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(54) SYSTEM AND METHOD FOR ON-DEMAND RECORDING

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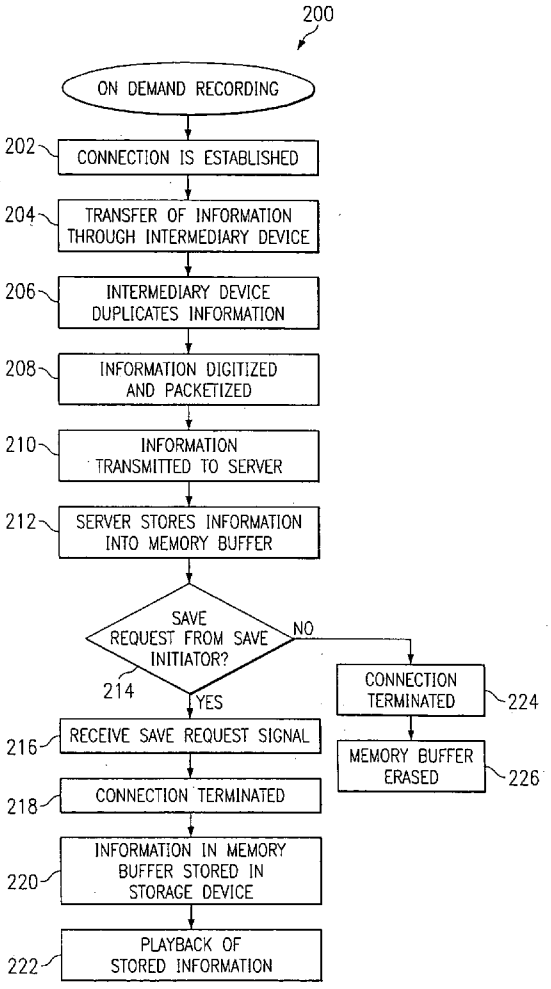
(52) **U.S. Cl.** **379/68**; 379/88.22

(57) **ABSTRACT**

Disclosed is a system and method for on-demand recording of telephone, computer, or video signals. Once a connection is established, the communication signals are sent through an intermediary device, which duplicates the signals. The signals are then stored in memory until a triggering event occurs during the connection. If the triggering event occurs, then the signals in memory are stored for playback. If the triggering event does not occur prior to the termination of the connection, the signals in memory are erased.



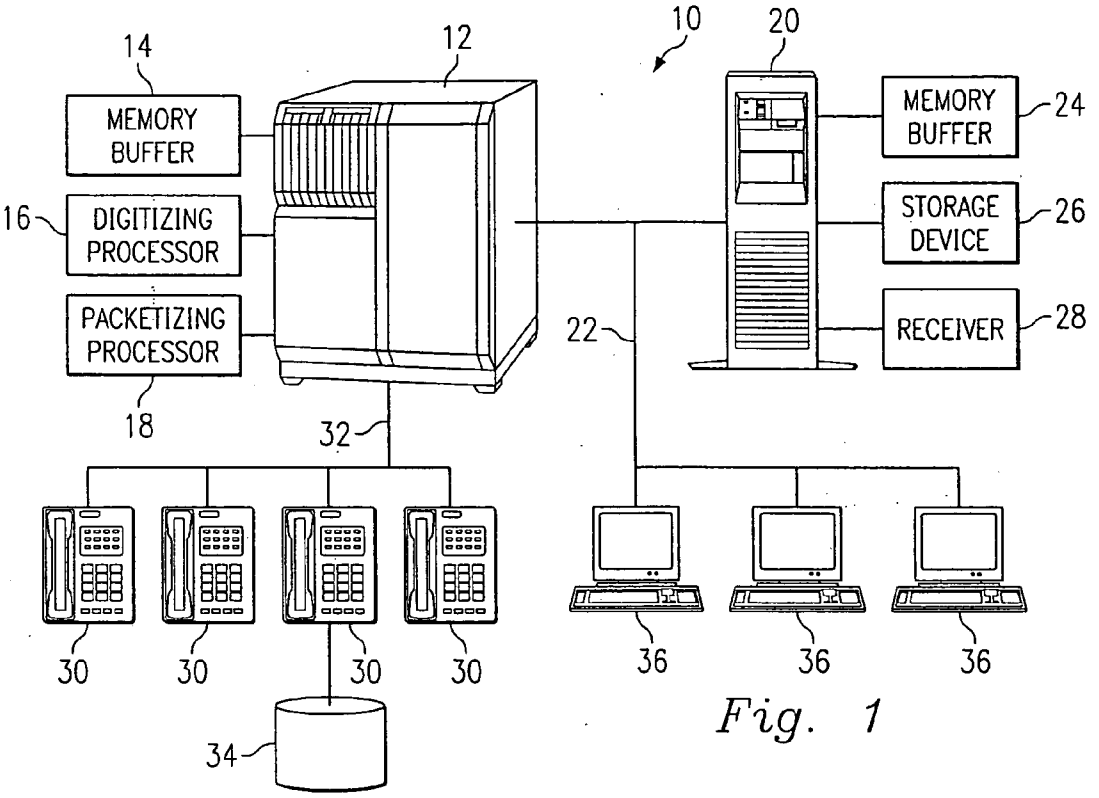

14
12
10
20
MEMORY BUFFER
16
DIGITIZING PROCESSOR
PACKETIZING PROCESSOR
18
32
22
MEMORY BUFFER
24
STORAGE DEVICE
26
RECEIVER
28
30
30
30
30
34
36
36
36

