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- (71) Applicant (for all designated States except US): **THOMSON LICENSING** [FR/FR]; 1-5 rue Jeanne d'Arc, F-92130 Issy Les Moulineaux (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **TRAN, Hao, Chi** [VN/US]; 11318 Bodger Street, El Monte, California 91732 (US). **BAHR, Hauke** [DE/US]; 509 E. Providencia Avenue, Apartment 104, Burbank, California 91501 (US). **NADZOKOV, Vasil** [US/US]; 8523 1/2 Saturn Street, Los Angeles, California 90035 (US). **YEH, Roger** [US/US]; 1202 Winston Avenue, San Marino, California 91108 (US). **SHARTZER, Lee, Douglas** [US/US]; 25910 Matel Road, Valencia, California 91355 (US). **YOON, Andrew** [US/US]; 756 South Broadway Apt. 1108, Los Angeles, CA 90014 (US).

(74) Agents: **SHEDD, Robert, D.** et al.; c/o Thomson Licensing LLC, 2 Independence Way, Suite 200, Princeton, New Jersey 08540 (US).

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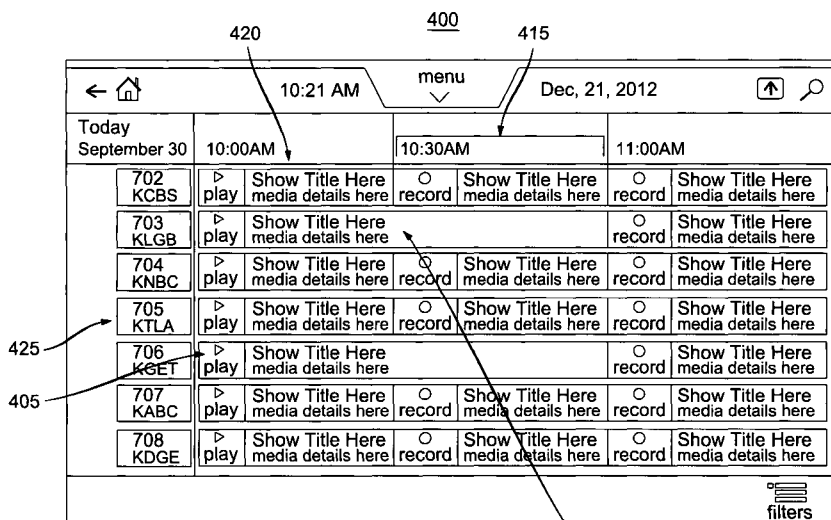


FIG. 4

(57) Abstract: The present invention relates to a method and associated apparatus providing an improved electronic program guide (EPG). Specifically, the present invention relates to a one click drilling feature which overlays a scrollable chronological list of programs to be broadcast by a particular channel. This feature is activated when a broadcaster icon, or channel number, is clicked upon in the grid electronic program guide.

Apparatus and Method for Electronic Program Guide Improvement

Priority Claim

5 This application claims the benefit of United States Provisional Patent Application No. 61/426,485 filed December 22, 2010, entitled "Apparatus and Method for Electronic Program Guide Improvement" which is incorporated herein by reference.

10 Field of the Invention

 The present invention relates to a method and associated apparatus providing an improved electronic program guide (EPG). Specifically, the present invention relates to a one click drilling feature which overlays a scrollable
15 chronological list of programs to be broadcast on a particular transmission channel. This feature is activated when a broadcaster icon, or channel number, is clicked upon in the grid electronic program guide.

Background of the Invention

20

 This section is intended to introduce the reader to various aspects of art, which may be related to various aspects of the present invention that are described below. This discussion is believed to be helpful in providing the reader with background information to facilitate a better understanding of the various
25 aspects of the present invention. Accordingly, it should be understood that these statements are to be read in this light, and not as admissions of prior art.

 Typically, an electronic program guide is presented as an on-screen display, depicting a grid. The grid is configured such that channel numbers are
30 aligned on one side of the grid, for example a vertical side, and times are aligned on another side, such as the horizontal side. The user may scroll the guide by

pressing keys on the remote control. As the user scrolls in the horizontal direction, new programs at different times are displayed for the channels represented on the vertical axis. As the user scrolls vertically, new channels are shown for the times represented on the horizontal axis. Each time the user scrolls to the next unseen column, all the columns are updated, often causing a delay while information is retrieved and updated for each channel.

With the vast amounts of programming and content available today to users of entertainment devices, quick navigation of electronic program guides is more important than ever. There is a need for improved methods of electronic program guide navigation that reduce the number of selections required by the user and increase the data displayed in easy to user, intuitive formats.

Summary of the Invention

In accordance with a present aspect of the present invention a method is disclosed, comprising the steps of generating a first representation of an electronic program guide wherein said first representation comprises a grid of programs having a plurality of program times represented on a first axis and a plurality of program sources represented on a second axis, receiving a control signal indicating one of said plurality of program sources, and generating a second representation of said electronic program guide wherein said second representation of said electronic program guide comprises a chronological list of a plurality of audio/video programs scheduled to be provided by only said one of said plurality of program sources.

In accordance with another aspect of the present invention, a method is disclosed, comprising the steps of generating a first representation of an electronic program guide wherein said first representation comprises a grid of programs having a plurality of times represented on a first axis and a plurality of program sources represented on a second axis, receiving a control signal

indicating one of said plurality of times, and generating a second representation of said electronic program guide wherein said second representation of said electronic program guide comprises a list of a plurality of audio/video programs scheduled to be provided only at said one of said plurality of times by said
5 plurality of program sources.

In accordance with another aspect of the present invention, an apparatus is disclosed, comprising a processor for generating a first representation of an electronic program guide wherein said first representation comprises a grid of
10 programs having a plurality of program times represented on a first axis and a plurality of program sources represented on a second axis, said processor further operative for generating a second representation of said electronic program guide wherein said second representation of said electronic program guide comprises a chronological list of a plurality of audio/video programs scheduled to
15 be provided by only said one of said plurality of program sources, and a receiver for receiving a control signal indicating one of said plurality of program sources.

