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Hazenfield

(54) **ON-HOLD MESSAGE SYSTEM**

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(60) Provisional application No. 60/349,236, filed on Jan. 18, 2002.

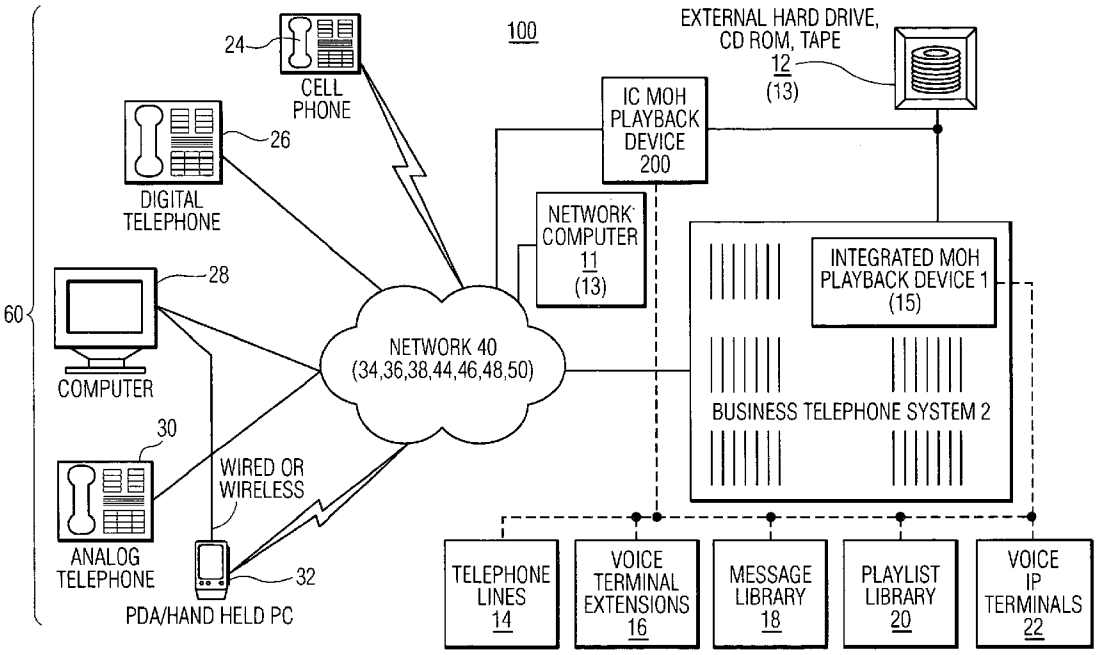
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(57) **ABSTRACT**

A programmable in-the-skin or intelligently connected message on hold delivery system is disclosed which comprises a message storage system and a processor for generating prompts which are transmitted to a control device. The prompts are received at the control device and allow an operator to select from a number of options in order to select, among other things, certain ones of the messages stored on said message storage system for playback, as well as the sequence in which said messages are to be played back. The message playback devices are each provided with one or more libraries of messages, and comprise at least one or more audio and/or visual advertising messages. Said system enables the user to start a pre-recorded audio or visual message at the beginning each time a caller is placed on hold in the telephone system.



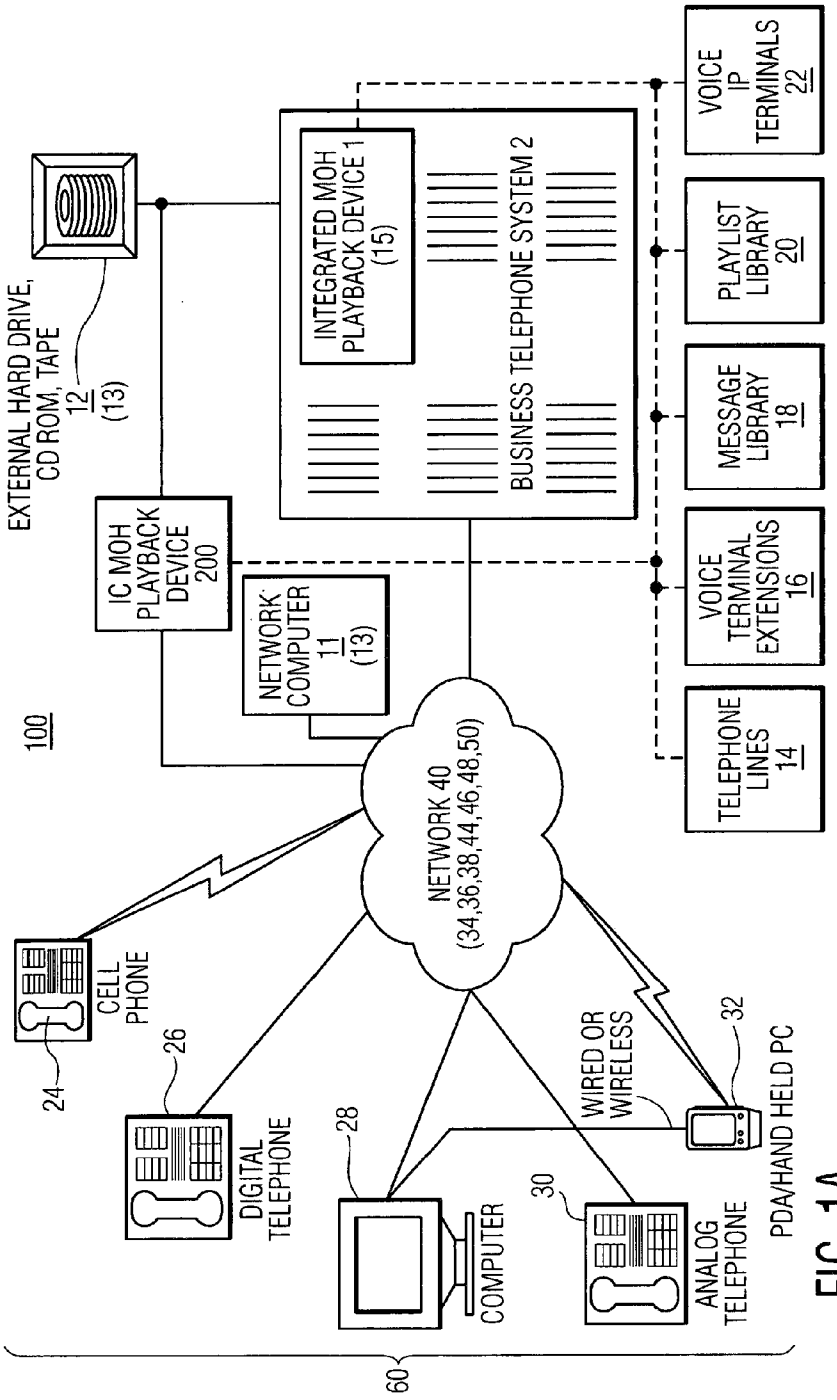

100
EXTERNAL HARD DRIVE, CD ROM, TAPE
12 (13)
INTEGRATED MOH PLAYBACK DEVICE 1 (15)
BUSINESS TELEPHONE SYSTEM 2
VOICE IP TERMINALS 22
PLAYLIST LIBRARY 20
MESSAGE LIBRARY 18
VOICE TERMINAL EXTENSIONS 16
TELEPHONE LINES 14
IC MOH PLAYBACK DEVICE 200
NETWORK COMPUTER 11 (13)
NETWORK 40 (34,36,38,44,46,48,50)
CELL PHONE
24
26
DIGITAL TELEPHONE
28
COMPUTER
30
ANALOG TELEPHONE
WIRED OR WIRELESS
32
PDA/HAND HELD PC
60

