

## METHOD AND APPARATUS TO DETERMINE BROADCAST CONTENT AND SCHEDULING IN A BROADCAST SYSTEM

### CLAIM OF PRIORITY

The present patent application is a Continuation of, and claims priority to and incorporates by reference, the corresponding U.S. patent application Ser. No. 12/975,027, entitled, "METHOD AND APPARATUS TO DETERMINE BROADCAST CONTENT AND SCHEDULING IN A BROADCAST SYSTEM" filed on Dec. 21, 2010, and issued as U.S. Pat. No. 8,108,542 on Jan. 31, 2012, and to U.S. patent application Ser. No. 11/864,485 filed Sep. 28, 2007, issued as U.S. Pat. No. 7,962,573 on Jun. 14, 2011 which is a Continuation of U.S. patent application Ser. No. 09/532,034 filed on Mar. 22, 2000, issued as U.S. Pat. No. 7,284,064 on Oct. 16, 2007 and claims priority and incorporates by reference thereto.

### CROSS-REFERENCE TO RELATED APPLICATIONS

The present application contains subject matter related to similar subject matter disclosed in co-pending application Ser. Nos. 09/533,024 and 09/533,048, both filed Mar. 22, 2000.

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

The present invention relates generally to broadcast systems and, more specifically, the present invention relates to providing content on demand in broadcast systems.

#### 2. Background Information

Broadcast systems traditionally transmit data in one direction from a server system to a plurality of client systems. Users of the client systems typically consume the signals received from the server system as they are broadcast. One paradigm in which users are provided with content on demand involves server systems that broadcast the same data continuously and/or at staggered intervals. Thus, if a user desires to consume a particular data file on demand, the user "tunes in" to one of the repeated broadcasts of the data file. One example of this paradigm can be illustrated with present day "pay per view" movies that are available from cable or satellite television providers. For instance, cable television providers commonly broadcast the same movies repeatedly on multiple channels at staggered intervals. Users that wish to watch a particular movie "on demand" simply tune in to one of the channels on which the desired movie is broadcast at the beginning of one of the times that the movie is broadcast. The continuous and repeated broadcasts of the same data or programs results in a very inefficient use of broadcast bandwidth. Bandwidth used to broadcast the same data repeatedly on multiple channels could otherwise be used to broadcast different data.

Another paradigm for providing content on demand in a broadcast system involves a user recording a particular data file and later accessing the data file "on demand." Continuing with the television broadcast illustration discussed above, an example of this paradigm is a user setting up his or her video cassette recorder (VCR) to record a desired television program. Later, when the user wishes to watch the television program "on demand," the user simply plays the earlier recorded program from his or her VCR. Recently, more advanced digital video recorders have become available,

which record the television broadcasts on internal hard drives instead of the video cassette tapes used by traditional VCRs. However, use of the digital video recorders is similar to traditional VCRs in that the users are required to explicitly set the criteria used (e.g. date, time) to determine which broadcasts are recorded on the internal hard drives.

Another limitation with present day broadcast systems is that it is difficult for most users of the client systems to provide feedback to broadcasters with regard to programming. For example, continuing with the television broadcast illustration discussed above, many of today's television broadcasters rely upon Neilson ratings to determine broadcast programming and/or scheduling. Neilson ratings are generally based upon only a small sampling of a cross-section of the public. Consequently, most television viewers have relatively little or no impact on broadcast schedules and/or content.

### BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is illustrated by way of example and not limitation in the accompanying figures.

FIG. 1A is a block diagram illustrating one embodiment of a broadcast system in accordance with the teachings of the present invention.

FIG. 1B is a block diagram illustrating another embodiment of a broadcast system in accordance with the teachings of the present invention.

FIG. 1C is a block diagram illustrating yet another embodiment of a broadcast system in accordance with the teachings of the present invention.

FIG. 2 is a block diagram of one embodiment of a computer system representative of a client or a server in accordance with the teachings of the present invention.

FIG. 3 is a flow diagram illustrating one embodiment of the flow of events in a server and a client when broadcasting meta-data and data files in accordance with the teachings of the present invention.

FIG. 4 is a flow diagram illustrating one embodiment of the flow of events in a client when processing meta-data broadcast from a server to maintain a meta-data table and content rating table in accordance with the teachings of the present invention.

FIG. 5 is an illustration of one example of meta-data broadcast by a server in accordance with the teachings of the present invention.

FIG. 6 is an illustration of one example of a meta-data table updated and maintained by a client in accordance with the teachings of the present invention.

FIG. 7 is an illustration of one example of a content rating table updated and maintained by a client in accordance with the teachings of the present invention.

FIG. 8 is a diagram illustrating one embodiment of data files that are classified by a user in accordance with the teachings of the present invention.

FIG. 9 is a diagram illustrating one embodiment of a meta-data table that is updated in response to user classifications in accordance with the teachings of the present invention.

FIG. 10 is a diagram illustrating one embodiment of a meta-data table that is updated after a user access in accordance with the teachings of the present invention.

FIG. 11 is a diagram illustrating one embodiment of a content rating table that is updated after a user access in accordance with the teachings of the present invention.

FIG. 12 is a diagram illustrating another embodiment of a meta-data table that is updated after another user access in accordance with the teachings of the present invention.