US008281339B1

(12) **United States Patent**
Walker et al.

(10) **Patent No.: US 8,281,339 B1**
(45) **Date of Patent: Oct. 2, 2012**

(54) **CUSTOMIZABLE FLIP AND BROWSE OVERLAYS IN AN INTERACTIVE TELEVISION SYSTEM**

(75) Inventors: **Todd Walker**, Bixby, OK (US); **Michael D Ellis**, Boulder, CO (US)

(73) Assignee: **United Video Properties, Inc.**, Tulsa, OK (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **12/551,399**

(22) Filed: **Aug. 31, 2009**

Related U.S. Application Data

(63) Continuation of application No. 10/756,699, filed on Jan. 12, 2004, now abandoned.

(51) **Int. Cl.**

G06F 3/00	(2006.01)
G06F 13/00	(2006.01)
H04N 5/445	(2011.01)
H04N 5/50	(2006.01)
G06Q 30/00	(2012.01)

(52) **U.S. Cl.** **725/45**; 725/40; 725/61; 348/564; 348/569; 705/14.4

(58) **Field of Classification Search** 725/45, 725/40, 61; 348/564, 569; 705/14.4
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,440,427	A	4/1969	Kammer
3,492,577	A	1/1970	Reiter et al.
3,493,674	A	2/1970	Houghton
3,833,757	A	9/1974	Kirk, Jr. et al.
3,891,792	A	6/1975	Kimura
3,936,868	A	2/1976	Thorpe
3,996,583	A	12/1976	Hutt et al.
4,004,085	A	1/1977	Makino et al.
4,016,361	A	4/1977	Pandey
4,026,555	A	5/1977	Kirschner et al.
4,031,548	A	6/1977	Kato et al.
4,052,719	A	10/1977	Hutt et al.
4,079,419	A	3/1978	Siegle et al.
4,081,753	A	3/1978	Miller

(Continued)

FOREIGN PATENT DOCUMENTS

DE	3337204	A1	4/1985

(Continued)

OTHER PUBLICATIONS

Edwardson, et al.; "CEEFAX: A Proposed New Broadcasting Ser.," Journal of the SMPTE, Jan. 1974, pp. 14-19.

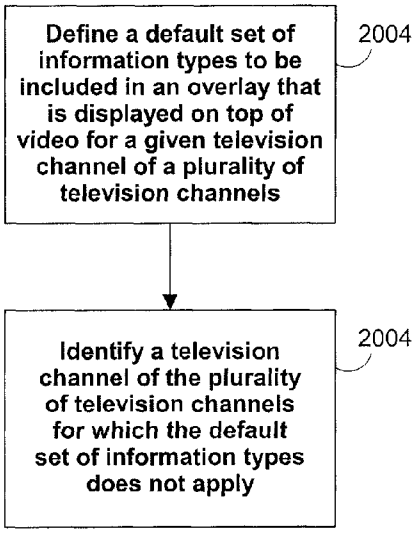
(Continued)

Primary Examiner — Hoang-Vu A Nguyen-Ba
(74) *Attorney, Agent, or Firm* — Ropes & Gray LLP

(57) **ABSTRACT**

Systems and methods are provided for customizing the display of interactive television overlays. A condition related to the display of an overlay on top of video for a television channel may be defined for each of a plurality of television channels. A default set of information types for an interactive television overlay (e.g., a FLIP overlay, a BROWSE overlay, etc.) may be defined for the plurality of television channels. When the overlay is displayed on top of video for a given television channel of the plurality of television channels, the overlay may include information of the default set of information types. One or more television channels of the plurality of television channels may be identified as channels for which the default set of information types does not apply (e.g., channels for which the overlay is not displayed or for which a custom set of information types is defined).

72 Claims, 24 Drawing Sheets



U.S. PATENT DOCUMENTS

4,081,754	A	3/1978	Jackson
4,096,524	A	6/1978	Scott
4,134,127	A	1/1979	Campioni
4,139,860	A	2/1979	Micic et al.
4,150,254	A	4/1979	Schussler et al.
4,156,850	A	5/1979	Beyers, Jr.
4,161,728	A	7/1979	Insam
4,162,513	A	7/1979	Beyers, Jr. et al.
4,170,782	A	10/1979	Miller
4,186,413	A	1/1980	Mortimer
4,203,130	A	5/1980	Doumit et al.
4,205,343	A	5/1980	Barrett
4,218,698	A	8/1980	Bart et al.
4,228,543	A	10/1980	Jackson
4,231,031	A	10/1980	Crowther et al.
4,233,628	A	11/1980	Ciciora
4,249,211	A	2/1981	Baba et al.
4,261,006	A	4/1981	Weintraub et al.
4,264,924	A	4/1981	Freeman
4,270,145	A	5/1981	Farina
4,283,787	A	8/1981	Chambers
4,288,809	A	9/1981	Yabe
4,305,101	A	12/1981	Yarbrough et al.
4,329,684	A	5/1982	Monteath et al.
4,337,480	A	6/1982	Bourassin et al.
4,337,483	A	6/1982	Guillou
4,344,090	A	8/1982	Belisomi et al.
4,381,522	A	4/1983	Lambert
4,388,645	A	6/1983	Cox et al.
4,390,901	A	6/1983	Keiser
4,393,376	A	7/1983	Thomas
4,405,946	A	9/1983	Knight
4,412,244	A	10/1983	Shanley, II
4,413,281	A	11/1983	Thonnart
4,420,769	A	12/1983	Novak
4,425,581	A	1/1984	Schweppe et al.
4,429,385	A	1/1984	Cichelli et al.
4,449,249	A	5/1984	Price
4,456,925	A	6/1984	Skerlos et al.
4,477,830	A	10/1984	Lindman et al.
4,488,179	A	12/1984	Kruger et al.
4,495,654	A	1/1985	Deiss
4,496,171	A	1/1985	Cherry
4,496,976	A	1/1985	Swanson et al.
4,510,623	A	4/1985	Bonneau et al.
4,536,791	A	8/1985	Campbell et al.
4,547,804	A	10/1985	Greenberg
4,566,034	A	1/1986	Harger et al.
4,587,520	A	5/1986	Astle
4,595,951	A	6/1986	Filliman
4,595,952	A	6/1986	Filliman
4,598,288	A	7/1986	Yarbrough et al.
4,620,229	A	10/1986	Amano et al.
4,635,121	A	1/1987	Hoffman et al.
4,639,779	A	1/1987	Greenberg
4,641,205	A	2/1987	Beyers, Jr.
4,677,466	A	6/1987	Lert, Jr. et al.
4,689,022	A	8/1987	Peers et al.
4,691,351	A	9/1987	Hayashi et al.
4,694,490	A	9/1987	Harvey et al.
4,701,794	A	10/1987	Froling et al.
4,706,121	A	11/1987	Young
4,712,105	A	12/1987	Kohler
4,751,578	A	6/1988	Reiter et al.
4,754,326	A	6/1988	Kram et al.
4,768,228	A	8/1988	Clupper et al.
4,775,935	A	10/1988	Yourick
4,787,063	A	11/1988	Muguet
4,821,102	A	4/1989	Ichikawa et al.
4,862,268	A	8/1989	Campbell et al.
4,890,321	A	12/1989	Seth-Smith et al.
4,894,789	A	1/1990	Yee
4,908,707	A	3/1990	Kinghorn
4,908,713	A	3/1990	Levine
4,959,720	A	9/1990	Duffield et al.
4,963,994	A	10/1990	Levine
4,977,455	A	12/1990	Young
4,991,011	A	2/1991	Johnson et al.
4,991,012	A	2/1991	Yoshino
5,038,211	A	8/1991	Hallenbeck
5,045,947	A	9/1991	Beery
5,047,867	A	9/1991	Strubbe et al.
5,068,734	A	11/1991	Beery
5,103,314	A	4/1992	Keenan
5,151,789	A	9/1992	Young
5,210,611	A	5/1993	Yee et al.
5,214,622	A	5/1993	Nemoto et al.
5,220,420	A	6/1993	Hoarty et al.
5,223,924	A	6/1993	Strubbe
5,231,493	A	7/1993	Apitz
5,235,415	A	8/1993	Bonicel et al.
5,237,411	A	8/1993	Fink et al.
5,237,417	A	8/1993	Hayashi et al.
5,253,066	A	10/1993	Vogel
5,317,391	A *	5/1994	Banker et al. 725/139
5,353,121	A	10/1994	Young et al.
5,357,276	A	10/1994	Banker et al.
5,382,983	A	1/1995	Kwoh et al.
5,404,393	A	4/1995	Remillard
5,410,326	A	4/1995	Goldstein
5,477,262	A	12/1995	Banker et al.
5,479,268	A	12/1995	Young et al.
5,485,221	A	1/1996	Banker et al.
5,528,304	A	6/1996	Cherrick et al.
5,532,754	A	7/1996	Young et al.
5,583,560	A	12/1996	Florin et al.
5,585,866	A	12/1996	Miller et al.
5,589,892	A	12/1996	Knee et al.
5,594,509	A	1/1997	Florin et al.
5,621,456	A	4/1997	Florin et al.
5,734,853	A	3/1998	Hendricks et al.
5,781,246	A	7/1998	Alten et al.
5,798,785	A	8/1998	Hendricks et al.
5,808,608	A	9/1998	Young et al.
5,822,123	A	10/1998	Davis et al.
5,986,650	A	11/1999	Ellis et al.
5,990,927	A	11/1999	Hendricks et al.
6,275,268	B1	8/2001	Ellis et al.
6,331,877	B1	12/2001	Bennington et al.
6,418,556	B1	7/2002	Bennington et al.
7,027,101	B1	4/2006	Sloo et al.
2002/0038241	A1	3/2002	Hiraga
2003/0033157	A1	2/2003	Dempski et al.
2003/0115593	A1	6/2003	Alten et al.
2003/0115599	A1	6/2003	Bennington et al.
2003/0115602	A1	6/2003	Knee et al.
2003/0182659	A1	9/2003	Ellis et al.
2003/0182660	A1	9/2003	Ellis et al.
2003/0188313	A1	10/2003	Ellis et al.
2003/0188314	A1	10/2003	Ellis et al.
2003/0196203	A1	10/2003	Ellis et al.
2003/0204847	A1	10/2003	Ellis et al.
2004/0103434	A1	5/2004	Ellis
2004/0154040	A1	8/2004	Ellis
2004/0168188	A1	8/2004	Bennington et al.

FOREIGN PATENT DOCUMENTS

EP	0393555	A2	10/1990
EP	0396062	A2	11/1990
EP	0401930	A2	12/1990
EP	0420123	A2	4/1991
EP	0444496	A1	9/1991
EP	0532322	A2	3/1993
GB	2034995	A	6/1980
GB	2256546	A	9/1992
JP	61050470	A	3/1986
JP	61074476	A	4/1986
WO	9015507		12/1990
WO	9204801		3/1992
WO	9311639		6/1993

OTHER PUBLICATIONS

Hedger, J., "Telesoftware: Home Computing Via Broadcast Teletext;" IEEE Transactions on Consumer Electronics, vol. CE-25, No. 3, Jul. 1979, pp. 279-287.

Baer, R. H.; "innovative Add-On TV Products," IEEE Transactions on Consumer Electronics, vol. CE-25, Nov. 1979, pp. 765-771.
Hofmann, V. G.; "Videotext Programmiert Videorecorder," Rundfunktech Mitteilungen, Broadcast Engineering Reports, vol. 26, Nov.-Dec. 1982.
Veith, R. H., "Television's Teletext", Elsevier Science Publishing Co., Inc., 1983, pp. 13-20, 45-51.
Lowenstein, et al., "The Inevitable March of Videotex", Technology Review, vol. 88, Oct. 1985, pp. 22.
Cablevision Advertisement for "TV Decisions", Aug. 1986.
Christodoulakis, et al.; "Browsing Within Time-Driven Multimedia Documents", publication of the Institute for Computer Research, University of Waterloo, Waterloo, Ontario, Canada, Jul. 1988, pp. 219-227.
Schlender, B. R.; "Couch Potatoes: Now It's Smart TV", Fortune, Nov. 20, 1989, pp. 111-116.
Antonofs, M.; "Stay Tuned for Smart TV", Popular Science, Nov. 1990, pp. 62-65.
Various publications of Insight Telecast, 1992 and 1993.
Jerrold Communications Publication, "Cable Television Equipment", dated 1992 and 1993, pp. 8-2.1 to 8-6 and 8-14 to 8-14.3.
Bestler, et al.; "Flexible Data Structure and Interface Rituals for Rapid Development of OSD Applications", 42nd Annual Convention and Exposition of the NCTA, Jun. 6, 1993, San Francisco, CA, pp. 223-236.
Daily, M.; "Addressable Decoder with Downloadable Operation", Proceedings From the 42nd Annual Convention and Exposition of the NCTA, San Francisco, CA, Jun. 6-9, 1993, pp. 82-89.
Mannes, George; "Smart Screens: Development of Personal Navigation Systems for TV Viewers", Video Magazine, Dec. 1993.
Preview Guide Brochure, Spring 1994.
Transcript of the testimony of Michael Faber and Larry Wangberg, May 1996, pp. 554-743.
Videocipher Stipuation, May 1996.
Transcript of the testimony of Brian Klosterman, May 1997, pp. 1700-1981.

* cited by examiner

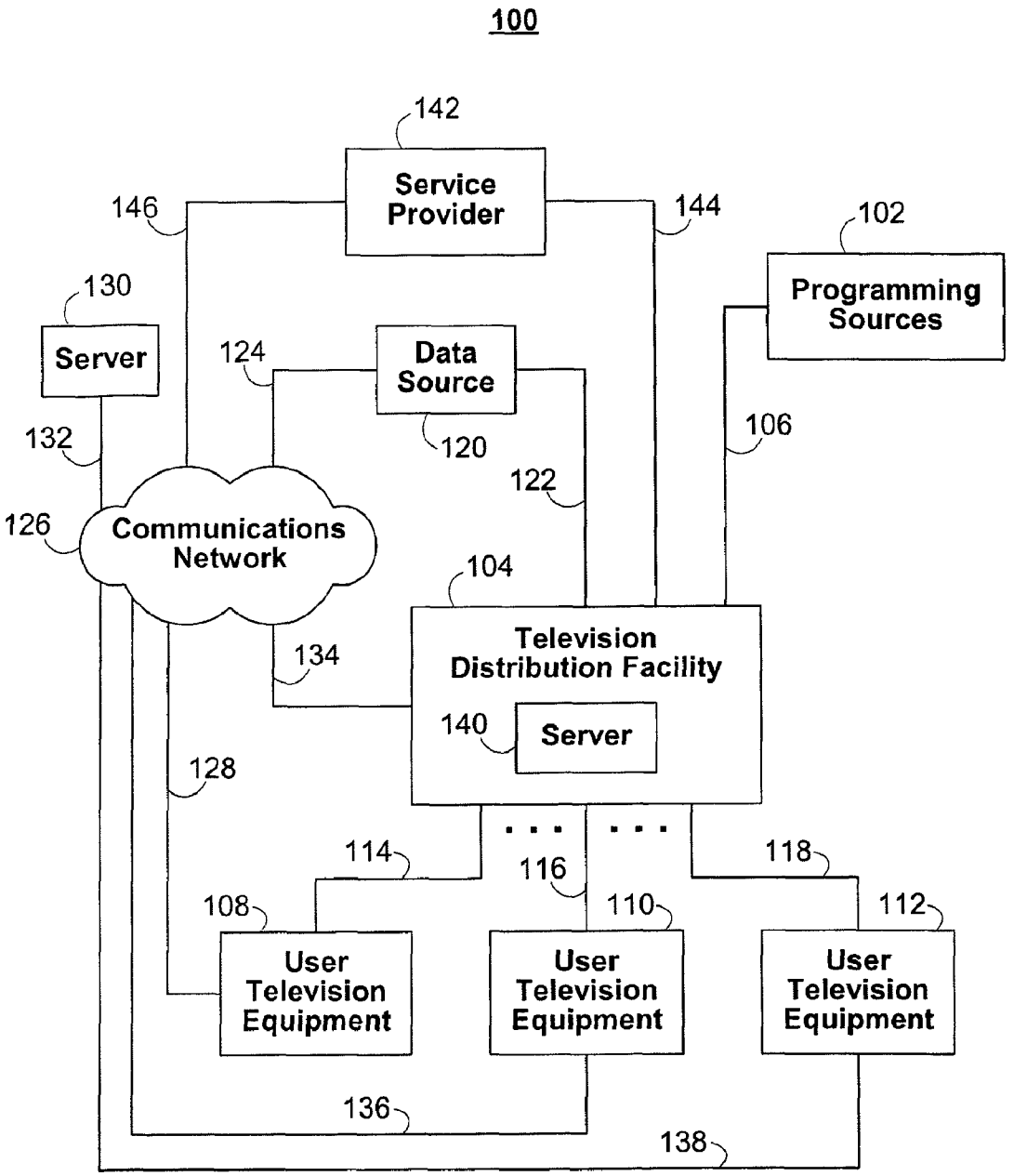

100
142
Service Provider
146
144
102
Programming Sources
130
Server
124
Data Source
120
132
106
122
126
Communications Network
104
Television Distribution Facility
134
140
Server
128
114
116
118
108
110
112
User Television Equipment
User Television Equipment
User Television Equipment
136
138

FIG. 1

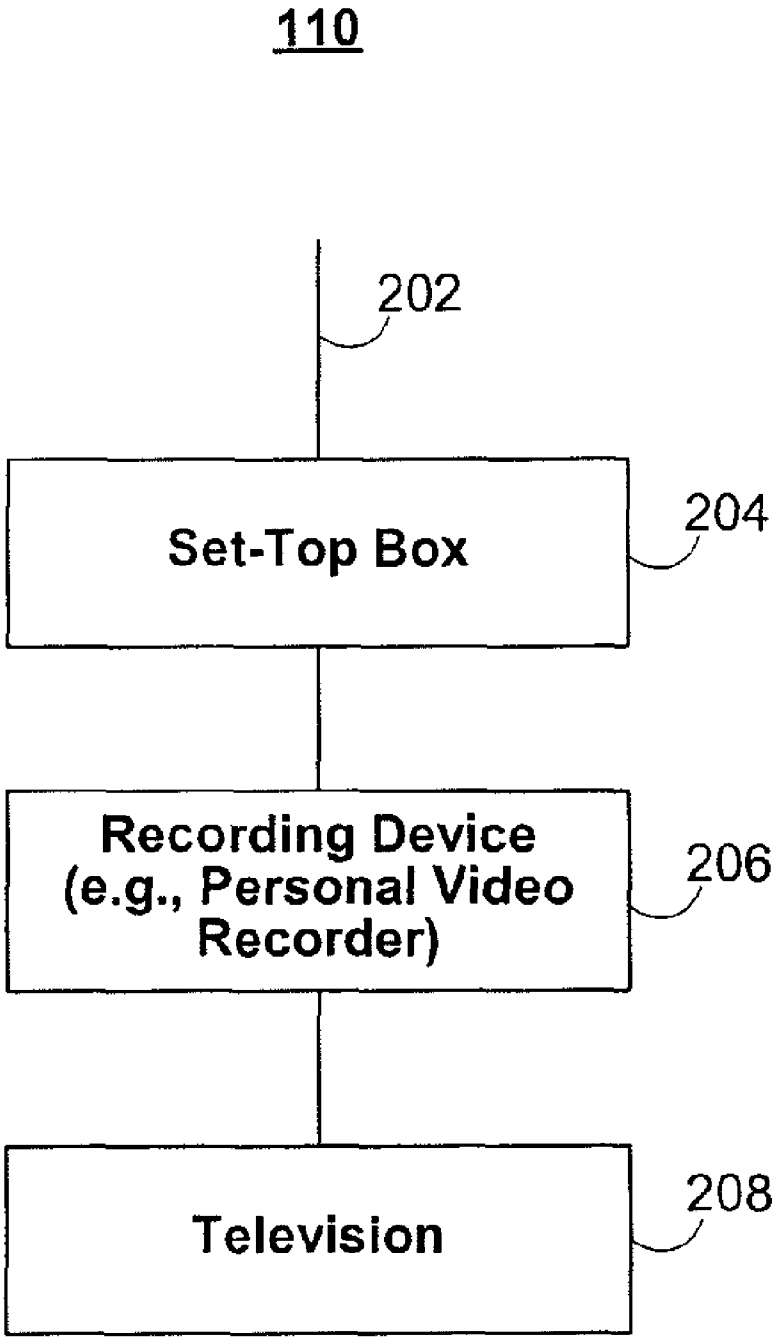

110
202
Set-Top Box
204
Recording Device
(e.g., Personal Video
Recorder)
206
Television
208

