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(54) INTELLIGENT INTEGRATED ON-HOLD MESSAGING SYSTEM FOR USE WITH BUSINESS TELEPHONE SYSTEMS

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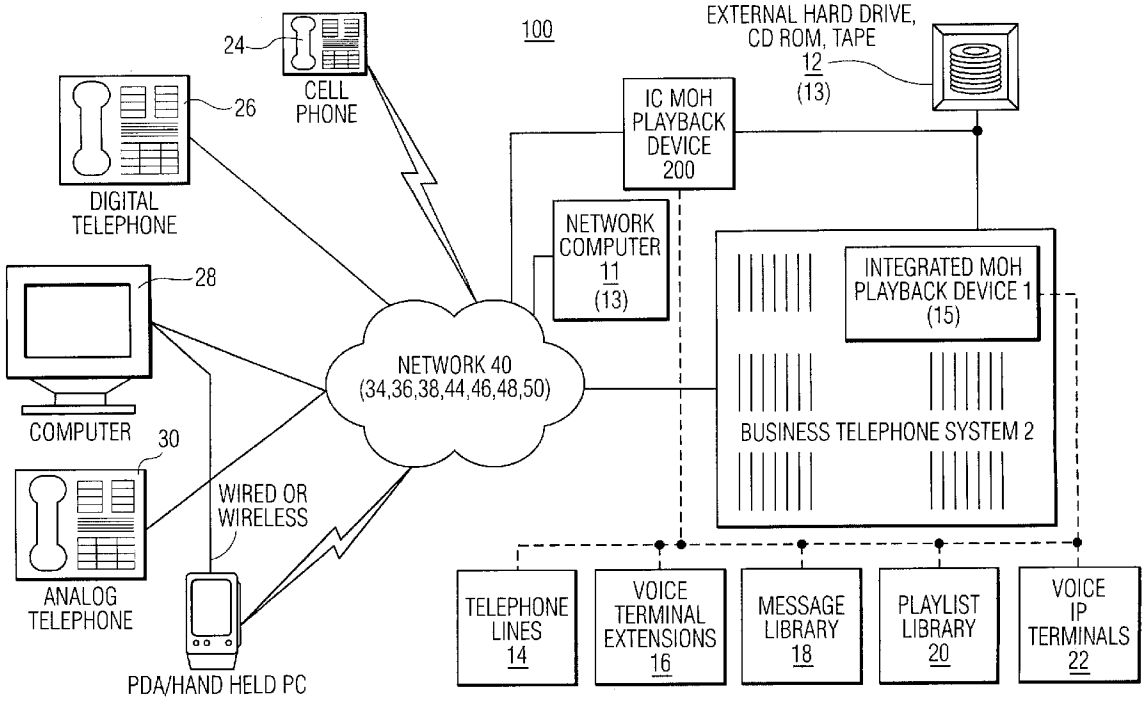
(52) **U.S. Cl.** **379/88.22**; 379/76

(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 sistem 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.



