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United States Patent [19]
Krueger et al.

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[45] Date of Patent: Nov. 30, 1999

[54] TRANSCODING DATA IN A PROXY
COMPUTER PRIOR TO TRANSMITTING
THE AUDIO DATA TO A CLIENT

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[75] Inventors: Mark H. Krueger, Higashi-ku, Japan;
Jay D. Logue, San Jose, Calif.

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[73] Assignee: WebTV Networks, Inc., Mountain
View, Calif.

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[21] Appl. No.: 08/834,991

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[22] Filed: Apr. 7, 1997

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Related U.S. Application Data

[63] Continuation-in-part of application No. 08/656,924, Jun. 3,
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[51] Int. Cl. 6 H04L 5/00; H04L 12/00;
G06F 13/00

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[52] U.S. Cl. 709/247; 709/202; 709/203;
709/217; 709/227; 709/228; 709/231; 709/232;
709/246; 704/500; 704/503; 370/235; 370/236

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[58] Field of Search 395/200.3-200.33,
395/200.37-200.59, 200.61-200.65, 200.76-200.77;
709/200-203, 217, 218, 227-229, 231-235,
246-247; 704/500, 503; 370/235, 236

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Primary Examiner—Zarni Maung
Assistant Examiner—Bharat Barot

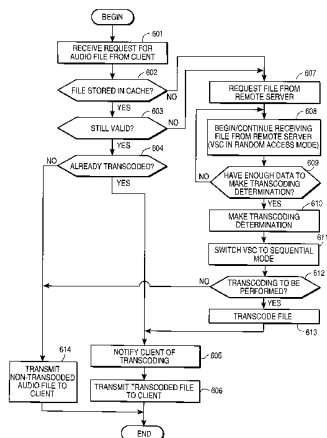
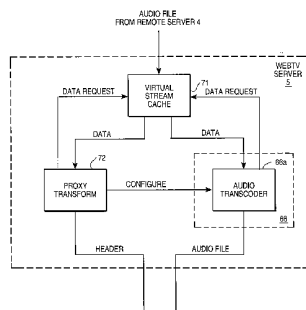
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Attorney, Agent, or Firm—Workman, Nydegger & Seeley

Table of U.S. Patent Documents with columns for patent number, date, inventor, and reference number.

[57] ABSTRACT

A local server has a connection to a client and to a remote
server over the Internet. The local server receives a request
for an audio file from the client and, in response, transmits
a requests for the audio file to the remote server. Upon
receiving the audio file, the local server transcodes the audio
file received from the remote server and then transmits the
transcoded audio file to the client. Transcoding may include
changing the audio file type, compressing the audio file,
reducing the number of audio channels, or reducing the
sampling rate of the data. The local server determines the
extent and type of transcoding to be performed on the audio
file as the audio file is downloaded from the remote server.
The extent and type of transcoding are based on the file



RPX Exhibit 1045
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formats which the client is capable of handling, the size of the requested audio file, the memory capacity of the client, the bandwidth of the connection between the local server and the client, and the desired level of audio quality. Transcoding may be performed on-the-fly while the

requested audio file is being downloaded to the local server from the remote server and while the modified audio file is being downloaded from the local server to the client.