FIG. 2

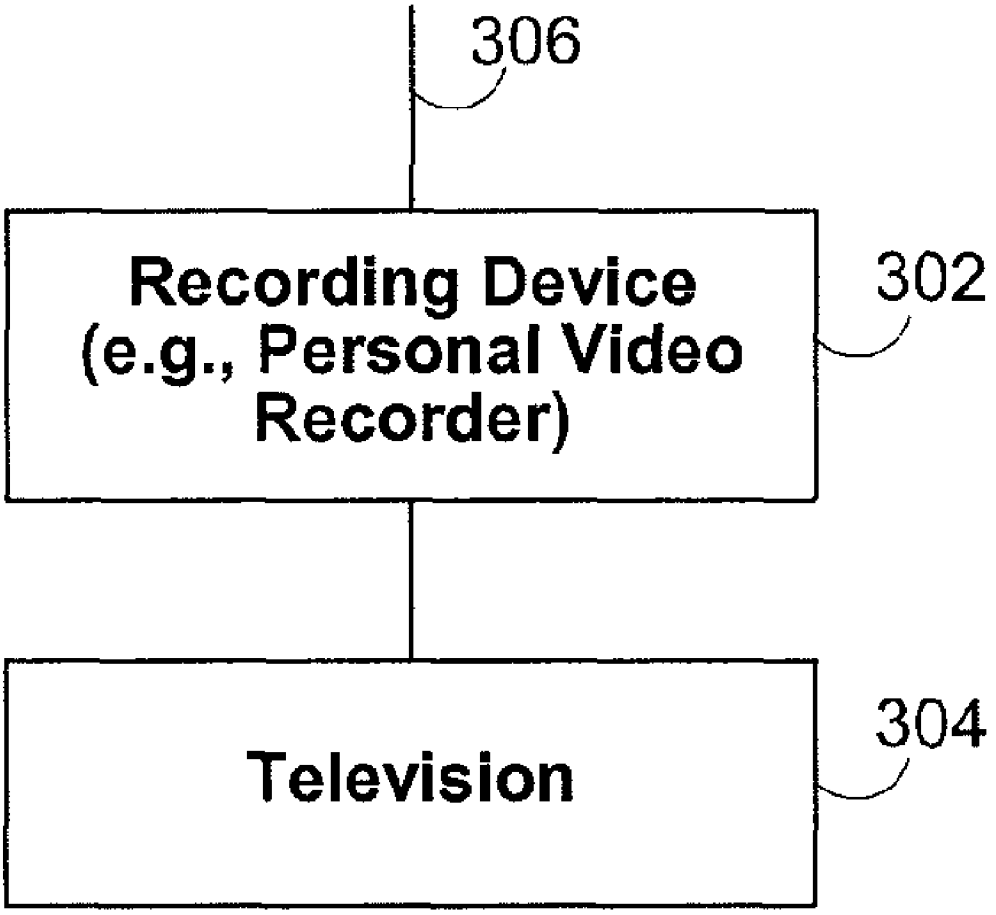

110
306
Recording Device (e.g., Personal Video Recorder)
302
Television
304

FIG. 3

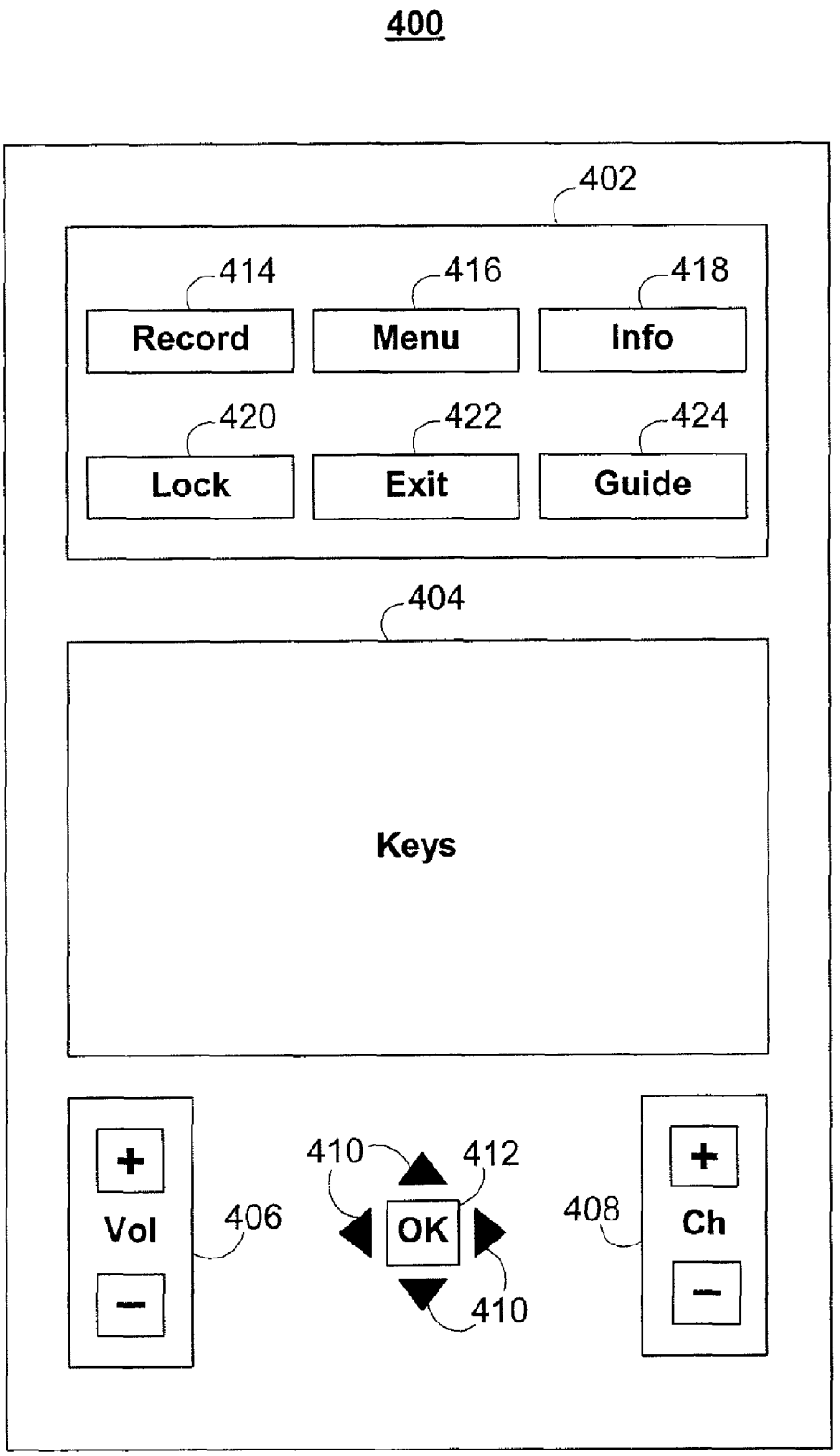

400
402
414
416
418
Record
Menu
Info
420
422
424
Lock
Exit
Guide
404
Keys
+
Vol
−
406
410
412
OK
410
408
+
Ch
−

FIG. 4

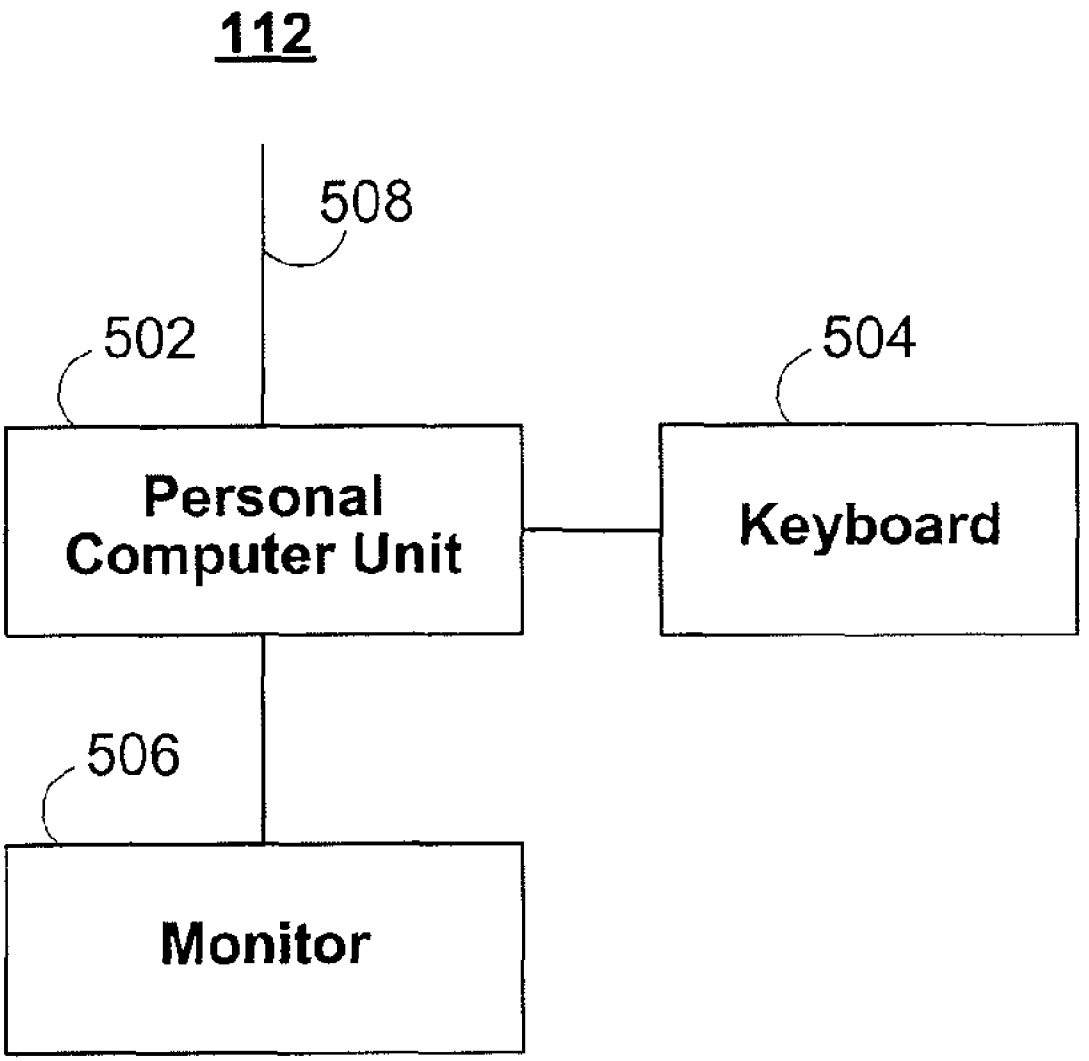

112
508
502
504
Personal Computer Unit
Keyboard
506
Monitor

FIG. 5

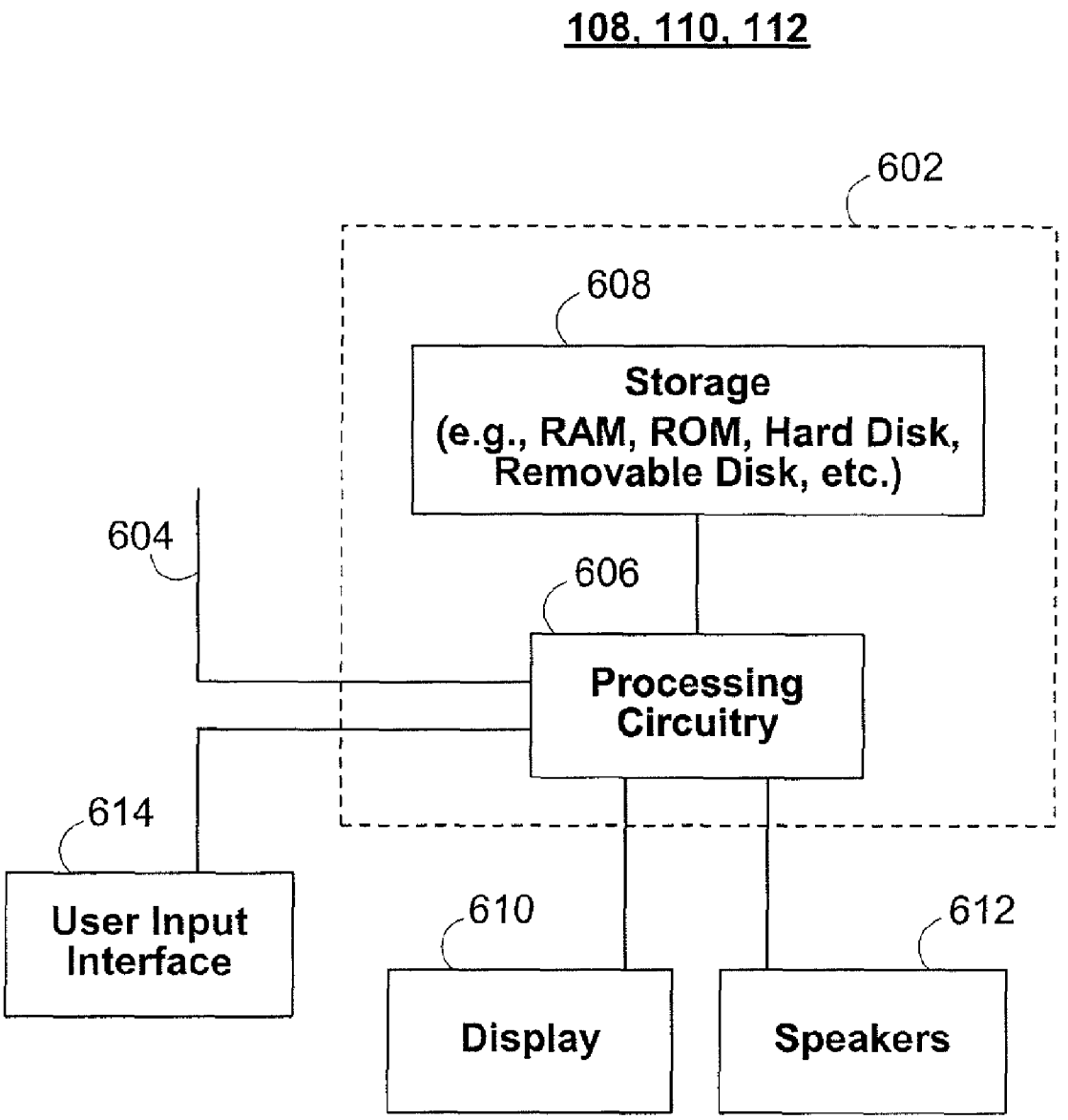

108, 110, 112
602
608
Storage
(e.g., RAM, ROM, Hard Disk, Removable Disk, etc.)
604
606
Processing Circuitry
614
User Input Interface
610
Display
612
Speakers

FIG. 6

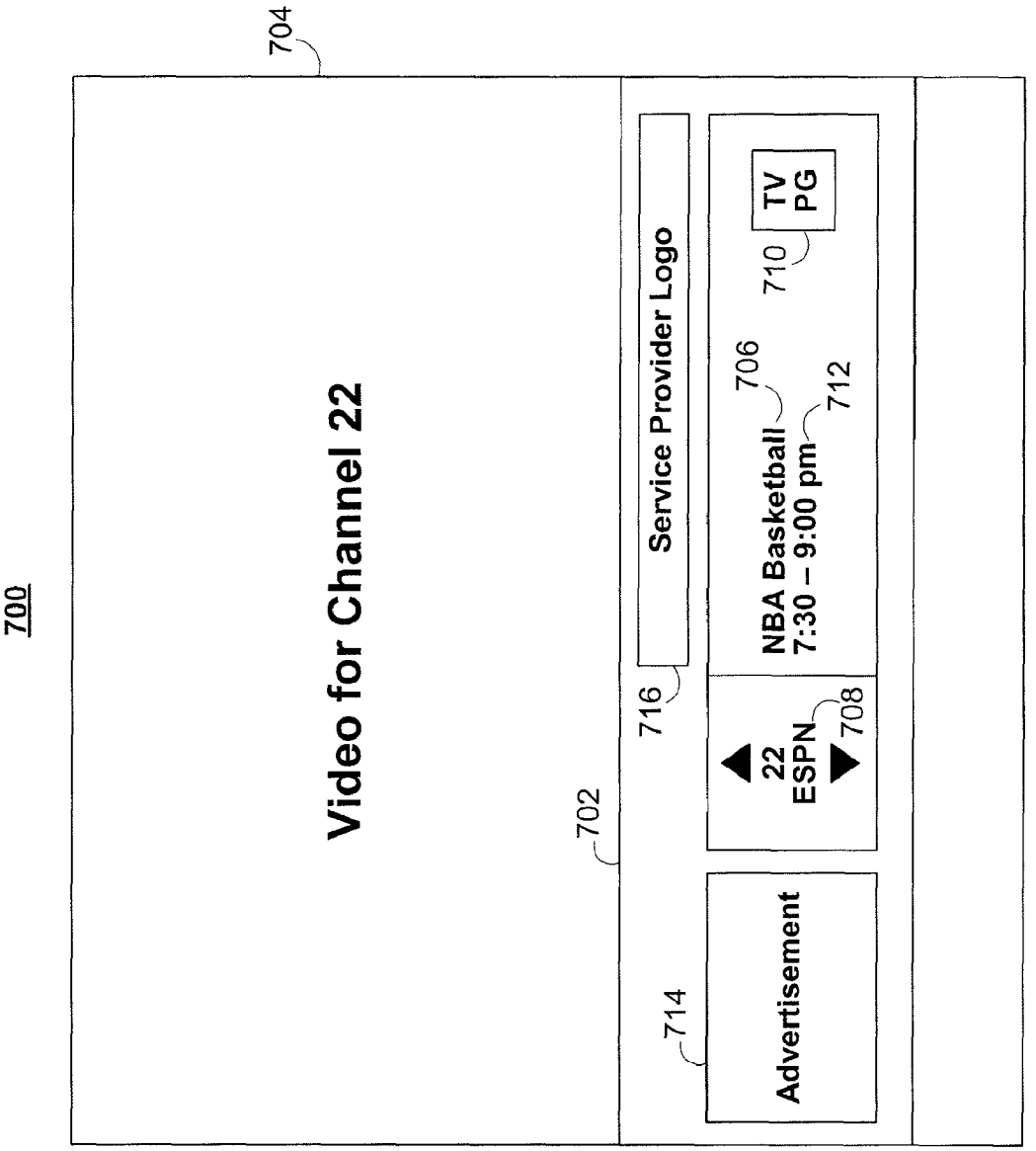

700
704
Video for Channel 22
702
Service Provider Logo
716
NBA Basketball
7:30 – 9:00 pm
706
712
TV
PG
710
22
ESPN
708
Advertisement
714