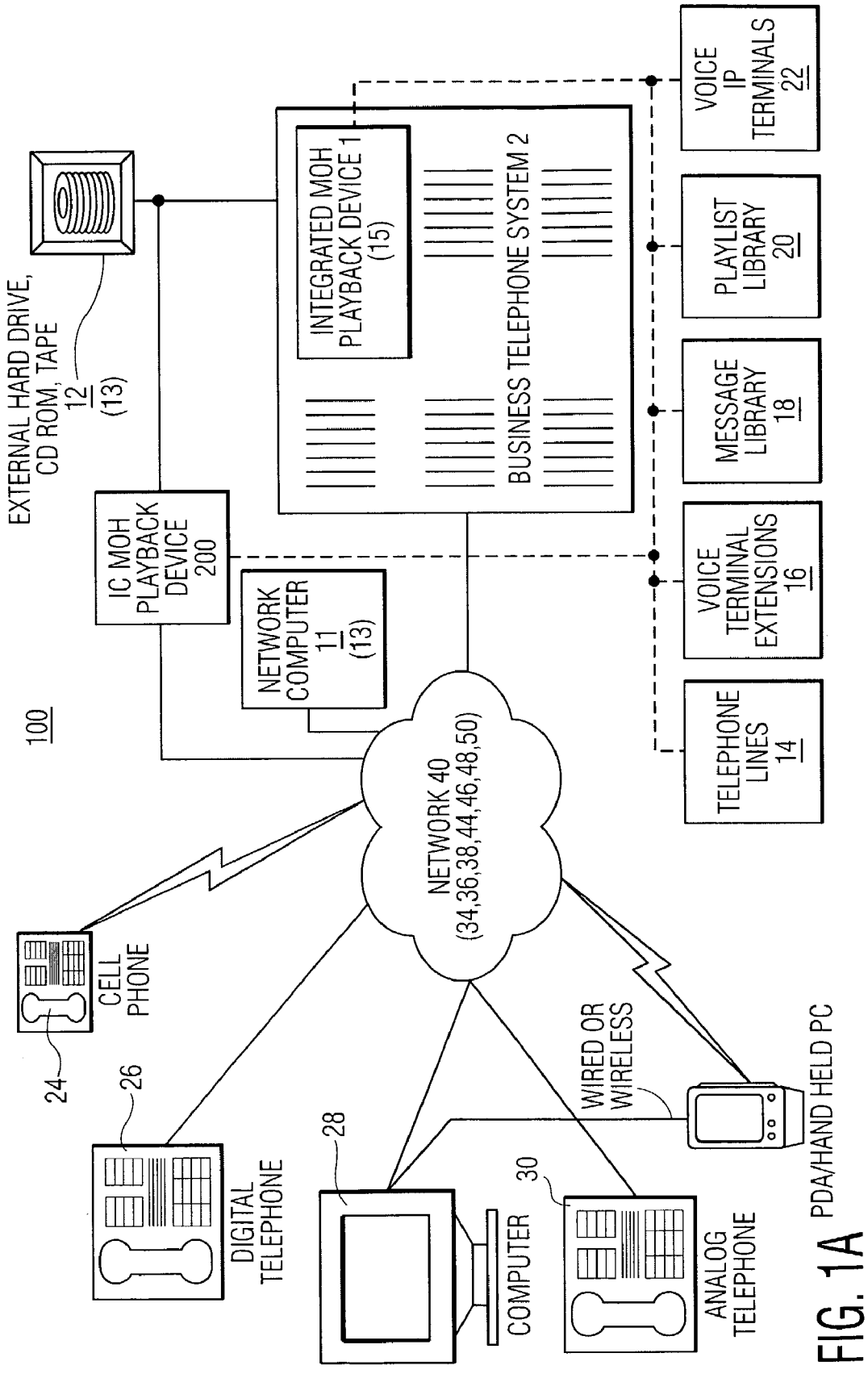

100
EXTERNAL HARD DRIVE, CD ROM, TAPE
12
(13)
IC MOH PLAYBACK DEVICE 200
NETWORK COMPUTER 11 (13)
INTEGRATED MOH PLAYBACK DEVICE 1 (15)
BUSINESS TELEPHONE SYSTEM 2
VOICE IP TERMINALS 22
PLAYLIST LIBRARY 20
MESSAGE LIBRARY 18
VOICE TERMINAL EXTENSIONS 16
TELEPHONE LINES 14
NETWORK 40 (34,36,38,44,46,48,50)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