Fig. 1

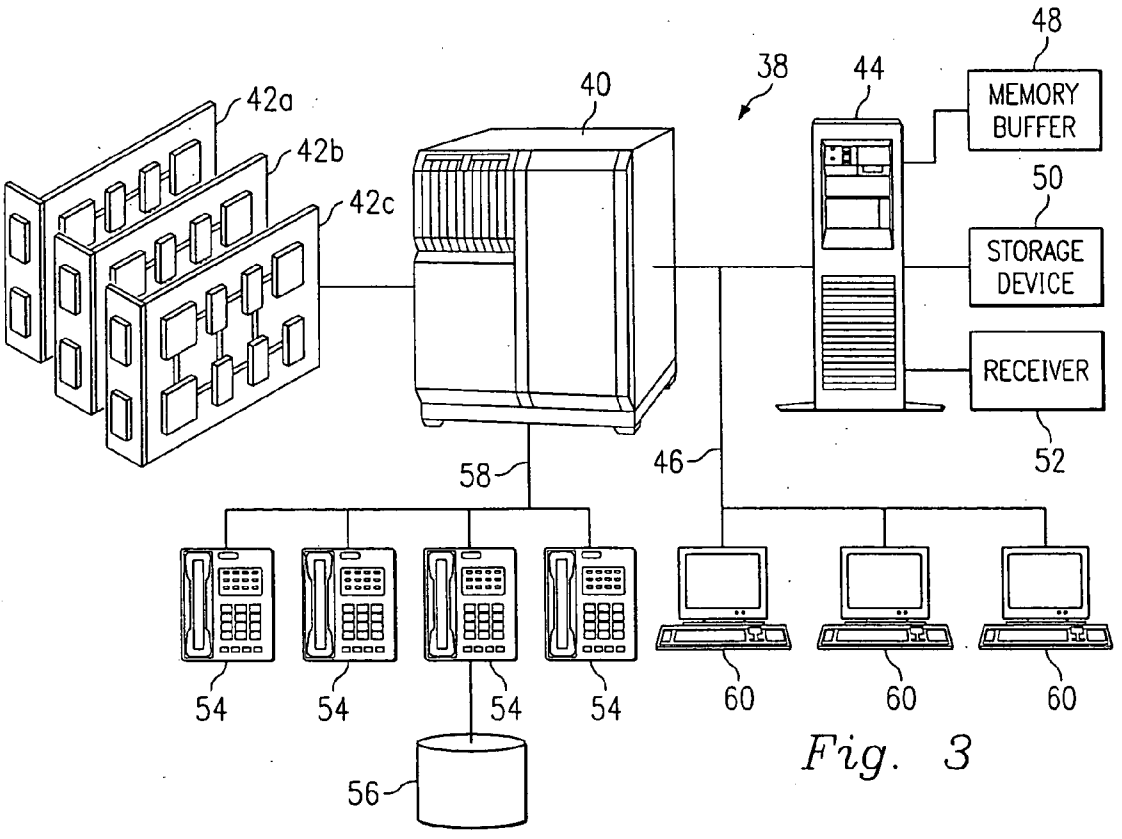

42a
42b
42c
40
38
44
48
MEMORY BUFFER
50
STORAGE DEVICE
RECEIVER
52
58
46
54
54
54
54
56
60
60
60

Fig. 3

Fig. 2

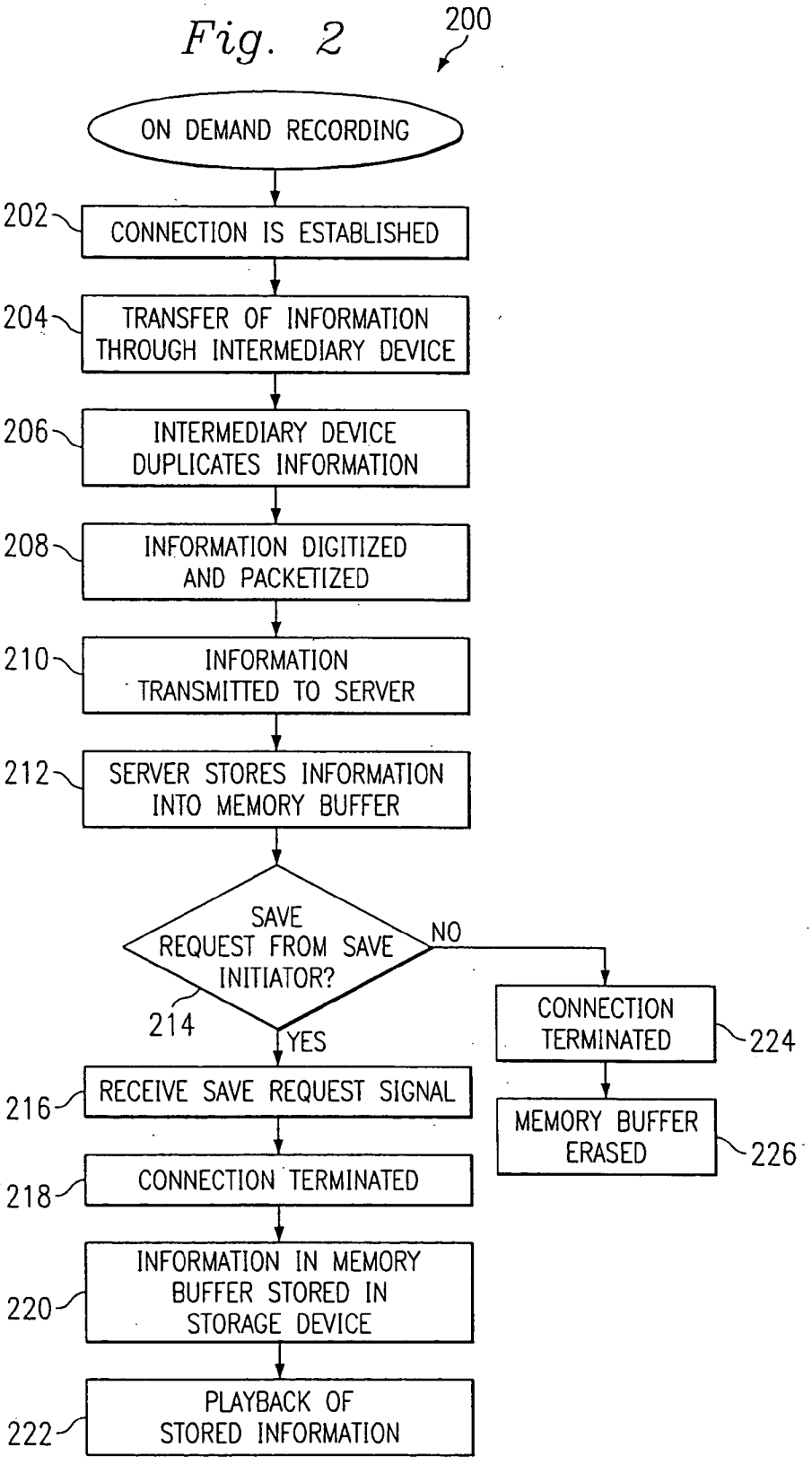

200
ON DEMAND RECORDING
202
CONNECTION IS ESTABLISHED
204
TRANSFER OF INFORMATION THROUGH INTERMEDIARY DEVICE
206
INTERMEDIARY DEVICE DUPLICATES INFORMATION
208
INFORMATION DIGITIZED AND PACKETIZED
210
INFORMATION TRANSMITTED TO SERVER
212
SERVER STORES INFORMATION INTO MEMORY BUFFER
SAVE REQUEST FROM SAVE INITIATOR?
214
NO
YES
CONNECTION TERMINATED
224
MEMORY BUFFER ERASED
226
216
RECEIVE SAVE REQUEST SIGNAL
218
CONNECTION TERMINATED
220
INFORMATION IN MEMORY BUFFER STORED IN STORAGE DEVICE
222
PLAYBACK OF STORED INFORMATION