FIG. 1A

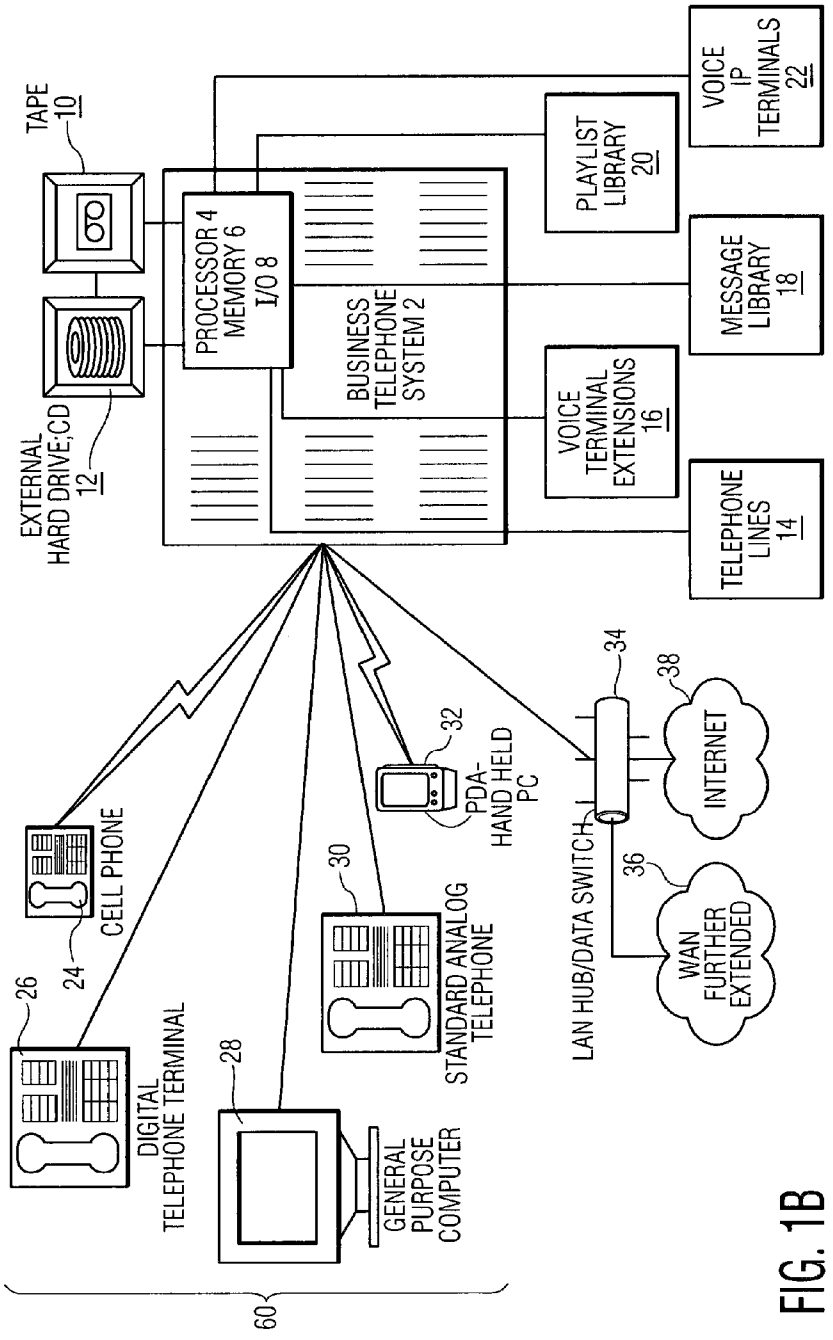

TAPE
10
EXTERNAL
HARD DRIVE;CD
12
PROCESSOR 4
MEMORY 6
I/O 8
BUSINESS
TELEPHONE
SYSTEM 2
PLAYLIST
LIBRARY
20
VOICE
IP
TERMINALS
22
MESSAGE
LIBRARY
18
VOICE
TERMINAL
EXTENSIONS
16
TELEPHONE
LINES
14
CELL PHONE
24
26
DIGITAL
TELEPHONE TERMINAL
28
GENERAL
PURPOSE
COMPUTER
30
STANDARD ANALOG
TELEPHONE
32
PDA-
HAND HELD
PC
34
LAN HUB/DATA SWITCH
36
38
INTERNET
WAN
FURTHER
EXTENDED
60

FIG. 1B

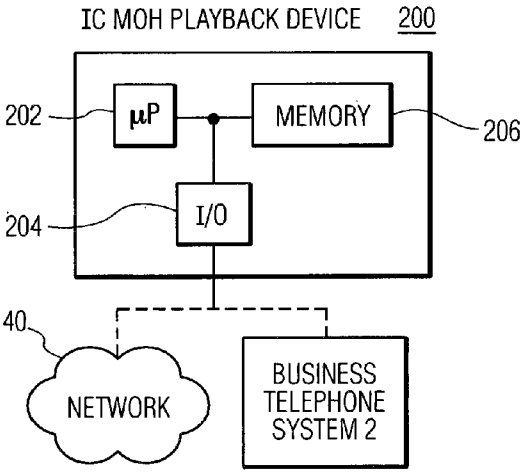

IC MOH PLAYBACK DEVICE 200
202
μP
MEMORY
206
204
I/O
40
NETWORK
BUSINESS TELEPHONE SYSTEM 2

FIG. 2

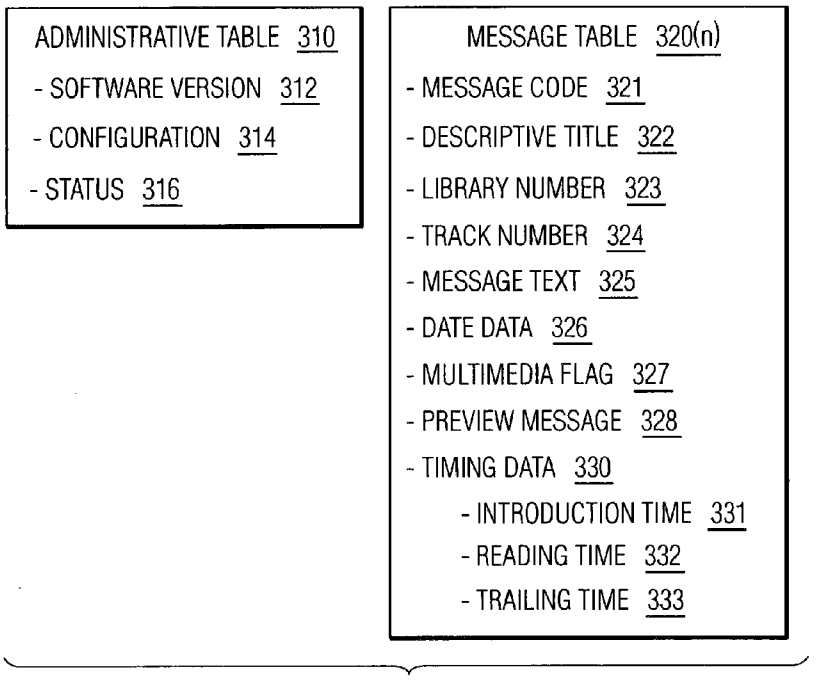

ADMINISTRATIVE TABLE 310
- SOFTWARE VERSION 312
- CONFIGURATION 314
- STATUS 316
MESSAGE TABLE 320(n)
- MESSAGE CODE 321
- DESCRIPTIVE TITLE 322
- LIBRARY NUMBER 323
- TRACK NUMBER 324
- MESSAGE TEXT 325
- DATE DATA 326
- MULTIMEDIA FLAG 327
- PREVIEW MESSAGE 328
- TIMING DATA 330
- INTRODUCTION TIME 331
- READING TIME 332
- TRAILING TIME 333