FIG. 1A

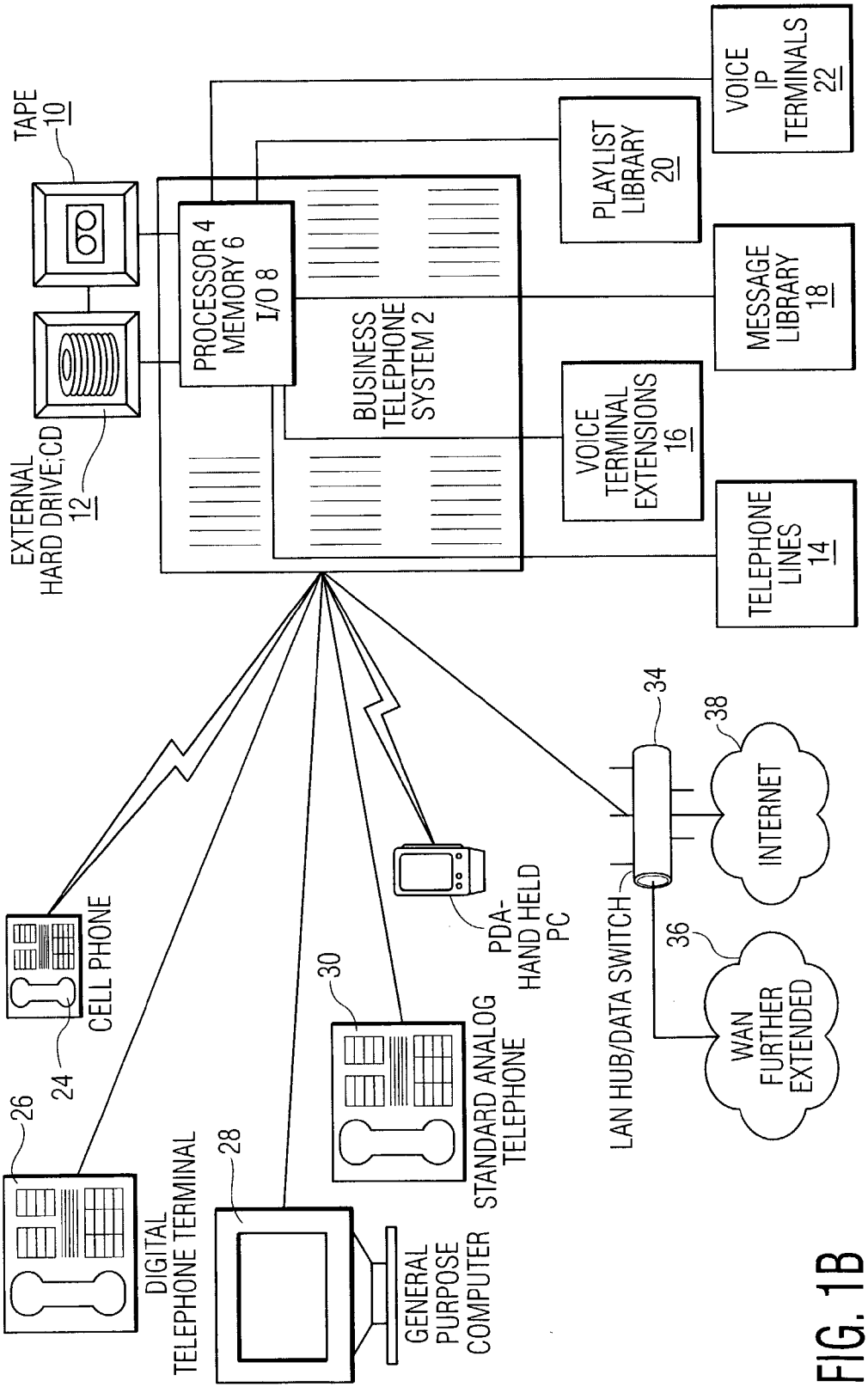

TAPE
10
EXTERNAL
HARD DRIVE;CD
12
PROCESSOR 4
MEMORY 6
I/O 8
BUSINESS
TELEPHONE
SYSTEM 2
PLAYLIST
LIBRARY
20
VOICE
IP
TERMINALS
22
MESSAGE
LIBRARY
18
VOICE
TERMINAL
EXTENSIONS
16
TELEPHONE
LINES
14
34
38
INTERNET
LAN HUB/DATA SWITCH
36
WAN
FURTHER
EXTENDED
PDA-
HAND HELD
PC
30
STANDARD ANALOG
TELEPHONE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

FIG. 1B

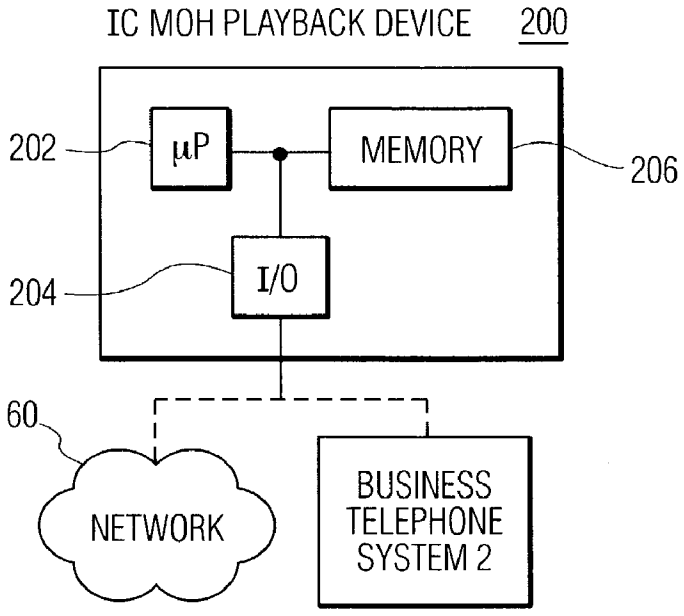


FIG. 2

ADMINISTRATIVE TABLE 310
- SOFTWARE VERSION 312
- CONFIGURATION 314
- STATUS 316

ADMINISTRATIVE TABLE 320(1)
- 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