Fig. 4

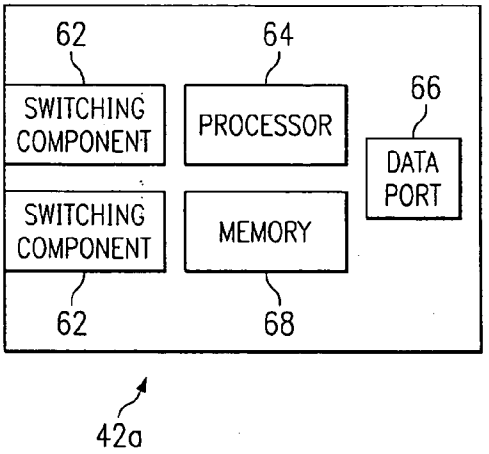
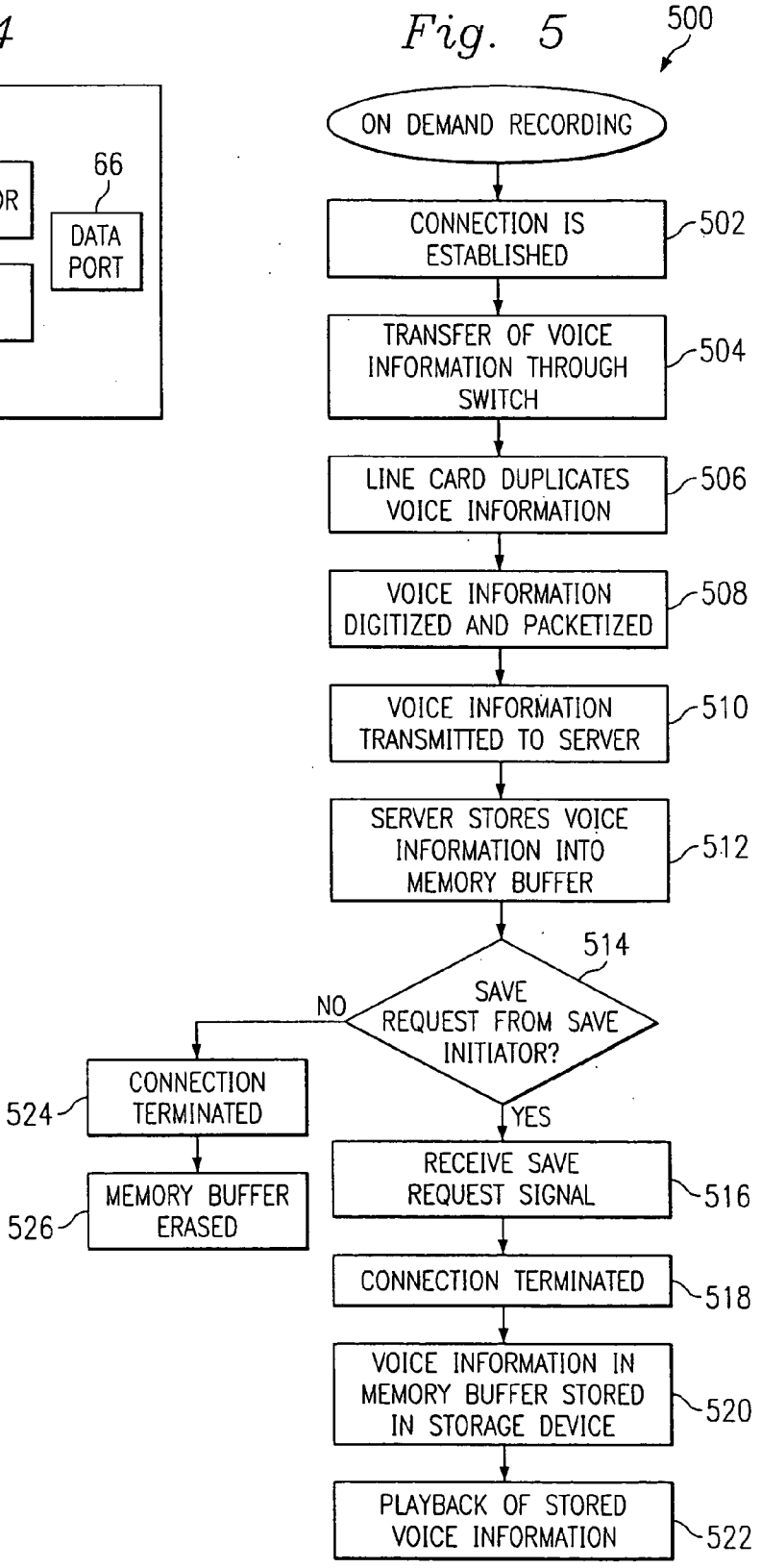

62
64
66
SWITCHING COMPONENT
PROCESSOR
DATA PORT
SWITCHING COMPONENT
MEMORY
62
68
42a

Fig. 5


500
ON DEMAND RECORDING
CONNECTION IS ESTABLISHED
502
TRANSFER OF VOICE INFORMATION THROUGH SWITCH
504
LINE CARD DUPLICATES VOICE INFORMATION
506
VOICE INFORMATION DIGITIZED AND PACKETIZED
508
VOICE INFORMATION TRANSMITTED TO SERVER
510
SERVER STORES VOICE INFORMATION INTO MEMORY BUFFER
512
514
SAVE REQUEST FROM SAVE INITIATOR?
NO
YES
CONNECTION TERMINATED
524
MEMORY BUFFER ERASED
526
RECEIVE SAVE REQUEST SIGNAL
516
CONNECTION TERMINATED
518
VOICE INFORMATION IN MEMORY BUFFER STORED IN STORAGE DEVICE
520
PLAYBACK OF STORED VOICE INFORMATION
522