FIG. 7

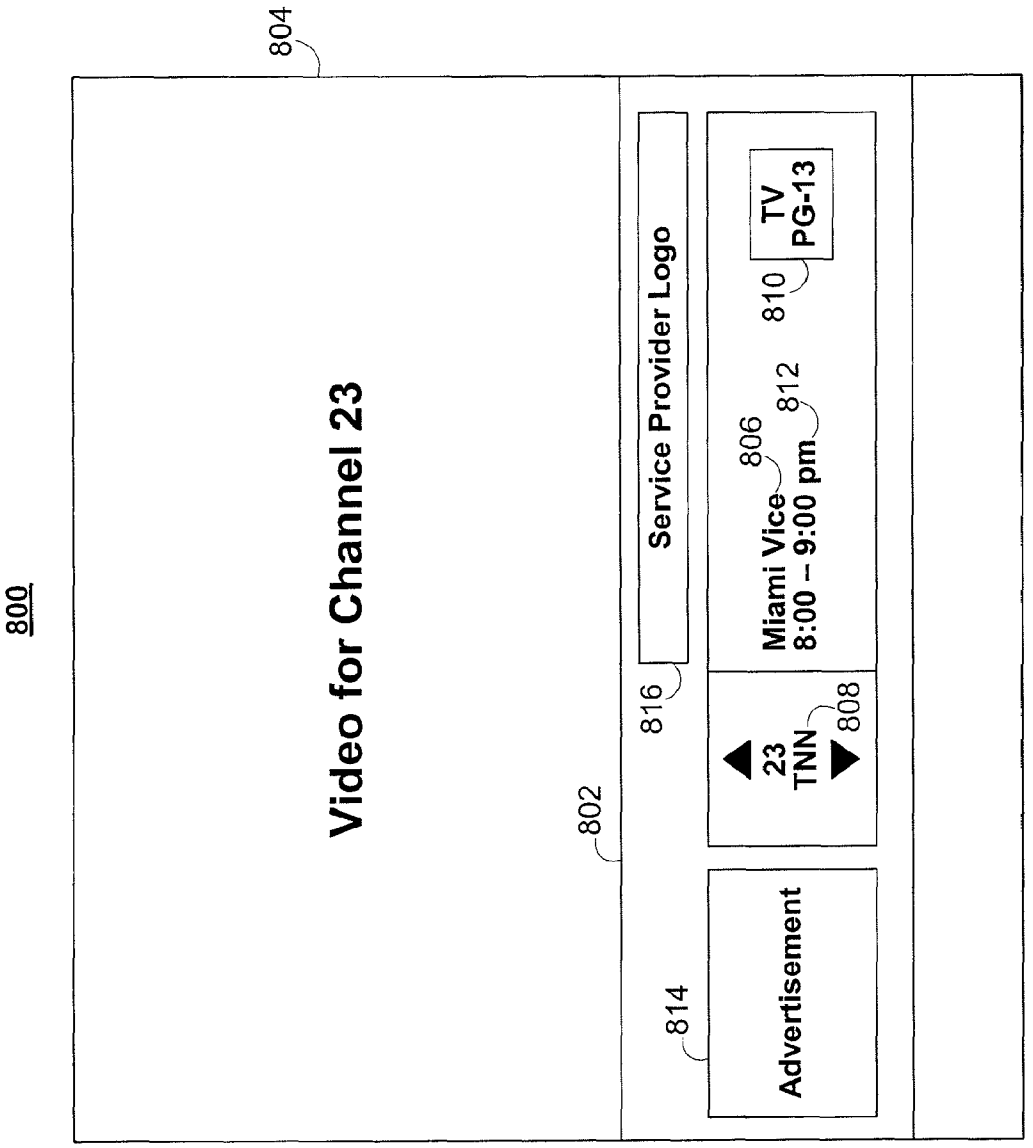

800
804
Video for Channel 23
802
Service Provider Logo
816
Advertisement
814
23
TNN
808
Miami Vice
8:00 – 9:00 pm
806
812
TV
PG-13
810

FIG. 8

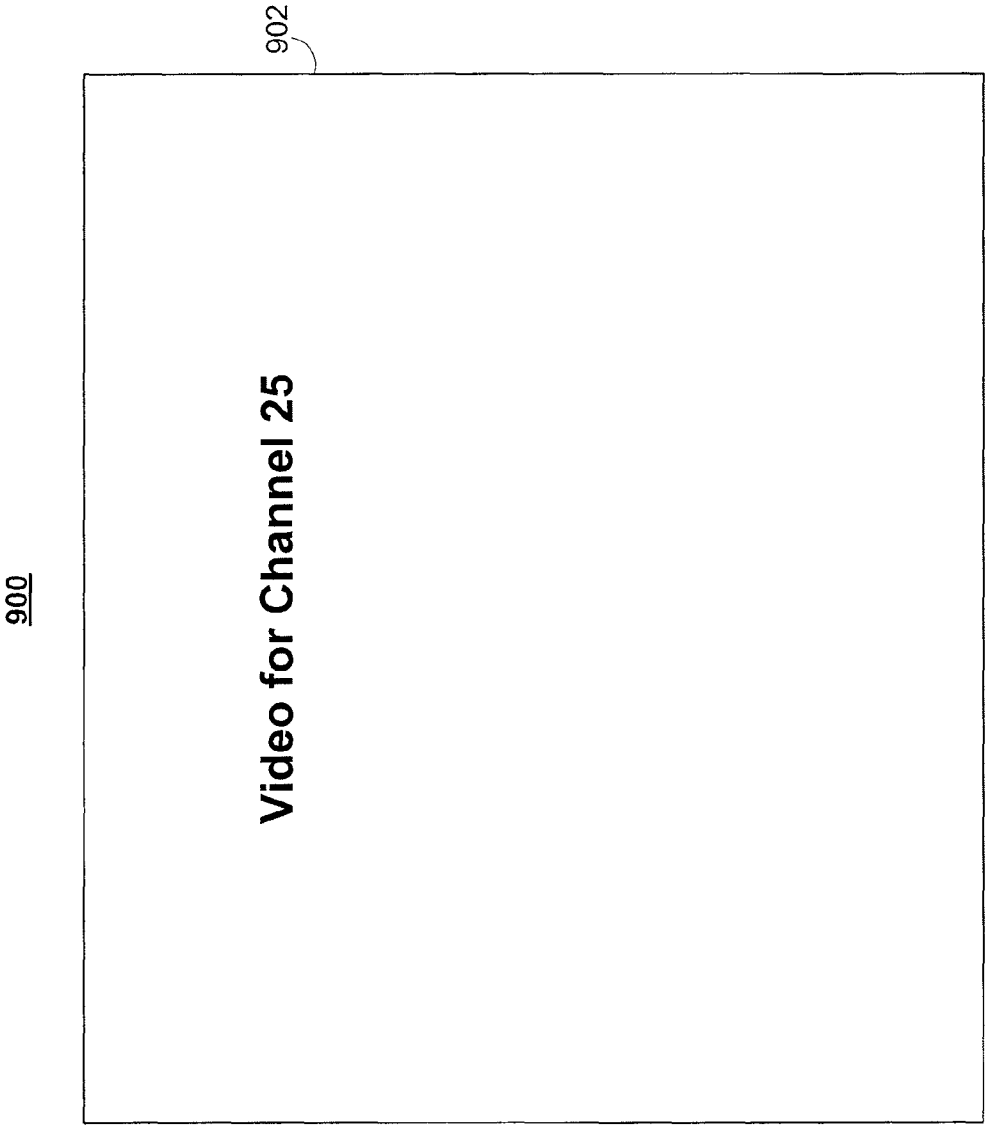


FIG. 9

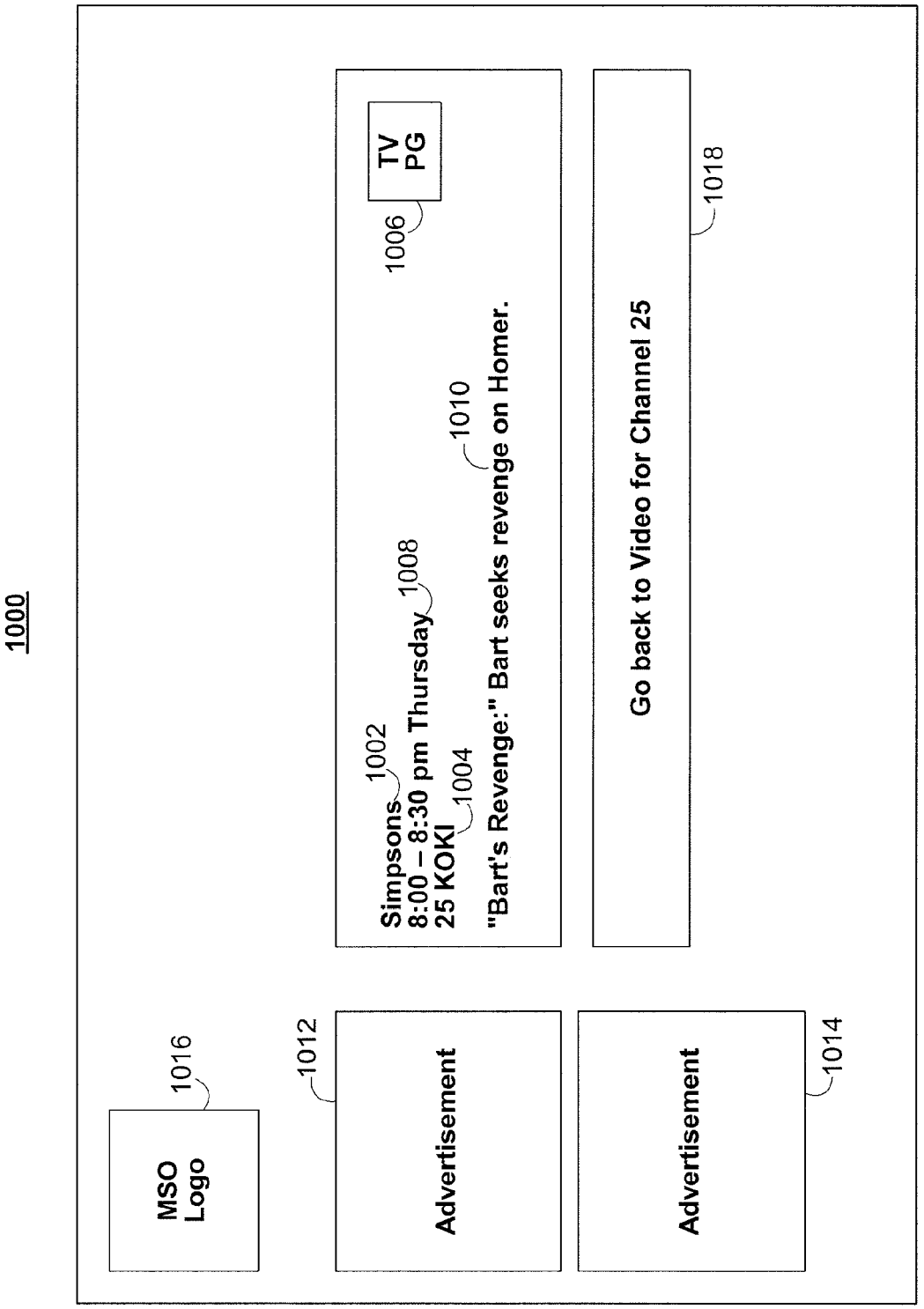

1000
MSO Logo
1016
1012
Advertisement
Advertisement
1014
Simpsons
1002
8:00 – 8:30 pm Thursday
1008
25 KOKI
1004
"Bart's Revenge:" Bart seeks revenge on Homer.
1010
TV PG
1006
Go back to Video for Channel 25
1018

FIG. 10

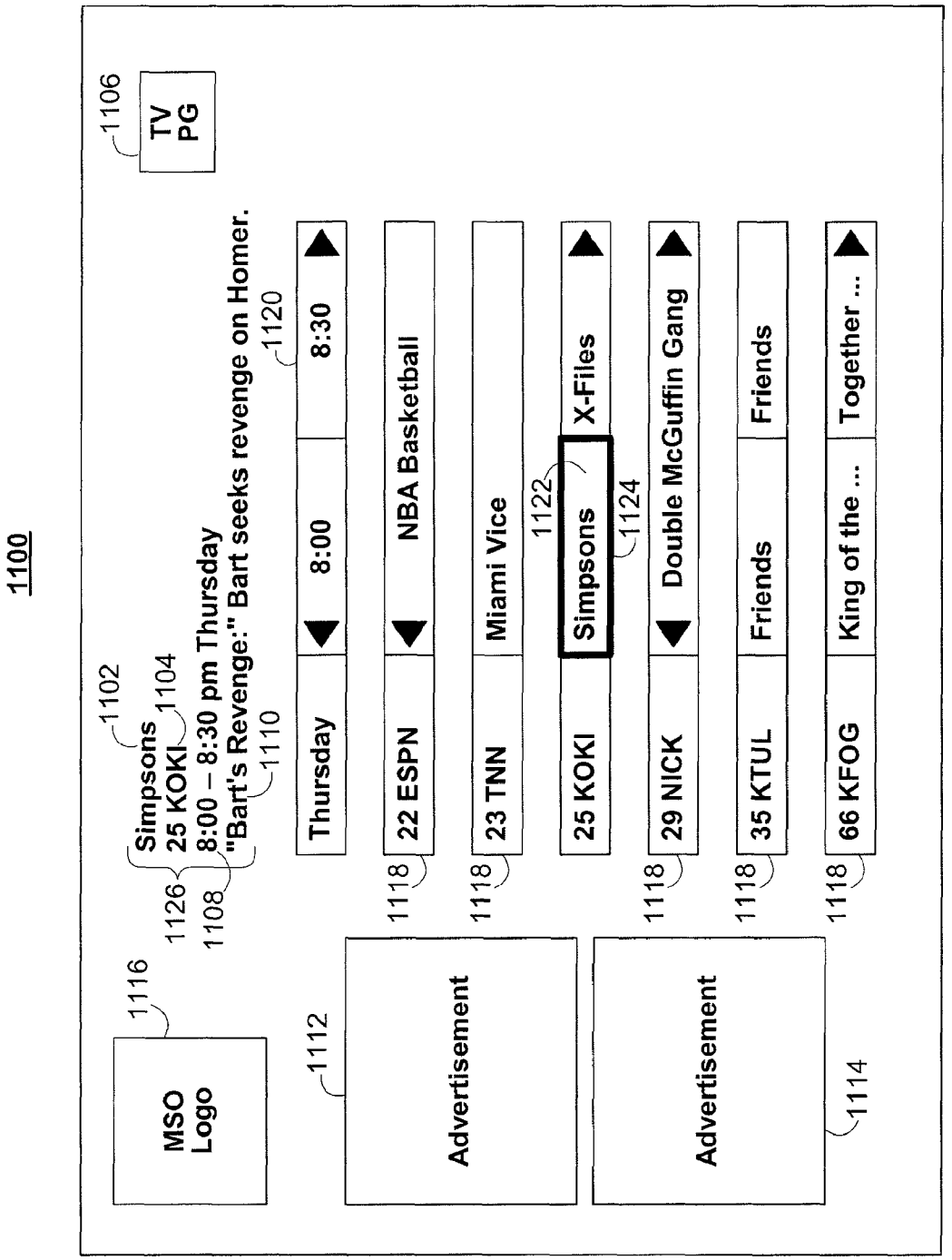

1100
1102
Simpsons
25 KOKI
1104
8:00 – 8:30 pm Thursday
"Bart's Revenge:" Bart seeks revenge on Homer.
1110
1126
1108
1106
TV
PG
1116
MSO
Logo
1112
Advertisement
Advertisement
1114
Thursday
8:00
8:30
1120
22 ESPN
NBA Basketball
23 TNN
Miami Vice
25 KOKI
Simpsons
X-Files
1122
1124
29 NICK
Double McGuffin Gang
35 KTUL
Friends
Friends
66 KFOG
King of the ...
Together ...
1118

FIG. 11

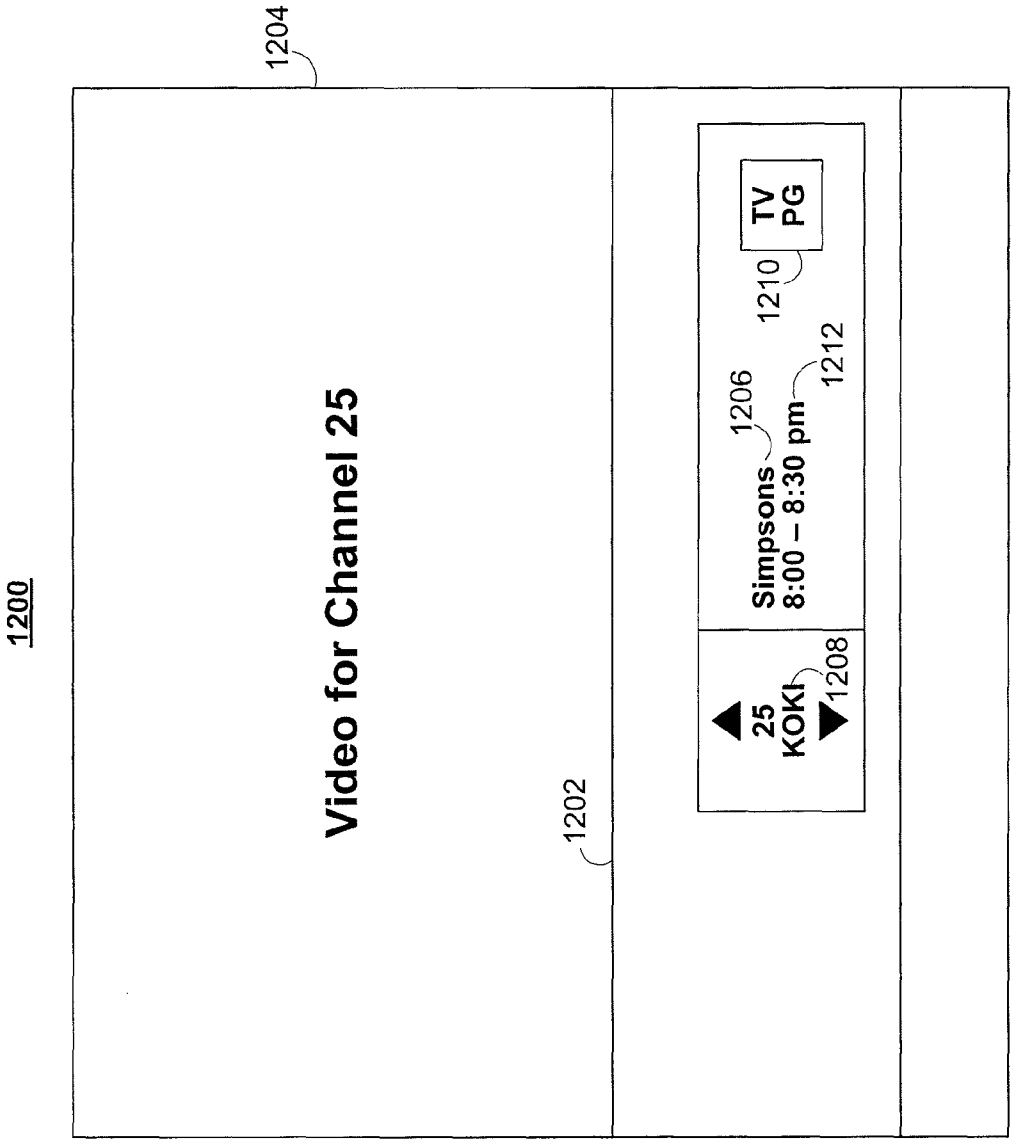

1200
1204
Video for Channel 25
1202
25
KOKI
1208
Simpsons
8:00 – 8:30 pm
1206
1212
TV
PG
1210

