been described with a certain degree of particularity, it should be recognized that elements thereof may be altered by persons skilled in the art without departing from the spirit and scope of the invention. It is believed that the method and apparatus for the present invention and many of its attendant advantages will be understood by the foregoing description, and it will be apparent that various changes may be made in the form, construction, and arrangement of the components thereof without departing from the scope and spirit of the invention or without sacrificing all of its material advantages, the form herein before described being merely an explanatory embodiment thereof. It is the intention of the following claims to encompass and include such changes.

CLAIMS

What is claimed is:

1 1. A telephone call replying system, comprising:
2 (a) a telephone line;
3 (b) a network controller operably connected to said telephone line; and
4 (c) an interface operably connected to said network controller, whereby when a
5 telephone call is received a user may respond to said telephone call via said interface by
6 delivering an verbal message at the time of said telephone call to said interface without
7 engaging in a two-way conversation, said verbal message being sent to said network
8 controller from said interface via an operable connection, said verbal message being
9 further sent from said network controller to said telephone line to be heard by a caller.

1 2. The telephone call replying system as claimed in claim 1, further
2 comprising a caller identification device operably connected to said telephone line
3 suitable for notifying said user of the identity of said caller.

1 3. The telephone call replying system as claimed in claim 1, wherein said
2 operable connection comprises a network device.

1 4. The telephone call replying system as claimed in claim 3, wherein said
2 network device includes said interface.

1 5. The telephone call replying system as claimed in claim 1, wherein said
2 user is capable of picking up a telephone call by a verbal command directed at said
3 interface.

1 6. The telephone call replying system as claimed in claim 1, wherein said
2 telephone call is ended when said verbal message is delivered to said telephone line.

1 7. The telephone call replying system as claimed in claim 1, wherein said
2 telephone call is ended after said verbal message is delivered to said telephone line and a
3 period of time suitable for a caller to respond has passed.

1 8. The telephone call replying system as claimed in claim 7, wherein a caller
2 is capable of responding back to a message delivered by said user.

1 9. The telephone call replying system as claimed in claim 1, wherein said
2 interface includes a microphone and speaker suitable for accommodating verbal
3 communication.

1 10. The telephone call replying system as claimed in claim 1, wherein said
2 telephone line is a hardwire.

1 11. The telephone call replying system as claimed in claim 1, wherein said
2 telephone line is wireless.

1 12. A method of replying to a telephone call, comprising the following steps:
2 (a) responding to a telephone call via an verbal pick-up;
3 (b) delivering a verbal message directed toward an interface at the time of said
4 telephone call to the caller without engaging in a two-way conversation; and
5 (c) ending said telephone call automatically after said verbal message is sent to a
6 caller and after a period of time has passed, wherein said verbal message is sent to
7 a network controller from said interface device via an operable connection, said
8 verbal message being further sent from said network controller to a telephone
9 line.

1 13. The method as claimed in claim 12, further comprising the step of
2 checking a caller identification display to determine the identity of said caller.

1 14. The method as claimed in claim 12, wherein said operable connection
2 comprises a network device.

1 15. The method as claimed in claim 14, wherein said network device includes
2 said interface.

1 16. The method as claimed in claim 12, wherein said period of time is of a
2 duration suitable for preventing caller to respond to said verbal message.

1 17. The method as claimed in claim 12, wherein said period of time is of a
2 duration suitable for allowing caller to respond to said verbal message.

1 18. The method as claimed in claim 12, wherein said interface includes a
2 microphone and speaker suitable for accommodating verbal communication.

1 19. The method as claimed in claim 12, wherein said telephone line is a
2 hardware.

1 20. The method as claimed in claim 12, wherein said telephone line is
2 wireless.

1 21. A program of instructions storable on a medium readable by a network controller
2 for causing the network controller to execute steps to allow a user to verbally respond to a
3 telephone call at the time of the telephone call without engaging in a two-way
4 conversation, the steps comprising:

- 5 (a) detecting that a telephone call is being directed on a telephone line operably
6 connected to a network controller;
- 7 (b) enabling an interface to allow a receiver to generate a verbal message;
- 8 (c) accepting said verbal message delivered by said receiver;
- 9 (d) sending said verbal message to said telephone line to be heard by a caller; and
- 10 (e) terminating said telephone call, wherein a receiver may deliver said verbal
11 message by directing said verbal message to said interface, said interface sending
12 said verbal message to said network controller via an operable connection.

1 22. The program of instructions as claimed in claim 21, wherein said receiver
2 knows the identity of said caller via a caller identification device operably connected to
3 said telephone line.

1 23. The program of instructions as claimed in claim 21, wherein said operable
2 connection comprises a network device.

1 24. The program of instructions as claimed in claim 23, wherein said network
2 device includes said interface.

1 25. The program of instructions as claimed in claim 21, wherein said network
2 controller terminates said telephone call after verbal message is sent to said caller
3 preventing caller from responding to said verbal message.

1 26. The program of instructions as claimed in claim 21, wherein said network
2 controller terminates said telephone call after said verbal message is sent to said caller
3 and a period of time suitable for allowing said caller to respond to said verbal message
4 has passed.

1 27. The program of instructions as claimed in claim 21, wherein said interface
2 includes a microphone and speaker suitable for accommodating verbal communication.

1 28. The program of instructions as claimed in claim 21, wherein said
2 telephone line is a hardwire.

1 29. The program of instructions as claimed in claim 21, wherein said
2 telephone line is wireless.



INVESTOR IN PEOPLE

Application No: GB 0108708.9
Claims searched: 1-29

Examiner: Richard Nicholls
Date of search: 28 November 2001

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK Cl (Ed.S): H4K (KBHE, KBHF)
Int Cl (Ed.7): H04M 1/64
Other: Online databases: WPI, EPODOC, PAJ

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	GB 2343084 A (Siemens) see especially page 1, last paragraph- page 2 line 7	1 and 12 at least

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.