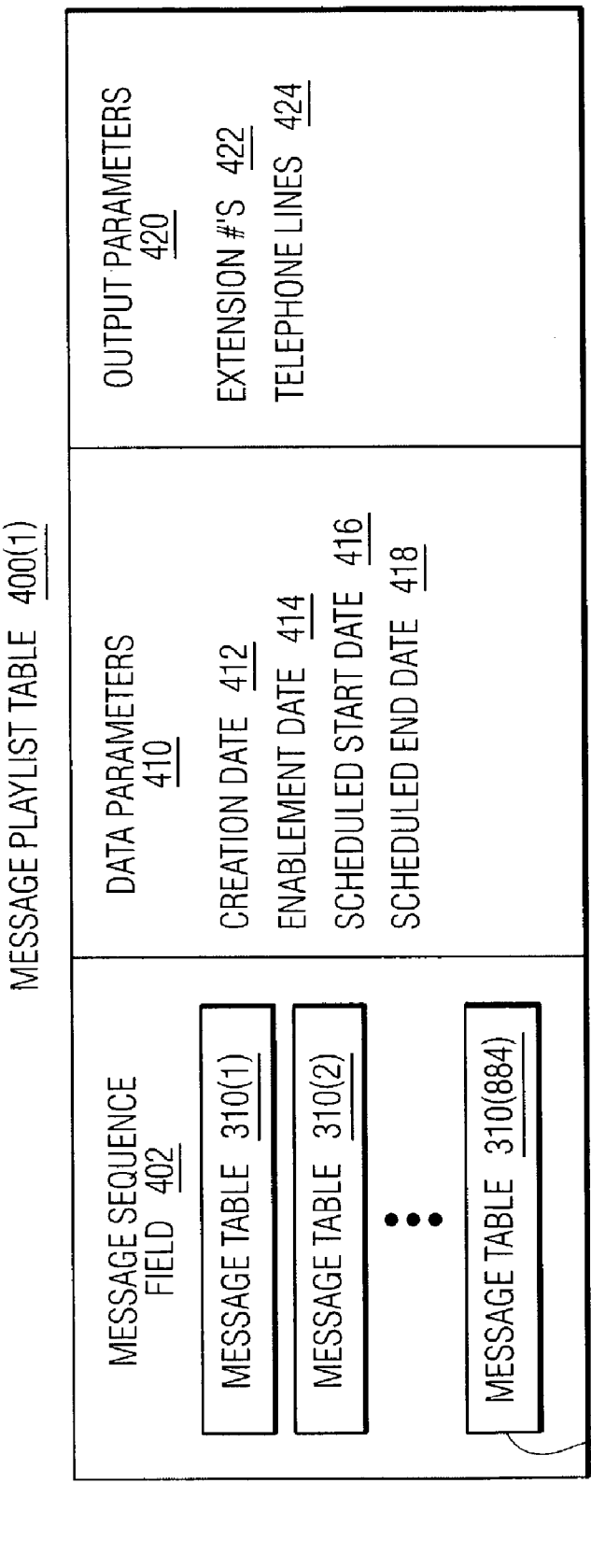

MESSAGE PLAYLIST TABLE 400(1)
MESSAGE SEQUENCE FIELD 402
DATA PARAMETERS 410
OUTPUT PARAMETERS 420
MESSAGE TABLE 310(1)
MESSAGE TABLE 310(2)
MESSAGE TABLE 310(884)
CREATION DATE 412
ENABLEMENT DATE 414
SCHEDULED START DATE 416
SCHEDULED END DATE 418
EXTENSION #'S 422
TELEPHONE LINES 424
MESSAGE NAME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