FIG. 12

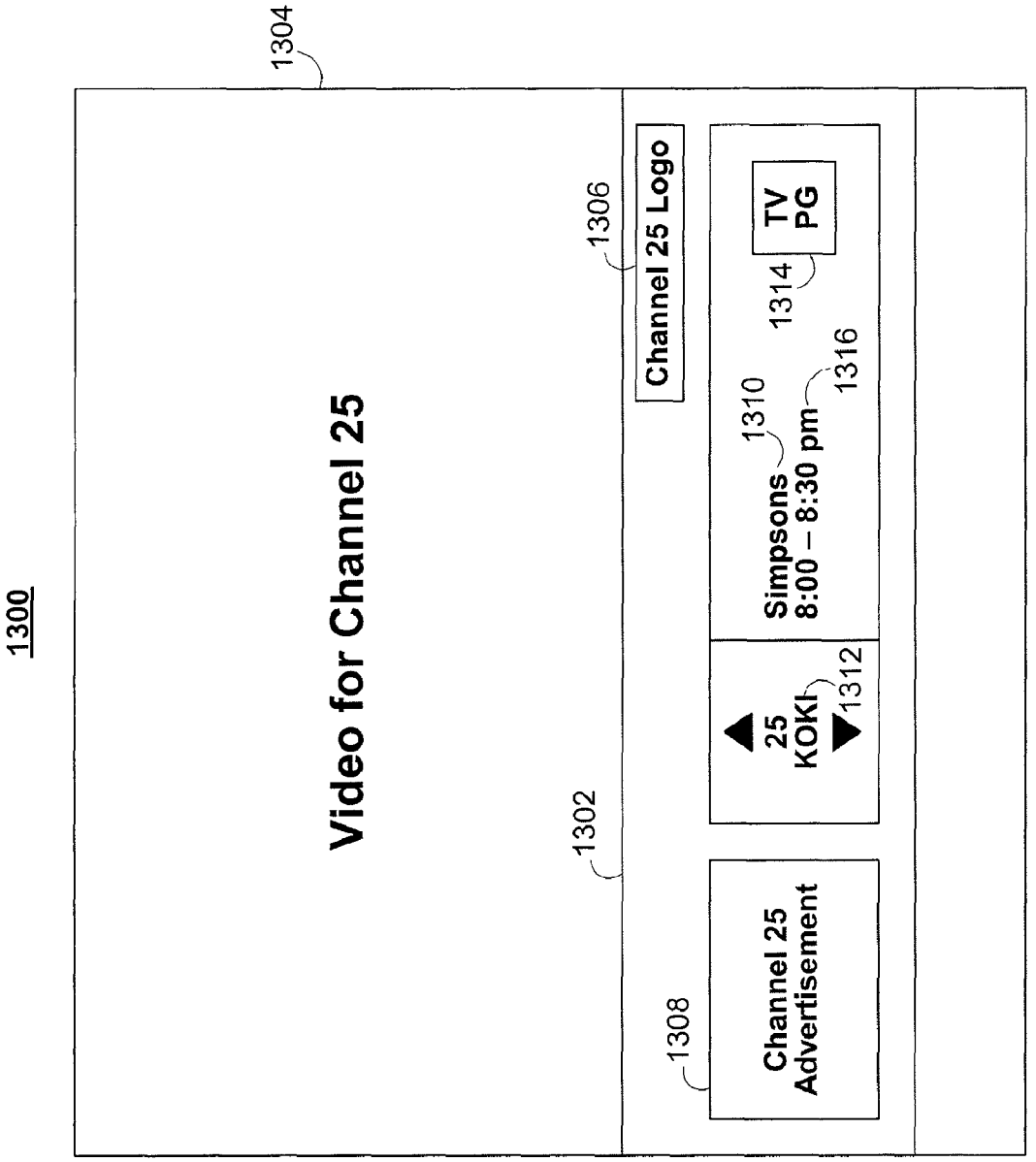

1300
1304
Video for Channel 25
1302
1306
Channel 25 Logo
1308
Channel 25
Advertisement
25
KOKI
1312
Simpsons
8:00 – 8:30 pm
1310
1316
1314
TV
PG

FIG. 13

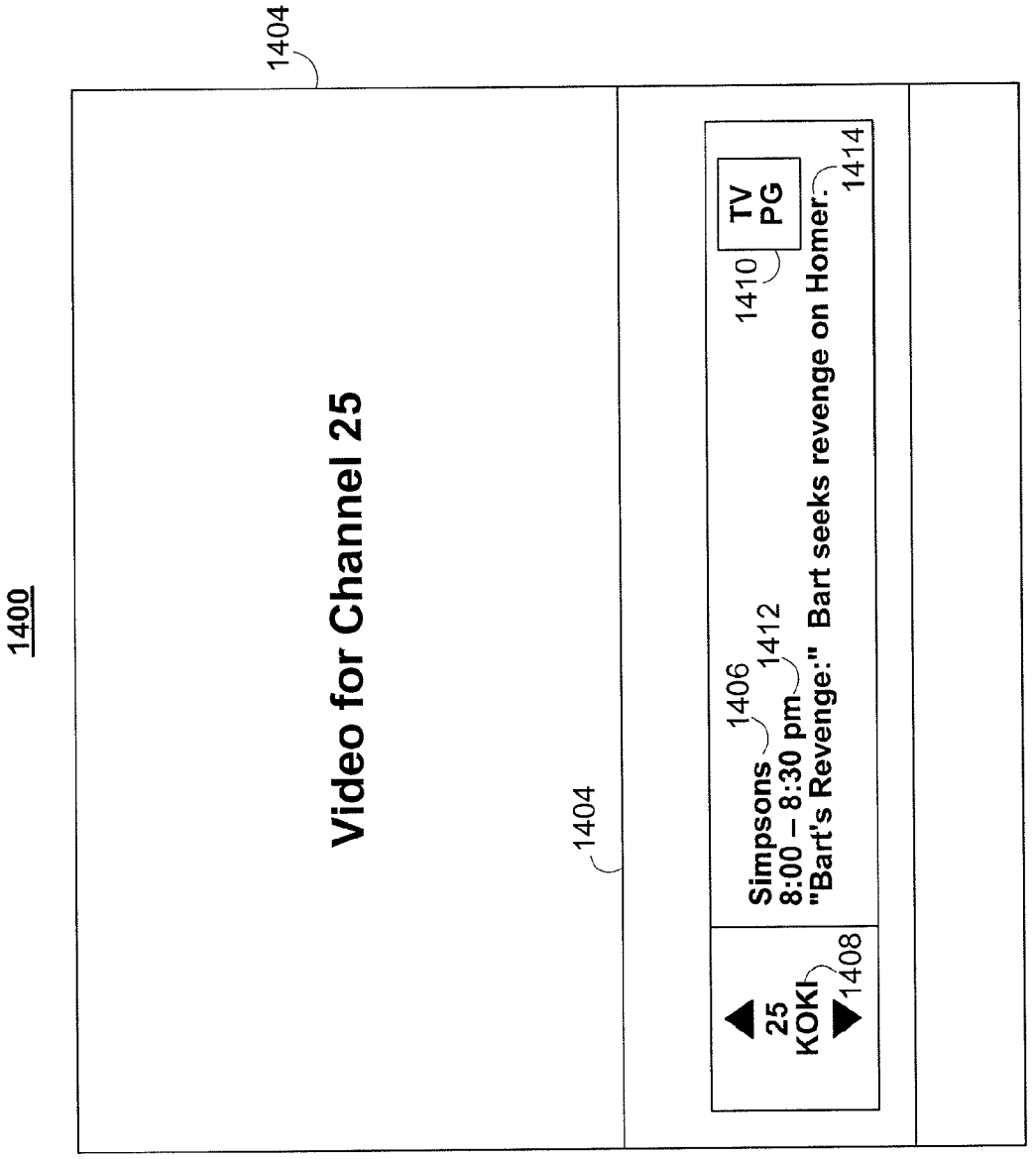

1400
1404
Video for Channel 25
1404
25
KOKI
1408
Simpsons
8:00 – 8:30 pm
"Bart's Revenge:" Bart seeks revenge on Homer.
1406
1412
TV
PG
1410
1414

FIG. 14

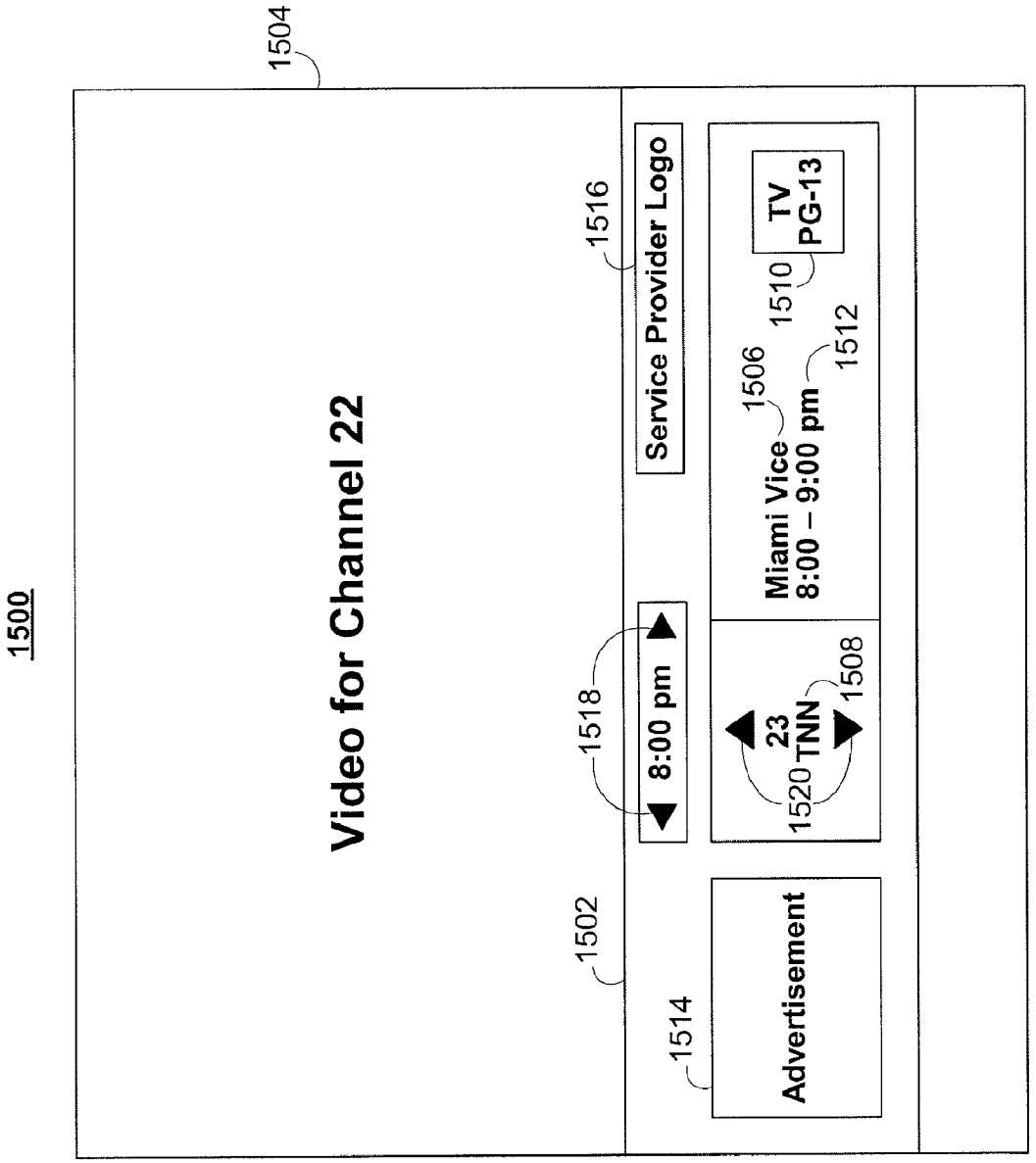

1500
1504
Video for Channel 22
1502
1514
Advertisement
1518
8:00 pm
1516
Service Provider Logo
1520
23
TNN
1508
1506
Miami Vice
8:00 – 9:00 pm
1512
1510
TV
PG-13

FIG. 15

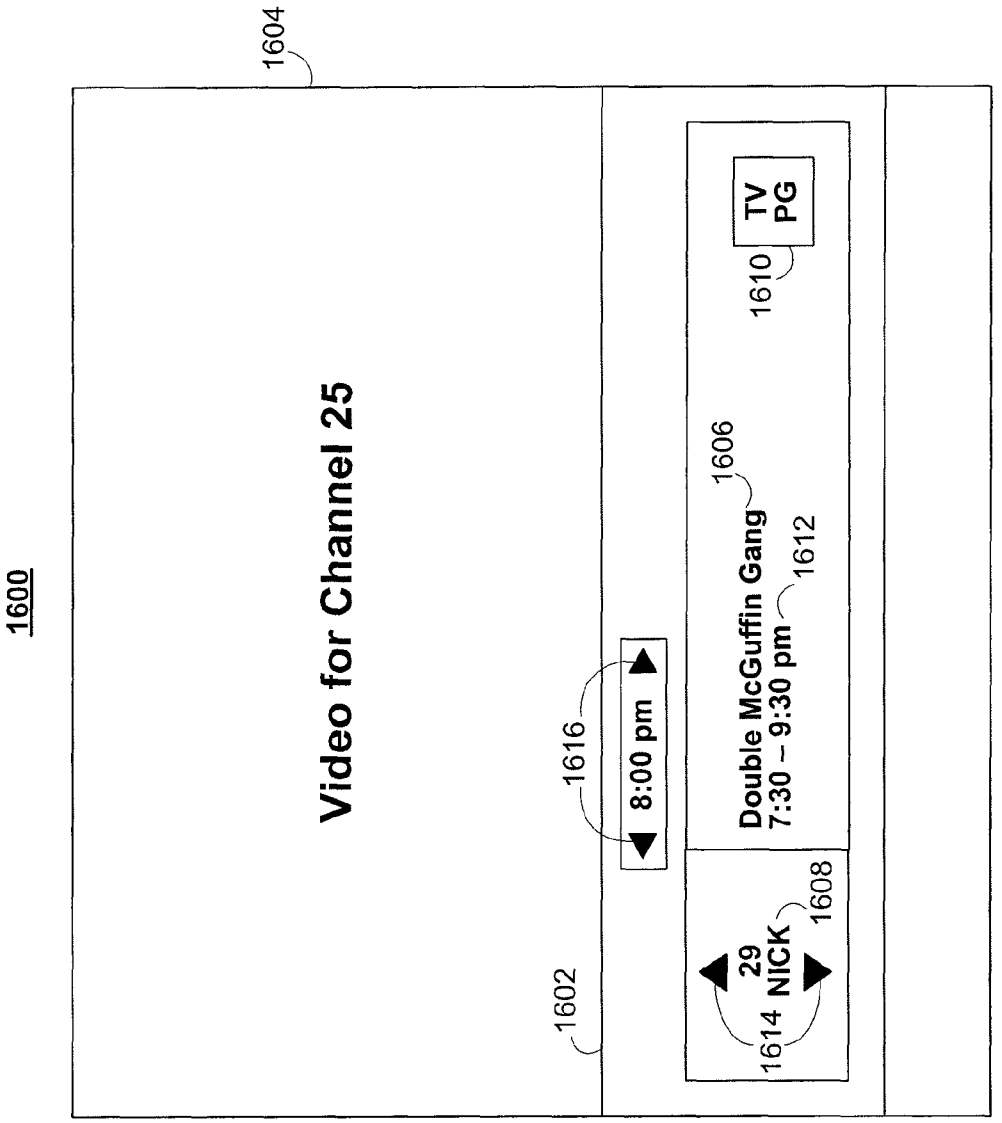

1600
1604
Video for Channel 25
1602
1616
8:00 pm
1606
Double McGuffin Gang
7:30 – 9:30 pm
1612
1610
TV
PG
1614
29
NICK
1608