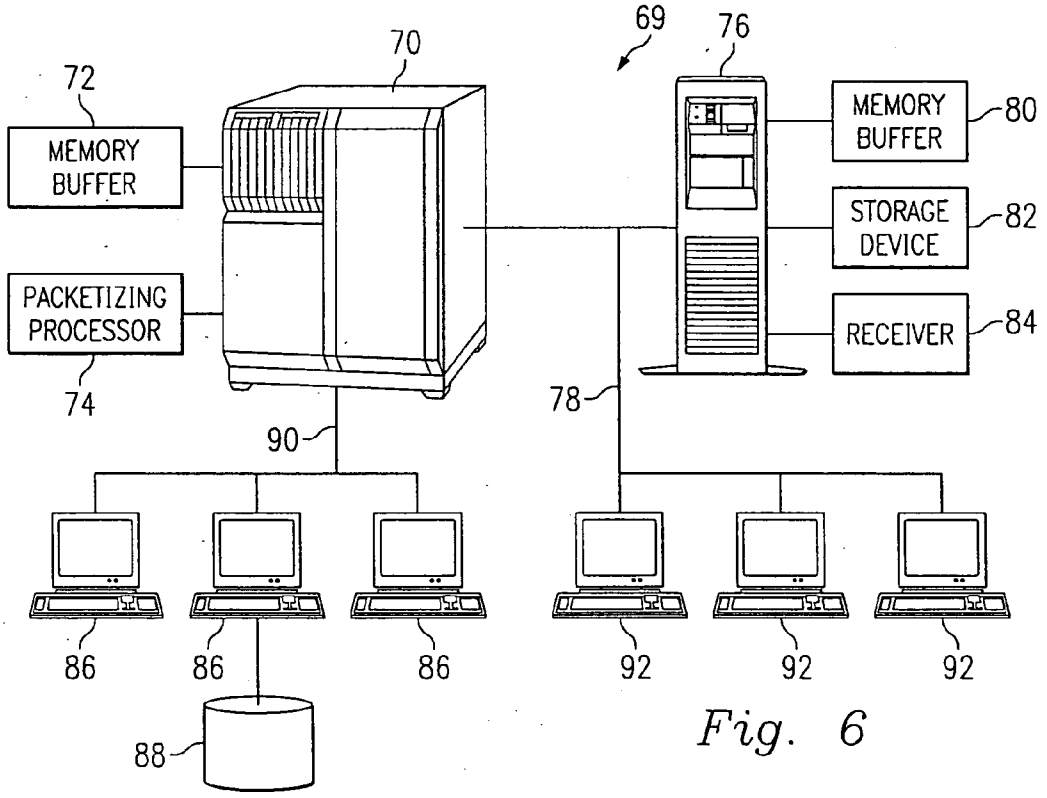

69
76
70
72
MEMORY BUFFER
80
STORAGE DEVICE
82
PACKETIZING PROCESSOR
RECEIVER
84
74
78
90
86
86
86
92
92
92
88

Fig. 6

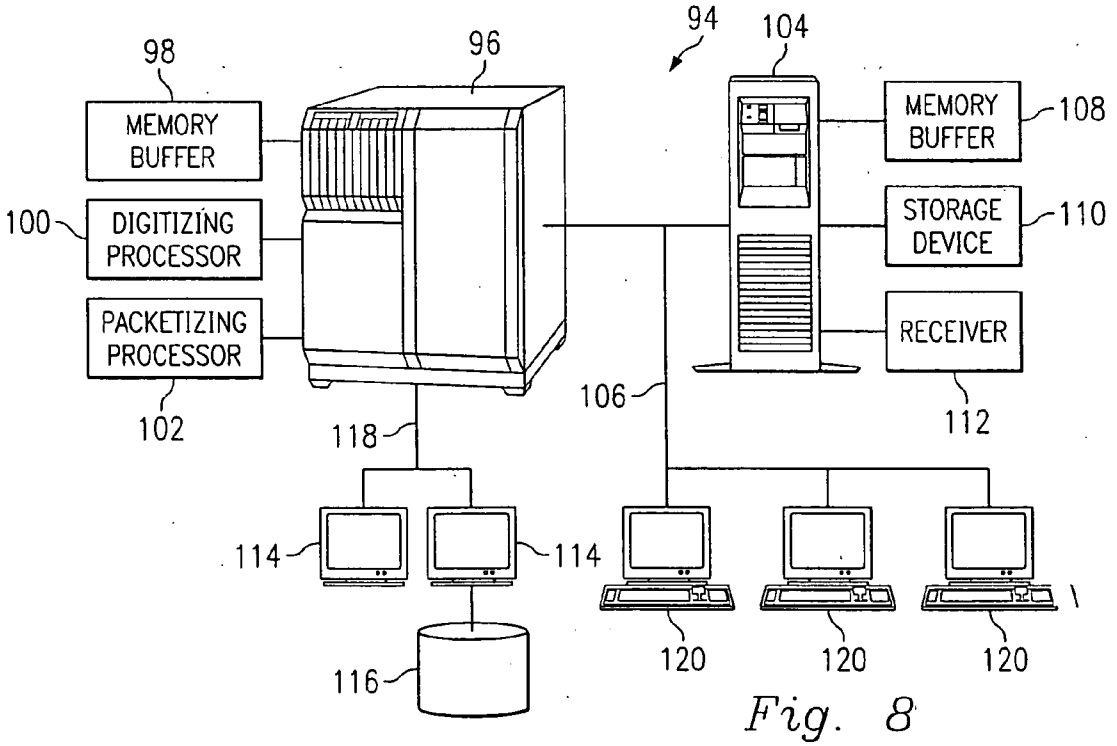

94
104
98
96
MEMORY BUFFER
108
100
DIGITIZING PROCESSOR
STORAGE DEVICE
110
PACKETIZING PROCESSOR
RECEIVER
102
106
112
118
114
114
120
120
120
116

Fig. 8

Fig. 7

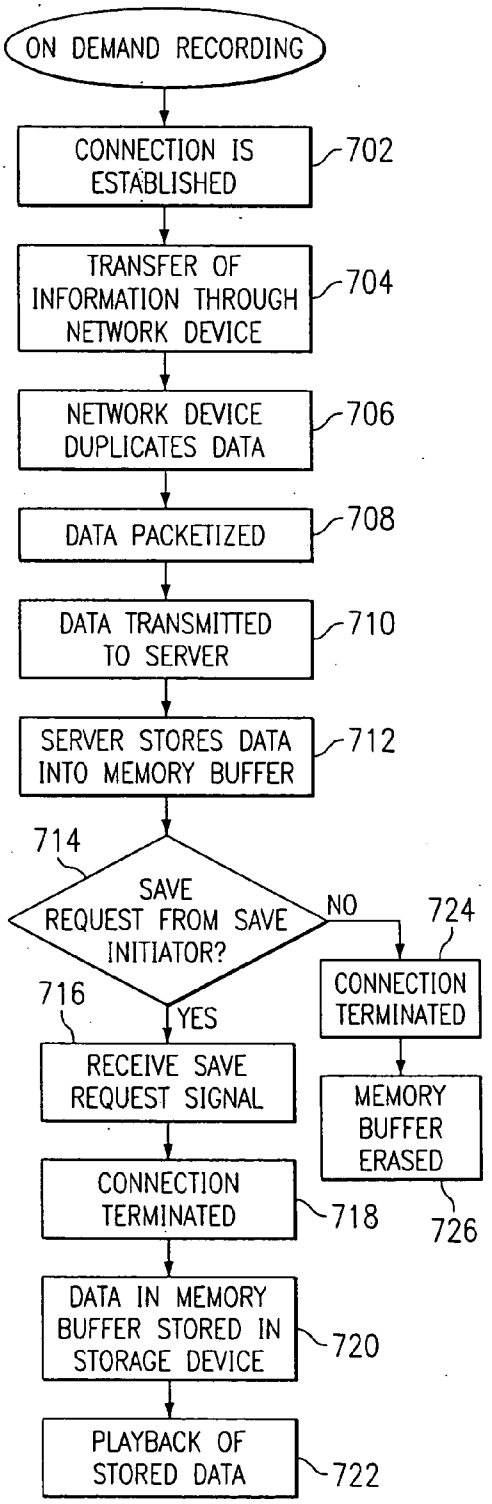
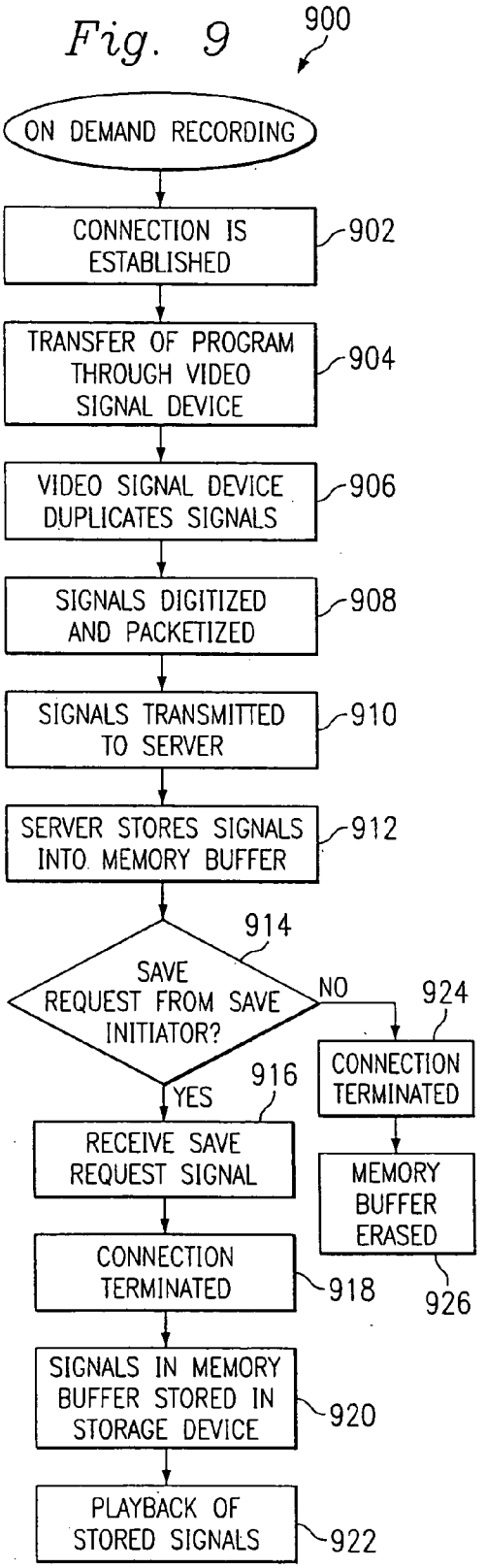