FIG. 4

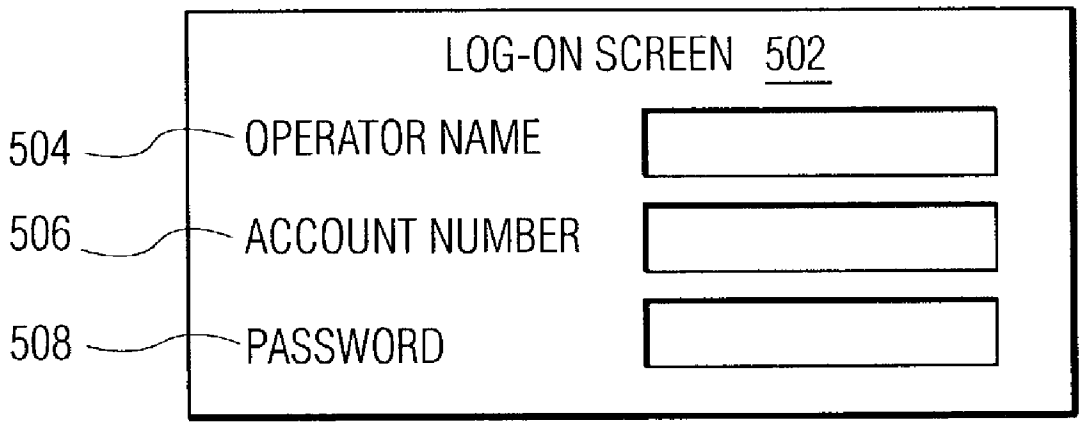

LOG-ON SCREEN 502
504
OPERATOR NAME
506
ACCOUNT NUMBER
508
PASSWORD

FIG. 5

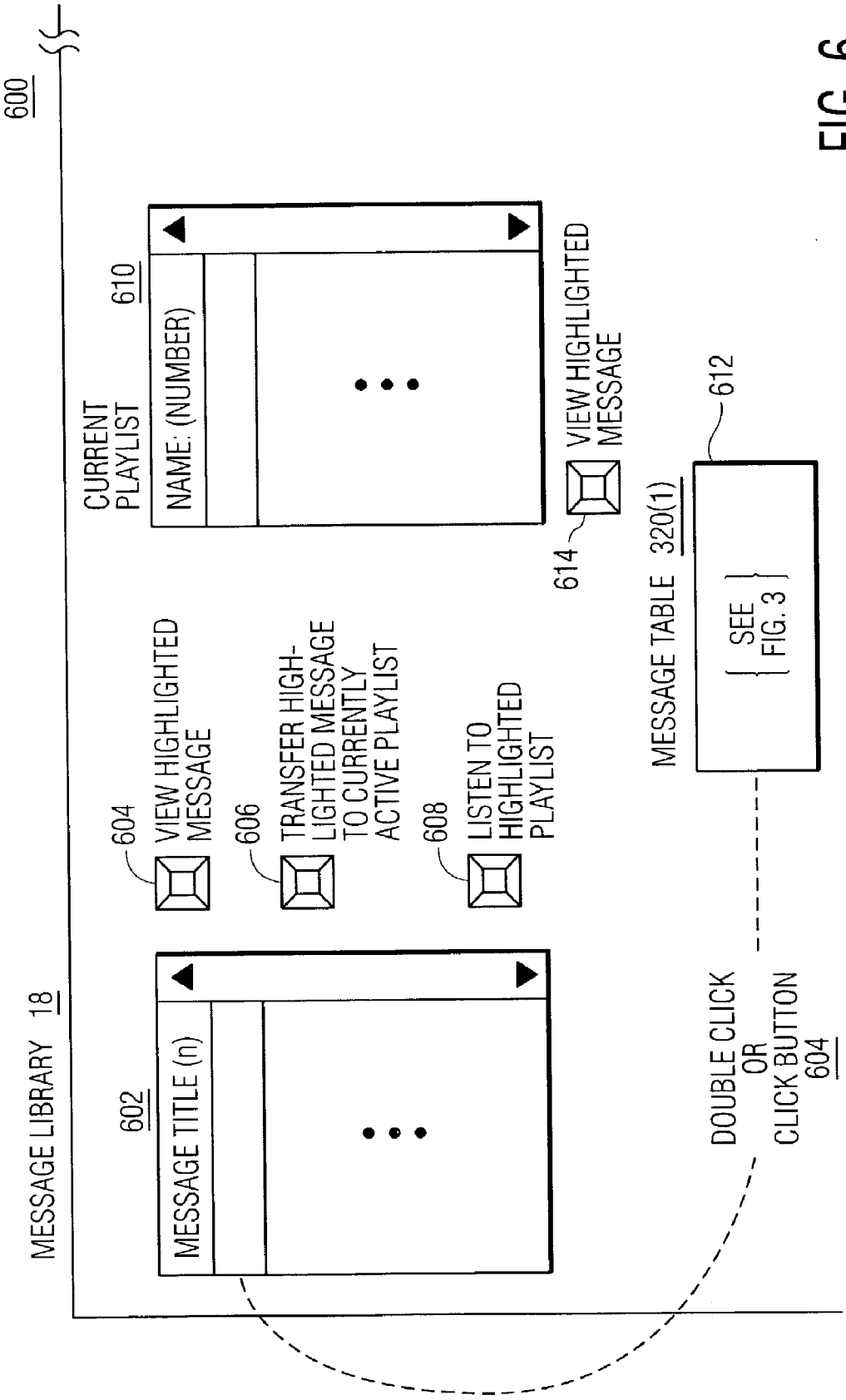

600
MESSAGE LIBRARY 18
602
MESSAGE TITLE (n)
604
VIEW HIGHLIGHTED MESSAGE
606
TRANSFER HIGH-LIGHTED MESSAGE TO CURRENTLY ACTIVE PLAYLIST
608
LISTEN TO HIGHLIGHTED PLAYLIST
CURRENT PLAYLIST 610
NAME: (NUMBER)
614
VIEW HIGHLIGHTED MESSAGE
MESSAGE TABLE 320(1)
612
{ SEE FIG. 3 }
DOUBLE CLICK OR CLICK BUTTON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

FIG. 6

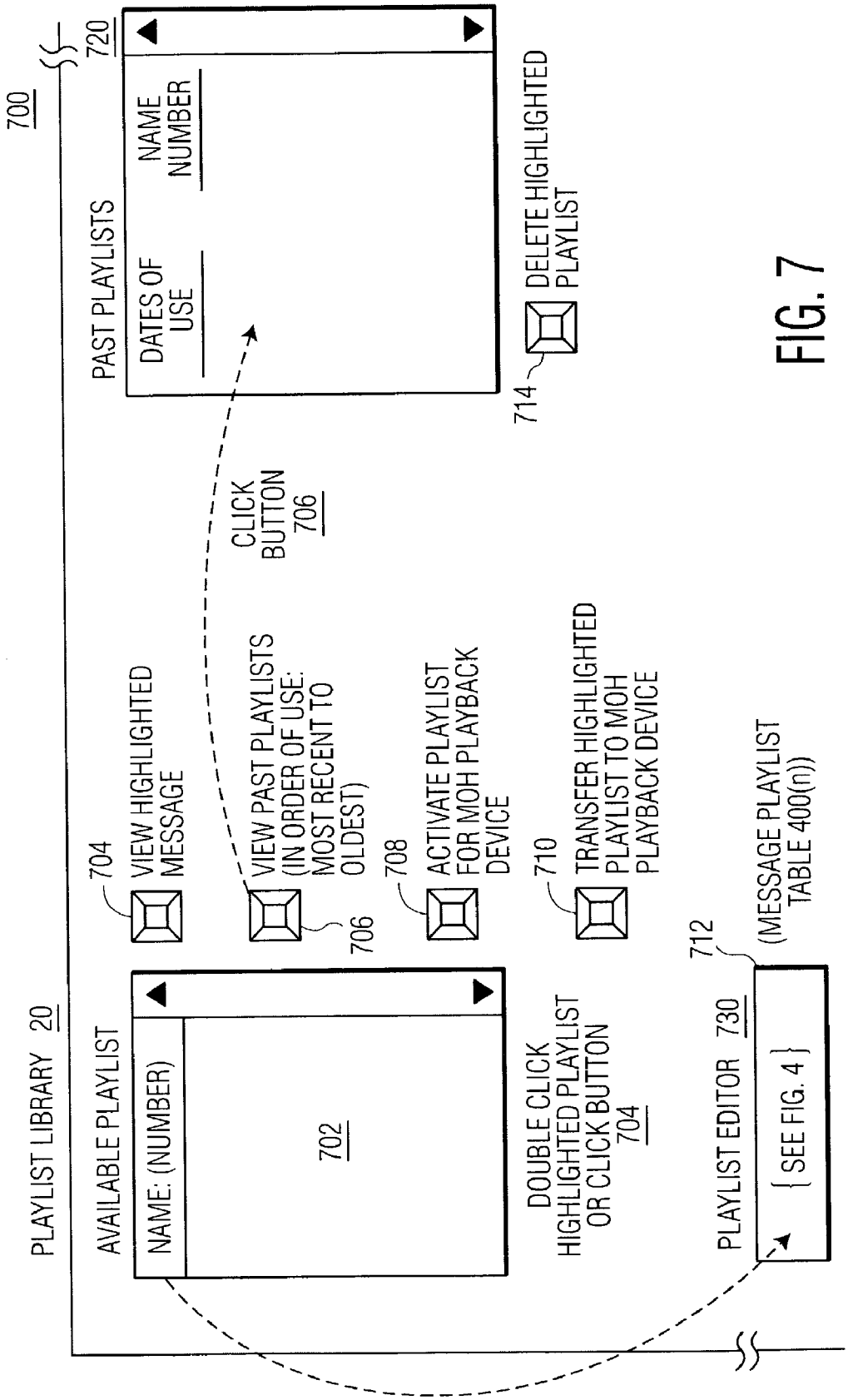

700
720
PAST PLAYLISTS
DATES OF USE
NAME NUMBER
714
DELETE HIGHLIGHTED PLAYLIST
CLICK BUTTON 706
PLAYLIST LIBRARY 20
AVAILABLE PLAYLIST
NAME: (NUMBER)
702
704
VIEW HIGHLIGHTED MESSAGE
VIEW PAST PLAYLISTS (IN ORDER OF USE: MOST RECENT TO OLDEST)
706
708
ACTIVATE PLAYLIST FOR MOH PLAYBACK DEVICE
710
TRANSFER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