FIG. 16

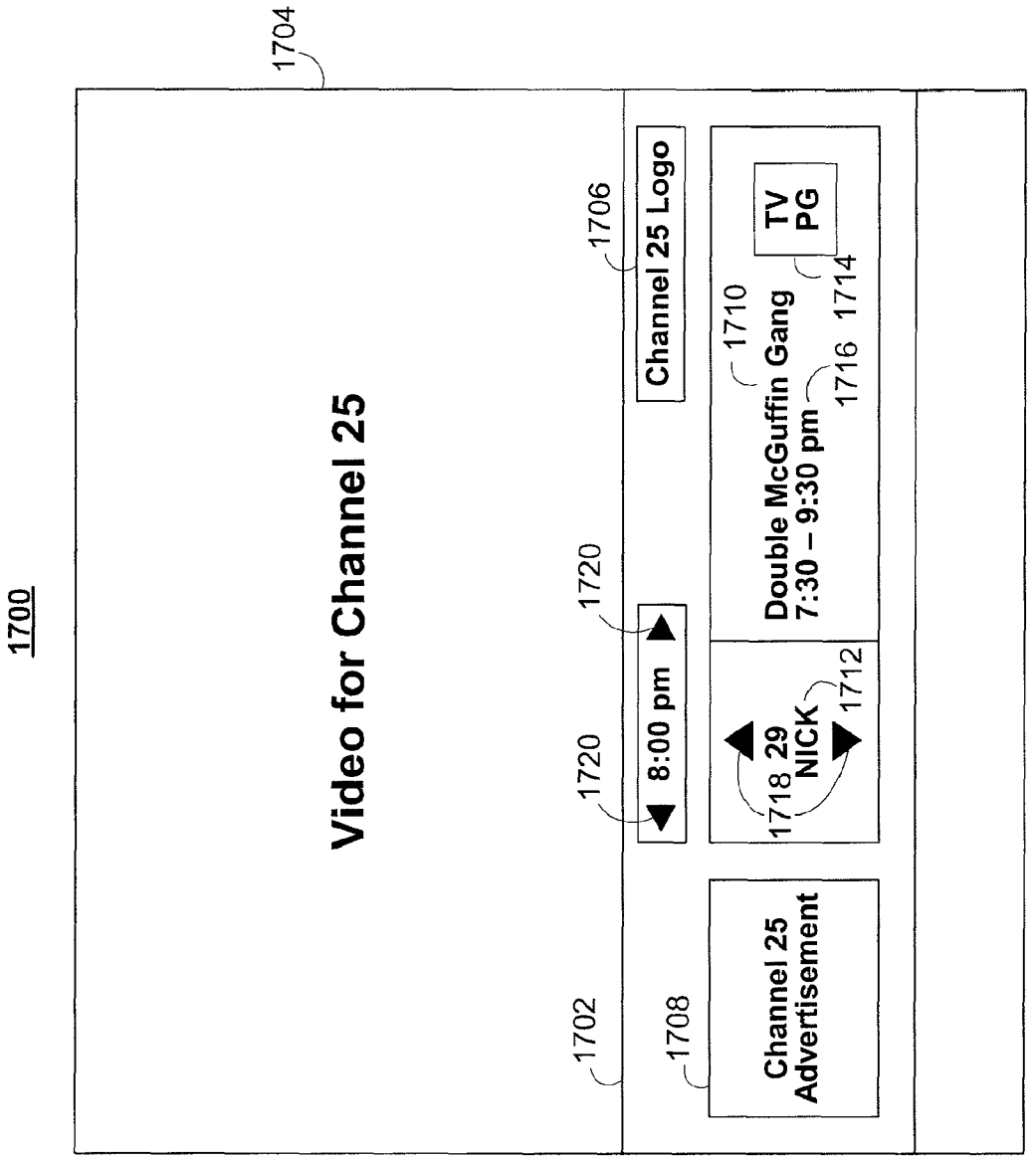

1700
1704
Video for Channel 25
1702
1706
Channel 25 Logo
1720
8:00 pm
1720
1708
Channel 25
Advertisement
1710
Double McGuffin Gang
7:30 – 9:30 pm
1716
TV
PG
1714
1718
29
NICK
1712

FIG. 17

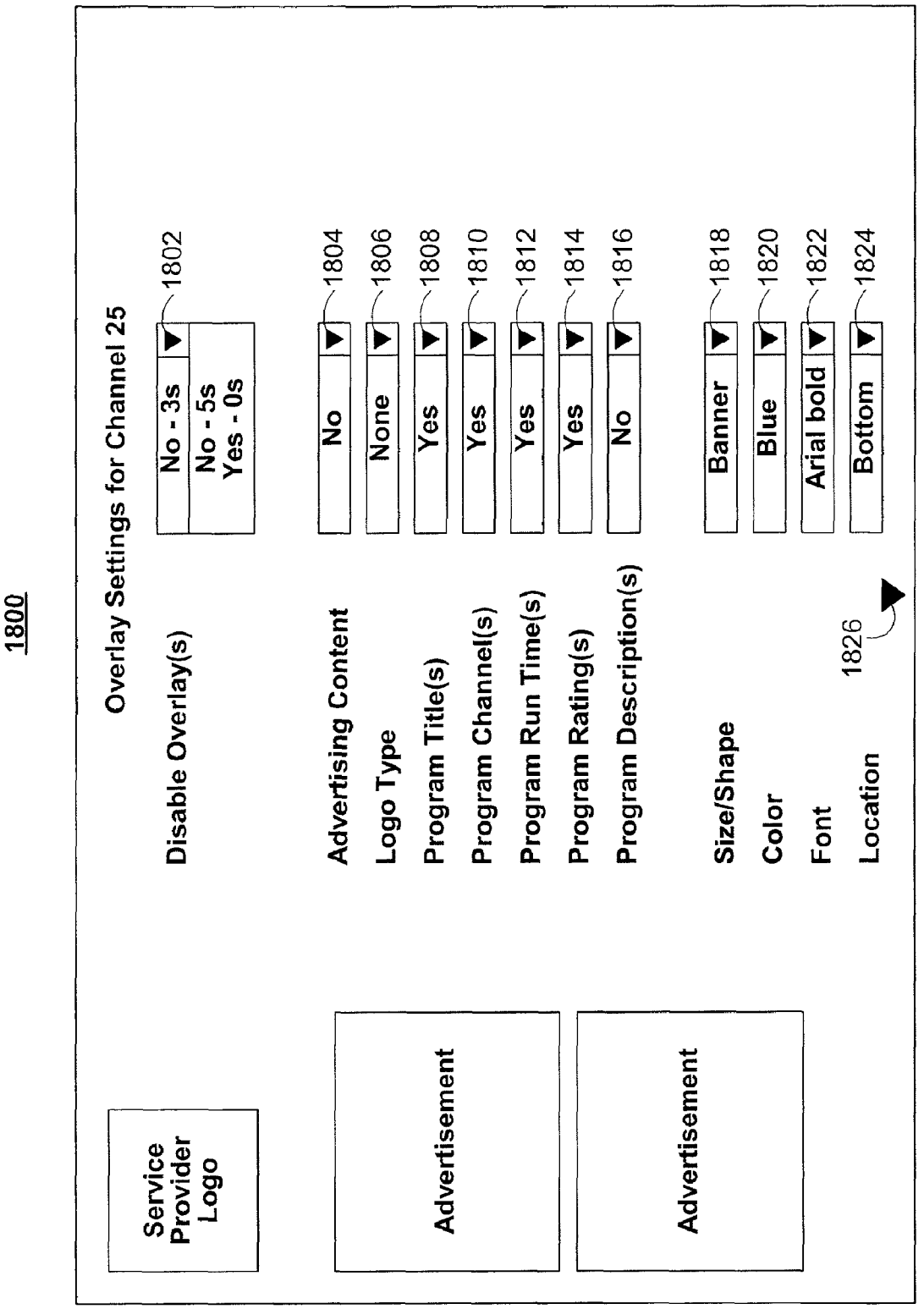

1800
Overlay Settings for Channel 25
Disable Overlay(s)
No - 3s
No - 5s
Yes - 0s
1802
Advertising Content
No
1804
Logo Type
None
1806
Program Title(s)
Yes
1808
Program Channel(s)
Yes
1810
Program Run Time(s)
Yes
1812
Program Rating(s)
Yes
1814
Program Description(s)
No
1816
Size/Shape
Banner
1818
Color
Blue
1820
Font
Arial bold
1822
Location
Bottom
1824
1826
Service Provider Logo
Advertisement
Advertisement

FIG. 18

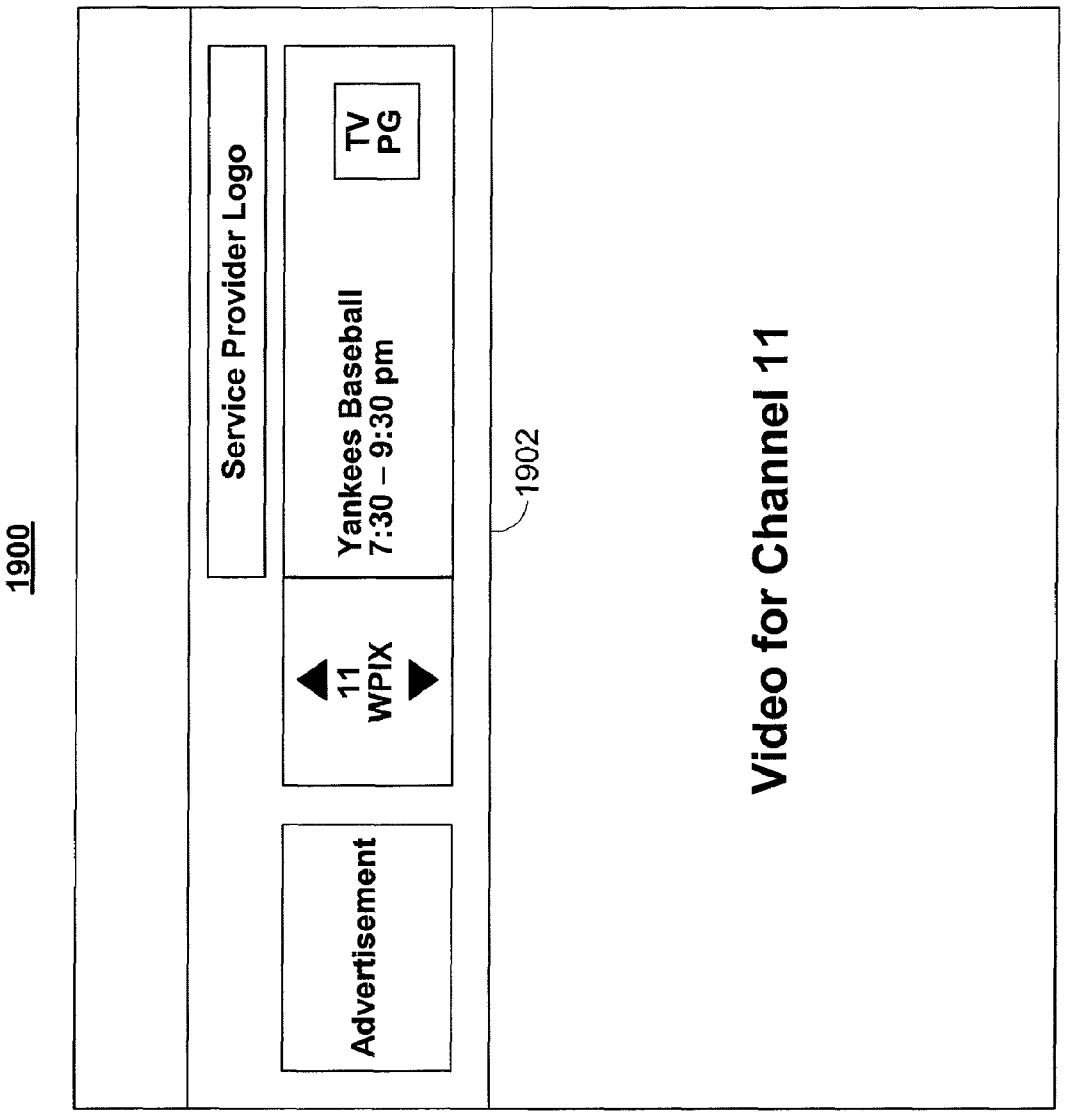

1900
Service Provider Logo
Yankees Baseball
7:30 – 9:30 pm
TV
PG
11
WPIX
Advertisement
1902
Video for Channel 11

FIG. 19

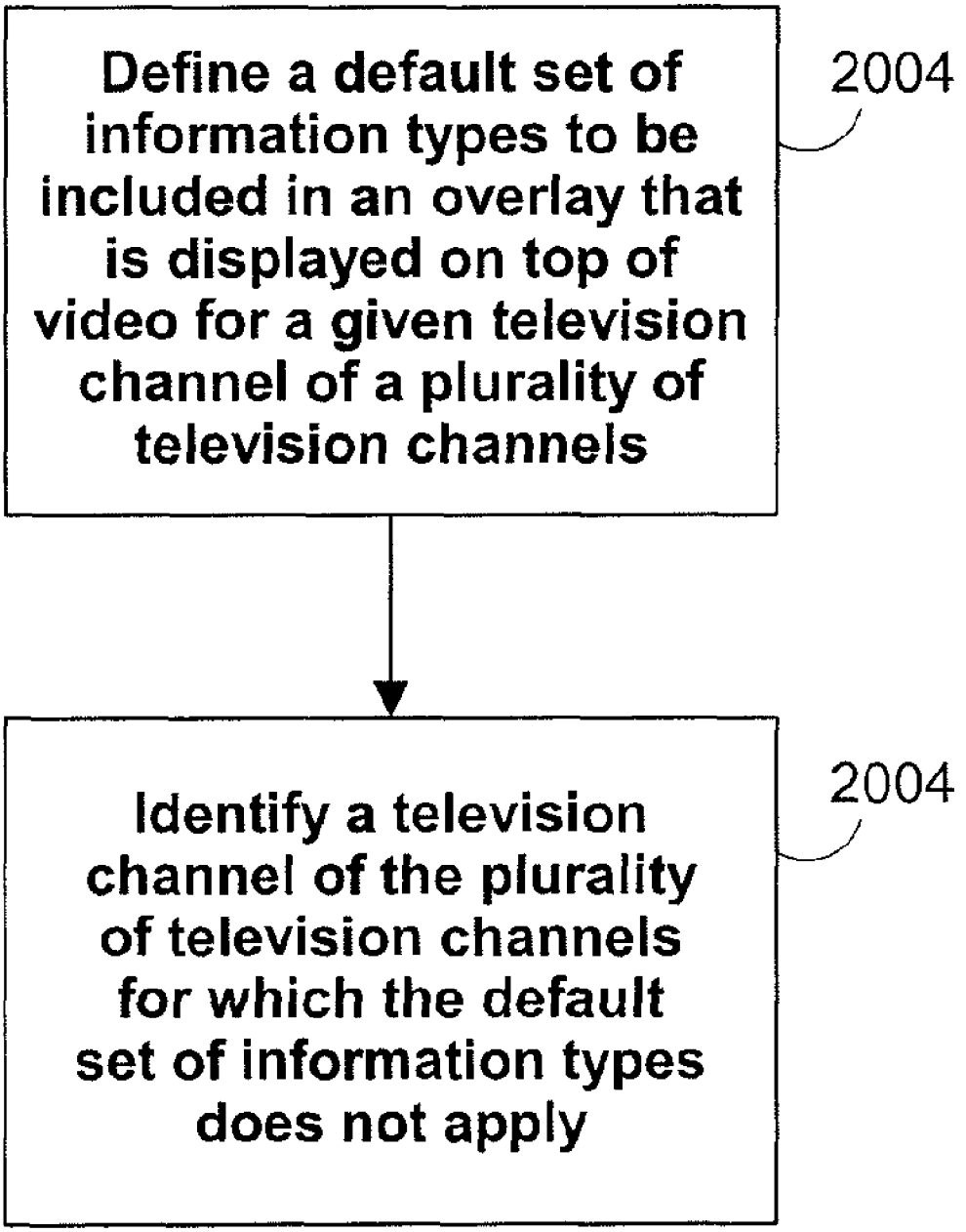

Define a default set of information types to be included in an overlay that is displayed on top of video for a given television channel of a plurality of television channels
2004
Identify a television channel of the plurality of television channels for which the default set of information types does not apply
2004

FIG. 20

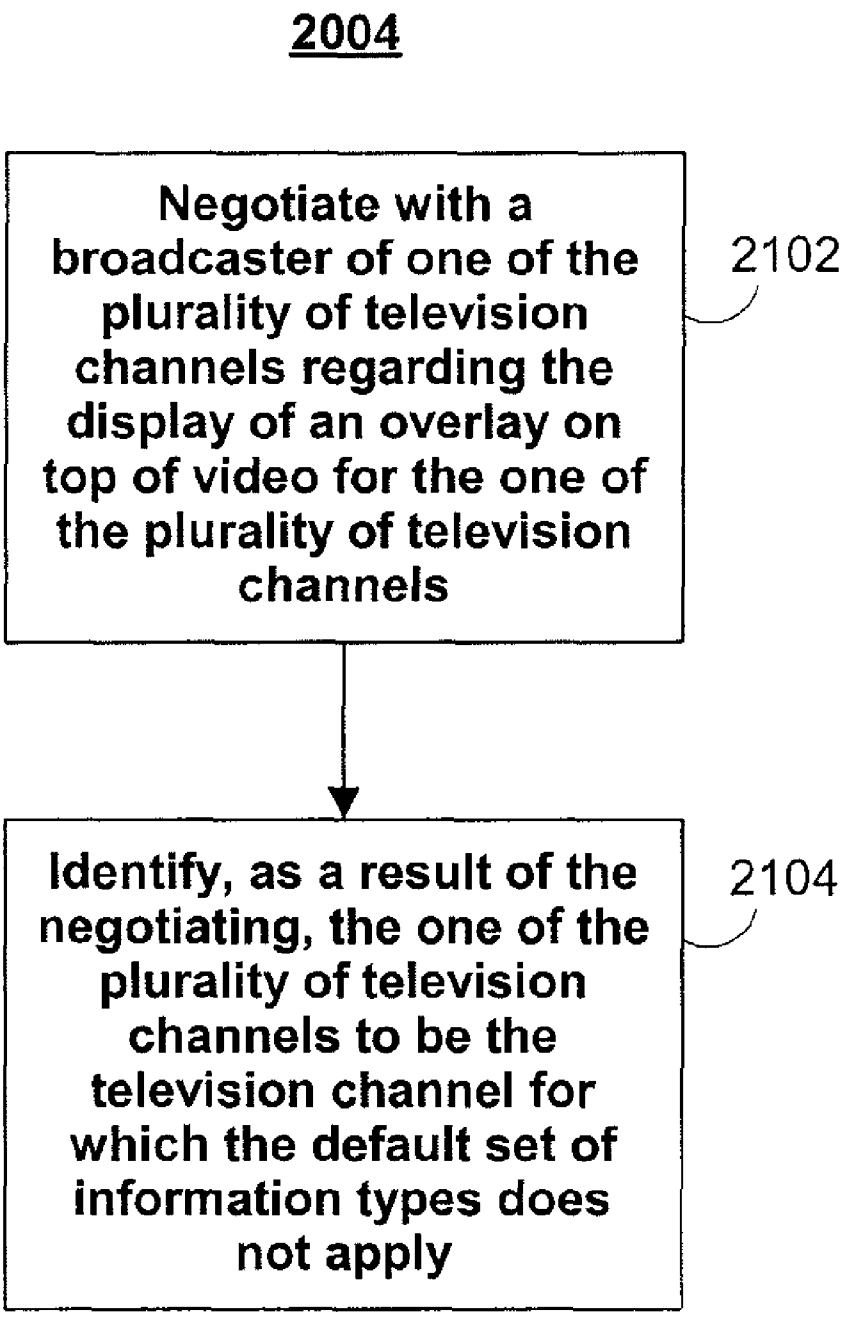

2004
Negotiate with a broadcaster of one of the plurality of television channels regarding the display of an overlay on top of video for the one of the plurality of television channels
2102
Identify, as a result of the negotiating, the one of the plurality of television channels to be the television channel for which the default set of information types does not apply
2104