FIG. 3

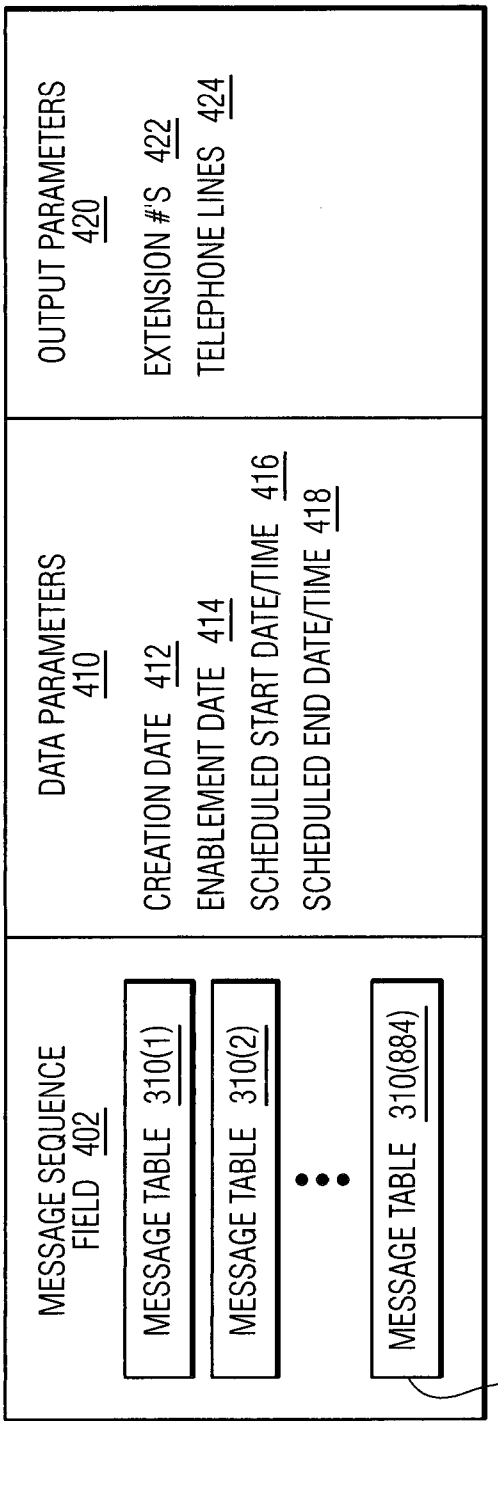

MESSAGE SEQUENCE FIELD 402
MESSAGE TABLE 310(1)
MESSAGE TABLE 310(2)
MESSAGE TABLE 310(884)
DATA PARAMETERS 410
CREATION DATE 412
ENABLEMENT DATE 414
SCHEDULED START DATE/TIME 416
SCHEDULED END DATE/TIME 418
OUTPUT PARAMETERS 420
EXTENSION #'S 422
TELEPHONE LINES 424
MESSAGE PLAYLIST TABLE 400
MESSAGE NAME & NUMBER

FIG. 4

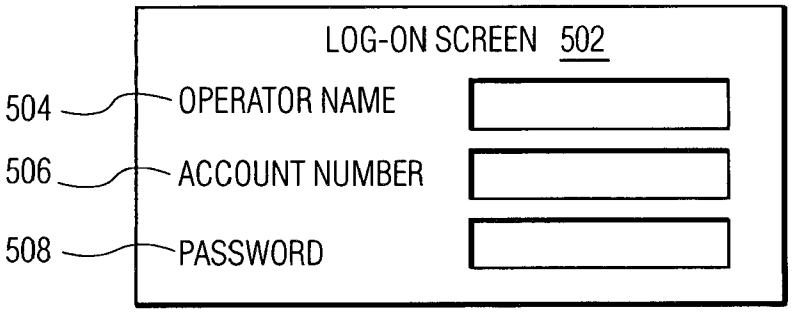

LOG-ON SCREEN 502
504
OPERATOR NAME
506
ACCOUNT NUMBER
508
PASSWORD

FIG. 5

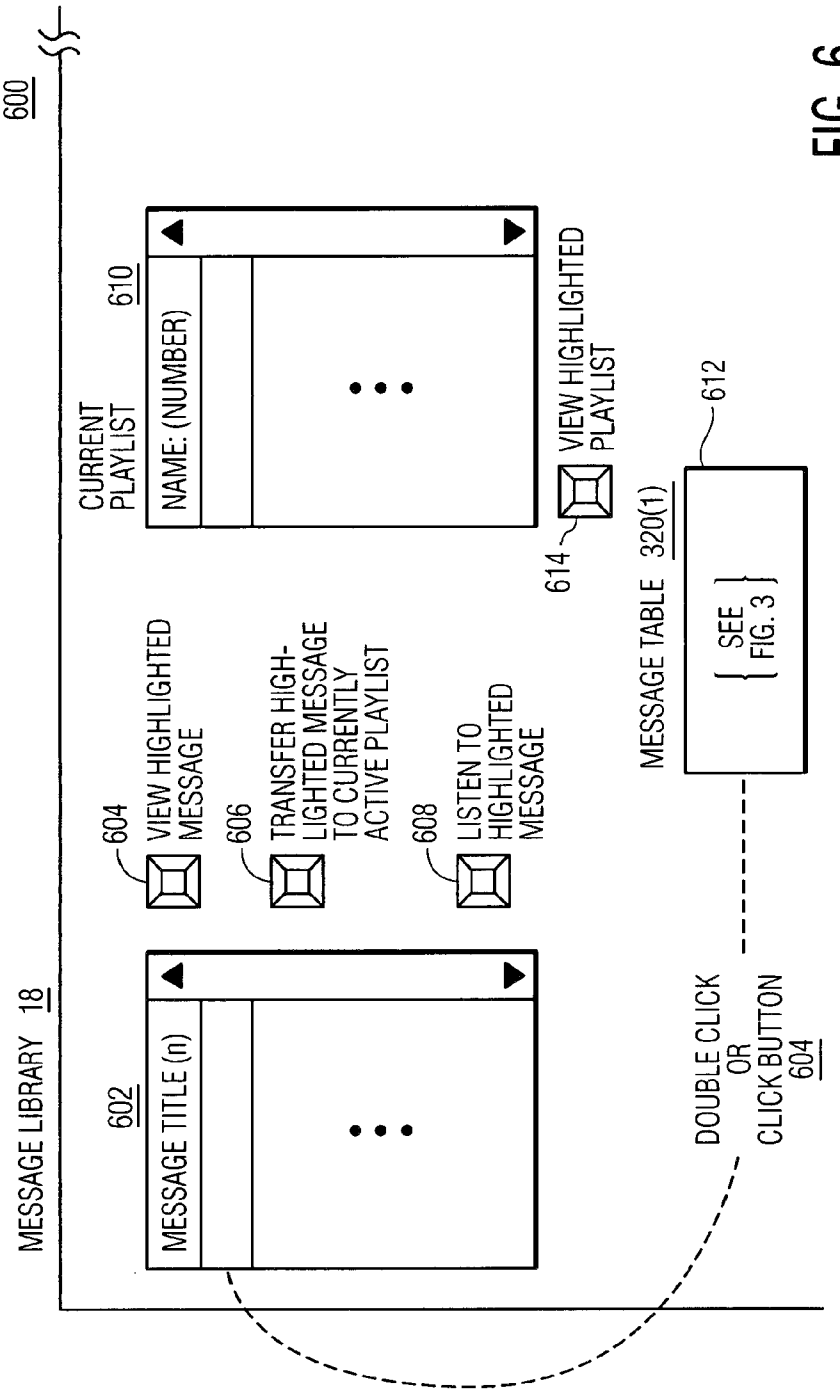

600
MESSAGE LIBRARY 18
602
MESSAGE TITLE (n)
604
VIEW HIGHLIGHTED MESSAGE
606
TRANSFER HIGH-LIGHTED MESSAGE TO CURRENTLY ACTIVE PLAYLIST
608
LISTEN TO HIGHLIGHTED MESSAGE
CURRENT PLAYLIST
610
NAME: (NUMBER)
614
VIEW HIGHLIGHTED PLAYLIST
MESSAGE TABLE 320(1)
612
{ SEE FIG. 3 }
DOUBLE CLICK OR CLICK BUTTON 604