Description of the Drawings

20 The above-mentioned and other features and advantages of this invention, and the manner of attaining them, will become more apparent and the invention will be better understood by reference to the following description of embodiments of the invention taken in conjunction with the accompanying drawings, wherein:

25 FIG. 1 is a block diagram showing an exemplary environment for implementing the present invention.

FIG. 2 is a block diagram showing an exemplary receiving device for implementing the present invention.

30 FIG. 3 is an exemplary illustration of a user interface process representative of an implementation of the present invention.

FIG. 4 is an exemplary on screen display representative of an implementation of the present invention.

FIG. 5 is an exemplary on screen display representative of an implementation of the present invention.

FIG. 6 is an exemplary on screen display representative of an implementation of the present invention.

5 FIG. 7 is an exemplary on screen display representative of an implementation of the present invention.

10 The examples set out herein illustrate presently preferred embodiments of the invention, and such exemplifications are not to be construed as limiting the scope of the invention in any manner.

Detailed Description

15 As described herein, the present invention permits a user to select a specific broadcast channel or time, thereby generating a scrollable EPG overlay for that selected time or broadcast channel. This feature is activated when a broadcaster icon, or channel number, is clicked upon in the grid electronic program guide.

20 While this invention has been described as having a preferred design, the present invention can be further modified within the spirit and scope of this disclosure. This application is therefore intended to cover any variations, uses, or adaptations of the invention using its general principles. Further, this application is intended to cover such departures from the present disclosure as
25 come within known or customary practice in the art to which this invention pertains and which fall within the limits of the appended claims. The present invention may be implemented in the software or electronics of a satellite or cable television set-top box or other device capable of tuning television signals. The disclosed apparatus and technique may also be used in other signal
30 reception applications.

Turning now to Figure 1, a block diagram of an embodiment of a system 100 for delivering content to a home or end user is shown. The content originates from a content source 102, such as a movie studio or production house. The content may be supplied in at least one of two forms. One form may be a broadcast form of content. The broadcast content is provided to the broadcast affiliate manager 104, which is typically a national broadcast service, such as the American Broadcasting Company (ABC), National Broadcasting Company (NBC), Columbia Broadcasting System (CBS), etc. The broadcast affiliate manager may collect and store the content, and may schedule delivery of the content over a deliver network, shown as delivery network 1 106. Delivery network 1 106 may include satellite link transmission from a national center to one or more regional or local centers. Delivery network 1 106 may also include local content delivery using local delivery systems such as over the air broadcast, satellite broadcast, or cable broadcast. The locally delivered content is provided to a receiving device 108 in a user's home, where the content will subsequently be searched by the user. It is to be appreciated that the receiving device 108 can take many forms and may be embodied as a set top box/digital video recorder (DVR), a gateway, a modem, etc. Further, the receiving device 108 may act as entry point, or gateway, for a home network system that includes additional devices configured as either client or peer devices in the home network.

A second form of content is referred to as special content. Special content may include content delivered as premium viewing, pay-per-view, or other content otherwise not provided to the broadcast affiliate manager, e.g., movies, video games or other video elements. In many cases, the special content may be content requested by the user. The special content may be delivered to a content manager 110. The content manager 110 may be a service provider, such as an Internet website, affiliated, for instance, with a content provider, broadcast service, or delivery network service. The content manager 110 may also incorporate Internet content into the delivery system. The content manager 110 may deliver the content to the user's receiving device 108 over a separate

delivery network, delivery network 2 112. Delivery network 2 112 may include high-speed broadband Internet type communications systems. It is important to note that the content from the broadcast affiliate manager 104 may also be delivered using all or parts of delivery network 2 (112 and content from the content manager 110 may be delivered using all or parts of delivery network 1 106. In addition, the user may also obtain content directly from the Internet via delivery network 2 112 without necessarily having the content managed by the content manager 110.

Several adaptations for utilizing the separately delivered content may be possible. In one possible approach, the special content is provided as an augmentation to the broadcast content, providing alternative displays, purchase and merchandising options, enhancement material, etc. In another embodiment, the special content may completely replace some programming content provided as broadcast content. Finally, the special content may be completely separate from the broadcast content, and may simply be a media alternative that the user may choose to utilize. For instance, the special content may be a library of movies that are not yet available as broadcast content.

The receiving device 108 may receive different types of content from one or both of delivery network 1 106 and delivery network 2 112. The receiving device 108 processes the content, and provides a separation of the content based on user preferences and commands. The receiving device 108 may also include a storage device, such as a hard drive or optical disk drive, for recording and playing back audio and video content. Further details of the operation of the receiving device 108 and features associated with playing back stored content will be described below in relation to FIG. 2. The processed content is provided to a display device 114. The display device 114 may be a conventional 2-D type display or may alternatively be an advanced 3-D display.

The receiving device 108 may also be interfaced to a second screen such as a touch screen control device 116. The touch screen control device 116 may be adapted to provide user control for the receiving device 108 and/or the display device 114. The touch screen device 116 may also be capable of displaying video content. The video content may be graphics entries, such as user interface entries, or may be a portion of the video content that is delivered to the display device 114. The touch screen control device 116 may interface to receiving device 108 using any well known signal transmission system, such as infra-red (IR) or radio frequency (RF) communications and may include standard protocols such as infra-red data association (IRDA) standard, Wi-Fi, Bluetooth and the like, or any other proprietary protocols. Operations of touch screen control device 116 will be described in further detail below.

In the example of Figure 1, the system 100 also includes a back end server 118 and a usage database 120. The back end server 118 includes a personalization engine that analyzes the usage habits of a user and makes recommendations based on those usage habits. The usage database 120 is where the usage habits for a user are stored. In some cases, the usage database 120 may be part of the back end server 118 a. In the present example, the back end server 118 (as well as the usage database 120) is connected to the system the system 100 and accessed through the delivery network 2 (112).