FIG. 7

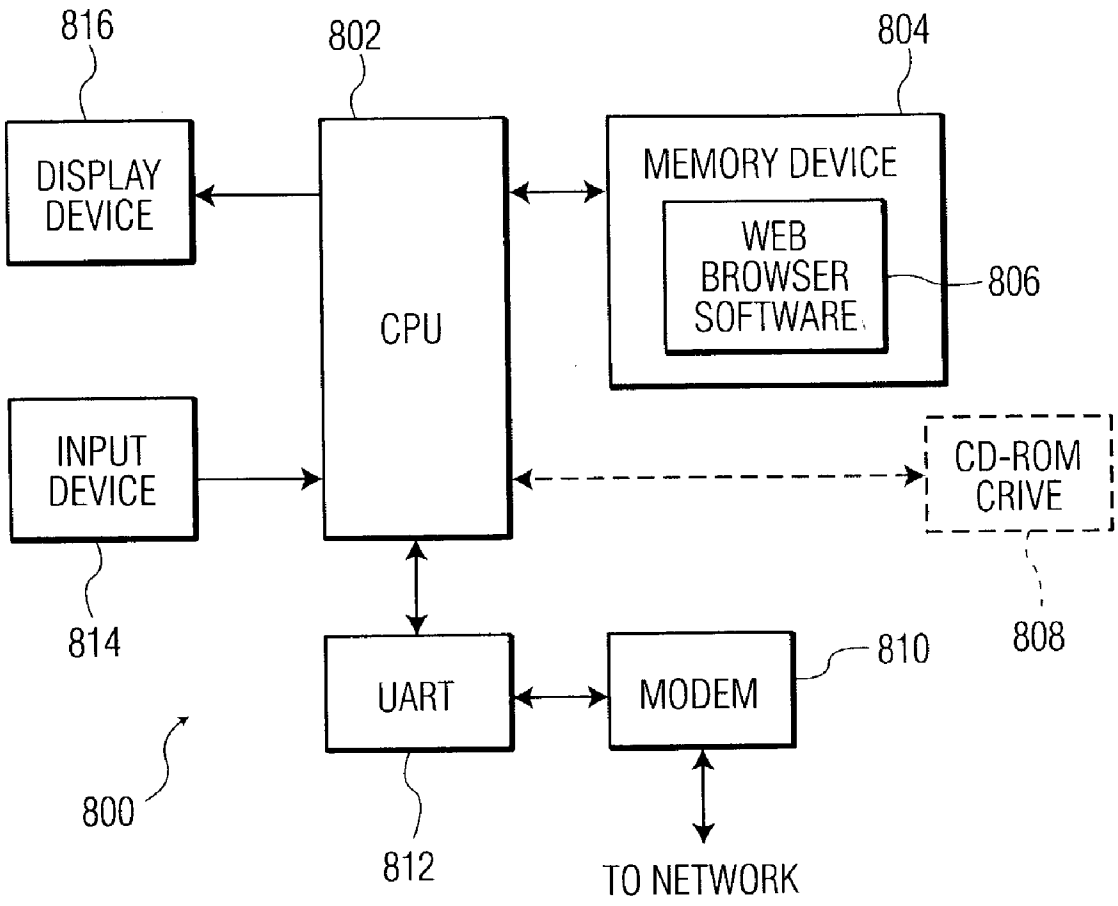

816
802
804
DISPLAY DEVICE
CPU
MEMORY DEVICE
WEB BROWSER SOFTWARE
806
INPUT DEVICE
CD-ROM CRIVE
814
808
UART
MODEM
810
800
812
TO NETWORK

FIG. 8

INTELLIGENT INTEGRATED ON-HOLD MESSAGING SYSTEM FOR USE WITH BUSINESS TELEPHONE SYSTEMS

PRIORITY INFORMATION

[0001] The present application claims priority under 35 U.S.C. § 119(e) to U.S. Provisional application No. 60/349,236 filed Jan. 18, 2002, the entire contents of which are herein expressly incorporated by reference.

FIELD OF THE INVENTION

[0002] The invention is related to on-hold messaging 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 play-back of the messages when callers are placed on hold. An additional features includes, but is 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 announcer's 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 messaging 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 audio messaging system disclosed in the '461 patent provides the ability to add or delete individual messages from a playlist and to change the play sequence of messages stored within the business telephone system. Another prior art MOH telephoning 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 messaging 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 could 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 play-lists by adding messages, deleting messages, or changing the order of messages in each play-list. Furthermore, in such a system, it would be advantageous to be able to assign different telephone extensions within a business phone system to listen to particular play-lists 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 play-lists, 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 track, instead of at random points within the tracks, as is found in the prior art.