FIG. 21

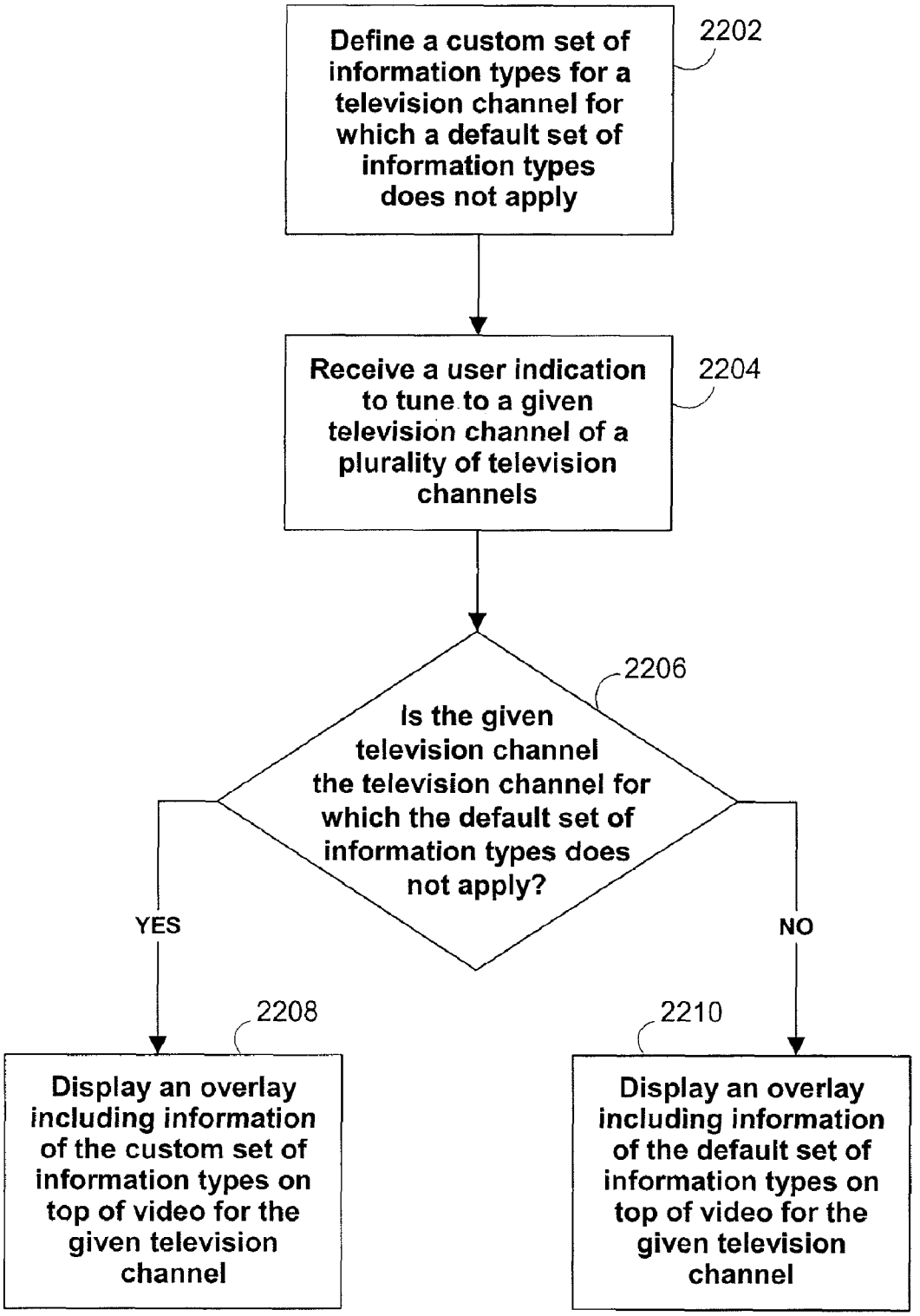

Define a custom set of information types for a television channel for which a default set of information types does not apply
2202
Receive a user indication to tune to a given television channel of a plurality of television channels
2204
Is the given television channel the television channel for which the default set of information types does not apply?
2206
YES
NO
2208
Display an overlay including information of the custom set of information types on top of video for the given television channel
2210
Display an overlay including information of the default set of information types on top of video for the given television channel

FIG. 22

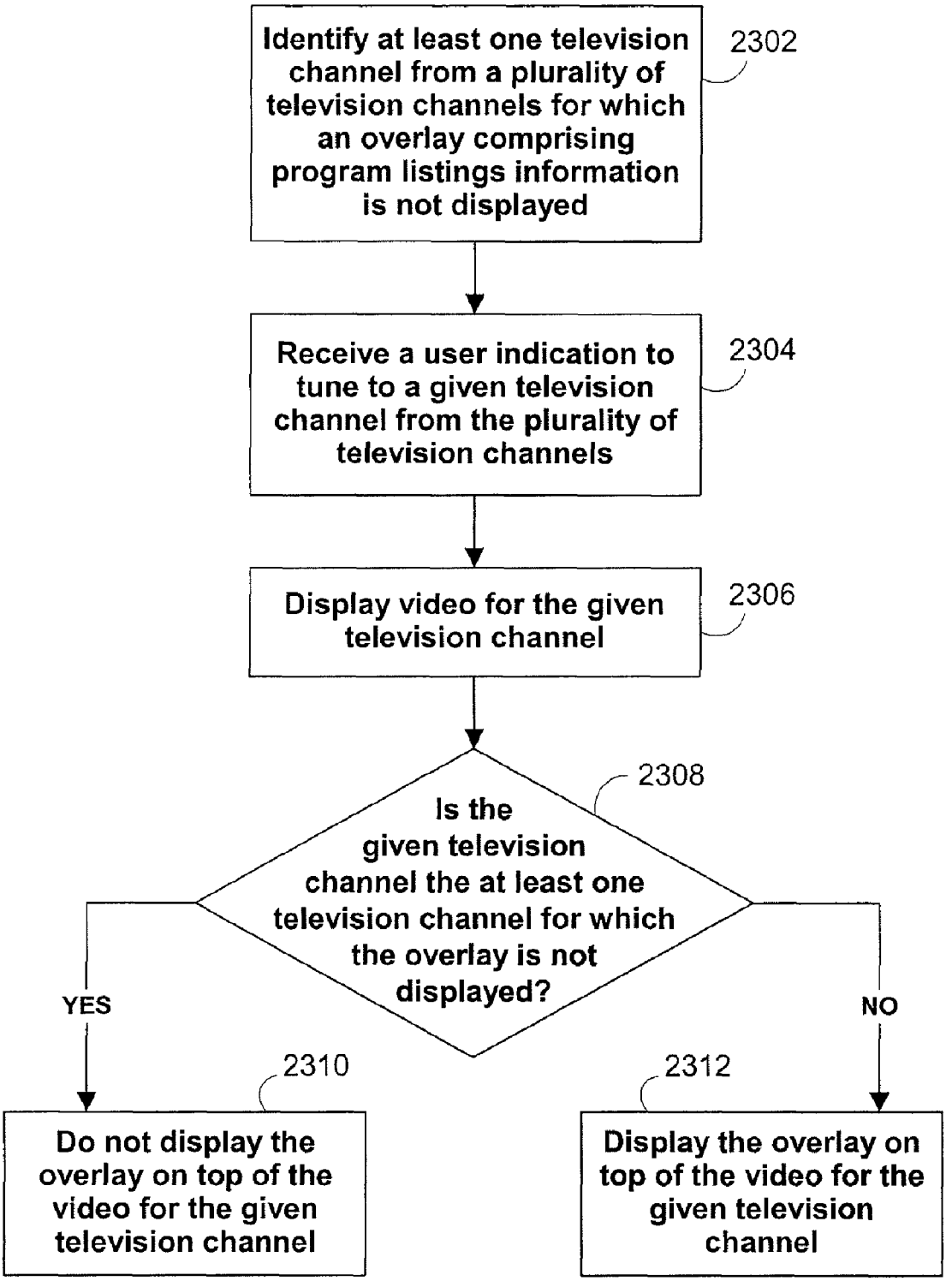

Identify at least one television channel from a plurality of television channels for which an overlay comprising program listings information is not displayed
2302
Receive a user indication to tune to a given television channel from the plurality of television channels
2304
Display video for the given television channel
2306
Is the given television channel the at least one television channel for which the overlay is not displayed?
2308
YES
NO
2310
Do not display the overlay on top of the video for the given television channel
2312
Display the overlay on top of the video for the given television channel

FIG. 23

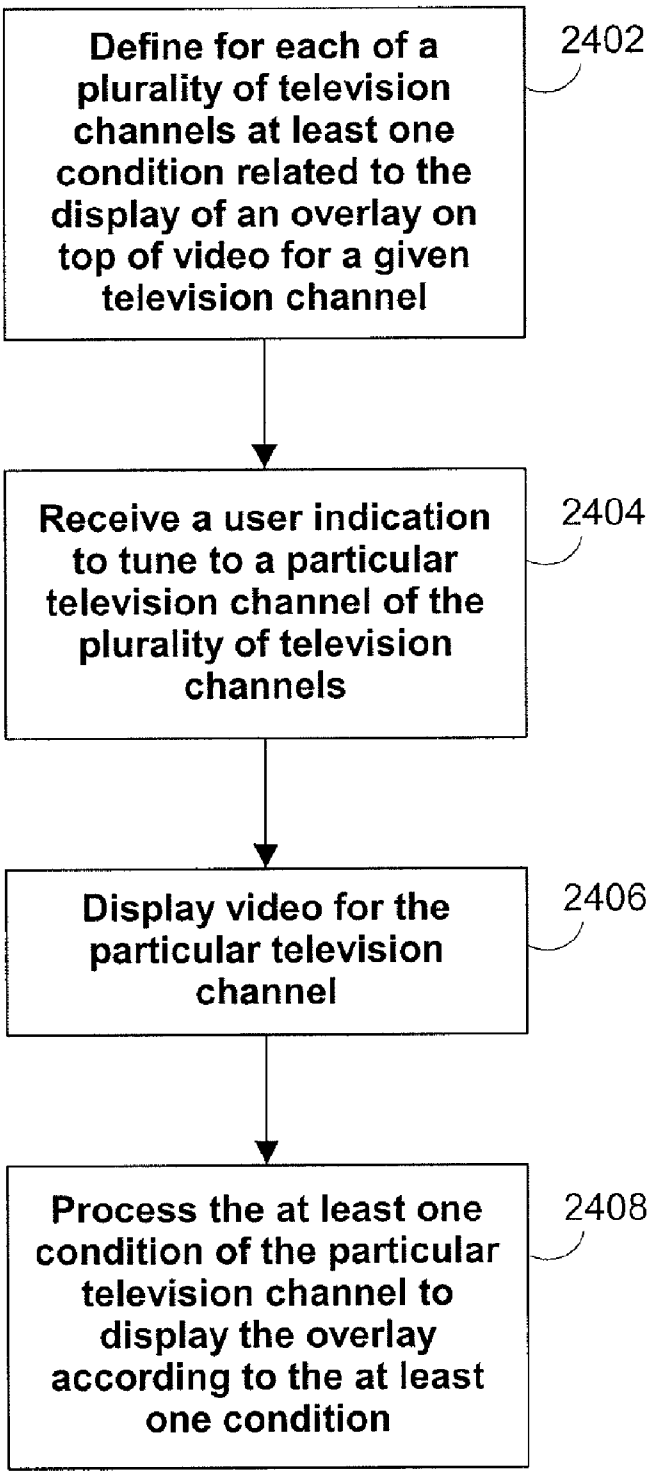

Define for each of a plurality of television channels at least one condition related to the display of an overlay on top of video for a given television channel
2402
Receive a user indication to tune to a particular television channel of the plurality of television channels
2404
Display video for the particular television channel
2406
Process the at least one condition of the particular television channel to display the overlay according to the at least one condition
2408

FIG. 24

CUSTOMIZABLE FLIP AND BROWSE OVERLAYS IN AN INTERACTIVE TELEVISION SYSTEM

CROSS-REFERENCE TO RELATED APPLICATION

This application is a continuation of prior U.S. patent application Ser. No. 10/756,699 filed Jan. 12, 2004 now abandoned. The prior application is hereby incorporated by reference herein in its entirety.

BACKGROUND OF THE INVENTION

This invention relates to interactive television systems, and more particularly, to interactive television systems such as interactive television program guide systems having customizable FLIP and BROWSE overlays.

Interactive television systems may be used to provide interactive television program guides in which screens of interactive television program listings are presented to users. Pay-per-view and video-on-demand services, web browsing services, games, home shopping, and other interactive features may be provided using interactive television systems.

In known interactive television systems, a user has an in-home set-top box or other equipment with which the user can interact using a remote control or other user input interface. In a computer environment, the user can access interactive television program guide web sites.

Known interactive television program guides allow the user to view program schedule information in overlays that are displayed on top of video for a currently tuned channel. The overlays may include the title, channel, and run time of the television program that is presently being shown on the currently tuned channel. The overlays may also include program schedule information for television programs other than the program that is presently being shown on the currently tuned channel and other information.

However, known program guide overlays are not customizable. The overlays displayed by known interactive television program guides include only information of a global set of information types that is invariably displayed regardless of which television channel is the currently tuned channel.

In view of the foregoing, it would be desirable to provide systems and methods for providing customizable interactive television overlays.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide systems and methods for providing customizable interactive television overlays.

This and other objects are accomplished in accordance with the principles of the present invention by providing an interactive television application that allows for the customization of the display of interactive television overlays.

Systems and methods for using the interactive television application to provide interactive television features to a user are provided. A default set of information types for an interactive television overlay (e.g., a FLIP overlay, a BROWSE overlay, etc.) may be defined for a plurality of television channels. When the interactive television application displays the overlay on top of video for a given television channel of the plurality of television channels, the interactive television overlay may include information of the default set of information types. An information type is any suitable category of content that may be included in an interactive television overlay. For example, the default set of information types may include the information types of an advertisement, a logo for a service provider, and a program schedule information type such as a program title for the currently broadcasted program on the given television channel (e.g., if the overlay is a FLIP overlay) or a program title for a program other than the currently broadcasted program on the given television channel (e.g., if the overlay is a BROWSE overlay). Information of any other suitable information types may be included in the interactive television overlay (e.g., a program description, a video clip in a reduced-size video window, etc.) One or more television channels of the plurality of television channels may be identified as channels for which the default set of information types does not apply.

In some embodiments of the present invention, a particular television channel for which the default set of information types does not apply may be identified as a result of negotiations with the television broadcaster of the particular television channel (e.g., negotiations between the television broadcaster and a service provider of the interactive television application). The television broadcaster of the particular television channel may, for example, request that the interactive television overlay not include an advertisement, a logo for a service provider, or other information type that may be included in the default set of information types. As another example, the television broadcaster may request that the overlay not be displayed on top of video for the particular television channel.

In some embodiments of the present invention, the particular television channel for which the default set of information types does not apply may be identified as a result of user interactions with the interactive television application. The interactive television application may provide, for example, one or more user input interfaces that allow the user to identify the particular television channel for which the default set of information types does not apply. The interactive television application may also allow the user to modify various conditions related to the display of the interactive television overlay on top of video for the particular television channel. For example, when the display of the interactive television overlay on top of video for the particular television channel is initially disabled (e.g., based on a condition set by a service provider of the interactive television application), the user may be able to use one or more suitable user input interfaces to direct the interactive television application to enable the overlay to be displayed.

In some embodiments of the present invention, a custom set of information types may be defined for the one or more television channels for which the default set of information types does not apply. The custom set of information types may include less than all information types of the default set of information types. For example, the default set of information types may include an advertisement or a logo for a service provider whereas the custom set of information types does not. The custom set of information types may also include information types that are not included in the default set of information types. For example, the custom set of information types may include a program description whereas the default set of information types does not. When the interactive television displays the overlay on top of video for the particular television channel, the overlay may include information of the custom set of information types.

In some embodiments of the present invention, at least one television channel of a plurality of television channels may be identified as a channel for which an interactive television overlay comprising program listings information (e.g., a FLIP overlay) is not displayed. In response to receiving a user

indication to tune to a given television channel of the plurality of television channels, video for the given television channel may be displayed for the user. The interactive television application may display the overlay comprising program listings information on top of the video for the given television channel only if the given television channel is not the at least one television channel for which the overlay is not displayed. The at least one television channel for which the interactive television overlay is not displayed may be identified by; for example, a service provider of the interactive television application (e.g., based on negotiations with the television broadcaster of the at least one television channel), based on user interactions with the interactive television application, or a combination thereof.

In some embodiments of the present invention, at least one condition related to the display of an interactive television overlay on top of video for a given television channel may be defined for each of a plurality of television channels. For example, a condition related to the length of time that the overlay is displayed (e.g., 0 seconds), a size of the overlay, a location of the overlay, a color of the overlay, or a font of the overlay may be defined for each of the plurality of television channels. As another example, a condition related to whether the interactive television overlay includes program schedule information, a logo for a service provider, or an advertisement may be defined for each of the plurality of television channels. At least one of the plurality of television channels may have a condition that is different from a condition of another television channel of the plurality of television channels. In response to receiving a user indication to tune to a particular television channel of the plurality of television channels, the interactive television application may process the at least one condition of the particular television channel to display the overlay according to the at least one condition. Conditions associated with the display of the interactive television overlay on top of video for a television channel of the plurality of television channels may be defined, for example, for the user by a service provider of the interactive television application, based on user interactions with the interactive television application, or based on a combination thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects and advantages of the invention will be apparent upon consideration of the following detailed description, taken in conjunction with the accompanying drawings, in which like reference characters refer to like parts throughout, and in which:

FIG. **1** is a diagram of an illustrative interactive television system in accordance with the present invention;

FIG. **2** is a diagram of illustrative user television equipment in accordance with the present invention;

FIG. **3** is a diagram of additional illustrative user television equipment in accordance with the present invention;

FIG. **4** is a diagram of an illustrative remote control in accordance with the present invention;

FIG. **5** is a diagram of illustrative user computer equipment in accordance with the present invention;

FIG. **6** is a generalized diagram of illustrative user equipment in accordance with the present invention;

FIGS. **7** and **8** each show an illustrative FLIP overlay including information of a default set of information types that is displayed on top of video for a given television channel of a plurality of television channels in accordance with the present invention;

FIG. **9** shows a display screen that includes video for a particular television channel for which the display of an interactive television overlay is disabled in accordance with the present invention;

FIG. **10** shows an illustrative interactive television program schedule information display screen that may be displayed to a user in response to receiving a user indication to view program schedule information while video is displayed for a particular television channel for which the display of a FLIP overlay is disabled in accordance with the present invention;

FIG. **11** shows an illustrative program listings display screen that may be displayed to a user in response to receiving a user indication to view program schedule information while video is displayed for a particular television channel for which the display of a FLIP overlay is disabled in accordance with the present invention;

FIG. **12** shows an illustrative customized FLIP overlay that is displayed on top of video for a particular television channel and that includes less than all information types of the default set of FLIP information types in accordance with the present invention;

FIG. **13** shows an illustrative customized FLIP overlay that is displayed on top of video for a particular television channel and that includes information of one or more information types that are not included in the default set of FLIP information types in accordance with the present invention;

FIG. **14** shows an illustrative customized FLIP overlay that is displayed on top of video for a particular television channel for which the default set of FLIP information types does not apply in accordance with the present invention;

FIG. **15** shows an illustrative BROWSE overlay including information of a default set of information types that is displayed on top of video for a given television channel of a plurality of television channels in accordance with the present invention;

FIG. **16** shows an illustrative customized BROWSE overlay that is displayed on top of video for a particular television channel and that includes less than all information types of the default set of BROWSE information types in accordance with the present invention;

FIG. **17** shows an illustrative customized BROWSE overlay that is displayed on top of video for a particular television channel that includes one or more information types that are not included in the default set of BROWSE information types in accordance with the present invention;

FIG. **18** shows an illustrative overlay settings display screen that may include various user-selectable options for customizing the display of interactive television overlays in accordance with the present invention;

FIG. **19** shows an illustrative FLIP overlay that has been automatically customized by the interactive television application based on data indicating the typical content of the underlying video;

FIG. **20** is a flow chart of illustrative steps involved in customizing the display of an interactive television overlay where a default set of overlay information types is defined in accordance with the present invention;

FIG. **21** is a flow chart of illustrative sub-steps involved in identifying a television channel for which a default set of overlay information types does not apply in accordance with the present invention;

FIG. **22** is a flow chart of illustrative steps involved in displaying an interactive television overlay on top of video for a television channel where both default and custom sets of overlay information types are defined in accordance with the present invention;

FIG. **23** is a flow chart of illustrative steps involved in disabling the display of an interactive television overlay on top of video for a particular television channel of a plurality of television channels in accordance with the present invention; and

FIG. **24** is a flow chart of illustrative steps involved in customizing the display of an interactive television overlay on top of video for a given television channel in accordance with one or more defined conditions for that channel in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

An illustrative interactive television system **100** in accordance with the present invention is shown in FIG. **1**. Content such as television programming and digital music may be provided from programming sources **102** to television distribution facilities such as television distribution facility **104** using communications path **106**. Programming sources **102** may be any suitable sources of television and music programming, such as television broadcasters (e.g., NBC, ABC, and HBO) or other television or music production studios.