700
ON DEMAND RECORDING
CONNECTION IS ESTABLISHED
702
TRANSFER OF INFORMATION THROUGH NETWORK DEVICE
704
NETWORK DEVICE DUPLICATES DATA
706
DATA PACKETIZED
708
DATA TRANSMITTED TO SERVER
710
SERVER STORES DATA INTO MEMORY BUFFER
712
714
SAVE REQUEST FROM SAVE INITIATOR?
NO
724
CONNECTION TERMINATED
MEMORY BUFFER ERASED
726
716
YES
RECEIVE SAVE REQUEST SIGNAL
CONNECTION TERMINATED
718
DATA IN MEMORY BUFFER STORED IN STORAGE DEVICE
720
PLAYBACK OF STORED DATA
722

Fig. 9


900
ON DEMAND RECORDING
CONNECTION IS ESTABLISHED
902
TRANSFER OF PROGRAM THROUGH VIDEO SIGNAL DEVICE
904
VIDEO SIGNAL DEVICE DUPLICATES SIGNALS
906
SIGNALS DIGITIZED AND PACKETIZED
908
SIGNALS TRANSMITTED TO SERVER
910
SERVER STORES SIGNALS INTO MEMORY BUFFER
912
914
SAVE REQUEST FROM SAVE INITIATOR?
NO
924
CONNECTION TERMINATED
MEMORY BUFFER ERASED
926
916
YES
RECEIVE SAVE REQUEST SIGNAL
CONNECTION TERMINATED
918
SIGNALS IN MEMORY BUFFER STORED IN STORAGE DEVICE
920
PLAYBACK OF STORED SIGNALS
922

SYSTEM AND METHOD FOR ON-DEMAND RECORDING

RELATED PROVISIONAL PATENT APPLICATION

[0001] This application is a continuation of U.S. patent application Ser. No. 10/146,168, filed May 15, **2002**, which claims priority to U.S. Provisional Patent Application Ser. No. 60/291,878, filed May 18, 2001.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a recording device for recording a stream of analog or digital data.

[0004] 2. Description of the Prior Art

[0005] In the current state of the industry, in order to record the contents of a telephone call, computer transmission, television program, or any form or type of analog or digital data transmission, there are two basic methods. The first method is "logging," which consists of recording every transmission, from initiation until termination, regardless of the content or characteristics of the transmission. Because logging is independent of the contents and characteristics of the transmission, if a specific transmission is to be reviewed, it becomes necessary to record every transmission. Recording every transmission, however, requires a significant amount of storage space. Further, because of the number of transmissions recorded, it is difficult and time-consuming to locate a specific transmission.

[0006] The second method of recording a transmission is "event driven" recording, which records a transmission upon the occurrence of a certain condition or event. In some instances, the recording condition may be the start of the transmission (which is, in effect, the logging method), while in other instances the event will occur during the transmission (such as when a user presses a "record" button during the transmission). Other events may be time-based, such as when recording begins and ends at a specific times. One difficulty of an event driven recording system is properly defining the event that initiates recording. An overly broad event may record too many transmissions, while too specific of an event may not record enough. Another disadvantage of event driven recording is that the event may not occur, or may occur at the wrong time, resulting in not all of the content of the transmission being recorded. Yet another disadvantage is that if the event cannot (or does not) occur until after the initiation of transmission, then the transmission that occurs prior to the event is not recorded. Further, for communications via computer instant messenging, a similar disadvantage occurs when the content of the conversation may "scroll off" the screen before the user can save the earlier portions of the conversation.

SUMMARY OF THE INVENTION

[0007] The present invention provides a new and unique system and method for on-demand recording of analog and digital information. In one embodiment, a connection is established on a communication device with an intermediary device. The information transmitted via the connection is dynamically stored. If a triggering event occurs during the connection, the information of the entire connection is saved at the conclusion of the connection, thus allowing the information to be replayed on-demand.

[0008] In another embodiment, a telephone call is established on a telephone with a PBX including a plurality of line cards. The voice information of the telephone call is duplicated dynamically at one of the line cards. The voice information can then be digitized and packetized. The voice information is output to a server connected to the PBX. During the telephone call a triggering event is activated, and the voice information of the entire telephone call is saved on the server at the conclusion of the telephone call, thus allowing the information to be replayed on-demand.

[0009] In a further embodiment, a computer data connection is established on a computer with a network device. The computer data is duplicated dynamically by the network device and packetized. The computer data is output to a server connected to the network device. During the computer data connection a triggering event is activated, and the computer data of the entire connection is saved on the server at the conclusion of the connection, thus allowing the computer data to be replayed on-demand.

[0010] In yet another embodiment, a television transmission is established on a display device with a video signal device. The television program is duplicated dynamically by the video signal device. The television program can then be digitized and packetized. The television program is output to a server connected to the video signal device. During the television transmission a triggering event is activated, and the television program of the entire television transmission is saved on the server at the conclusion of the television transmission, thus allowing the information to be replayed on-demand.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] **FIG. 1** is an illustration of an embodiment of the invention.

[0012] **FIG. 2** is a flowchart illustrating the operation of an embodiment of the invention.