FIG. 6

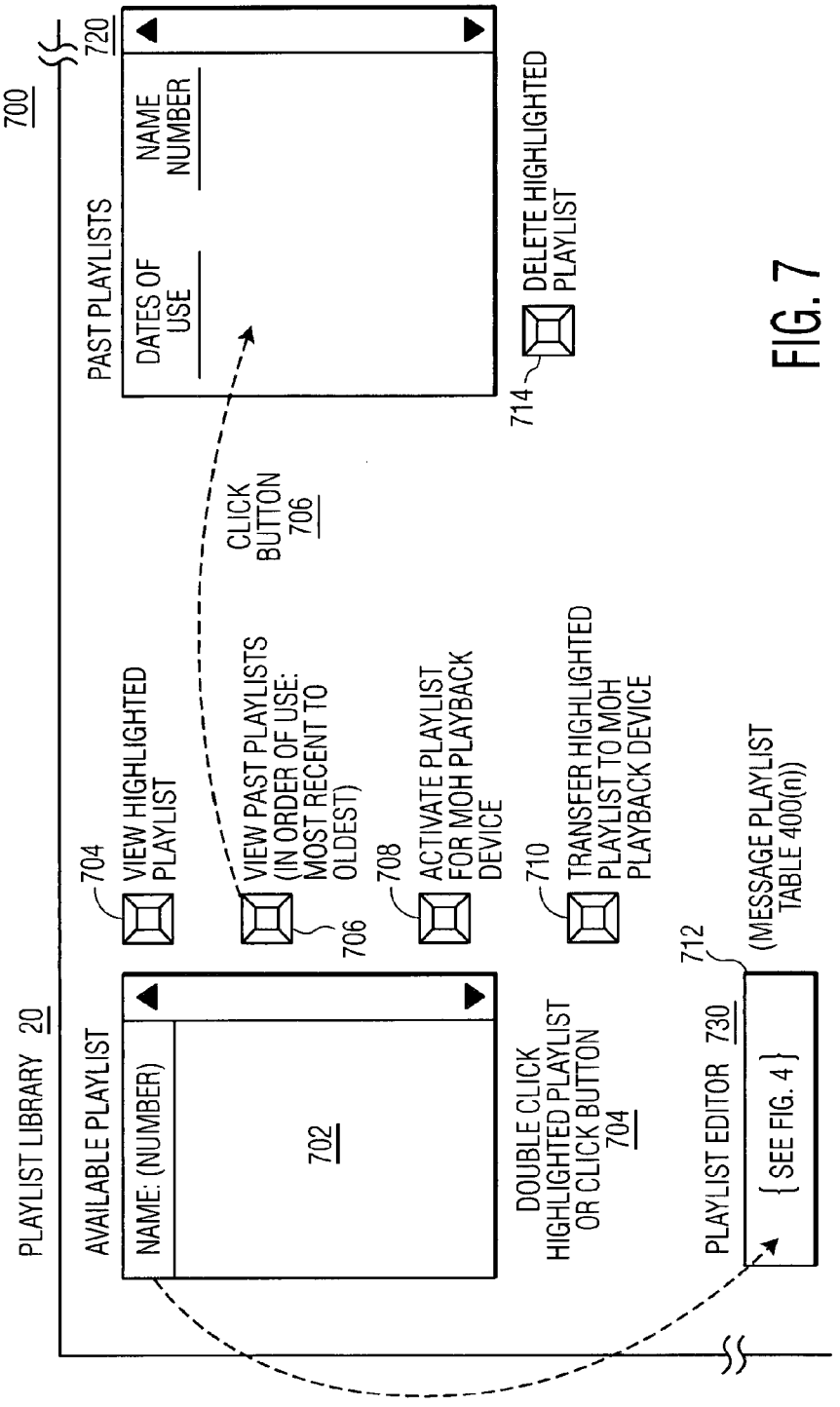

700
720
PAST PLAYLISTS
DATES OF USE
NAME NUMBER
DELETE HIGHLIGHTED PLAYLIST
714
CLICK BUTTON 706
PLAYLIST LIBRARY 20
AVAILABLE PLAYLIST
NAME: (NUMBER)
702
704
VIEW HIGHLIGHTED PLAYLIST
706
VIEW PAST PLAYLISTS (IN ORDER OF USE: MOST RECENT TO OLDEST)
708
ACTIVATE PLAYLIST FOR MOH PLAYBACK DEVICE
710
TRANSFER HIGHLIGHTED PLAYLIST TO MOH PLAYBACK DEVICE
DOUBLE CLICK HIGHLIGHTED PLAYLIST OR CLICK BUTTON 704
712
PLAYLIST EDITOR 730
{SEE FIG. 4}
(MESSAGE PLAYLIST TABLE 400(n))

FIG. 7

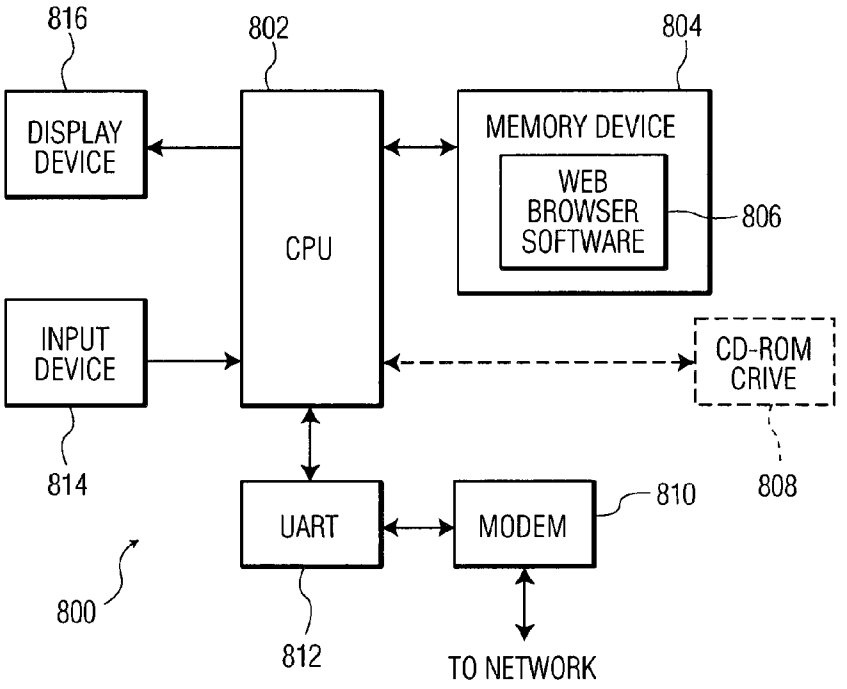

816
802
804
DISPLAY DEVICE
CPU
MEMORY DEVICE
WEB BROWSER SOFTWARE
806
INPUT DEVICE
CD-ROM CRIVE
814
808
UART
MODEM
810
800
812
TO NETWORK

FIG. 8

ON-HOLD MESSAGE SYSTEM

CROSS-REFERENCE

[0001] This is a continuation of U.S. patent application Ser. No. 13/600,852, filed Aug. 31, 2012 (Pending), which is a continuation of U.S. patent application Ser. No. 11,783,188, filed Apr. 6, 2007 (U.S. Pat. No. 8,259,912 issued Sep. 4, 2012), which is a continuation of U.S. patent application Ser. No. 10/345,413, filed on Jan. 16, 2003 (Abandoned), which in turn claims priority under 35 U.S.C. §119(e) to U.S. Provisional Patent Application Ser. No. 60/349,236, filed on Jan. 18, 2002 (Expired), the disclosures of which are incorporated by reference herein in their entirety.