Television distribution facility **104** may be a cable system headend, a satellite television distribution facility, a television broadcaster, or any other suitable facility for distributing television and music programming to users. There are typically numerous television distribution facilities **104** in system **100**, but only one is shown in FIG. **1** to avoid overcomplicating the drawing.

Communications path **106** may be a satellite path, a fiber-optic path, a cable path, or any other suitable wired or wireless communications path or combination of such paths.

Television distribution facility **104** may be connected to various user equipment devices **108**. Such user equipment **108** may be located, for example, in the homes of users. User equipment **108** may include user television equipment **110** or user computer equipment **112**.

The user equipment may receive television and music programming and other data from television distribution facility **104** over communications paths such as communications paths **114**, **116**, and **118**. The user equipment may also transmit signals to television distribution facility **104** over paths **114**, **116**, and **118**. Paths **114**, **116**, and **118** may be cables or other wired connections, free-space connections (e.g., for broadcast or other wireless signals), satellite links, or any other suitable link or combination of links.

Data source **120** in system **100** may include a program listings database that is used to provide the user with television program schedule information such as scheduled broadcast times, titles, channels, ratings information (e.g., parental ratings and critic's ratings), detailed title descriptions, genre or category information (e.g., sports, news, movies, etc.), and information on actors and actresses. Data source **120** may also be used to provide advertisements (e.g., program guide advertisements and advertisements for other interactive television applications), real-time data such as sports scores, stock quotes, news data, and weather data, application data for one or more interactive television applications, and any other suitable data for use by system **100**. For example, data source **120** may provide data indicating whether customized interactive television overlays (e.g., a customized FLIP or BROWSE overlay) are to be displayed on top of video for a given television channel. As another example, data source **120** may provide data indicating the types of information that may be included in the interactive television overlays (e.g., at the request of the user, absent user modification, etc.).

There may be multiple data sources such as data source **120** in system **100**, although only one is shown in FIG. **1** to avoid overcomplicating the drawing. For example, a separate data source **120** may be associated with each of a plurality of television broadcasters and may provide data that is specific to those broadcasters (e.g., advertisements for future programming of the broadcasters, logo data for displaying broadcasters' logos in program guide display screens, instructions to be used by the interactive television application to customize the display of overlays such as FLIP and BROWSE overlays on top of video for one or more television channels that are associated with the broadcasters, etc.). Data source **120** and the other system components of FIG. **1** may be provided using equipment at one or more locations. Systems components are drawn as single boxes in FIG. **1** to avoid overcomplicating the drawings.

In some embodiments of the present invention, data source **120** may provide program schedule data and other data to television distribution facility **104** over communications path **122** for distribution to the associated user equipment over paths **114**, **116**, and **118** (e.g., when data source **120** is located at a main facility). Communications path **122** may be any suitable communications path such as a satellite communications path or other wireless path, a fiber-optic or other wired communications path, a path that supports Internet communications, or other suitable path or combination of such paths.

In some embodiments of the present invention, data source **120** may provide program schedule data and other data directly to user equipment **108** over path **124**, communications network **126**, and path **128** (e.g., when data source **120** is located at a facility such as one of programming sources **102**). Paths **124** and **128** may be wired paths such as a telephone lines, cable paths, fiber-optic paths, satellite paths, wireless paths, any other suitable paths or a combinations of such paths. Communications network **126** may be any suitable communications network, such as the Internet, the public switched telephone network, or a packet-based network.

Program schedule data and other interactive television data may be provided to user equipment using any suitable approach. For example, program schedule data and other data may be provided to the user equipment on a television channel sideband, in the vertical blanking interval of a television channel, using an in-band digital signal, using an out-of-band digital signal, or by any other suitable data transmission technique. Program schedule data and other data may be provided to user equipment on multiple analog or digital television channels. Program schedule data and other data may be provided to the user equipment with any suitable frequency (e.g., continuously, daily, in response to a request from user equipment, etc.).

User equipment devices such as user television equipment and personal computers may use the program schedule data and other interactive television data to display program listings and other information (e.g., information on digital music) for the user. An interactive television program guide application or other suitable interactive television application may be used to display the information on the user's display (e.g., in one or more overlays that are displayed on top of video for a given television channel). Interactive television displays may be generated and displayed for the user using any suitable approach. In one suitable approach, television distribution facility **104** or other facility may generate application display screens and may transmit the display screens to user equipment for display. In another suitable approach, user equipment may store data for use in one or more interactive television displays (e.g., program schedule data, advertisements, logos, etc.), and an interactive television application

implemented at least partially on the user equipment may generate the interactive television displays based on instructions received from television distribution facility **104** or other facility. In some embodiments of the present invention, user equipment may store only the program schedule data and other data that is used to generate the interactive television displays (e.g., storing logo data for a particular television broadcaster only if the logo is to be included in one or more interactive television displays). In some embodiments of the present invention, user equipment may store various program schedule data and other data that is not necessarily used to generate the interactive television displays (e.g., storing advertisements associated with a particular television broadcaster that may or may not be displayed depending on, for example, the outcome of negotiations with the television broadcaster). Any other suitable approach or combination of approaches may be used to generate and display interactive television overlays for the user.

An on-line program guide and other interactive television services may be provided using a server connected to communications network **126** such as server **130**. Server **130** may receive program schedule data and other data from data source **120** via communications path **124**, communications network **126**, and communications path **132** or via another suitable path or combination of paths. Path **132** may be a satellite path, fiber-optic path, wired path, or any other path or combination of paths.

User equipment **108** may access on-line program guide data and other data from server **130** via communications path **128**. User equipment **108** may also access the on-line program guide and other services on server **130** via communications path **114**, television distribution facility **104**, and communications path **134**. For example, a cable modem or other suitable equipment may be used by user equipment **108** to communicate with television distribution facility **104**. Television distribution facility **104** may communicate with communications network **126** over any suitable path **134**, such as a wired path, a cable path, fiber-optic path, satellite path, or combination of such paths.

User equipment such as user television equipment **110** and user computer equipment **112** may access the on-line program guide and server **130** using similar arrangements. User television equipment **110** may access the on-line program guide and server **130** using communications path **136** or using path **116**, television distribution facility **104**, and path **134**. User computer equipment **112** may access the on-line program guide and server **130** using communications path **138** or using path **118**, television distribution facility **104**, and path **134**. Paths **136** and **138** may be any suitable paths such as wired paths, cable paths, fiber-optic paths, wireless paths, satellite paths, or a combination of such paths.

Program guide application functions and the functions of other interactive television applications may be supported using server **130** and other servers connected to communications network **126** such as server **140**. Interactive television applications may also be supported by servers or other suitable equipment at one or more service providers such as service provider **142**. For example, a home shopping service may be supported by a service provider such as service provider **142** that has sales representatives, order fulfillment facilities, account maintenance facilities, and other equipment for supporting interactive home shopping features. A home shopping application that is implemented using the user equipment may be used to access the service provider to provide such features to the user. The user equipment may access service provider **142** via television distribution facility **104** and communications path **144** or via communications network **126** and communications path **146**. Communications paths such as paths **144** and **146** may be any suitable paths such as wired paths, cable paths, fiber-optic paths, satellite paths, or a combination of such paths.

Another example of an interactive television application is a home banking application. A home banking service may be supported using personnel at facilities such as service provider **142**. An interactive home banking application that is implemented using the user equipment may access the home banking service via television distribution facility **104** and communications path **144** or via communications network **126** and communications path **146**.

If desired, an interactive television application such as a network-based video recorder or a video-on-demand application may be supported using server **140**, server **130**, or equipment at service provider **142**. Video-on-demand content and video recorded using a network-based video recorder arrangement may be stored on server **140** or server **130** or at service provider **142** and may be provided to the user equipment when requested by users. An interactive television application may be used to support the functions of a personal video recorder (sometimes called a digital video recorder) that is implemented using user equipment **108**. Illustrative equipment that may be used to support personal video recorder functions include specialized personal video recorder devices, integrated receiver decoders (IRDs), set-top boxes with integrated or external hard drives, or personal computers with video recording capabilities.

If desired, interactive television applications such as an interactive television program guide application, a home shopping application, a home banking application, a video-on-demand application, game applications, and other applications (e.g., applications related to e-mail and chat or other communications functions, etc.) may be provided as separate applications that are accessed through a navigation shell application (i.e., a menu application with menu options corresponding to the applications). The features of such applications may be combined. For example, games, video-on-demand services, home shopping, network-based video recorder functions, personal video recorder functions, navigational functions, program guide functions, communications functions, and other suitable functions may be provided using one application or any other suitable number of applications. This one or more applications may display on user equipment various overlays including interactive television information on top of video for a given television channel.

The interactive television program guide application, the home banking application, the home shopping application, the network-based video recorder and personal video recorder applications, the video-on-demand application, the gaming applications, communications applications, and navigational applications are only a few illustrative examples of the types of interactive television applications that may be supported by system **100**. Other suitable applications that may be supported include news services, web browsing and other Internet services, and interactive wagering services (e.g., for wagering on horse races, sporting events, and the like). Interactive television overlays that are displayed by these applications may also be customized in accordance with the present invention.

The interactive television application or applications that are used in interactive television system **100** may be implemented locally on the user equipment. The applications may also be implemented in a distributed fashion (e.g., using a client-server architecture in which the user equipment serves at least partly and for at least some of the time as the client and a server such as server **140** at television distribution facility

104, server 130, or other suitable equipment acts as the server). Other distributed architectures may also be used if desired. Moreover, some or all of the interactive television system features of system 100 may be provided using operating system software or middleware software. Such operating system software and middleware may be used instead of or in combination with application-level software. Regardless of the particular arrangement used to implement interactive television features related to, for example, program guides, home shopping, home banking, video-on-demand, Internet, and communications, the software that supports these features may be referred to as an application or applications.

Illustrative user television equipment 110 (FIG. 1) that is based on a set-top box arrangement is shown in FIG. 2. Input/output 202 may be connected to communications paths such as paths 116 and 136 (FIG. 1). Input/output functions may be provided by one or more wires or communications paths, but are shown as a single path in FIG. 2 to avoid overcomplicating the drawing. Television programming, program guide data, and any other suitable interactive television or other data may be received using input/output 202. Commands and requests and other data generated as a result of user interactions with the interactive television application may also be transmitted over input/output 202.

Set-top box 204 may be any suitable analog or digital set-top box (e.g., a cable set-top box). Set-top box 204 may contain an analog tuner for tuning to a desired analog television channel (e.g., a channel comprising television programming, interactive television data, or both). Set-top box 204 may also contain digital decoding circuitry for receiving digital television channels (e.g., channels comprising television or music programming, interactive television data, etc.). Both analog and digital channels may be handled together if desired. Multiple tuners may be provided (e.g., to handle simultaneous watch and record functions or picture-in-picture (PIP) functions). Box 204 may be an integrated receiver decoder (IRD) that handles satellite television. If desired, box 204 may have circuitry for handling cable, over-the-air broadcast, and satellite content. Box 204 may include a storage device (e.g., a digital storage device such as a hard disk drive) for providing recording capabilities. Box 204 may also be connected to a recording device 206 such as a video cassette recorder, personal video recorder, or other device or devices with storage capabilities.

Set-top box 204 contains a processor (e.g., a microcontroller or microprocessor or the like) that is used to execute software applications. Set-top box 204 may contain memory such as random-access memory for use when executing applications. Nonvolatile memory may also be used (e.g., to launch a boot-up routine and other instructions). Hard disk storage in box 204 or in recording device 206 may be used to back up data and to otherwise support larger databases and storage requirements than may be supported using random-access memory approaches.

Set-top box 204 may have infrared (IR) or other communications circuitry for communicating with a remote control or wireless keyboard. Set-top box 204 may also have dedicated buttons and a front-panel display. The front-panel display may, for example, be used to display the current channel to which the set-top box is tuned.

Set-top box 204 may also have communications circuitry such as a cable modem, an integrated services digital network (ISDN) modem, a digital subscriber line (DSL) modem, a telephone modem, or a wireless modem for communications with other equipment. Such communications may involve the Internet or any other suitable communications networks or paths. If desired, the components of set-top box 204 may be integrated into other user equipment (e.g., a television or videocassette recorder).

Recording device 206 may be used to record videos provided by set-top box 204. For example, if set-top box 204 is tuned to a given television channel, the video signal for that television channel may be passed to recording device 206 for recording on a videocassette, compact disc, digital video disk, or internal hard drive or other storage device. Recording device 206 may have communications circuitry such as a cable modem, an ISDN modem, a DSL modem, or a telephone modem for communications with other equipment. Such communications may involve the Internet or any other suitable communications networks or paths. The components of recording device 206 may be integrated into other user equipment (e.g., a television, stereo equipment, etc.).

Recording device 206 may be controlled using a remote control or other suitable user interface. If desired, video recorder functions such as start, stop, record and other functions for device 206 may be controlled by set-top box 204. For example, set-top box 204 may control recording device 206 using infrared commands directed toward the remote control inputs of recording device 206 or set-top box 204 may control recording device 206 using other wired or wireless communications paths between box 204 and device 206.

The output of recording device 206 may be provided to television 208 for display to the user. If desired, multiple recording devices 206 or no recording device 206 may be used. If recording device 206 is not present or is not being actively used, the video signals from set-top box 204 may be provided directly to television 208. Any suitable television or monitor may be used to display the video. In the equipment of FIG. 2 and the other equipment of system 100 (FIG. 1), the audio associated with various video items is typically distributed with those video items and is generally played back to the user as the videos are played.

Another illustrative arrangement for user television equipment 110 (FIG. 1) is shown in FIG. 3. In the example of FIG. 3, user television equipment 110 includes a recording device 302 such as a digital video recorder (e.g., a personal video recorder (PVR)) that uses a hard disk or other storage for recording video or may be a digital video disc recorder, compact disc recorder, videocassette recorder, or other suitable recording device. Equipment 110 of FIG. 3 may also include a television 304. Input/output 306 may be connected to communications paths such as paths 116 and 136 (FIG. 1). Television programming, program schedule data, and other data (e.g., advertisement data, data indicating one or more television channels for which the display of an overlay is to be customized, etc.) may be received using input/output 306. Commands and requests and other data from the user may be transmitted over input/output 306.

Recording device 302 may contain at least one analog tuner for tuning to a desired analog television channel (e.g., to display video for a given television channel to a user, to receive program guide data and other data) and multiple tuners may be provided. Recording device 302 may also contain digital decoding circuitry for receiving digital television programming, music programming, program guide data, and other data on one or more digital channels. If desired, recording device 302 may contain circuitry for handling both analog and digital channels. Recording device 302 also contains a processor (e.g., a microcontroller or microprocessor or the like) that is used to execute software applications. Recording device 302 may contain memory such as random-access memory for use when executing applications. Nonvolatile memory may also be used to store a boot-up routine or other

instructions. The hard disk and other storage in recording device **302** may be used to support databases (e.g., program guide databases or other interactive television application databases). The hard disk or other storage in recording device **302** may also be used to record video such as television programs or video-on-demand content or other content provided to recording device **302** over input/output **306**.

Recording device **302** may have IR communications circuitry or other suitable communications circuitry for communicating with a remote control. Recording device **302** may also have dedicated buttons and a front-panel display. The front-panel display may, for example, be used to display the current channel to which the recording device is tuned.

Recording device **302** may also have communications circuitry such as a cable modem, an ISDN modem, a DSL modem, a telephone modem, or a wireless modem for communications with other equipment. Such communications may involve the Internet or other suitable communications networks or paths.

If desired, recording device **302** may include a satellite receiver or other equipment that has wireless communications circuitry for receiving satellite signals.

Recording device **302** of FIG. **3** or recording device **206** of FIG. **2** may record new video while previously recorded video is being played back on television **304** or **208**. This allows users to press a pause button during normal, television viewing. When the pause button is pressed, the current television program is stored on the hard disk of digital video recorder **302**. When the user presses play, the recorded video may be played back. This arrangement allows the user to seamlessly pause and resume television viewing. Recording device **302** and **206** may also be used to allow a user to watch a previously-recorded program while simultaneously recording a new program.

The set-top box arrangement of FIG. **2** and the personal video recorder set-top box arrangement of FIG. **3** are merely illustrative. Other arrangements may be used if desired. For example, user television equipment may be based on a WebTV box, a personal computer television (PC/TV), or any other suitable television equipment arrangement. If desired, the functions of components such as set-top box **204**, recording device **302**, a WebTV box, or PC/TV or the like may be integrated into a television or personal computer or other suitable device.

An illustrative remote control **400** for operating user television equipment **110** (FIG. **1**) or suitable user computer equipment **112** is shown in FIG. **4**. Remote control **400** is only illustrative and any other suitable user input interface may be used to operate user equipment (e.g., a mouse, trackball, keypad, keyboard, touch screen, voice recognition system, etc.). Remote control **400** may have function keys **402** and other keys **404** such as keypad keys, power on/off keys, pause, stop, fast-forward and reverse keys. Volume up and down keys **406** may be used for adjusting the volume of the audio portion of a video. Channel up and down keys **408** may be used to change television channels and to access content on virtual channels. Cursor keys **410** may be used to navigate on-screen menus. For example, cursor keys **410** may be used to position an on-screen cursor, indicator, or highlight (sometimes all generically referred to herein as a highlight or highlight region) to indicate interest in a particular option or other item on a display screen that is displayed by the interactive television application.

An OK key **412** (sometimes called a select or enter key) may be used to select on-screen options that the user has highlighted.

Keys **402** may include a RECORD key **414** for initiating recordings. MENU button **416** may be used to direct the interactive television application to display a menu on the user's display screen (e.g., on television **208** or **304** or on a suitable monitor or computer display). INFO button **418** may be used to direct the interactive television application to display an information display screen. For example, when a user presses INFO key **418** while video for a given television channel is displayed for the user, the interactive television application may display a FLIP overlay including program schedule information for the current program on the given television channel on top of the video. As another example, when a particular program listing in an interactive television program listings display screen is highlighted, the user pressing INFO button **418** may cause the interactive television application to provide additional program schedule information associated with that program listing (e.g., a program description, actor information, etc.).