Turning now to Figure 2, a block diagram of an embodiment of a receiving device 200 is shown. Receiving device 200 may operate similar to the receiving device described in FIG. 1 and may be included as part of a gateway device, modem, settop box, or other similar communications device. The device 200 shown may also be incorporated into other systems including an audio device or a display device. In either case, several components necessary for complete operation of the system are not shown in the interest of conciseness, as they are well known to those skilled in the art.

In the device 200 shown in Figure 2, the content is received by an input signal receiver 202. The input signal receiver 202 may be one of several known receiver circuits used for receiving, demodulation, and decoding signals provided over one of the several possible networks including over the air, cable, satellite,
5 Ethernet, fiber and phone line networks. The desired input signal may be selected and retrieved by the input signal receiver 202 based on user input provided through a control interface or touch panel interface 222. Touch panel interface 222 may include an interface for a touch screen device. Touch panel interface 222 may also be adapted to interface to a cellular phone, a tablet, a
10 mouse, a high end remote or the like.

The decoded output signal is provided to an input stream processor 204. The input stream processor 204 performs the final signal selection and processing, and includes separation of video content from audio content for the content
15 stream. The audio content is provided to an audio processor 206 for conversion from the received format, such as compressed digital signal, to an analog waveform signal. The analog waveform signal is provided to an audio interface 208 and further to the display device or audio amplifier. Alternatively, the audio interface 208 may provide a digital signal to an audio output device or display
20 device using a High-Definition Multimedia Interface (HDMI) cable or alternate audio interface such as via a Sony/Philips Digital Interconnect Format (SPDIF). The audio interface may also include amplifiers for driving one more sets of speakers. The audio processor 206 also performs any necessary conversion for the storage of the audio signals.

25 The video output from the input stream processor 204 is provided to a video processor 210. The video signal may be one of several formats. The video processor 210 provides, as necessary a conversion of the video content, based on the input signal format. The video processor 210 also performs any
30 necessary conversion for the storage of the video signals.

A storage device 212 stores audio and video content received at the input. The storage device 212 allows later retrieval and playback of the content under the control of a controller 214 and also based on commands, e.g., navigation instructions such as fast-forward (FF) and rewind (Rew), received from a user interface 216 and/or touch panel interface 222. The storage device 212 may be a hard disk drive, one or more large capacity integrated electronic memories, such as static RAM (SRAM), or dynamic RAM (DRAM), or may be an interchangeable optical disk storage system such as a compact disk (CD) drive or digital video disk (DVD) drive.

The converted video signal, from the video processor 210, either originating from the input or from the storage device 212, is provided to the display interface 218. The display interface 218 further provides the display signal to a display device of the type described above. The display interface 218 may be an analog signal interface such as red-green-blue (RGB) or may be a digital interface such as HDMI. It is to be appreciated that the display interface 218 will generate the various screens for presenting the search results in a three dimensional gird as will be described in more detail below.

The controller 214 is interconnected via a bus to several of the components of the device 200, including the input stream processor 202, audio processor 206, video processor 210, storage device 212, and a user interface 216. The controller 214 manages the conversion process for converting the input stream signal into a signal for storage on the storage device or for display. The controller 214 also manages the retrieval and playback of stored content. Furthermore, as will be described below, the controller 214 performs searching of content and the creation and adjusting of the gird display representing the content, either stored or to be delivered via the delivery networks, described above.

The controller 214 is further coupled to control memory 220 (e.g., volatile or non-volatile memory, including RAM, SRAM, DRAM, ROM, programmable ROM (PROM), flash memory, electronically programmable ROM (EPROM) , electronically erasable programmable ROM (EEPROM), etc.) for storing information and instruction code for controller 214. Control memory 220 may store instructions for controller 214. Control memory may also store a database of elements, such as graphic elements containing content. The database may be stored as a pattern of graphic elements. Alternatively, the memory may store the graphic elements in identified or grouped memory locations and use an access or location table to identify the memory locations for the various portions of information related to the graphic elements. Additional details related to the storage of the graphic elements will be described below. Further, the implementation of the control memory 220 may include several possible embodiments, such as a single memory device or, alternatively, more than one memory circuit communicatively connected or coupled together to form a shared or common memory. Still further, the memory may be included with other circuitry, such as portions of bus communications circuitry, in a larger circuit.

Turning now to Figure 3, the user interface process of the present disclosure employs an input device that can be used to express functions, such as fast forward, rewind, etc. To allow for this, a tablet or touch panel device 300 (which is the same as the touch screen device 116 shown in FIG.1) may be interfaced via the user interface 216 and/or touch panel interface 222 of the receiving device 200. The touch panel device 300 allows operation of the receiving device or set top box based on hand movements, or gestures, and actions translated through the panel into commands for the set top box or other control device. In one embodiment, the touch panel 300 may simply serve as a navigational tool to navigate the grid display. In other embodiments, the touch panel 300 will additionally serve as the display device allowing the user to more directly interact with the navigation through the grid display of content. The touch panel device may be included as part of a remote control device containing more

conventional control functions such as activator buttons. The touch panel 300 can also includes at least one camera element.

Turning now to Figure 4, an exemplary on screen display of an electronic program guide (EPG) representative of an implementation of the present invention is shown. The EPG may be shown and accessed on the tablet (116, 300) It is desirable for a user to navigate to desired information in the quickest way possible. The present invention teaches a navigation method and apparatus using one click drilling on the tablet (116, 300). Typically an electronic program guide is configured in a grid with times along one axis 415 and channels along a second, orthogonal, axis 425. The individual programs are laid out in a grid with their respective times and channels corresponding to the times and channels on the grids.

An additional feature of the present inventive electronic program guide is that the EPG may shade all of the programs currently being shown such that the program EPG listing is progressively shaded darker proportional to the amount of time elapsed in the program (405, 410). This way the user gets a sense of how much of the program has already been shown without having to navigate into specific information about the program. Alternately, a progress bar can be displayed (420) over the column of programs with the length of the bar being proportional to the amount of time elapsed, as shown in Figure 6. The length of the bar would give the user a graphical representation of how much of the program has elapsed and the user could decide to view the program or not based on this information.