FIELD OF INVENTION

[0002] The invention is related to on-hold message systems for business telephone systems. More specifically, the invention relates to an intelligent integrated message on-hold system that allows a user, connected through an intelligent interface, to store and randomly access selected pre-recorded messages with a variety of options for playback of the messages when callers are placed on hold. Additional features include, but are not limited to, the ability to start the stored message at the beginning of the message each time a call is placed on hold if desired.

BACKGROUND OF THE INVENTION

[0003] Many businesses use music or audio promotions of products or services while the customer is placed on-hold and waiting for assistance. Most existing telephone systems use externally connected tape players, digital announcers or CD players as the audio source. These external audio sources are connected through a port on the telephone system and are referred to as "dumb connections." They are called dumb connections because there is no ability to interact, or program the external audio source.

[0004] A prior art message on-hold (MOH) telephone system is disclosed in U.S. Pat. No. 5,870,461 to Hazenfield (the '461 patent), the entire contents of which are expressly incorporated herein by reference. The MOH system disclosed in the '461 patent provides the ability to add or delete individual audio messages from a playlist and to change the play sequence of messages stored within the business telephone system. Another prior art MOH telephone system is disclosed in U.S. Pat. No. 5,991,374 to Hazenfield (the '374 patent) the entire contents of which are expressly incorporated herein by reference. The '374 patent discloses a programmable on-hold message system for controlling the playback of messages in music on-hold compatible telephone systems by providing the user with a geographic user interface for control of messages and track selection. The system is intelligent but interfaces to the telephone system through a dumb connection.

[0005] What does not currently exist is an MOH system which can be accessed from any general purpose computer, dual-tone multi frequency (DTMF) telephone or digital electronic terminal. Such a system could provide play-lists of messages from a library of messages contained on a local storage unit, located within the telephone system, i.e., as an integrated feature of the business telephone system. By incorporating an intelligent interface to the business telephone system, an operator could modify the playlists by adding messages, deleting messages, or changing the order of messages in each playlist. Furthermore, in such a system, it would be advantageous to be able to assign different telephone extensions within a business phone system to particular playlists when callers calling those extensions are placed on hold. In this manner, callers calling an engineering department of a company, for instance, could hear messages related to engineering. Callers calling extensions in a sales department could hear messages related to recent product offerings. It would further be advantageous to extend the features of such a system to allow two (or more) companies to share a phone system but provide separate messages to be played to the callers placed on hold for each company sharing such a system. Furthermore, the messages related to the two (or more) different companies could be assigned to different playlists, with callers calling a first company listening to messages related to the first company, callers calling a second company listening to messages related to the second company, and so on. Furthermore, it would be advantageous to provide the ability to start the messages at the beginning of the tracks, instead of at random points within the tracks, as is found in the prior art.

[0006] The above objectives are met and other advantages are realized in a method and system according to the present invention, in which messages are stored in and retrieved from one or more message libraries, each library containing one or more messages. The message playback system is capable of generating audible and/or visual prompts to assist an operator to select various options in order to change message playback parameters. Among the parameters which can be changed are a playlist for determining a sequence in which messages are played, and an extension list or trunk (telephone line) list for determining which message libraries are associated with various extensions or telephone lines.

SUMMARY OF THE INVENTION

[0007] In accordance with an aspect of the present invention, a programmable message delivery system is provided which allows operators to specify message sequences that are to be played at one or more sites via a telephone system. The message delivery system allows for storing a plurality of messages and for controlling at least one or more of the stored messages. The message delivery system allows the operator to make several choices. These choices include selecting which message(s) in a message library is (are) to be played; the sequence in which the messages are to be played; which telephone extensions are to be associated with a particular message library; and a system and method for implementing these choices.

[0008] In accordance with yet another aspect of the invention, the interface between the user and the message delivery system is a digital proprietary terminal, a telephone instrument, or a general purpose computer connected via a network (which can be the Internet, an intranet, LAN, WAN, or public or private phone line (wireless or wired)) to a business telephone system. If, for example, the user interface is a general purpose computer accessing the message delivery system via the Internet, prompts generated by the message delivery system, comprise web pages viewable on the general purpose computer having a web browser. An operator accesses the web pages via the computer and makes selections via an input device such as a mouse or keyboard. The choices are communicated back to the message delivery system.

[0009] In accordance with a further aspect of the invention, the communication link is a telephone network, and the remote communication device is a standard DTMF tele-

phone. A remote operator accesses the message delivery system by calling the telephone number assigned to the message delivery system. The processor of the message delivery system then generates audio prompts which are transmitted to the operator over the telephone network. The operator is able to make selections by pressing appropriate keys on the DTMF telephone. The operator's selections are transmitted back over the telephone network and received by the message delivery system. The operator's selections are then implemented by the message delivery system.

[0010] In accordance with still another aspect of the present invention, the processor of the message delivery system is programmable to generate prompts which allow a user to select a message from the message directory and to display a full text script of the message, or listen to at least a portion of the message.

[0011] In accordance with yet another aspect of the present invention, the processor of the message delivery system is programmable to receive control signals from a communication device and to implement selections represented by the control signals, such selections affecting parameters of the message delivery system, such as whether any messages should be deleted, the sequence in which messages are to be played, and which message libraries are associated with certain telephone extensions or telephone lines connected to the business telephone system.

[0012] In accordance with still another aspect of the present invention, the telephone system is able to start a pre-recorded message at the beginning of the message when a caller is placed on hold. Additionally, a further aspect of the invention allows the user of the message delivery system to store one or more messages and recall these messages using a set of commands from within the telephone system and store the messages, preferably, within the body of the phone system, or externally with an intelligent connection to the message delivery system. Furthermore, video and/or multimedia messages maybe displayed to callers with appropriate phone or communication systems, when they are placed on hold.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The novel features and advantages of the present invention will be more readily apprehended from the detailed description of the preferred embodiments which follows, when read in connection with the appended drawings, which form a part of this original disclosure, and wherein:

[0014] FIGS. **1**A and **1**B are schematic block diagrams of alternative embodiments of a programmable integrated message on-hold delivery system constructed in accordance with an embodiment of the present invention;

[0015] FIG. **2** is a schematic block diagram of a intelligently connected message on-hold playback device constructed in accordance with an embodiment of the present invention and connected to a conventional message on-hold compatible telephone system;

[0016] FIG. **3** illustrates a block diagram representation of an administrative and message database table used in conjunction with an embodiment of the invention;

[0017] FIG. **4** illustrates a block diagram representation of a message playlist database table used in conjunction with an embodiment of the invention;

[0018] FIG. **5** is a representation of a graphic interface for use in a message on-hold system according to an embodiment of the invention;

[0019] FIG. **6** illustrates a block diagram representation of a graphic interface for use in the message on-hold delivery system for selecting messages for a playlist via a message on-hold website;

[0020] FIG. **7** illustrates a block diagram representation of a graphic interface for use in the message on-hold delivery system for programming a playlist via a message on-hold website; and

[0021] FIG. **8** illustrates a schematic block diagram of a general purpose computer for accessing the pre-recorded on-hold messages in accordance with an embodiment of the present invention.

DETAILED DESCRIPTION

[0022] The various features of the preferred embodiments will now be described with reference to the drawing figures, in which like parts are identified with the same reference characters. The following description of the presently contemplated best mode of practicing the invention is not to be taken in a limiting sense, but is provided merely for the purpose of describing the general principles of the invention.

