

Exhibit 13

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J. Douglas
7/15/98



IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

APPLICANT: Richard Lang
SERIAL NO.: 08/896,727
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TITLE: Burst Transmission Apparatus and Method for
Audio/Video Information
EXAMINER: Huy Nguyen
ART UNIT: 2712
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Date: May 26, 1998

Charles B. Katz

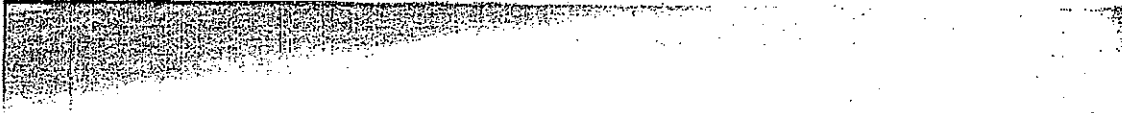
Charles B. Katz

Assistant Commissioner for Patents
Washington, DC 20231

7/21/98
by

AMENDMENT AND RESPONSE

In response to the Office Action mailed November 25, 1997, please amend the above-identified application as follows:



In the Claims:

Please cancel claims ~~27-41~~, ~~43-68~~, ~~70-113~~, ~~115-129~~ and ~~131-194~~ without prejudice.

Please add the following new claims 195-218:

-
- 1 ~~195~~. An audio/video transceiver apparatus comprising:
- 2 input means for receiving audio/video source information, said
- 3 audio/video source information comprising a multiplicity of video frames
- 4 collectively representing at least one full motion video program;
- 5 compression means, coupled to said input means, for compressing said
- 6 audio/video source information into a digital time compressed representation
- 7 thereof, wherein said digital time compressed representation of said
- 8 audio/video source information is capable of being transmitted in a burst
- 9 transmission time period that is substantially shorter than a time period
- 10 associated with real time viewing by a receiver of said audio/video source
- 11 information;
- 12 storage means, coupled to said compression means, for storing said digital
- 13 time compressed representation of said audio/video source information; and
- 14 transmission means, coupled to said storage means, for transmitting said
- 15 digital time compressed representation of said audio/video source information
- 16 away from said audio/video transceiver apparatus in said burst transmission
- 17 time period.

1 ^B 196. The audio/video transceiver apparatus of claim ^A 195, further comprising
2 editing means, coupled to said storage means, for editing the digital time
3 compressed representation of said audio/video source information stored in said
4 storage means and for storing the edited digital time compressed representation
5 of said audio/video source information in said storage means.

1 ³ 197. The audio/video transceiver apparatus of claim ² 196, wherein said
2 transmission means is configured to receive the edited digital time compressed
3 representation of said audio/video source information and to transmit the edited
4 digital time compressed representation of said audio/video source information
5 away from said audio/video transceiver apparatus in said burst transmission
6 time period.

1 ^A 198. The audio/video transceiver apparatus of claim ^A 195, further comprising:
2 decompression means, coupled to said storage means, for selectively
3 decompressing the digital time compressed representation of said audio /video
4 source information stored in said storage means; and
5 editing means, coupled to said decompression means and said storage
6 means, for editing the decompressed digital time compressed representation of
7 said audio/video source information, and for then storing the edited
8 decompressed digital time compressed representation of said audio/video
9 source information in said storage means.

5
1 ~~199~~⁵. The audio/video transceiver apparatus of claim ~~195~~¹, wherein said input
2 means comprise analog to digital converter means for converting analog
3 audio/video source information received at said input means to corresponding
4 digital audio/video source information.

6
1 ~~200~~⁶. An audio/video information transfer network comprising a plurality of
2 audio/video transceivers coupled via at least one communication link, each of
3 the audio/video transceivers comprising:
4 input means for receiving audio/video source information, said
5 audio/video source information comprising a multiplicity of video frames
6 collectively representing at least one full motion video program;
7 compression means, coupled to said input means, for compressing said
8 audio/video source information into a digital time compressed representation
9 thereof, wherein said digital time compressed representation of said
10 audio/video source information is capable of being transmitted in a burst
11 transmission time period that is substantially shorter than a time period
12 associated with real time viewing by a receiver of said audio/video source
13 information;
14 storage means, coupled to said compression means, for storing said digital
15 time compressed representation of said audio/video source information; and
16 transmission means, coupled to said storage means, for transmitting said
17 digital time compressed representation of said audio/video source information

18 away from said audio/video transceiver apparatus in said burst transmission
19 time period.