Turning now to Figure 5, an electronic program guide is operative with one click drilling, such that when a particular channel is selected by a user, a scrollable chronological list of shows with respective times is overlaid on the EPG is shown 500. According to the present invention, the user, via tablet (116,130) or remote control pointing device, can select a channel indicator on the EPG axis,

and a second guide appears over the initial electronic program guide. The second guide (510) has a scrollable list of chronologically ordered programs to be broadcast on the selected channel. This permits the user to easily and quickly view what will be shown on a particular channel without having to refresh the entire guide for each new screen of EPG. Alternately, the user may select a time indicator on the first axis, and a second scrollable EPG appears overlaid over the first EPG and displays all programs starting or playing at the selected time. This similarly permits the user to easily and quickly scroll through the second guide and see what is on at a particular time without having to load the entire guide for each block of channels being viewed on the guide. Additionally, the user can select a program from the field of the guide and a second guide will pop up overlaid on the first guide, where the second guide comprises a list of times and channels for the particular program selected.

Additionally, the electronic program guide operates such that when a user selects a per channel break out view, the original EPG is blacked out or significantly shaded while a new EPG, or scrollable list view is opened showing the selected channel's chronological list of shows and times. This makes viewing the second guide on the tablet (116, 300) easier for the user and concentrates the user's attention on the portions of the guide which are selectable, and not on the portions that cannot be selected. The user also will not be distracted or confused by information displayed on the overlaid EPG when viewing information displayed on the top level guide.

Turning now to Figure 6, an exemplary program guide feature 600 according to the present invention is shown. When a user selects a program, from within either the guide represented in Figure 4, or the guide represented in Figure 5, information is shown about the program, as well as the next viewing opportunity. (610) Additional times could be displayed as limited by design choices and available program information.

Referring now to Figure 7, the EPG 700 also facilitates the user to jump ahead by full days by selecting the date indicator 710 on the EPG, after which a scrollable calendar function opens and permits the user to select a day in the past or future limited by the data available to the EPG. When a user selects the new data, the EPG is opened for the new date at the time previously displayed by the EPG when the data was selected. For example, if a user is viewing the program guide on February 1st at 6 pm, and the electronic program guide shows 3 hours of programming, information concerning programs broadcast between 6 pm and 9pm will be shown for February 1st. If the user then selects the date button, or some variation thereof, and chooses February 5th, the guide will switch to displaying programs to be broadcast between 6 pm and 9pm on February 5th. Alternatively, a user may select a day, and an additional pop up selection or scrollable list may appear which lets a user select a time period, such as a.m., p.m., morning, afternoon, evening, etc. After a user selects a time period, a corresponding time period will appear in the EPG, such as 6-9 am, or the like.

It should be understood that the elements shown in the FIGS. may be implemented in various forms of hardware, software or combinations thereof. Preferably, these elements are implemented in a combination of hardware and software on one or more appropriately programmed general-purpose devices, which may include a processor, memory and input/output interfaces.

The present description illustrates the principles of the present disclosure. It will thus be appreciated that those skilled in the art will be able to devise various arrangements that, although not explicitly described or shown herein, embody the principles of the disclosure and are included within its spirit and scope.

All examples and conditional language recited herein are intended for informational purposes to aid the reader in understanding the principles of the disclosure and the concepts contributed by the inventor to furthering the art, and

are to be construed as being without limitation to such specifically recited examples and conditions.

Moreover, all statements herein reciting principles, aspects, and
5 embodiments of the disclosure, as well as specific examples thereof, are intended to encompass both structural and functional equivalents thereof. Additionally, it is intended that such equivalents include both currently known equivalents as well as equivalents developed in the future, i.e., any elements developed that perform the same function, regardless of structure.

10

Thus, for example, it will be appreciated by those skilled in the art that the block diagrams presented herein represent conceptual views of illustrative
circuitry embodying the principles of the disclosure. Similarly, it will be appreciated that any flow charts, flow diagrams, state transition diagrams,
15 pseudocode, and the like represent various processes which may be substantially represented in computer readable media and so executed by a computer or processor, whether or not such computer or processor is explicitly shown.

20 The functions of the various elements shown in the figures may be provided through the use of dedicated hardware as well as hardware capable of executing software in association with appropriate software. When provided by a processor, the functions may be provided by a single dedicated processor, by a single shared processor, or by a plurality of individual processors, some of which
25 may be shared. Moreover, explicit use of the term “processor” or “controller” should not be construed to refer exclusively to hardware capable of executing software, and may implicitly include, without limitation, digital signal processor (“DSP”) hardware, read only memory (“ROM”) for storing software, random access memory (“RAM”), and nonvolatile storage.

30

Other hardware, conventional and/or custom, may also be included. Similarly, any switches shown in the figures are conceptual only. Their function may be carried out through the operation of program logic, through dedicated logic, through the interaction of program control and dedicated logic, or even
5 manually, the particular technique being selectable by the implementer as more specifically understood from the context.

Although embodiments which incorporate the teachings of the present disclosure have been shown and described in detail herein, those skilled in the
10 art can readily devise many other varied embodiments that still incorporate these teachings. Having described preferred embodiments for a method and system for passing content between main screen and secondary screen (which are intended to be illustrative and not limiting), it is noted that modifications and variations can be made by persons skilled in the art in light of the above
15 teachings.