[0023] FIGS. **1**A and **1**B are schematic block diagrams of alternative embodiments of a programmable integrated message on-hold delivery system constructed in accordance with an embodiment of the present invention. FIG. **1**A depicts both an intelligently connected message on-hold playback device (IC MOH playback device) **200** and an integrated message on-hold playback device (IMOH playback device) **1** as part of a message on-hold delivery system **100**. Either IC MOH playback device **200** or IMOH playback device **1**, in conjunction with business telephone system **2** and the other elements shown and described below comprises a message on-hold delivery system **100**. "Intelligently connected" means that the playback devices (i.e., message memory or storage devices) have an integrated microprocessor and input/output communication hardware, which further means that they can receive instructions, store instructions and act upon those instructions at the present or some later time. IMOH playback device **1** has the same features as IC MOH playback device **200**, but is instead built within business telephone system **2**, perhaps as a computer card, or other similar type of hardware design that achieves integration within the physical framework of business telephone system **2**. Either IMOH playback device **1** or IC MOH playback device **200** communicates with business telephone system **2**, for the playback of messages to callers within the business telephone system while placed on-hold. The term "message" used herein refers to music, advertisements or other recorded audio or multi-media messages, which can be played for a person whose telephone or video call has been answered by a human or auto-attendant device of the business telephone system.

[0024] The message on-hold delivery system **100** of FIG. **1**A comprises either IMOH playback device **1** or IC MOH playback device **200**, business telephone system **2** (which is a conventional message on-hold (MOH) telephone system), external message storage devices **13** (tape, CD ROM, external hard drive **12**), network computer **11** (with various memory devices), network **40**, interfaces between components and remote devices **60**. Network **40** and remote devices **60** each comprise many different types of devices, which will be discussed in detail below. External message storage devices comprise a tape player, CD ROM and/or external hard drive **12** and the memory located within or attached to network computer **11**.

[0025] As shown in FIG. **1**B, internal message on-hold (IMOH) playback device **1** comprises a processor **4**, memory **6** and input/output hardware **8**. In both IMOH playback device **1** and IC MOH playback device **200**, program instructions are stored within their respective memory devices which enable the processors within to perform the process of a message on-hold system. It is well known in the art that such instructions may be stored in suitable and appropriate memory.

[0026] Remote devices **60** of message on-hold delivery system **100** comprise a cell phone **24**, a digital telephone **26**, a general purpose computer (computer) **28**, an analog telephone **30** and/or a personal digital assistant (PDA) **32**. Network **40** comprises a LAN **34**, a WAN **36**, the Internet **38**, a private phone network **44**, a cellular phone network **46**, a satellite phone network **48** and/or a public switched telephone network (PSTN) **50**. These can be used singularly or in various combinations with each other. For example, cell phone **24** will most certainly interface with cellular network **46**, which may then interface with PSTN **50**. Or, PDA **32** can interface directly with cellular network **46**, or through computer **28**, which then might interface with PSTN **50** to connect to business telephone system **2**. Because computer **28** (as well as cell phone **24** and PDA **32**) can be used with the Internet, a web browser might be available as an interface to messaging on-hold delivery system **100**. Additionally, there might be a private phone network **44** which is a final network within the "walls" of the business such that all other networks interface directly to it. A discussion of all possible means of interfacing remote devices **60** with business phone system **2** is beyond the level necessary for an understanding of the present invention. It is generally known, and understood by those skilled in the art, that any of those remote devices listed, or which in the future become available to the public or private sector to use, can be used in accordance with the system and methods of the invention, and an intimate understanding of how these communications work is not needed to understand how the present invention works.

[0027] FIG. **2** is a schematic block diagram of an intelligently connected message on-hold playback device constructed in accordance with an embodiment of the present invention and connected to a conventional message on-hold compatible telephone system **2**. Intelligently connected message on-hold (IC MOH) playback device **200** comprises a processor **202**, memory **206** and input/output (I/O **204**). Note that in FIG. **1**A, IC MOH playback device **200** is shown with a connection to both network **40** and directly to business telephone system **2**. In the former case, communications to and from IC MOH playback device **200** are through network **40**, which might include a LAN **34** (FIG. **1**B) and/or a private phone network **44**. In this case, the network computer **11** will facilitate communications. In the latter case, IC MOH playback device **200** will communicate directly with business telephone system **2**. Memory **206** will hereinafter be referred to as an external message storage device **13**. External message storage devices **13** include not only external hard drive/CD ROM and tape, but also the memory component of network computer **11**. Essentially, any message storing memory device that is not physically located within business telephone system **2** is considered to be an external message storing device **13**. Any message storing memory device **15** physically located with business telephone system **2** is considered to be an internal message storage device. Any and all of the memory devices are capable of storing messages for use in the messaging on-hold delivery system **100**, and can be accessed by the business telephone system **2** when the playback of messages for on-hold callers is necessary.

[0028] Referring back to FIG. **1**A, remote devices **60** are capable of controlling the playback and programming of messages. Although an apparently exhaustive list of remote devices and network systems has been presented, it should be realized by those skilled in the art that other combinations of network types and remote devices **60** are contemplated to be within the scope of the present invention. Messages can be stored in any of the external message storage devices **13** and/or internal message storage devices **15**. Internal message storage devices **15** might also comprise an integrated circuit chip, such as a random access memory storage device or even a read-only memory (ROM) storage device. Message on-hold delivery system **100**, which also comprises executable software instructions located within memory **206** of IC MOH playback device **200** and memory **6** of JMOH playback device **1** (as well as the associated aforementioned hardware) can access any of the internal message storage devices **15** and external message storage devices **13**, to obtain specific, individual pre-recorded messages as necessary. Through the use of network **40** and remote devices **60**, members of the business (or multiple businesses for a shared message on-hold delivery system **100**) that own message on-hold delivery system **100** can record or download new messages.

[0029] In accordance with the present invention, both playback devices **1**, **200** utilize internal and external message storage devices **13**, **15** to store header information pertaining to each message stored in the storage device, such as a message number, an alphanumeric message title, etc. Header information can be accessed by the processors **4**, **202** to generate prompts which are transmitted to one or more of the remote devices **60** to inform the operator which messages are available in external and internal message storage devices **13**, **15**. Header information may also be used by processor **4**, **202** to define playlists, and the number and content of playlists may also be conveyed to operators using one or more of remotes devices **60**. Furthermore, processors **4**, **202** can transmit at least a portion of each message to any of remote communication devices **60** to further assist an operator of the system in identifying messages and configuring the playlist (i.e., for use in previewing the stored messages).

[0030] Thus, in accordance with the present invention, both playback devices **1**, **200** can be programmed by operators using any of remote devices **60** to select and play messages stored in memory within (or accessible to) each playback device **1**, **200** in the business telephone system **2**. Furthermore, message on-hold delivery system **100** simplifies the process of selecting message playlists and allows an operator to more effectively maintain a promotional program for customers placed on-hold.

[0031] Processors **4**, **202** of message on-hold delivery system **100**, are each programmed to generate prompts based on existing data structures. This allows operators to define and update message playlists and any other necessary parameters related to the configuration of the messages via remote communication devices **60**. The data structures stored in both playback devices **1**, **200** comprise identification codes corresponding to each message stored in either playback device **1**, **200** (or memory accessible to each); playlists currently in use; telephone extensions connected to business telephone system **2** that are associated with each playlist, and alternate playlists (e.g., playlists having future effective dates), among other

data. Additionally, processors **4**, **202** are also programmed to provide an interface by generating prompts which are transmitted to all or any of remote devices **60** for guiding an operator when making changes to the configuration of messaging on-hold delivery system **100** (e.g., defining a new playlist or modifying existing records).