17
1 ~~201.~~ The audio/video transfer network of claim ~~200~~⁶, wherein:
2 said input means of at least one of said plurality of audio/video
3 transceivers includes a fiber optic input port;
4 said transmission means of at least one other of said plurality of
5 audio/video transceivers includes a fiber optic output port; and
6 said at least one communication link includes a fiber optic transmission
7 line coupling in communication said fiber optic input port with said fiber optic
8 output port.

8
1 ~~202.~~ The audio/video transfer network of claim ~~200~~⁶, wherein said transmission
2 means of at least one of said plurality of audio/video transceivers includes a
3 modem, and said at least one communication link includes a telephone
4 transmission line.

9
1 ~~203.~~ The audio/video transfer network of claim ~~200~~⁶, wherein at least one of
2 said audio/video transceivers further comprises editing means, coupled to said
3 storage means, for editing the digital time compressed representation of said
4 audio/video source information stored in said storage means and for storing the
5 edited digital time compressed representation of said audio/video source

6 information in said storage means.

1 ¹⁰ ~~204~~. The audio/video transfer network of claim ⁶ ~~200~~, wherein at least one of
2 said audio/video transceivers further comprises:

3 decompression means, coupled to said storage means, for selectively
4 decompressing the digital time compressed representation of said audio /video
5 source information stored in said storage means; and

6 editing means, coupled to said decompression means and said storage
7 means, for editing the decompressed digital time compressed representation of
8 said audio/video source information, and for then storing the edited
9 decompressed digital time compressed representation of said audio/video
10 source information in said storage means.

1 ¹¹ ~~205~~. The audio/video transceiver network of claim ⁶ ~~200~~, wherein at least one of
2 said plurality of audio/video transceivers further comprises analog to digital
3 converter means for converting analog audio/video source information received
4 at said input means to corresponding digital audio/video source information.

1 ¹² ~~206~~. A method for handling audio/video source information, the method
2 comprising the steps of:
3 receiving audio/video source information, said audio/video source
4 information comprising a multiplicity of video frames collectively constituting at

5 least one full motion video program;
6 compressing the received audio/video source information into a digital
7 time compressed representation thereof, the digital time compressed
8 representation of said audio/video source information having an associated
9 burst transmission time period that is substantially shorter than a time period
10 associated with real time viewing by a receiver of said audio/video source
11 information;
12 storing the digital time compressed representation of said audio/video
13 source information; and
14 transmitting, in said burst transmission time period, the stored digital time
15 compressed representation of said audio/video source information to a selected
16 destination.

¹³
1 ~~207~~. The method of claim ¹²206, further comprising the steps of:
2 editing the stored time compressed representation of said audio/video
3 source information; and
4 storing the edited time compressed representation of said audio/video
5 source information.

¹⁴
1 ~~208~~. The method of claim ¹²206, further comprising the step of converting the
2 received audio/video information from an analog format to a digital format.

1 ¹⁵~~209~~. The method of claim ¹²~~206~~ wherein the step of transmitting the stored
2 digital time compressed video information further comprises sending said time
3 compressed data to one of a plurality of audio/video transceivers connected
4 over at least one communications link.

1 ¹⁶~~210~~. The method of claim ¹⁵~~209~~ wherein said at least one communications link
2 comprises an optical channel.

1 ¹⁷~~211~~. The method of claim ¹⁵~~209~~, wherein said at least one communications link
2 comprises a telephone transmission channel.

1 ¹⁸~~212~~. The method of claim ¹²~~206~~, further comprising the step of providing a
2 network that includes a plurality of audio/video transceivers, coupled via at
3 least one communications link, said selected destination comprising at least one
4 of said plurality of audio/video transceivers.