CLAIMS:

1. A method comprising the steps of:
 - generating a first representation of an electronic program guide wherein
5 said first representation comprises a grid of programs having a plurality of
 program times represented on a first axis and a plurality of program
 sources represented on a second axis;
 - receiving a control signal indicating one of said plurality of program
 sources; and
 - 10 - generating a second representation of said electronic program guide
 wherein said second representation of said electronic program guide
 comprises a chronological list of a plurality of audio/video programs
 scheduled to be provided by only said one of said plurality of program
 sources.
- 15 2. The method of claim 1 wherein said plurality of program sources are
 television broadcasters.
- 20 3. The method of claim 1 wherein said second representation of said
 electronic program guide is scrollable such that a start time of said
 chronological list is altered in response to a second control signal.
- 25 4. The method of claim 3 wherein said second control signal is generated in
 response to a scroll wheel on a remote control device.
5. The method of claim 3 wherein said second control signal is generated in
 response to a user hand movement in contract with a touch sensitive input
 device.
- 30 6. The method of claim 1 wherein said second representation of said
 electronic program guide is overlaid on an altered version of said first
 representation of said electronic program guide.

7. A method comprising the steps of:

- generating a first representation of an electronic program guide wherein said first representation comprises a grid of programs having a plurality of times represented on a first axis and a plurality of program sources represented on a second axis;
- receiving a control signal indicating one of said plurality of times; and
- generating a second representation of said electronic program guide wherein said second representation of said electronic program guide comprises a list of a plurality of audio/video programs scheduled to be provided only at said one of said plurality of times by said plurality of program sources.

8. The method of claim 7 wherein said plurality of program sources are television broadcasters.

9. The method of claim 7 wherein said second representation of said electronic program guide is scrollable such that a first one of said program sources of said list is altered in response to a second control signal.

10. The method of claim 9 wherein said second control signal is generated in response to a scroll wheel on a remote control device.

11. The method of claim 9 wherein said second control signal is generated in response to a user hand movement in contact with a touch sensitive input device.

12. The method of claim 7 wherein said second representation of said electronic program guide is overlaid on an altered version of said first representation of said electronic program guide.

13. An apparatus comprising:

- a processor for generating a first representation of an electronic program guide wherein said first representation comprises a grid of programs having a plurality of program times represented on a first axis and a plurality of program sources represented on a second axis, said processor further operative for generating a second representation of said electronic program guide wherein said second representation of said electronic program guide comprises a chronological list of a plurality of audio/video programs scheduled to be provided by only said one of said plurality of program sources; and
- a receiver for receiving a control signal indicating one of said plurality of program sources.

14. The apparatus of claim 13 wherein said plurality of program sources are television broadcasters.

15. The apparatus of claim 13 wherein said second representation of said electronic program guide is scrollable such that a start time of said chronological list is altered in response to a second control signal.

16. The apparatus of claim 15 wherein said second control signal is generated in response to a scroll wheel on a remote control device.

17. The apparatus of claim 15 wherein said second control signal is generated in response to a user hand movement in contact with a touch sensitive input device.

18. The apparatus of claim 13 wherein said second representation of said electronic program guide is overlaid on an altered version of said first representation of said electronic program guide.

19. The apparatus of claim 13 further comprising a display for displaying said first representation and said second representation.
20. The apparatus of claim 13 wherein said second representation is
5 displayed in response to receiving said control signal.