[0032] If remote communication device **60** is computer **28** with a standard web browser, then both playback devices **1**, **200** will be configured to generate prompts as HTML web pages to be displayed in the browser window of computer **28**. Playback devices **1**, **200** will also be programmed to respond to input from computer **28**, such as data entered via a keyboard, keypad, or clicks of a mouse. Alternatively, if the remote device **60** is either digital telephone **26** or analog telephone **30**, external and internal message storage devices **13**, **15** will be configured to generate prompts in the form of audio messages which are heard by the operator of the telephones **26**, **30** (audio prompts may also be configured to be sent to computer **28**, and possibly PDA **32**, if operating through the Internet). The prompts will provide guidance to the operator, including instructions on pressing certain telephone keys to cause certain actions. Playback devices **1**, **200** will be further adapted to receive response signals from the telephones **26**, **30** based on keys which are pressed by their operator(s).

[0033] FIG. **3** illustrates a block diagram representation of administrative and message database tables used in conjunction with an embodiment of the invention. Playback devices **1**, **200** of messaging on-hold delivery system **100**, store various data structures in database tables. Administrative table **310** includes data such as software version data **312** (i.e., the version of software running on playback device **1**, **200**), configuration data **314** (i.e., the date and time when the configuration of playback device **1**, **200** was last programmed) and status data **316** (i.e., when the status of playback device **1**, **200** was last read).

[0034] In addition to administrative table **310**, playback devices **1**, **200** store message tables **320**. Each message in message on-hold delivery system **100** is preferably defined in a separate message table **320**. Thus, in FIG. **3**, the message table is denoted as "**320**(*n*)" the "n" indicating a number of the message table, which can be unlimited, but in a practical sense will be limited by memory storage costs, etc. Message table **320** defines a single message currently in existence in each playback device **1**, **200** of message on-hold delivery system **100**. Changes to message table **320**(*n*) may occur when individual messages are added to, deleted from, or modified within, playback device **1**, **200**.

[0035] Message table **320**(*n*) comprises a plurality of fields, some of which are interactive, for storing and/or retrieving information about the particular message. This information includes: message code **321** (which uniquely identifies that message); descriptive title **322** for the message (i.e., header information, discussed above); library number **323**; track number **324** (i.e., the actual track number on internal or external message memory storage devices **13**, **15** that contains the audio and/or video data); message text **325** (for storing the text of the message for generation, if desired, on the screen of computer **28**); date data **326** (the date on which the message was recorded); multimedia flag **327** (which is an identification of either an audio or multimedia file version of the message, which can be transmitted to an appropriate remote device **60** for playback); message preview **328** (which will preview the message with an appropriately connected remote device **60**); and timing data **330**, which further comprises introduction time **331**, reading time **332** and trailer time **333** (all timing data is in seconds). The unique message codes in the message tables preferably consist of a single number.

[0036] FIG. **4** illustrates a block diagram representation of a message playlist database table used in conjunction with an embodiment of the invention. Message playlist table **400** is stored in memory within (or accessible to) playback devices **1**, **200**. Message playlist table **400** comprises three major sections: the first is message sequence field **402**, the second is message data parameters **410** and the third is output parameters **420**. Message sequence field **402** contains a list of the messages that comprise the playlist. The "playlist" is, as its name denotes, a list of the messages that the message on-hold system will play when a caller is placed on hold; however, within the structure of playback device **1**, **200**, the playlist is referred to as message playlist table **400**(*n*). The "n" denotes that there may be a plurality of playlists created by any operator of messaging on-hold system **100**). The messages in the message sequence field **402** are listed according to their message table number (i.e., message table **310**(**1**), message table **310**(**5**), etc.). The order within message sequence field **402** is the order in which the messages will be played. Thus, in FIG. **4**, the message defined by message table **310**(**1**) will be played first, followed by the message defined in message table **310** (**5**), etc.

[0037] The second section of message playlist **400** is data parameters **410**. Data parameters **410** include creation date **412**, enablement date **414**, scheduled start date/time **416** and scheduled end date/time **418**. The third section of message playlist table **400** is output parameters **420**. In output parameters **420**, extension numbers **422** and/or telephone lines **424** are listed which will play the message sequence defined in message sequence field **402**.

[0038] Various graphic and textual displays can be displayed on a messaging on-hold (MOH) website for remote devices **60** that are capable of accessing the MOH website and displaying these displays. Some remote devices are capable of receiving textual displays only, and those remote devices **60** will be discussed below. The principal aforementioned remote device **60** capable of displaying the graphic displays is computer **28**, and possibly PDA **32**. The graphic and textual displays correspond to prompts generated by the message on-hold delivery system **100**, and transmitted to computer **28**. The graphic and textual displays are created in a conventional manner using, for example, relational database software, such that data entered into the fields on the screens are processed and stored to tables and are otherwise used to generate message playlists in the message on-hold delivery system **100**.

[0039] FIG. **5** is a representation of a graphic interface for use in a message on-hold system according to an embodiment of the invention. The processors in each of playback devices **1**, **200** are programmed to generate a number of prompts to guide an operator through the process of generating message playlists, as well as modifying existing playlists. The prompts generated by the processors of playback devices **1**, **200** allow an operator to describe relationships between extension numbers **422** and telephone lines **424** connected to business phone system **2**, and message tables **310**(*n*) and message playlist tables **400**(*n*) in both graphical (i.e., MOH website use) or audible terms, which are then recorded in the memory of playback devices **1**, **200**. If a MOH website is used, a number of graphic interfaces representing the display of prompts are depicted on a remote computer in FIG. **1**. Of course, where

visual prompts are described in relation to a computer having a web browser, similar menu prompts could easily be generated and responded to, in the form of DTMF tones. As shown in FIG. **5**, the processors of both playback devices **1**, **200** are programmed to generate a log-on screen **502** which prompts the operator to enter the operator's name **504**, an account number **506** and a password **508**. Once a valid password **508** is entered and recognized as such, the processors of each playback device **1**, **200** are programmed to generate a main window screen which is transmitted to the computer **28**.

[0040] FIG. **6** illustrates a block diagram representation of a graphic interface for use in the message on-hold delivery system for selecting messages for a playlist via a message on-hold website. Referring back to FIG. **1**, there was shown five graphic interfaces that operators having access to a MOH website might use: telephone lines **14**, voice terminal extensions **16**, message library **18**, playlist library **20** and voice Internet Protocol (IP) terminals **22**. Message library **18**, shown in detail in FIG. **6**, shows a list, in window **602**, of all of the messages available to the operator by message title and number. Double-clicking on any message in the list or clicking on the button **604** opens its corresponding message table **320**(*n*) viewer screen. Message table **320**(*n*) viewer screen allows the operator to view message parameters, and along with the buttons in message library **18**, to play a portion of the message through the remote device **60**, and to accept and transfer the highlighted message for playback from playback devices **1**, **200** located at messaging on-hold delivery system **100**. Window **602** shows all the messages available for selection. There are up/down arrow buttons for scrolling through the available messages. Clicking on button **604** will view (i.e., "open") the highlighted message table **320**(*n*), so that the operator might see all the relevant data associated with the message. Button **606**, when clicked, will transfer the highlighted message to the currently active playlist. A playlist can be chosen to be currently active in two ways: first, by using window **610** to chose a playlist to become active (by double clicking, and confirming the selection), or, secondly, by using playlist library **20**, which will be discussed in detail below. When message library **18** first opens, window **610** lists playlists associated with playback device **1**, **200**, and highlights the currently active playlist. Clicking button **614** then opens message playlist table **400**(*n*), which is also known as playlist editor **730**, shown in detail in FIG. **7**. Clicking on button **608** allows an operator of an appropriate remote device **60** to listen to the message before selection, if desired. FIG. **6** shows the effect of either clicking on button **604** or double clicking on a highlighted message title in window **602** (corresponding to message table **320**(**1**)), which then opens message table **320** (**1**) as window **612**.