[0013] **FIG. 3** is an illustration of a voice implementation of the invention.

[0014] **FIG. 4** is an illustration of a line card, such as can be used in the voice implementation of **FIG. 3**.

[0015] **FIG. 5** is a flowchart illustrating the operation of the voice implementation.

[0016] **FIG. 6** is an illustration of another embodiment of the invention implemented in a computer network.

[0017] **FIG. 7** is a flowchart illustrating the operation of the computer network implementation of **FIG. 6**.

[0018] **FIG. 8** is an illustration of a television network implementation of the invention.

[0019] **FIG. 9** is a flowchart illustrating the operation of the television network implementation of **FIG. 8**.

DETAILED DESCRIPTION

[0020] The following disclosure provides many different embodiments, or examples, for implementing different features of an on-demand recording system. Specific examples of components, processes, and implementations are

described to help clarify the invention. These are, of course, merely examples and are not intended to limit the invention from that described in the claims.

[0021] Referring to **FIG. 1**, one embodiment 10 of an on-demand recording system includes an intermediary device **12** connected to a server **20** via a network **22**. The intermediary device **12** includes a memory buffer **14**, such as RAM or a hard drive, a processor **16** for converting analog signals into digital signals, and a processor **18** for placing data into packets. While processor **16** and processor **18** are depicted as separate processors, it is contemplated that a single processing system, composed of one or more processors in conjunction with firmware or software, could provide equivalent functionality. The server **20** includes a memory buffer **24**, such as random access memory (RAM) or a hard drive, a storage device **26**, such as a compact disk (CD-ROM) drive, floppy drive, or hard drive, and a device **28** for receiving a save initiation request. The intermediary device **12** is connected to one or more communication devices **30** via a network **32**. Communication devices **30** may be capable of transmitting or receiving analog or digital signals via the network **32**. Also connected to network **22** are one or more playback devices **36**, such as computers, dumb terminals, televisions, telephones, or other communication devices. Network **22** and network **32** may be any type of wired or wireless system for transmission of signals, including, a plain old telephone switch (POTS) network, computer packet network, or television broadcast system.

[0022] Connected to at least one of the communication devices **30** is a save initiator **34**, which allows a user of the on-demand recording system **10** to initiate a save request. While depicted in **FIG. 1** as being connected to one of the communication devices **30**, the save initiator **34** may instead (or in addition) be connected to any of the other components or may be a stand-alone component connected to network **22** or network **32**, thus allowing the initiation of the save request by someone other than a user of the communication devices **30**. Further, the save initiator **34** may be a touch pad, button, icon on a display screen, or any means or physical device to generate a save request signal.

[0023] Referring now to **FIG. 2**, in one embodiment, the on-demand recording system **10** may perform an on-demand recording method **200**. At step **202**, a connection is established between two communication devices (e.g., the communication devices. **30** of **FIG. 1** or an external communication device that is not part of the on-demand recording system). Examples of the connection include a telephone call, a data transmission between computers, a reception of a television signal, or any connection involving the transmission of information or data. In the present example, the connection is made through the intermediary device **12** of **FIG. 1**. At step **204**, once the connection is established, the intermediary device transmits the information to and from the communication devices. At step **206**, the information is dynamically duplicated into the memory buffer **14** as the information is communicated through the connection.

[0024] In one embodiment, the duplicated information is digitized at step **208** by the processor **16** (if not already in digital form). The digitized information can also be placed into packets. It is understood that in some embodiments, the step of digitizing the information could occur prior to duplication and packetization. At step **210**, the packets are then provided over the network **22** and received by the server **20**. At step **212**, the server **20** extracts (e.g., de-packetizes) the digitized information from the packets and stores the extracted information in the memory buffer **24**. While packets are used in the preferred embodiment, other forms of data transfer are commonly used by those skilled in the art, including, for example, frames, raw data, or tokens.

[0025] At any time during the connection, up until the connection is terminated, a user of the on-demand recording system **10** may request that the information of the entire connection be saved for later retrieval by initiating a save request with the save initiator **34** (a triggering event), such as at step **214**. It should be noted, however, that the user of the on-demand system **10** does not necessarily have to be a user of a communication device **30**. If a save request signal is initiated at step **214**, execution proceeds to step **216** where the save initiator **34** transmits a save request signal for receipt by the receiver **28**. At step **218**, the connection is terminated (in some embodiments), and at step **220**, the contents of the memory buffer **24** on the server **20** is copied onto the storage device **26**. At step **222**, the saved information of the entire connection on storage device **26** is made available for playback via the playback device **36**. In this manner, regardless of when the save request is initiated during the connection, the entire connection is available for playback.

[0026] In the present embodiment, if the connection terminates without a save request signal, such as at step **224**, execution proceeds to step **226**, where the contents of the memory buffer **24** on the server **20** is erased.

[0027] Referring now to **FIG. 3**, another embodiment of an on-demand recording system for use with voice communications is designated with the reference numeral **38**. The on-demand system **38** utilizes a switch **40**, which includes a series of line cards **42**. The switch **40** is connected to a server **44** via a network **46**. The server **44** includes a memory buffer **48**, storage device **50**, and a device **52** for receiving a save initiation request. The line cards **42** are connected to communication devices **54** via a network **58**. It is understood that communication device **54**, such as a telephone or any telephony device, may be capable of transmitting analog or digital signals, and that switch **40** may be any type of switch, such as an exchanger switch, telephone switch, or a private branch exchange (PBX). Any number of telephones **54** may be connected to any number of line cards **42**. Also connected to the network **46** are one or more playback devices **60** for playing back recorded communications.

[0028] In the present embodiment, a save initiator **56** is connected to a single telephone **54**. While depicted in **FIG. 3** as being connected to a telephone **54**, the save initiator may instead (or in addition) be connected to any of the other components or may be a stand-alone component connected to network **46** or network **58**, thus allowing the initiation of the save request by someone other than a user of the telephone **54**. Further, the save initiator **56** may be a touch pad, button, icon on a display screen, or any means or physical device to generate a save request signal.

[0029] Referring to **FIG. 4**, for the sake of example, each of the line cards **42** is constructed similar to a line card **42*a***. The line card **42*a*** includes a plurality of conventional switching components **62** and a processor **64** that is capable of digitizing, duplicating, and/or packetizing information for

transmission. The line card **42***a* also includes a data port **66** for transferring information onto either network **58** or network **46** or both. The processor **64** may be connected to a power supply (not shown) of the line card **42***a*. The line card will also include a memory **68** for storing signals that are switched through the line card.

[**0030**] Referring now to **FIG. 5**, in one embodiment, the on-demand recording system **38** may perform an on-demand recording method **500**. At step **502**, a connection is established between two telephones (e.g., the telephones **54** of **FIG. 3**, or any telephony device or an external communication device that is not part of the on-demand recording system). In the present example, the connection is a telephone call transmitting voice information. At step **504**, the connection is sent through a line card **42***a* in the PBX **40** and the line card **42***a* will transmit the voice communication to and from the telephones **54**. At step **506**, the processor **64** will dynamically duplicate the communications into memory **68** as the voice communication is transmitted via the telephone call. At step **508**, the duplicated communications, if not already in digital form, are digitized by the processor **64**, and then the digitized communications will be placed into packets. It is understood that digitizing the communications could occur prior to duplication and packetization.