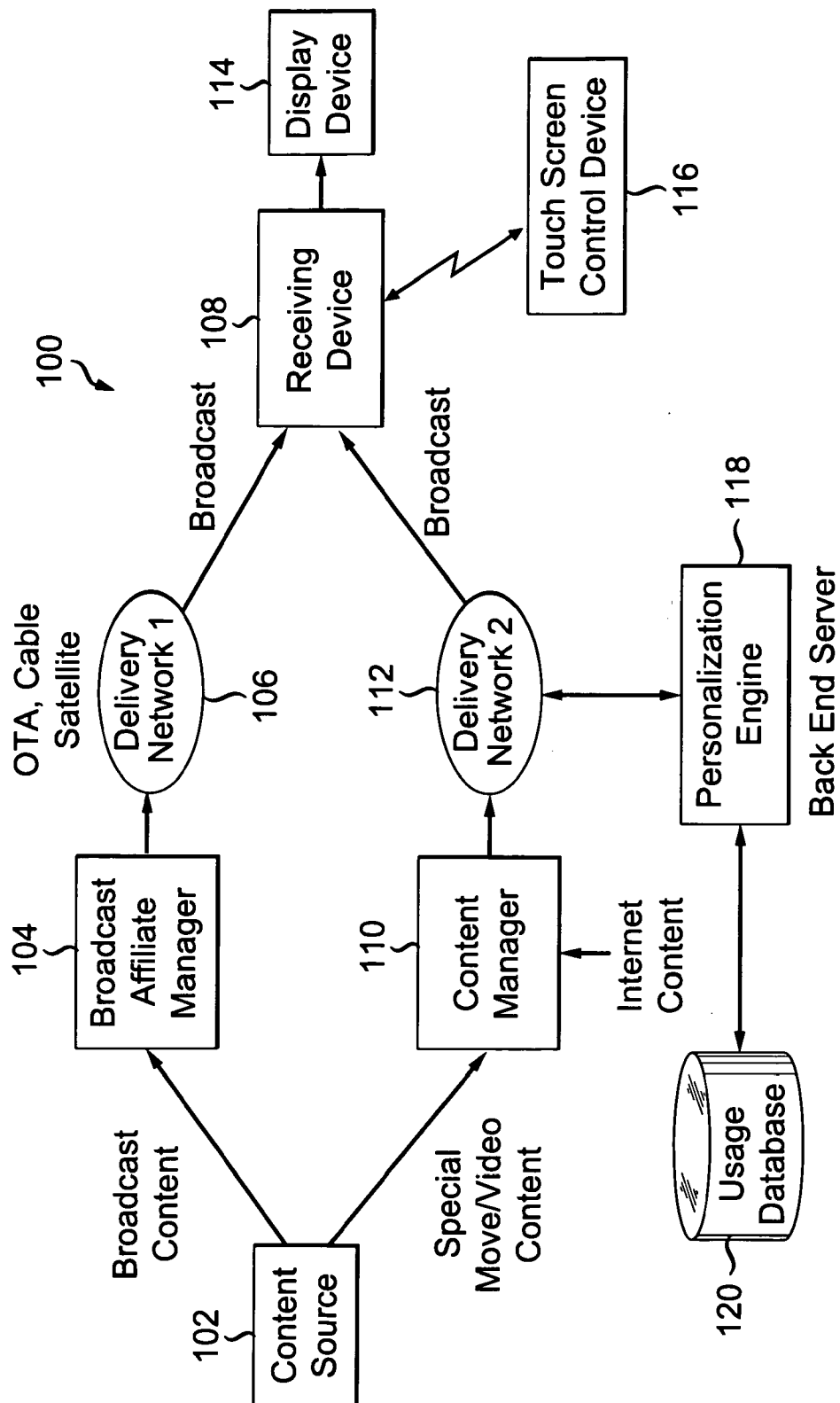
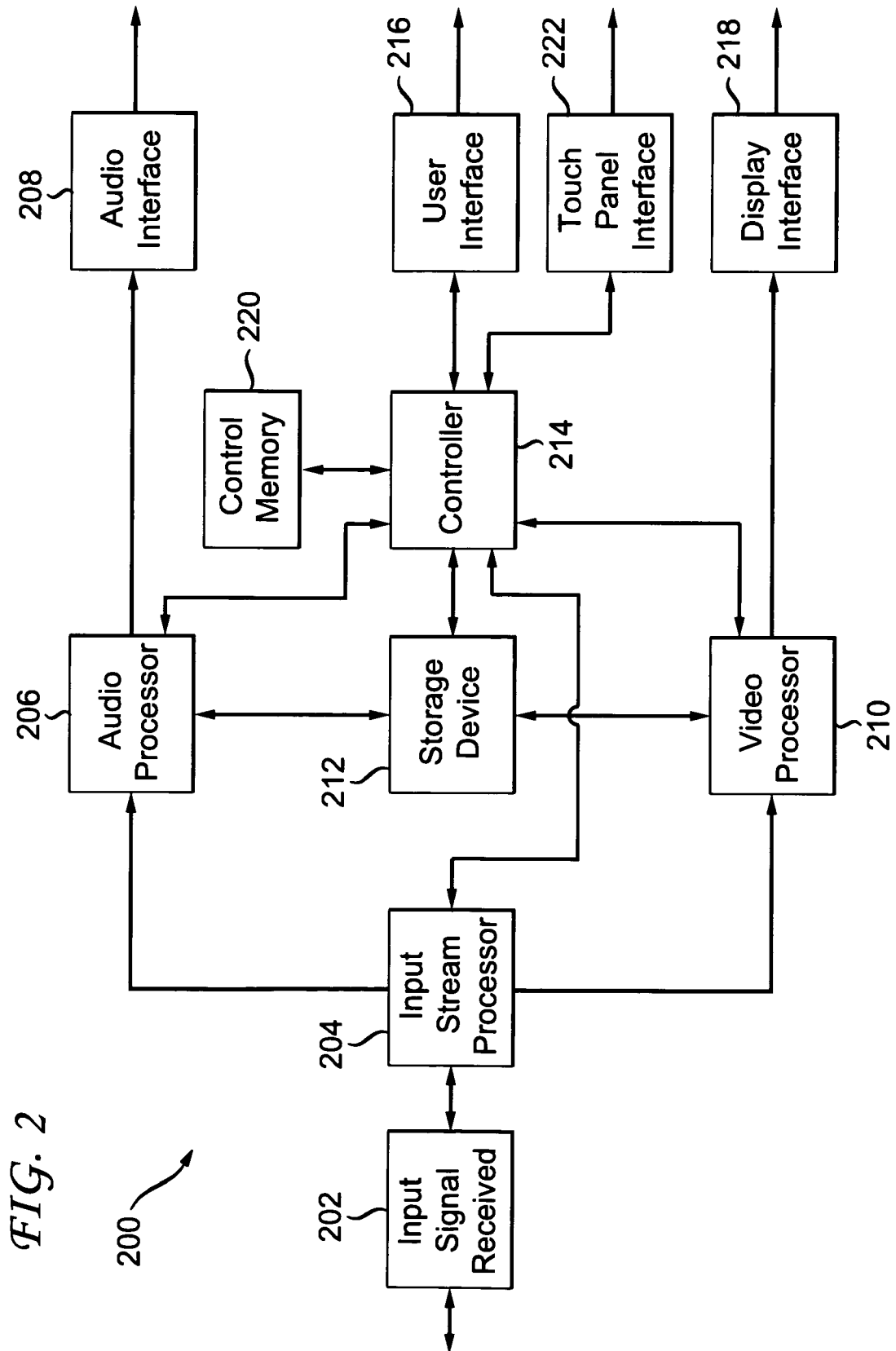