1 ¹⁹~~213~~. The method of claim ¹⁸~~212~~, wherein said at least one communications link
2 comprises an optical channel.

1 ²⁰~~214~~. The method of claim ¹⁸~~212~~, wherein said at least one communications link
2 comprises a telephone transmission channel.

1 ²¹~~215~~. A method for handling audio/video source information, the method
2 comprising the steps of:
3 receiving audio/video source information as a digital time compressed
4 representation thereof, said audio/video source information comprising a
5 multiplicity of video frames collectively constituting at least one full motion
6 video program selected from a video library storing a plurality of video
7 programs in a digital time compressed representation thereof for selective
8 retrieval;
9 said at least one video program being received by a receiver in a burst
10 transmission time period that is substantially shorter than a time period
11 associated with real-time viewing by a receiver of said at least one video
12 program;
13 storing the digital time compressed representation of said audio/video
14 source information; and
15 transmitting, in said burst transmission time period, the stored digital time
16 compressed representation of said audio/video source information to a selected
17 destination.

1 ²²~~216~~. The method of claim ²⁴~~215~~, further comprising the step of providing a
2 network that includes a plurality of audio/video transceivers, coupled via at
3 least one communications link, said selected destination comprising at least one
4 of said plurality of audio/video transceivers.

- 1 ²³~~217~~. The method of claim ²²~~216~~, wherein said at least one communications link
- 2 comprises an optical channel.

- 1 ²⁴~~218~~. The method of claim ²²~~216~~, wherein said at least one communications link
 - 2 comprises a telephone transmission channel.
-

REMARKS

Reconsideration of the Application, as amended by the present communication, is hereby respectfully requested.

Claims 27-41, 43-68, 70-113, 115-129 and 131-194 were originally presented for examination in the Application. In the Office Action dated 11/25/97, the foregoing claims were rejected under 35 U.S.C. §103(a). Responsive to the Office Action, all of the original claims have been cancelled, and new claims 195-218 have been added. It is submitted that the new claims more clearly describe the invention and distinguish the same over the prior art of record.

Before turning to the specific rejections, a discussion of the general nature of the invention may be helpful to provide a context for analysis of the claims. The present invention teaches a system and method for transmitting audio/video source information, namely full motion video programs, between devices. The audio/video information is time compressed to thereby allow transmission in a burst transmission time period which is substantially shorter than the time associated with real-time viewing of the video program by a receiver of the program. For example, a video program having an associated viewing time (i.e., running length) of one hour could be time compressed and transmitted to a receiver in a burst transmission time period which is substantially less than one hour.

The burst transmission technique employed by the invention offers significant advantages over prior art audio/video information delivery systems

and methods. One illustrative example involves video library systems (also known as video-on-demand systems), wherein a video program selected from a collection of multiple programs is delivered to a client in response to a request therefrom. In a conventional video library system, each (uncompressed) video program is delivered to the requesting client on a substantially real time basis, i.e., the transmission period is equal to the time associated with viewing of the program by the receiver. By using the burst transmission system and method of the present invention, the transmission throughput (i.e., the rate at which audio/video information can be delivered to the system clients given a certain amount of bandwidth) is increased, enabling servicing of a larger number of clients. Furthermore, the system's clients can be serviced faster and more efficiently than by a conventional system. Utilization of the technique embodied by the invention also lends enhanced functionality to the video library system, such as the ability to selectively "pause" or "rewind" the video program.

Rejections Under 35 U.S.C. §103(a)

Claims 27-41, 43-68, 70-113, 115-129, and 131-194 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Izeke et al. (U.S. Pat. No. 4,974,178) in view of Hamilton et al. (U.S. Pat. No. 4,897,717). The Applicant respectfully traverses the Examiner's rejection as applied to new claims 195-218.

Izeke et al. teaches a system for editing information including pictures, sounds, and characters. The information is received through input units (43, 45)

and is preferably converted into a prescribed format by converting unit (46). The converted information, held in first storage means 53, is then edited by editing unit 47, and the edited information is stored in second storage means. The edited information can then be conveyed via an interface to a storage device such as magnetic tape. It is to be appreciated that the Izeki et al. device does not provide for burst transmission of video programs over a communications channel; rather, it is intended to facilitate production of a master tape comprising picture and sound information.