[**0031**] At step **510**, the packets are output over the network **46** and received by the server **44**. At step **512**, the server **44** will extract (e.g., de-packetize) the digitized communications from the packets and store the communications in a memory buffer **48**. While packets are used in the preferred embodiment, other forms of data transfer are commonly used by those skilled in the art, including, for example, frames, raw data, or tokens.

[**0032**] At any time during the connection, up until the connection is terminated, the user of the voice implementation of the on-demand recording system **38** may request that the information of the entire connection be saved for later retrieval by initiating a save request (a triggering event), such as at step **514**. It should be noted, however, that the user of the on-demand system does not necessarily have to be a user of a telephone **54**. If a save request signal is initiated at step **514**, execution proceeds to step **516**, where the save initiator **56** will transmit a save request signal, which will be received by the receiver **52**. At step **518**, the telephone call is terminated and execution continues to step **520**, where, the memory buffer **48** on the server **44** is copied onto the storage device **50**. At step **522**, the entire saved communication is available for playback via a playback device **60**. In this manner, regardless of when the save request is initiated during the connection, the entire communication of the connection is available for playback.

[**0033**] If the telephone call terminates without a save request signal, such as at step **524**, execution proceeds to step **526**, where the memory buffer **48** on the server **44** is erased.

[**0034**] Referring now to **FIG. 6**, an embodiment of an on-demand recording system for use with computer communications is designated with the reference numeral **69**. A network device **70** is connected to a server **76** via a network **78**. The network device **70** includes a memory buffer **72** and a processor **74** for placing data into packets. The server **76** includes a memory buffer **80**, a storage device **82**, and a device **84** for receiving a save initiation request. The network device **70** is also connected to computers **86** via a network **90**, and one or more playback devices **92** are connected to the server **76** by network **78**.

[**0035**] Network **78** and network **90** may be capable of transmitting analog or digital signals, and may be any type of computer or telecommunication network. The network device **70** may be a router, hub, personal computer, server, gateway, bridge, or any device capable of facilitating network communications, and any number of computers **86** may be connected to any number of network devices **70**.

[**0036**] The computers **86** may be personal computers, personal digital assistants, or any device capable of receiving and/or transmitting signals. The computers **86** may also be running voice over IP software or software that allows computer messenging communications, such as provided by America Online's Instant Messenger, Yahoo! Messenger, or MSN Messenger. A save initiator **88** is connected to a computer **86**. While depicted in **FIG. 6** as being connected to one of the computers **86**, the save initiator **88** may instead (or in addition) be connected to any of the other components or may be a stand-alone component connected to network **78** or **90**, thus allowing the initiation of the save request by someone other than a user of a computer **86**. It is further understood that while network **78** and network **90** are depicted as distinct networks, that network **78** and network **90** could be the same network.

[**0037**] Referring now to **FIG. 7**, in one embodiment, the on-demand recording system **69** may perform an on-demand recording method **700**. At step **702**, a connection is established between two computers (e.g., the computers **86** of **FIG. 6** or an external communication device that is not part of the on-demand recording system). Examples of the connection include a telephone call, a data transmission between computers, a reception of a television signal, or any connection involving the transmission of information or data. In the present example, the data is sent through the network device **70** of **FIG. 1**. At step **704**, once the connection is established, the network device transfers information to and from the computers. At step **706**, the data is dynamically duplicated into memory **72** as the telephone call is communicated through the connection.

[**0038**] At step **708**, the duplicated data is placed into packets for transmission across a packet network. At step **710**, the packets are output over the network **78** to the server **76**. At step **712**, the server **76** will extract (e.g., de-packetize) the data from the packets and store the data in the memory buffer **80**. While packets are used in the preferred embodiment, other forms of data transfer are commonly used by those skilled in the art, including, for example, frames, raw data, or tokens.

[**0039**] At any time during the connection, up until the connection is terminated, the user of the on-demand recording system **69** may request that the data be saved for later retrieval (a triggering event), such as at step **714**. It should be noted, however, that the user of the on-demand recording system **69** does not necessarily have to be a user of a computer **86**. If a save request signal is initiated at step **714**, execution proceeds to step **716**, where the save initiator **88** will transmit a save request signal, which will be received by the receiver **84**. At step **718**, the connection is terminated, and execution continues to step **720**, where the memory

buffer **80** on the server **76** is copied onto the storage device **82**. At step **722**, the entire saved communication on storage device **82** is available for playback via a playback device **92**. In this manner, regardless of when the save request is initiated during the connection, the entire communication is available for playback.

[**0040**] If the connection terminates without a save request signal being received at the receiver **84**, such as at step **724**, execution proceeds to step **726**, where the memory buffer **80** on the server **76** is erased.

[**0041**] Referring now to **FIG. 8**, an embodiment of an on-demand recording system for use with television programs is designated by reference numeral **94**. A video signal device **96** for receiving video signals is connected to a server **104** via a network **106**. The video signal device includes a memory buffer **98**, a processor **100** for digitizing video signals, and a processor **102** for packetizing video signals. While processor **100** and processor **102** are depicted as separate processors, it is contemplated that a single processing system, composed of one or more processors in conjunction with firmware or software, could provide equivalent functionality. The video signal device **96** may be a computer, storage device, tuner, or any device capable of receiving video signals, including TiVo, Inc.'s digital video recorder or Microsoft Corporation's ULtimateTV digital video recorder.

[**0042**] The server **104** includes a memory buffer **108**, a storage device **110**, and a receiver **112** for receiving save request signals, and one or more playback devices **120** are connected to server **104** by network **106**. Network **106** and network **118** may be capable of transmitting analog or digital signals, and may be any type of computer, telecommunication, or television transmission network, whether cable, broadcast, or satellite. It is also understood that while network **106** and network **118** are depicted as distinct networks, that network **106** and network **118** could be the same network.

[**0043**] At least one display device **114** is connected to the video signal device **96** via a network **118**, and any number of display devices **114** may be connected to any number of video signal devices **96**. The display devices **114** may be computers, personal digital assistants, televisions, or any device capable of receiving and/or transmitting signals. Connected to at least one display device **114** is a save initiator **116** for initiating a save request signal. While depicted in **FIG. 8** as being connected to one of the display devices **114**, the save initiator **116** may be connected to any of the other components or may be a stand-alone component connected to network **106** or **118**, thus allowing the initiation of a save request by someone other than a user of the display device **114**. The save initiator **116** may be a touch pad, button, icon on a display screen, or any means or physical device to generate a save request signal.