FIG. 1

2/7



3/7

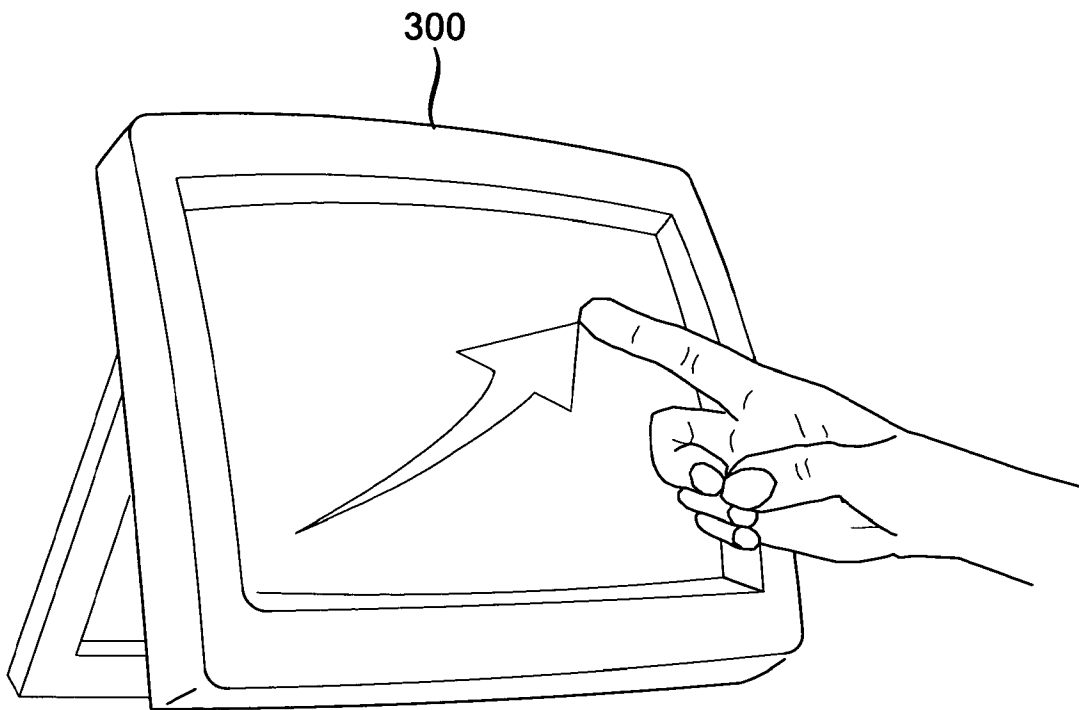


FIG. 3

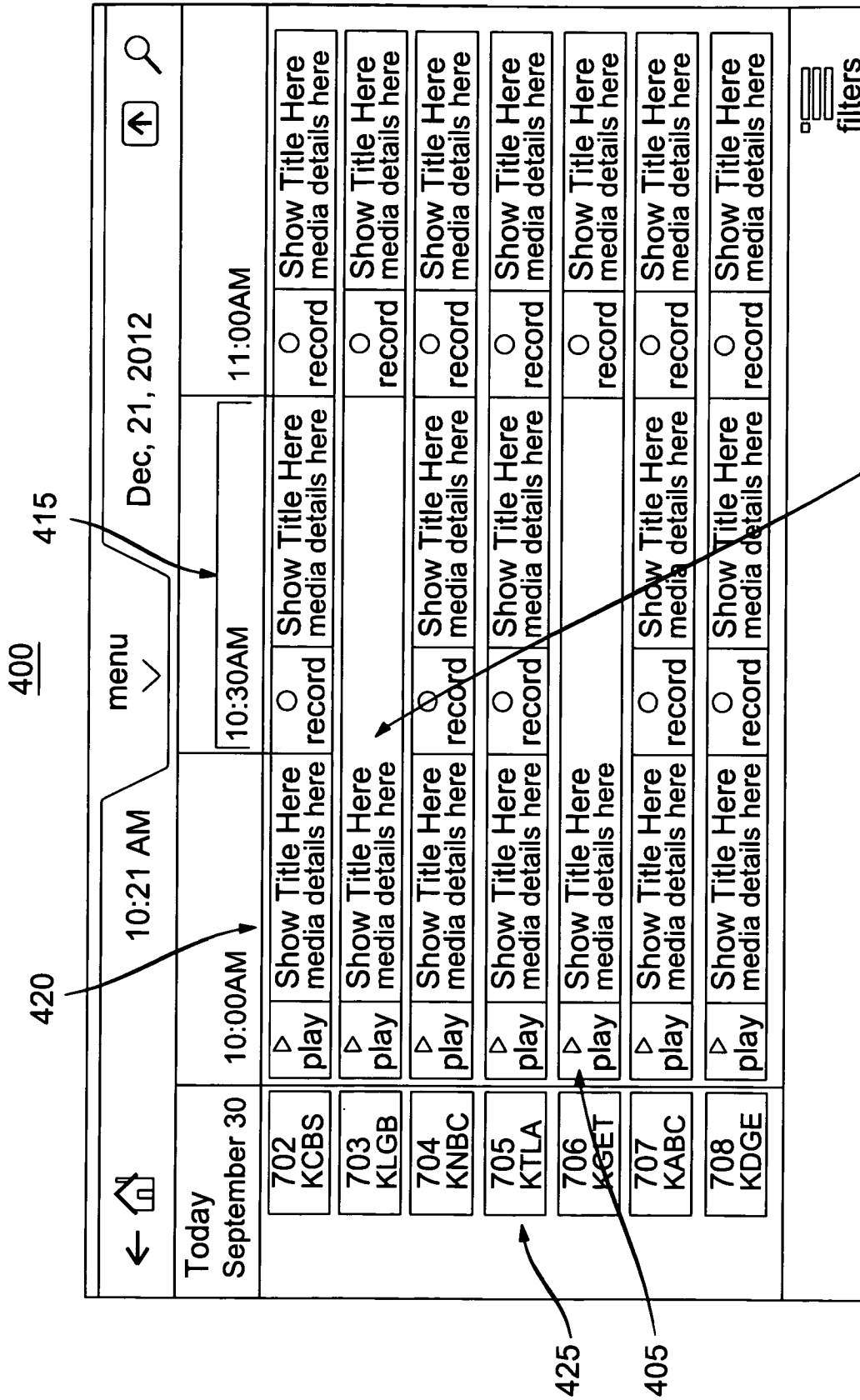


FIG. 4

500

510

←

10:21 AM

menu

Dec. 21 2012

Today September 30			
702 KCBS	11:00PM Media Title Here media details here	▶ play	Here s here O record Show Title Here media details here
703 KLGB	11:30PM Media Title Here media details here	O record	Here s here O record Show Title Here media details here
704 KNBC	TOMORROW October 1		Here s here O record Show Title Here media details here
705 KTLA	12:00 AM Media Title Here media details here	O record	Here s here O record Show Title Here media details here
706 KGET	1:00 AM Media Title Here media details here	O record	Here s here O record Show Title Here media details here
707 KABC	2:00 AM Media Title Here media details here	O record	Here s here O record Show Title Here media details here
708 KIDG	2:30 AM Media Title Here media details here	O record	Here s here O record Show Title Here media details here
X close			