SUMMARY OF THE INVENTION

[0006] The above objectives are met and other advantages are realized in a method and system according to the present invention, in which a message storage and retrieval for one or more message libraries, each library containing one or more messages. The message playback is capable of generating audible and/or visual prompts directed to assist an operator to select various options in order to change parameters of the message's playing. 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 list (telephone line) for determining which message libraries are associated with various extensions or telephone lines.

[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 which 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 invention 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 invention 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 allows 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 message, 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 following 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. 1A and 1B** are schematic block diagrams of alternative embodiments of a programmable integrated messaging 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** illustrates a block diagram representation of graphic interfaces for use in a messaging 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 messaging on-hold delivery system for selecting messages for a playlist via a messaging on-hold website;

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

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

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[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. 1A and 1B** are schematic block diagrams of alternative embodiments of a programmable integrated messaging on-hold delivery system (messaging on-hold delivery system) constructed in accordance with an embodiment of the present invention. **FIG. 1A** depicts both an intelligently connected messaging on-hold playback device (IC MOH playback device) **200** and an integrated messaging on-hold playback device (IMOH playback device) **1** as part of a messaging on-hold delivery system **100**. Either IC MOH playback device **100** or IMOH playback device, in conjunction with business telephone system **2**, and the other elements shown (and described below) comprises a messaging 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 it can receives 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**. Both IMOH playback device **1** and 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 messaging on-hold delivery system **100** of **FIG. 1A** 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 (tape, CD ROM, external hard drive **12**) **13**, network computer (with various memory devices) **11**, network **40**, interface **42** and remote devices **60**. Network **40** and remote devices **60** each comprises many different types of devices, which will be discussed in detail below. External message storage devices comprises a tape player, CD ROM and/or external hard drive **12** and the memory located within or attached to network computer **11**.

[**0025**] 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** (playback devices) **1,200** program instructions are stored within their respective memory devices which enable the processors within to perform the process of a messaging 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 messaging on-hold delivery system **100** comprises a cell phone **24**, digital telephone **26**, general purpose computer (computer) **28**, analog telephone **30** and/or personal digital assistant (PDA) **32**. Network **40** comprises LAN **34**, WAN **36**, Internet **38**, private phone network **44**, cellular phone network **46**, satellite phone network **48** and/or 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 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 final network within the "walls" of the business such that all other networks interface directly to it. A discussion of all the possible means of interfacing from 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 understand to 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 works is not needed to understand how the present invention works

[**0027**] **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. Intelligently connected message on-hold (IC MOH) playback device **200** comprises processor **202**, memory **204** and I/O **206**. Note that in **Fig. 1A** 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** and/or 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 **204** will from herein be referred to as external message storage device **13**. External message storage devices **13** includes not only external hard drive/CD ROM and tape, but the memory component of network computer **11**. Essentially, any message storing capable 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 capable memory device physically located with business telephone system **2** is considered to be an internal message storage device **15**. 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 business telephone system **2** when playback of messages for on-hold callers is necessary.

[**0028**] Referring back to **FIG. 1A**, 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 (RAM) or even a read-only memory (ROM) storage device. Messaging 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 IMPH 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 messaging on-hold delivery system **100**) that own messaging on-hold delivery system **100** can record or download new messages.

[**0029**] In accordance with the present invention, both playback devices **1**, **200** internal and external message storage devices **13**, **15** 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 business telephone system **2**. Furthermore, messaging 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] Processor **4** of messaging on-hold delivery system **100**, is 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 remotes 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 an administrative and message database table 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 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 device **1**, **200** store message tables **320**. Each message in messaging on-hold delivery system **100** is preferably defined in a separate message tabl**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 messaging 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 computer **28** screen); 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 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** is comprised off three major sections: the first 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 comprises the playlist (the "playlist" is, as its name denotes, a list of the messages that the messaging 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 message sequence filed 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 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 (graphic displays) can be displayed on a messaging on-hold (MOH) website for remote devices **60** that are capable of accessing the MOH website and of displaying these graphic displays. Some remote devices are capable of receiving textual displays only, and those remote devices **60** will be discussed below. The principle aforementioned remote device **60** capable of displaying the graphic displays is computer **28**, and possibly PDA **32**. The graphic displays correspond to prompts generated by messaging on-hold delivery system **100**, and transmitted to computer **28**. The graphic 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 messaging on-hold delivery system **100**.

[**0039**] **FIG. 5** illustrates a block diagram representation of graphic interfaces for use in a messaging on-hold system according to an embodiment of the invention. The processors in each of playback devices **1**, **200** is 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 processor of playback devices **1**, **200** allow an operator to describe relationships between extension number **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 on a remote computer are depicted 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 by, and responses thereto, in the form of DTMF tones. As shown in **FIG. 5**, the processors of both playback devices **1**, **200** , is 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 messaging on-hold delivery system for selecting messages for a playlist via a messaging on-hold website. Referring back to **FIG. 1** there is shown five graphic interfaces that operators having access to an MOH website might use: telephone lines **14**, voice terminal extensions **16**, message library **18**, playlist library **20** and voice 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 the ubiquitous 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**. 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 messaging on-hold delivery system for programming a playlist via a messaging 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 messaging on-hold delivery system **100**. These extension numbers can then selected and dragged to an "activate extension numbers" window, or by double clicking on each individual extension number and dragging them to the "activate extension numbers" window. Alternatively, an "All" button can be clicked to automatically list all telephone extensions highlighted in the area **12**. Messages can be selected by clicking them in the Message Library area **12** or on the message viewer screen (e.g., screen **12**). "Remove" button **20** is provided to remove selected ones or all of the messages in the message area **11**. The entries in the Playlist Editor area **12** can then be saved or canceled by clicking the "Save" button **21** or the "delete" button **17**, respectively. The device **2,3** 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 their control device disclosed and controlled by the operator.