Hamilton et al. teaches a digital compression technique utilizing a discrete sine transform, segmentation and predictive analysis to avoid compression losses and thereby improve the quality of reconstructed images. Hamilton et al. does not teach or suggest any specific implementation of the compression technique described therein.

All of the claims in the present Application recite structures or steps wherein audio/video information representative of a video program is stored in digital time-compressed form, and the digital time-compressed audio/video information is then transmitted in a burst transmission time period substantially shorter than the time associated with real-time viewing of the audio/video information by a viewer. For example, independent claim 195 recites an audio/video transceiver comprising, inter alia:

compression means, coupled to said input means, for compressing said audio/video source information into a digital time compressed representation thereof, wherein said digital time compressed representation of said audio/video source information

is capable of being transmitted in a burst transmission time period that is substantially shorter than a time period associated with real time viewing by a receiver of said audio/video source information; [and]

transmission means, coupled to said storage means, for transmitting said digital time compressed representation of said audio/video source information away from said audio/video transceiver apparatus in said burst transmission time period.

Similarly, claim 206 recites a method for handling audio/video information, the method including the steps of, inter alia:

compressing the received audio/video source information into a digital time compressed representation thereof, the digital time compressed representation of said audio/video source information having an associated burst transmission time period that is substantially shorter than a time period associated with real time viewing by a receiver of said audio/video source information; [and]

transmitting, in said burst transmission time period, the stored digital time compressed representation of said audio/video source information to a selected destination.

The time-compression/burst transmission feature recited in the claims of the present Application is neither disclosed nor suggested by Izeke et al., Hamilton et al., or any of the other references of record, either taken individually or in combination. In rejecting the originally presented claims under §103, the Examiner states "it would be obvious to one of ordinary skill in the art to employ means for time-compressing audio/video information as an alternative compressing device for the compressing means of Izeke et al. in order to increase the transmission speed of the audio/video information as well as to increase the capacity of storing the audio/video information of the storage means." Applicant traverses the Examiner's assertion. It is an axiom of patent law that obviousness

cannot be established by combining the teaching of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. ACS Hospital Systems, Inc. v. Montefiore Hospital, 221 U.S.P.Q. 929, 932, 933 (Fed. Cir. 1984). As discussed hereinabove, Izeki et al. is directed to a very different problem than is the claimed invention. Namely, the Izeki et al. device is intended to be used for editing picture, sound and character information to produce a recording medium, whereas the system and method of the present invention enables burst transmission of full motion video programs. The "output means" (80) of Izeki et al. simply comprises an interface for transferring edited files to a master tape (see column 6, lines 61-65); it is not analogous to the transmission means or transmission step of the claimed invention. Furthermore, although Izeki et al. makes reference to processing "video information", it is apparent, based on a fair reading of the specification, that this "video information" represents still-picture information in video form (see column 2, lines 37-42). This is in sharp contrast to the claimed invention, wherein full motion video programs, having an inherent temporal element, are time compressed and transmitted.

Applicant respectfully submits that there is no motivation to combine the editing apparatus of Izeki et al. with the compression technique disclosed in Hamilton et al. Izeki et al. is simply not concerned with transmitting audio/video information away from the apparatus to one or more receivers. Furthermore, since Izeki deals with still picture information, compression of the

information would still not represent time compression thereof (as defined in the specification of the Application), since time compression necessarily requires that the information to be compressed have a temporal dimension.

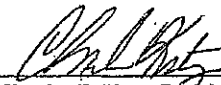
Because all of the claims now pending in the application recite features neither taught nor suggested by the prior art references, Applicant submits that these claims are allowable, and such action is earnestly solicited.

If the Examiner has questions regarding this case, he is invited to telephone the Applicant's undersigned representative at the number given below.

Respectfully submitted,
Richard Lang

Date: May 26, 1998

By: _____


Charles B. Katz, Reg. No. 36,564
Carr & Ferrell LLP
2225 East Bayshore Road, Suite 200
Palo Alto, CA 94303
(650) 812-3446