38 Claims, 6 Drawing Sheets

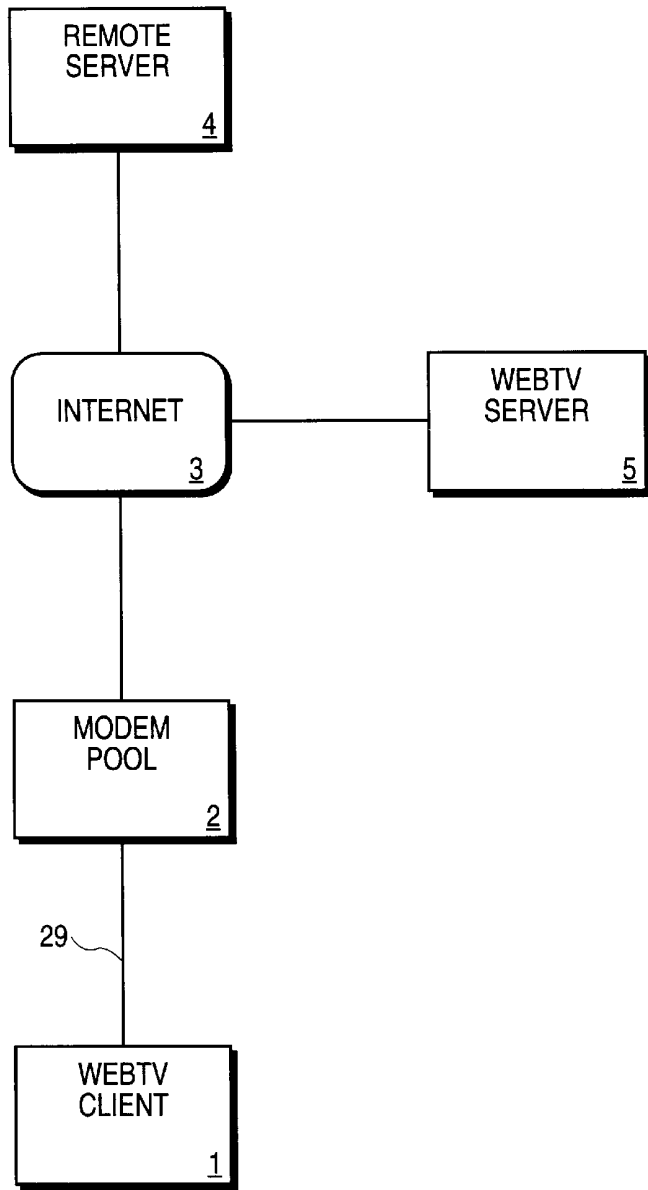


FIG. 1

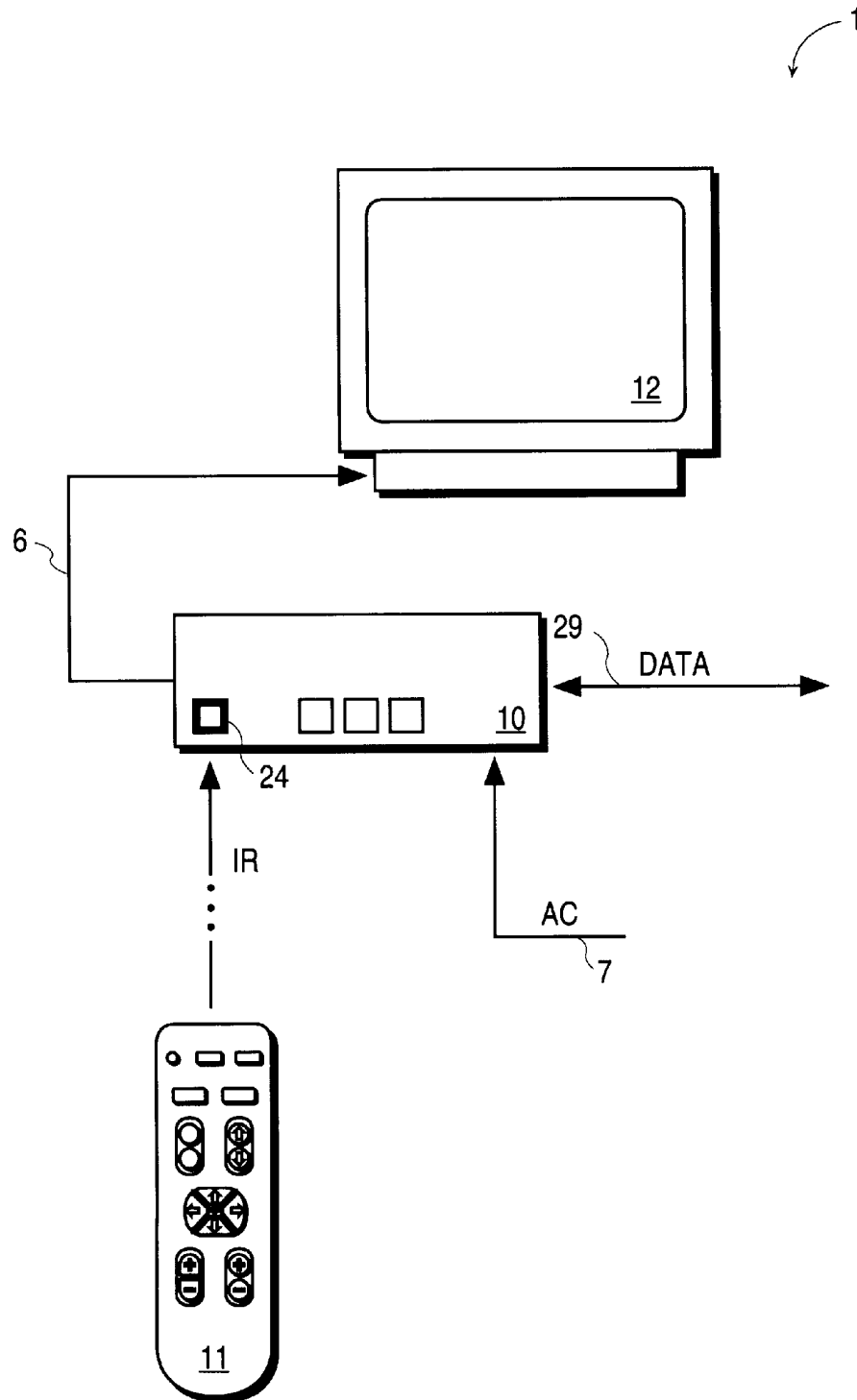