[**0043**] As stated previously, processors **4**, **202** of the playback device **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 messaging on-hold delivery system **100**, playback devices **1**, **200** and the operator.

[**0044**] Messaging 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 business telephone system **2**, The screens generated by messaging on-hold delivery system **100**, and transmitted to the operator allows the operators to select messages available at messaging on-hold delivery system **100**, for playback via a telephone system as well as to define multiple playlists, and to associate each playlist with a set of telephone extension numbers or telephone lines connected to 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. A telephone system with a built in programmable on hold message delivery system for playing messages to callers placed on hold comprising:

a message playback device, said message playback device comprising a storage device for storing messages and for playing selected ones of said messages to a list of extensions, or lines as selected by the user, and

a control device operable to receive prompts and transmit command signals for controlling said playback device;

said message playback device being adapted to receive said command signals for selected ones of said messages for playback by said message playback device, said message playback device being programmable to access said messages identified from said storage device and to provide said messages to become enabled to play messages chosen by the user to the chosen lines or extension's selected by the user.

2. A system as claimed in claim 1, wherein said control device is selected from the group consisting of a proprietary telephone instrument, standard DTMF telephone, general purpose computer, cellular phone, hand help computer device.

3. A system as claimed in claim 1, wherein said message playback device comprises a processing device, a storage device for storing said messages as respective files, that is connected through an intelligent connection to the telephone system.

4. A system as claimed in claim 1, wherein message playback device comprises group or messages consisting of audio and or video messages selectable to be played to the user.

5. A programmable message delivery system for playing messages on a telephone system comprising:

a message playback device comprising a storage device for storing messages and for playing selected ones of said messages through the telephone system as selected by the user, to a list of extensions or lines within the telephone system.

6. A system as claimed in claim 5, wherein at least one of said prompts causes said device to output at least one of a list of titles and reference codes corresponding to said messages from which said operator can select a plurality of said messages for play at said message playback device, said device further being operable to respond to said prompts with response signals selected by said operator, and corresponding to a playlist comprising data relating to said plurality of messages, said message playback device further being operable to receive said response signals and based thereon to implement said playlist.

7. A system as claimed in claim 6, wherein at least one of said prompts comprises at least a portion of one of said messages identified in said at least one of said menu signals, said portion being audible by said operator.

8. A system as claimed in claim 6, wherein one of said prompts comprises at least one of a current playlist and a pending playlist for said message playback device, said current playlist and said pending playlist each comprising said reference codes corresponding to said selected messages, said pending playlist further comprising a date and time corresponding to when said pending playlist is to be implemented by said message playback device.

9. A system as claimed in claim 8, wherein said prompts allow said operator to specify at least one of a plurality of parameters selected from the group consisting of a time of day when said pending playlist is to be implemented by said message playback device, a date on which said pending playlist is to be implemented by said message playback device, a sequence in which said selected messages are to be played, and how many times to repeat said selected messages in said sequence at said message playback device.

10. A system as claimed in claim 6, wherein said prompts guide said operator to select one of said messages from said playlist and an operation selected from the group consisting of adding at least one of said messages to said playlist, deleting at least one of said messages to said playlist, changing said sequence of said messages on said playlist, and changing at least one of the date or time for playing at least one of said messages.

11. A method of programming a message playback device comprising the steps of:

storing a library of discrete and individually accessible messages at said message playback device;

storing at least one of a title and an identification code for uniquely identifying each of said messages in a memory of said message playback device;

generating and transmitting prompts relating to said messages stored at said message playback device to a e control device; and

selecting at least one of said messages from said library for play at said message playback device using said control device to transmit response signals from said communication device to said message playback device corresponding to said selected message.

12. A method as claimed in claim 11, further comprising the steps of:

receiving said response signals at said message playback device;

accessing said selected message from said library stored at said message playback device; and

playing said selected message on said message playback device.

13. A method as claimed in claim 11, wherein said messages are stored on at least one optical disc at said message playback device.

14. A method of programming a message playback device comprising the steps of:

storing a library of discrete and individually accessible messages at a message playback device, each message being uniquely identified by at least one of an identification code and a title;

generating and transmitting prompts from said message playback device to a e control device said prompts comprising at least one of said identification code and said title for at least one of said message;

operating said Control device to identify messages from said library for playback, and a sequence for playback of said messages, and response signals relating to said messages and said sequence; and

entering playlist data using said Control device to respond to said prompts, said prompts providing selections to an operator selected from the group consisting of said identification codes of selected ones of said messages, said titles of selected ones of said messages, times for commencing the play of said messages, and a sequence for playing said messages.

15. A method as claimed in claim 14, further comprising the steps of:

receiving said commands at said message playback device; accessing said selected messages from said library stored at said message playback device; and

playing said selected messages on said message playback device.

16. A programmable message delivery system for playing messages comprising:

a storage device for storing discrete, individually accessible messages;

a processor connected to said storage device and programmable to access at least one of said messages; and

a control device connected to said playback device for receiving prompts from said processor and for transmitting response signals to said processor;

17. A system as claimed in claim 16, wherein said operator can select a sequence of said messages, said processor being programmable to access each of said selected messages via said storage device to provide said messages to said input for play on said output in accordance with said sequence.

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