FIG. 5

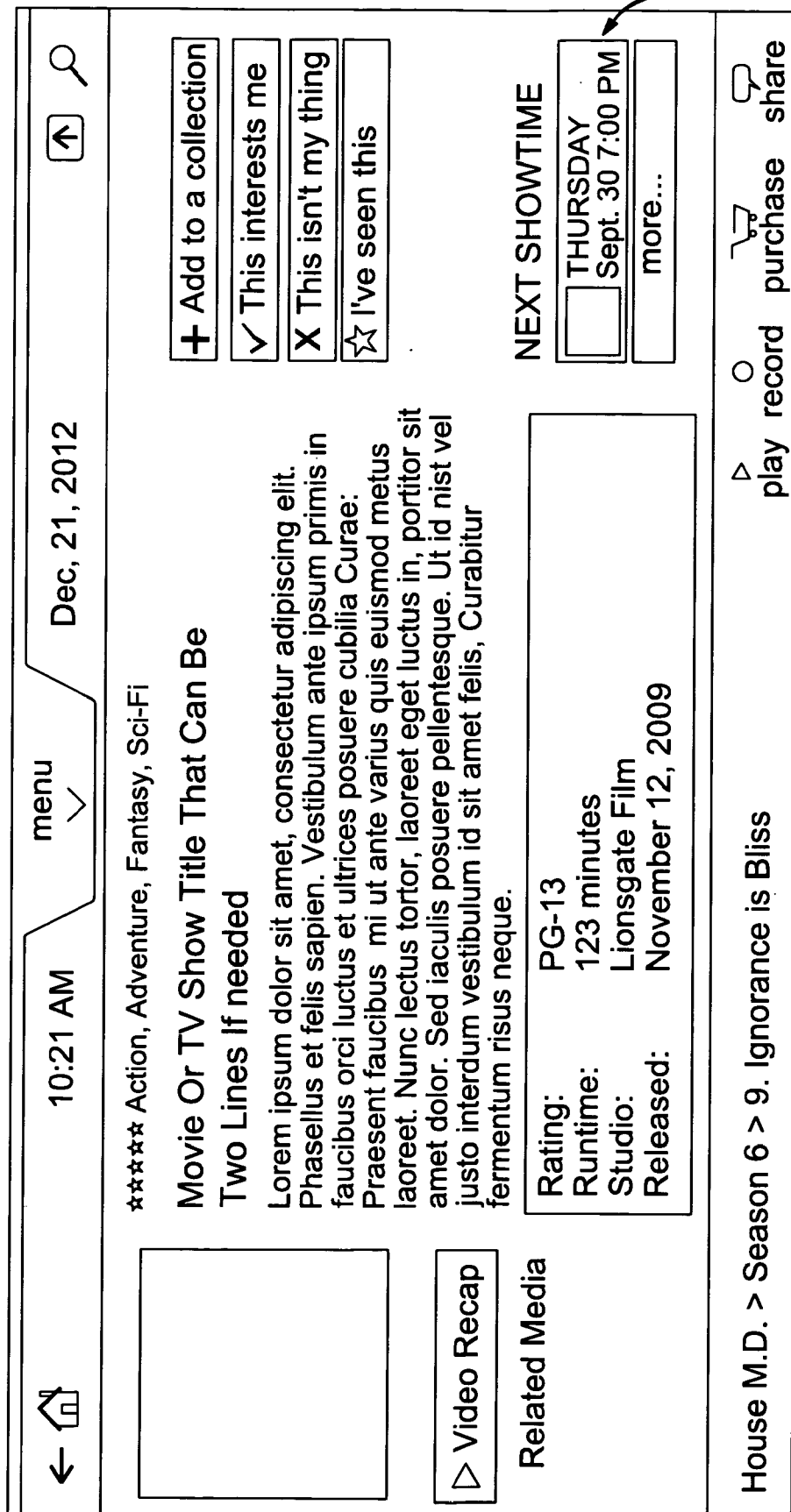


FIG. 6

7/7

710
700

	10:21 AM	menu	Dec, 21, 2012		
Today September 30	Today September 30				
702 KCBS	Tomorrow October 1	☐ cord	Show Title Here media details here	☐ record	Show Title Here media details here
703 KLGB	SATURDAY October 2			☐ record	Show Title Here media details here
704 KNBC	SUNDAY October 3	☐ cord	Show Title Here media details here	☐ record	Show Title Here media details here
705 KTLA	MONDAY October 4	☐ cord	Show Title Here media details here	☐ record	Show Title Here media details here
706 KGET	TUESDAY October 5			☐ record	Show Title Here media details here
707 KABC	WEDNESDAY October 6	☐ cord	Show Title Here media details here	☐ record	Show Title Here media details here
708	THURSDAY	☐	Show Title Here	☐	Show Title Here
X close					

FIG. 7

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2011/065972

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H04N21/482 H04N21/431
 ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/020962 A1 (STARK KORINA J [US] ET AL) 26 January 2006 (2006-01-26) abstract; figure 2 paragraphs [0088], [0089], [0091] paragraphs [0228] - [0232], [0238] - [0244] Table of functions between pages 20-26; paragraph [0287]	1-20
X	US 5 353 121 A (YOUNG PATRICK [US] ET AL) 4 October 1994 (1994-10-04) column 10, lines 42-65 column 26, lines 30-32	1-20
A	WO 2010/033982 A1 (ECHOSTAR TECHNOLOGIES LLC [US]; WHITE JAMES MATTHEW [US]; TAXIER KAREN) 25 March 2010 (2010-03-25) paragraphs [0245], [0275]	4,5,10, 11,16,17
	-/--	



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

23 March 2012

Date of mailing of the international search report

04/04/2012

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040,
 Fax: (+31-70) 340-3016

Authorized officer

Güvener, Cem

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2011/065972

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2009/165045 A1 (STALLINGS HEATH [US] ET AL) 25 June 2009 (2009-06-25) figure 9 -----	6,12,18, 19

INTERNATIONAL SEARCH REPORT

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