[**0044**] Referring now to **FIG. 9**, in one embodiment, the on-demand recording system **94** may perform an on-demand recording method **900**. At step **902**, a connection is established with a television **114**. Examples of the connection include a television program broadcast, a pay-per-view program, or any connection involving the transmission of information or data. In the present example, the connection is transmitted to the television **114** through the video signal device **96**. At step **904**, once the connection is established, the video signal device transmits the information to the television **114**. At step **906**, the television program will be dynamically duplicated into memory **98** as the program is communicated through the connection.

[**0045**] In one embodiment, the duplicated program is digitized at step **908** by the processor **100** (if the program is not already in digital form), and then the digitized program will be placed into packets by processor **102**. It is understood that the digitization could occur prior to the duplication and packetization of the television program. At step **910**, the packets are output over the network **106** to the server **104**. At step **912**, the server **104** will extract (e.g. de-packetize) the television program from the packets and store the data in the memory buffer **108**. While packets are used in the preferred embodiment, other forms of data transfer are commonly used by those skilled in the art, including, for example, frames, raw data, or tokens.

[**0046**] At any time during the television program, up until the transmission is terminated, the user of the on-demand recording system **94** may request that the data be saved for later retrieval (a triggering event), such as at step **914**. It should be noted, however, that the user of the on-demand system **94** does not necessarily have to be a user of the television **114**. If a save request signal is initiated at step **914**, execution proceeds to step **916**, where the save initiator **116** will transmit a save request signal, which will be received by the receiver **112**. At step **918**, the connection is terminated, and at step **920**, the memory buffer **108** on the server **104** is then copied onto a storage device **110**. At step **922**, the entire saved television program is available for playback, regardless of when the save request is initiated. In this manner, regardless of when the save request is initiated during the connection, the entire communication is available for playback.

[**0047**] If the television program transmission terminates without a save request signal, such as at step **924**, execution proceeds to step **926**, where the memory buffer **108** on the server is erased.

[**0048**] The present invention as described above thus provides an improved method for allowing the entire telephone conversation, television broadcast, and other streams of analog or digital data to be recorded when the triggering event to record the data is initiated during the transmission. It is also contemplated by the present invention that various components of the invention could be combined to reduce the number of components. For example, the playback device could be integrated with the server or a communication device, or the playback device, server, and communication device could be integrated into a single unit. Other embodiments include having the playback device be situated on a separate network from the server or communication device. In addition, the processors contemplated in this disclosure could be hardware, software, or any combination thereof. Further, the memory buffer and storage devices could be combined into a single device.

[**0049**] While the invention has been particularly shown and described with reference to the preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and detail may be made therein without departing from the spirit and scope of the invention, as set forth in the following claims.

What is claimed is:

1. A method of on-demand recording of a telephone call conversation, comprising:

transmitting voice data of a telephone call conversation between a plurality of communication devices; and

recording the transmitted voice data in response to a triggering event occurring during the telephone call conversation, including recording a portion of the voice data that was transmitted between the plurality of communication devices prior to the occurrence of the triggering event.

2. The method of claim 1, wherein:

transmitting the voice data between the plurality of communication devices includes transmitting the voice data through an intermediary device; and

recording the transmitted voice data includes recording the transmitted voice data in the intermediary device.

3. The method of claim 2 further comprising establishing a connection via which the voice data is transmitted through the intermediary device and between the plurality of communication devices, wherein establishing the connection is at least partially performed by the intermediary device.

4. The method of claim 2 wherein the intermediary device is a private branch exchange (PBX).

5. The method of claim 1 wherein:

the portion of the voice data that was transmitted between the plurality of communication devices prior to the occurrence of the triggering event is a first portion of the voice data that was transmitted between the plurality of communications devices;

a second portion of the voice data was transmitted between the plurality of communication devices after the occurrence of the triggering event; and

recording the transmitted voice data in response to the triggering event includes recording the first and second portions of the transmitted voice data in response to the occurrence of the triggering event.

6. The method of claim 5 wherein the first and second portions of the transmitted voice data recorded in response to the occurrence of the triggering event collectively comprise the substantial entirety of the voice data transmitted between the plurality of communications devices during the telephone call conversation.

7. The method of claim 1 wherein transmitting the voice data between the plurality of communication devices includes performing a first save of the voice data transmitted between the plurality of communications devices irrespective of the occurrence or absence of the triggering event during the telephone call conversation, and wherein recording the transmitted voice data in response to the triggering event occurring during the telephone call conversation includes performing a second save of the voice data transmitted between the plurality of communications after the conclusion of the telephone call conversation.

8. The method of claim 7 wherein performing the first save includes saving substantially all of the voice data transmitted between the plurality of communications devices as the voice data is transmitted between the plurality of communications devices, and wherein performing the second save includes saving substantially all of the voice data transmitted between the plurality of communications after the conclusion of the telephone call conversation.

9. The method of claim 7 wherein transmitting the voice data between the plurality of communications devices includes transmitting the voice data through an intermediary device, and wherein performing the first and second save each include saving the transmitted voice data in a memory of the intermediary device.

10. The method of claim 9 wherein performing the first save includes saving the transmitted voice data in a first memory of the intermediary device, and wherein performing the second save includes saving the transmitted voice data in a second memory of the intermediary device.

11. The method of claim 7 wherein transmitting the voice data between the plurality of communication devices includes performing the first save of the voice data transmitted between the plurality of communications devices, and further comprising discarding the first-saved voice data if the telephone call conversation concludes in the absence of the triggering event.

12. An apparatus for on-demand recording of data communicated during each of a plurality of data communication sessions, comprising:

a switch configured to switch the data communicated during the plurality of data communication sessions, collectively;

a first memory configured to temporarily store a plurality of session data sets each corresponding to one of the plurality of data communication sessions, wherein each of the plurality of session data sets is temporarily stored at least until the conclusion of the corresponding one of the plurality of data communication sessions;

a receiver configured to receive each of a plurality of save requests each corresponding to one of the plurality of data communication sessions, including receiving each of the plurality of save requests during the corresponding one of the plurality of data communication sessions from one of an originating communication device and a terminating communication device of the corresponding one of the plurality of data communication sessions; and

a second memory configured to record ones of the plurality of session data sets each corresponding to one of the plurality of save requests received by the receiver.

13. The apparatus of claim 12 wherein the apparatus is a private branch exchange (PBX).

14. The apparatus of claim 12 wherein the originating and terminating communication devices are telephones.

15. The apparatus of claim 12 wherein the switch is connected to a plurality of line cards each configured to send and receive data corresponding to multiple ones of the plurality of data communication sessions.

16. The apparatus of claim 12 wherein the plurality of data communications sessions includes a plurality of telephone call conversations between the originating and terminating communication devices.

17. The apparatus of claim 12 wherein the plurality of data communications sessions includes a plurality of VoIP communication sessions.

18. The apparatus of claim 12 wherein at least one of the first and second memories are integrally housed with the switch and the receiver.

19. The apparatus of claim 12 wherein at least one of the first and second memories is housed separate from the switch and the receiver but connected at least indirectly to at least one of the switch and the receiver via a network.

20. The apparatus of claim 12 the second memory is configured to record at least two of the plurality of session data sets corresponding to simultaneously occurring ones of the plurality of data communication sessions.

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