[0041] FIG. **7** illustrates a block diagram representation of a graphic interface for use in the message on-hold delivery system for programming a playlist via a message on-hold website. Playlist library **20** is shown in FIG. **7**. All available playlists are shown in window **702**; double clicking on any one of them, or clicking the "view highlighted playlist" button **704** will open its corresponding message playlist table **400** (*n*), where "n" is the number of the playlist. Playlists in window **702** are listed by playlist name and number (n). Clicking button **706** opens window **720**, and shows all the playlists ever used (unless the history file is purposely expunged) with playback devices **1**, **200**. Clicking on button **708** displays the active playlist for playback device **1**, **200** in window **712** (when playlist library **20** first opens, the active playlist is already highlighted). Clicking on button **710** transfers (after seeking confirmation) the highlighted playlist to playback devices **1**, **200** as the active playlist. Clicking on button **714** deletes the highlighted playlist from playback devices **1**, **200**.

[0042] Window **712** is essentially the same window as seen in FIG. **4**, i.e., message playlist table **400**. When viewed in playlist library **20**, it is also referred to as playlist editor **730**. Playlist editor **730** indicates whether or not a playlist has an effective transmission date, the telephone extensions or telephone lines on which the playlist is to be played, as well as the messages in the playlist. Extension numbers can be specified by clicking on the extension numbers box **422** in message playlist table **400**(*n*), which will show a window that displays all the extension numbers a for locations associated with on-hold delivery system **100**. These extension numbers can then be activated by being selected and dragged to an "activate extension numbers" window, or by double clicking on each individual extension number and dragging it to the "activate extension numbers" window. Alternatively, an "All" button can be clicked to automatically list all telephone extensions highlighted in the area **712**. Messages can be selected by clicking them in the message library area **18** or on the message viewer screen (e.g., screen **612**). A remove button not shown is provided to remove selected ones or all of the messages in the current playlist **610**. The entries in the playlist area **12** can then be saved or canceled by clicking a "Save" button (not shown) or a "delete" button (not shown), respectively. The playback device **1**, **200** is programmed to update its memory to reflect changes made through the interaction of the various prompts transmitted and displayed in the form of screens on a remote computer or control device controlled by the operator.

[0043] As stated previously, processors **4**, **202** of the playback **1**, **200** are programmed to generate prompts to guide the operator in describing relationships between messages, playlists, and telephone extensions and lines. The various prompts provide for a variety of transactions between the message on-hold delivery system **100**, playback devices **1**, **200** and the operator. FIG. **8** is a schematic block diagram of a general purpose computer for accessing the message-on-hold prerecorded messages in accordance with an embodiment of the present invention.

[0044] The message on-hold delivery system **100** realizes a number of advantages over existing message delivery systems. The use of intelligent message storage technology overcomes the aforementioned problems with systems that employ "dumb connections" to a business telephone system **2**. The screens generated by the message on-hold delivery system **100**, and transmitted to the operator, allows the operator to select messages available at the message on-hold delivery system **100** for playback via a the business telephone system **2** as well as to define multiple playlists, and to associate each playlist with a set of telephone extension numbers or telephone lines connected to the business telephone system **2**. Thus, callers calling particular telephone extensions and placed on hold will hear the messages defined in the playlist associated with the called telephone extension. Furthermore, the order in which the messages are to be played can be defined. Thus, managers of private and public organizations can use the messaging on-hold delivery system **100** to program the information they wish to provide their customers via a telephone system or other audio and/or visual advertising

device from a location at any time during the day or evening, efficiently and cost-effectively.

[0045] The present invention has been described with reference to certain exemplary embodiments thereof. However, it will be readily apparent to those skilled in the art that it is possible to embody the invention in specific forms other than those of the exemplary embodiments described above. This may be done without departing from the spirit and scope of the invention. The exemplary embodiments are merely illustrative and should not be considered restrictive in any way. The scope of the invention is defined by the appended claims and their equivalents, rather than by the preceding description.

What is claimed is:

1. An on-hold messaging system, comprising:

a business telephone system comprising a plurality of lines or extensions on which a calling party from outside the system may be placed on hold;

a storage device for storing a plurality of messages;

a message playback device for playing said messages; and

a control device for permitting a user of said telephone system to select one or more messages from among said plurality of stored messages and one or more lines or extensions from among said plurality of lines or extensions on which said one or more selected messages are to be played by the message playback device when a caller or called party is placed on hold by said telephone system;

wherein the number of said one or more lines or extensions selected using said control device can be less than the total number of said plurality of lines or extensions.

2. An on-hold messaging system as claimed in claim **1**, wherein said control device permits said user to select the order in which said one or more selected messages are to be played by said message playback device on said one or more selected lines or extensions.

3. The on-hold messaging system of claim **1**, wherein said control device permits said user to select a first message from the plurality of messages to be played by said message playback device on a first line or extension from among said plurality of lines or extensions, and to select a second message from said plurality of messages to be played by said message playback device on a second line or extension from among said plurality of lines or extensions, wherein said first message is different from said second message.

4. An on-hold message system of claim **1**, wherein said control device is selected from the group consisting of a proprietary telephone instrument, a standard DTMF telephone, a general purpose computer, a cellular telephone, and a hand-held computer device.

5. An on-hold message system of claim **1**, wherein said message playback device comprises a processing device, and wherein said storage device stores said messages as respective files.

6. An on-hold message system of claim **1**, wherein each of said messages comprises at least one of an audio message, a video message and a multimedia message selectable to be played to the user.

7. An on-hold message system, comprising:

a telephone system comprising a plurality of lines or extensions; and

an on-hold message playback device intelligently connected to or integrated with said telephone system and playing messages to outside callers into said telephone system that are placed on hold on one of said lines or extensions;

wherein said on-hold message playback device is programmable through a communication device operatively communicating with said telephone system to selectively program at least one message for playback on a selected one of said lines or extensions.

8. An on-hold message system of claim **7**, wherein said on-hold message playback device provides prompts to a user of said telephone system, said on-hold message playback device further being operable to receive response signals from said user.

9. An on-hold message system of claim **8**, wherein at least one of said prompts includes a list of messages which said user can select for playing by said on-hold message playback device.

10. An on-hold message system of claim **8**, wherein said user response signals correspond to a playlist comprising data relating to said plurality of messages, and wherein said on-hold message playback device is operable in response to said user response signals to implement said playlist.

11. An on-hold message system of claim **8**, wherein at least one of said prompts comprises a portion of a message playable by said on-hold message playback device.

12. An on-hold message system of claim **8**, wherein at least one of said prompts includes a list of messages which said user can select for playing by said on-hold message playback device.

13. An on-hold message system of claim **12**, wherein said current playlist and said pending playlist comprise reference codes corresponding to selected messages.

14. An on-hold message system of claim **12**, wherein said pending playlist comprises a date and time corresponding to when said pending playlist is to be implemented by said message playback device.

15. A method of operating a message playback device to play on-hold messages through a telephone system, comprising the steps of:

storing a library of discrete and individually accessible messages for playing by said message playback device;

storing information for uniquely identifying each of said messages in a memory of said message playback device;

selecting at least one of said messages from said library for playing by said message playback device;

selecting at least one line or extension of a telephone system on which said message playback device is to play said at least one selected message, wherein the number of lines or extensions selected can be less than the total number of lines or extensions of the telephone system; and

playing at least a portion of said at least one selected message on said message playback device to an outside party placed on hold on said at least one line or extension.

16. The method of claim **15**, wherein said stored information comprises at least one of a title and an identification code.

17. The method of claim **15**, further comprising the steps of:

generating and transmitting prompts relating to said stored messages to a control device; and

using said control device to transmit response signals to said message playback device corresponding to said at least one selected message.

18. The method of claim **17**, further comprising the steps of:

receiving said response signals at said message playback device; and

accessing said at least one selected message from said library.

19. The method of claim **17**, wherein said messages are stored on at least one optical disc.

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