FIG. 2

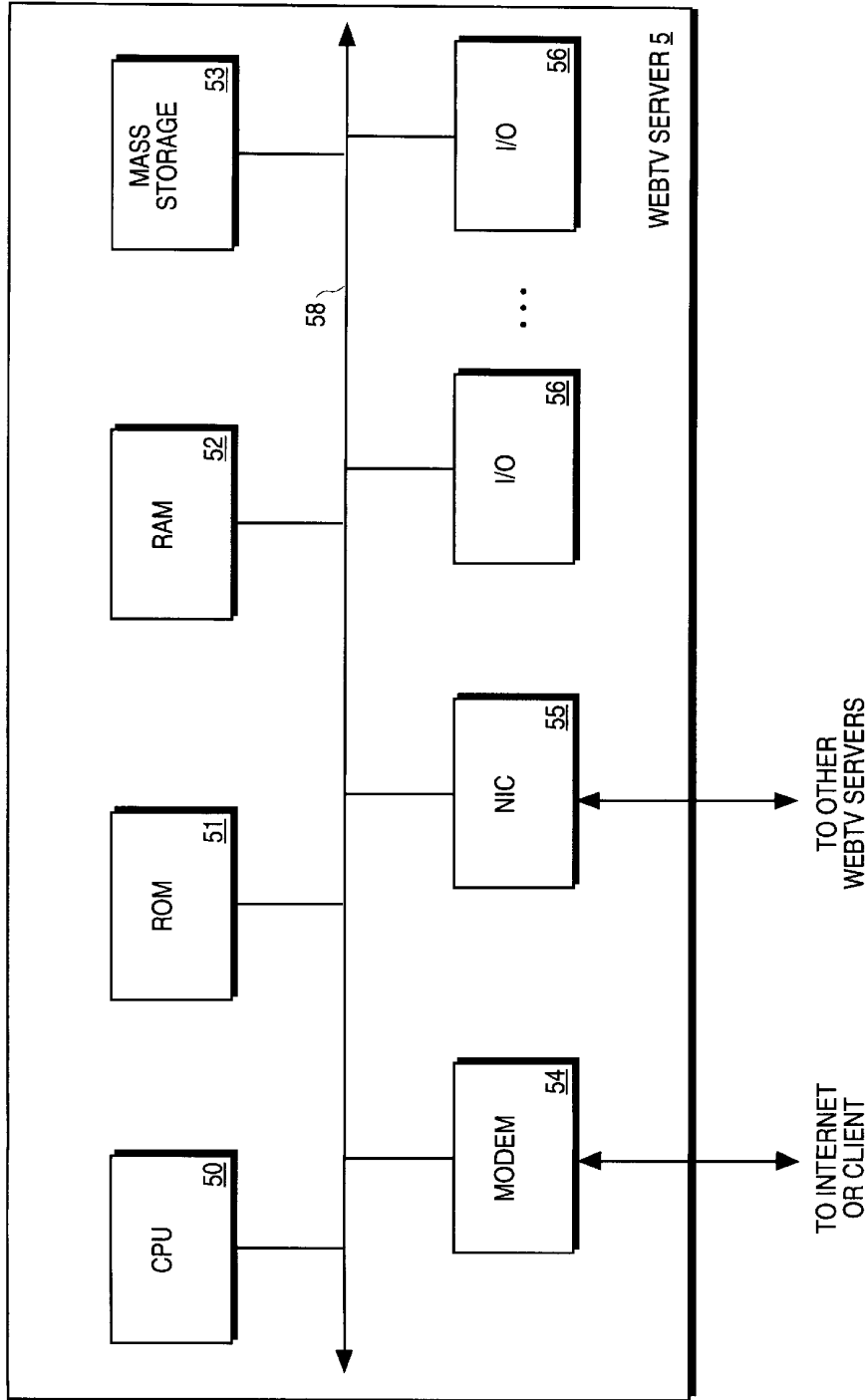


FIG. 3

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