LOCK button **420** may be used to modify access privileges. For example, a parent may use LOCK button **420** or on-screen options to establish parental control settings for the interactive television application. The parental control settings may be time-based settings (e.g., to prevent a child from watching television during a particular time block such as from 3:00 PM to 5:00 PM). The parental control settings may also be used to block programming based on, for example, rating, channel, and program title. A locked or blocked program is typically not viewable until the interactive television application is provided with a suitable personal identification number (PIN). Once this PIN has been entered, the interactive television program will unlock the user's equipment and allow the locked content to be accessed.

EXIT button **422** may be used to exit the interactive television application or to exit a portion of the interactive television application (e.g., to cause the interactive television application to remove a FLIP, BROWSE, or other interactive television overlay from the display screen). GUIDE button **96** may be used to invoke an interactive television program guide (e.g., a program guide menu screen, program listings screen, or other program guide screen).

The keys shown in FIG. **4** are merely illustrative. Other keys or buttons may be provided if desired. For example, a music button may be used to access music with the interactive television application. An edit button may be used to edit stored content (e.g., to remove commercials, remove portions of a video, etc.). Alphanumeric buttons may be used to enter alphanumeric characters. A last or back button may be used to browse backward in the interactive television application (e.g., to return to a previous channel, web page, or other display screen). Video recorder function buttons such as a play button, pause button, stop button, rewind button, fast-forward button, and record button, may be used to control video recorder functions (local or network-based) in system **100** (FIG. **1**). A help key may be used to invoke help functions such as context-sensitive on-screen help functions.

Illustrative user computer equipment **112** (FIG. **1**) is shown in FIG. **5**. In the arrangement of FIG. **5**, personal computer **502** may be controlled by the user using keyboard **504** or other suitable user input device such as a trackball, mouse, touch pad, touch screen, voice recognition system, or a remote control such as remote control **400** of FIG. **4**. Video content such as television programming and interactive television application display screens may be displayed on monitor **506**. Television and music programming, program guide data, video-on-demand content, video recordings played back from a network-based video recorder, and other data may be received from paths **118** and **138** (FIG. **1**) using

input/output **508**. User commands and other information generated as a result of user interactions with the interactive television application and system **100** (FIG. **1**) may also be transmitted over input/output **508**.

Personal computer unit **502** may contain a television or video card such as a television tuner card for decoding analog and digital television channels (e.g., channels comprising program guide data) and for handling streaming video content. Multiple video cards (e.g., tuner cards) may be provided if desired. An illustrative television tuner card that may be used may contain an analog television tuner for tuning to a given analog channel and digital decoding circuitry for filtering out a desired digital television or music channel from a packetized digital data stream. Any suitable card or components in computer unit **502** may be used to handle video and other content delivered via input/output line **508** if desired.

Personal computer unit **502** may contain one or more processors (e.g., microprocessors) that are used to run the interactive television application or a portion of the interactive television application.

Personal computer unit **502** may include a hard drive, DVD drive, CD drive, or other suitable storage device or devices that stores video, program guide data, and other content. The interactive television application and personal computer unit **502** may use a storage device or devices to, for example, provide the functions of a personal video recorder.

User equipment such as user equipment **108**, user television equipment **110**, and user computer equipment **112** may be used with network equipment such as server **130**, server **140**, and equipment at service providers such as service provider **142** of FIG. **1** to provide network-based video recording functions. Video recording functions may be provided by storing copies of television programs and other video content on a remote server (e.g., server **130** or server **140**) or other network-based equipment such as equipment at a service provider such as service provider **142**.

Video recordings may be made in response to user commands that are entered at user equipment **108**. In a personal video recorder arrangement, the interactive television application may be used to record video locally on the user equipment in response to the user commands. In a network-based video recorder arrangement, the interactive television application may be used to record video or to make virtual recordings on network equipment such as server **130**, server **140**, or equipment at service provider **142** in response to the user commands. The user commands may be provided to the network equipment over the communications paths shown in FIG. **1**. The personal video recorder arrangement and the network-based video recorder arrangement can support functions such as fast-forward, rewind, pause, play, and record.

To avoid unnecessary duplication in a network-based video recorder environment, system **100** may provide network-based video recording capabilities by using virtual copies or recordings. With this approach, each user may be provided with a personal area on the network that contains a list of that user's recordings. The video content need only be stored once (or a relatively small number of times) on the network equipment, even though a large number of users may have that video content listed as one of their recordings in their network-based video recorder personal area. Personal settings or any other suitable data may be stored in a user's personal area on the network. For example, data associated with the display of interactive television overlays that have been customized by the user may be stored in such an area (e.g., to allow a back office of the interactive television application to determine which types of interactive television data are most desirable to users).

The user television equipment and user computer equipment arrangements described above are merely illustrative. A more generalized embodiment of illustrative user equipment **108**, **110**, and **112** (FIG. **1**) is shown in FIG. **6**. Control circuitry **602** is connected to input/output **604**. Input/output **604** may be connected to one or more communications paths such as paths **114**, **116**, **118**, **128**, **136**, and **138** of FIG. **1**. Television and music programming may be received via input/output **604** (e.g., from programming sources **102**, servers or other equipment such as server **130**, service providers such as service provider **142**, television distribution facility **104**, etc.). Program schedule information for an interactive television program guide may be received from data source **120** via input/output **604**. Input/output **604** may also be used to receive data from data source **120** for other interactive television applications. The user may use control circuitry **602** to send commands, requests, and other suitable data using input/output **604**.

Control circuitry **602** may be based on any suitable processing circuitry **606** such as processing circuitry based on one or more microprocessors, microcontrollers, digital signal processors, programmable logic devices, etc. Memory (e.g., random-access memory and read-only memory), hard drives, DVD drives, CD drives, or any other suitable memory or storage devices may be provided as storage **608** that is part of control circuitry **602**. Tuning circuitry such as one or more analog tuners, one or more MPEG-2 decoders or other digital video circuitry, or any other suitable tuning or video circuits or combinations of such circuits may also be included as part of circuitry **602**. Encoding circuitry (e.g., for converting over-the-air or cable analog signals to MPEG signals for storage) may also be provided. The tuning and encoding circuitry may be used by the user equipment to receive and display or play or record a particular television or music channel or other desired audio and video content (e.g., video-on-demand content or requested network-based or local video recorder playback). Television programming and other video and on-screen options and information may be displayed on display **610**. Display **610** may be a monitor, a television, or any other suitable equipment for displaying visual images. Speakers **612** may be provided as part of a television or may be stand-alone units. Digital music and the audio component of videos displayed on display **610** may be played through speakers **612**.

A user may control the control circuitry **602** using user input interface **614**. User input interface **614** may be any suitable user interface, such as a mouse, trackball, keypad, keyboard, touch screen, touch pad, voice recognition interface, or a remote control.

The interactive television application of the present invention may use application data to change its display screens and available options. Such application data may originate from computers located at one or more suitable facilities or locations (e.g., television distribution facility **104** (FIG. **1**), one or more data sources **120** (FIG. **1**), a user input interface at user equipment, etc.). FIGS. **7**, **8**, and **10-18** show various interactive television application display screens in accordance with various embodiments of the present invention. The display screens of FIGS. **7**, **8**, and **10-18** are only illustrative. Any other suitable user interface approach may be used.

In some embodiments of the present invention, the interactive television application (e.g., an interactive television program guide) may display a FLIP overlay including information of a default set of information types on top of video for a given television channel. An information type is any suitable category of content that may be included in an interactive

television overlay. A FLIP overlay generally includes one or more program schedule information types that are associated with the television program that is currently available for viewing by the user on the given television channel (e.g., a program title, program description, etc.). Any other suitable information types may also be included in the FLIP overlay (e.g., advertisements, service provider logos, web links, applets, etc.). An illustrative FLIP overlay display screen **700** is shown in FIG. **7**. FLIP overlay **702** is displayed on top of video **704** for channel **22**. Channel **22** may be one of a plurality of television channels for which the default set of FLIP information types applies. In particular, when a FLIP overlay is displayed on top of video for one of the plurality of television channels, the FLIP overlay may include information of the default set of information types. FLIP overlay **702** may include information of various default program schedule information types such as program title **706** for a television program that is currently available for viewing on channel **22**, channel **708**, rating **710**, run time **712**, or any other suitable information types (e.g., a description of the television program that is currently available for viewing by the user on channel **22**). FLIP overlay **702** may also include information of other default information types such as advertisement **714**, service provider logo **716** (e.g., for a service provider of the interactive television application, for a television broadcaster, etc.), and any other suitable information types (e.g., an internet link).

A given television channel may be identified as one of a plurality of television channels for which the default set of FLIP overlay information types applies in any suitable fashion. In some embodiments of the present invention, it may be determined that the default set of information types applies to the given television channel based on negotiations with the television broadcaster of the given television channel. The television broadcaster of the given television channel may, for example, indicate to a back-office representative of the interactive television application that information of the default set of information types is suitable for display on top of video for the one or more television channels that are associated with that broadcaster (e.g., channels HBO' and HBO2 that are associated with broadcaster HBO). As another example, it may be determined that the default set of information types applies to one or more television channels absent a contrary request by the one or more television broadcasters of the one or more television channels or a contrary request by the user.

Another illustrative FLIP overlay display screen **800** is shown in FIG. **8**. FLIP overlay **802** is displayed on top of video **804** for channel **23**. Channel **23** may be another television channel of the plurality of television channels for which the default set of FLIP overlay information types applies. The interactive television program guide may display FLIP overlay **802** including information of the same default set of FLIP information types that are included in FLIP overlay **702** (FIG. **7**) such as program title **806**, channel **808**, rating **810**, run time **812**, advertisement **814**, and service provider logo **816**. FLIP overlays for other channels of the plurality of television channels for which the default set of information types applies may also include information of the same default set of information types as FLIP overlays **702** (FIG. **7**) and **802** (FIG. **8**).

The interactive television application may display a FLIP overlay on top of video for a given television channel at any suitable time. For example, the interactive television application may automatically display a FLIP overlay on top of video for the given television channel in response to receiving a user indication to tune to the given television channel (e.g., a user pressing channel up/down keys **408** or the appropriate numeric keys **404**). As another example, a FLIP overlay may be displayed on top of video for the given television channel in response to the interactive television application receiving a user indication to view program schedule information (e.g., a user pressing a remote control key such as INFO key **418**) while video for the given television channel is displayed by user equipment. Still another example, a FLIP overlay may be displayed on top of video for the given television channel in response to the interactive television application receiving a user indication to exit other interactive television display screens (e.g., a program guide menu display screen, a program listings display screen, a display screen including a web page, etc.) when the given television channel is a currently tuned channel.

The interactive television application may display a FLIP overlay in any suitable format, size, and location in a display screen. For example, in the illustrative embodiments of FIGS. **7** and **8**, FLIP overlays **702** and **802** are displayed in a banner-like format across bottom portions of display screens **700** and **800**, respectively. In other examples, a FLIP overlay may be displayed in a different shape (e.g., an ovular shape), may occupy a greater or a lesser portion of the display screen, and may be displayed, for example, across a top portion of the display screen, a middle portion of the display screen, or along a side portion of the display screen. At least a substantial portion of the underlying video for the currently tuned program (e.g., video **704** or video **804**) may be visible to the user while a FLIP overlay (e.g., FLIP overlay **702** or **802**) or other interactive television overlay is displayed. In some embodiments of the present invention, a FLIP overlay that is displayed by the interactive television program guide may be at least somewhat transparent such that the underlying video can be at least partially perceived by the user through the overlay. In some embodiments of the present invention, the size of the video may be reduced so that it may be viewed unobscured at the same time as a FLIP display.

In accordance with the present invention, one or more television channels that are available for viewing by the user may be identified as television channels for which a default set of information types does not apply. The interactive television program guide may, for example, disable the display of a FLIP overlay on top of video for the one or more television channels. FIG. **9** shows an illustrative display screen **900** that may be displayed to the user in response to, for example, the interactive television program guide receiving a user indication to tune to television channel **25** for which the default set of information types does not apply. User equipment (e.g., user equipment **108**, **110**, **112** (FIG. **1**)) may display video **902** for channel **25** in display screen **900**. However, no FLIP overlay (e.g., such as FLIP overlay **702** (FIG. **7**) or **802** (FIG. **8**)) may be displayed in display screen **900**.

In the example of FIG. **9**, channel **25** may have been identified (e.g., by a back office of the interactive television application or a user) as a television channel for which the default set of information types does not apply based on, for example, negotiations with the television broadcaster for channel **25**, data input using a suitable user input device such as remote control **400** (FIG. **4**), or in any other suitable fashion. The display of a FLIP overlay on top of video for channel **25** may be disabled at all times or only in instances in which such a display would otherwise be automatic by the interactive television application (e.g., such as in response to a user indication to tune to channel **25**). The television broadcaster for channel **25** may have, for example, requested that the FLIP overlay only be displayed on top of video **902** for channel **25** when the user expressly indicates a desire to view the FLIP overlay (e.g., when the user presses remote control INFO key **418** (FIG. **4**) while video for channel **25** is displayed by user

equipment, when the user enables the display of the FLIP overlay using one or more suitable user input interfaces, etc.).

The interactive television application may disable the functionality of various user input interface options that would otherwise cause the interactive television program guide to display a FLIP overlay on top of video for a given television channel. For example, while video is displayed on user equipment for a given television channel for which the default set of information types does not apply (e.g., video **902** (FIG. **9**)), the functionality of remote control INFO key **418** which may otherwise cause the interactive television program guide to display a FLIP overlay (e.g., such as when the user presses INFO key **418** while video **704** (FIG. **7**) or video **804** (FIG. **8**) is displayed by user equipment) may be disabled.

The interactive television application may also modify the functionality of various user input interface options that may otherwise cause the interactive television program guide to display a FLIP overlay on top of video for a given television channel. FIG. **10** shows an illustrative interactive television application program schedule information display screen **1000**. The interactive television application may display information display screen **1000** in response to, for example, receiving a user indication to view program schedule information (e.g., a user pressing remote control INFO key **418** (FIG. **4**)) while video **902** (FIG. **9**) for television channel **25** is displayed by user equipment. As previously described, channel **25** may be a television channel for which the display of a FLIP overlay is disabled. Information display screen **1000** may include one or more program schedule information types that may otherwise be included in a FLIP overlay such as program title **1002**, channel **1004**, rating **1006**, run time **1008**, and description **1010** of the program that is currently available for viewing by the user. However, information display screen **1000** may occupy the full area of the user's display screen (i.e., video for channel **25** may not be visible) and audio for television channel **25** may or may not be audible to the user while information display screen **1000** is displayed. In contrast, while video is displayed for a television channel for which the default set of FLIP overlay information types applies (e.g., video **702** (FIG. **7**) for channel **22** or video **802** (FIG. **8**) for channel **23**), such a user indication may cause the interactive television program guide to display a FLIP overlay that only partially obstructs the underlying video and that does not affect the ability of the user to perceive the audio corresponding to the video. Information display screen **1000** may also include other suitable information types such as one or more advertisements **1012** and **1014**, a service provider logo **1016**, and any other suitable information types. The interactive television program guide may remove display screen **1000** and video for channel **25** may be displayed by user equipment in response to a user selection of option **1018** (e.g., a user positioning a highlight region on option **1018** using remote control keys **410** and pressing OK key **412** (FIG. **4**)).

FIG. **11** shows another illustrative interactive television program guide display screen **1100** that the interactive television program guide may display for a user in response to receiving, while television channel **25** for which the display of a FLIP overlay is disabled is a currently tuned channel, a user indication that would otherwise cause the interactive television program guide to display a FLIP overlay. Display screen **1100** is a program listings display screen that occupies the full area of the user's display (e.g., television **208** (FIG. **2**), television **304** (FIG. **3**), monitor **506** (FIG. **5**), display **610** (FIG. **6**), etc.). Audio for television channel **25** may or may not be audible to the user while program listings display screen **1100** is displayed by user equipment. Similar to information types that may otherwise be included in a FLIP overlay, display screen **1100** may include the program schedule information types of program title **1102**, channel **1104**, rating **1106**, run time **1108**, and description **1110** for the television program that is currently available for viewing on channel **25**. Program listings display screen **1100** may also include other information such as one or more advertisements **1112** and **1114**, a service provider logo **1116** (e.g., an MSO logo), and program schedule information for other channels (e.g., channels **1118**) and times (e.g., time slot **1120** from 8:30-9:00 PM). The interactive television program guide may initially display program listings display screen **1100** having the currently broadcasted program **1122** on channel **25** highlighted by highlight region **1124** such that detailed information **1126** for program **1122** is displayed for the user. The user may change the position of highlight region **1124** using, for example, remote control **400** (FIG. **4**) or other user input interface (e.g., user input interface **614** (FIG. **6**)) to view detailed information **1126** for programs other than program **1122**.

Information display screen **1000** of FIG. **10** and program listings display screen **1100** of FIG. **11** are only illustrative. Any other suitable interactive television display screens may be displayed by the interactive television application in response to receiving a user indication that would otherwise cause a FLIP overlay to be displayed on top of video for a given television channel for which the display of a FLIP overlay is disabled. For example, the interactive television program guide may display a main menu display screen that includes various interactive television options and features (e.g., an option to access an information display screen such as display screen **1000** (FIG. **10**), an option to access a program listings display screen such as display screen **1100** (FIG. **11**), an option to access a home shopping or banking display screen, etc.) or any other suitable display screen in response to receiving such a user indication.

In some embodiments of the present invention, the interactive television application may display a FLIP overlay including information of a custom set of information types on top of video for a given television channel. An illustrative FLIP overlay display screen **1200** is shown in FIG. **12**. FLIP overlay **1202** is displayed on top of video **1204** for television channel **25** which, as previously described, may be a television channel for which the default set of FLIP information types does not apply (e.g., as determined based on negotiations with the television broadcaster for television **25** or based on one or more user inputs). The custom set of information types of FLIP overlay **1202** may include less than all information types of the default set of FLIP overlay information types (e.g., less than all information types that are displayed in FLIP overlays **702** (FIG. **7**) and **802** (FIG. **8**)). For example, FLIP overlay **1202** may include information of the program schedule information types of program title **1206**, channel **1208**, rating **1210**, and run time **1212**, but not information of the information types of an advertisement (e.g., such as advertisement **714** (FIG. **7**) or **814** (FIG. **8**)) and a service provider logo (e.g., such as logo **716** (FIG. **7**) or **816** (FIG. **8**)). The television broadcaster for channel **25** may have, for example, requested that FLIP overlay **1202** for channel **25** not include these information types unless requested or enabled by the user (e.g., the interactive television application compiling viewer statistics indicating a desire to view advertisements and a service provider logo).

Referring to FIGS. **7**, **8**, and **12**, the interactive television application may display information of information types that are common to both the default and custom sets of FLIP overlay information types in the same locations and formats

in the associated FLIP overlays. This may, for example, maximize the ability of the user to locate various information in the FLIP overlays as the user changes channels and the associated FLIP overlays are displayed.

In some embodiments of the present invention, a custom set of FLIP overlay information types may include one or more information types that is not included in the default set of FLIP overlay information types. FIG. **13** shows an illustrative FLIP overlay display screen **1300**. FLIP overlay **1302** is displayed on top of video **1304** for channel **25** which, as previously described, may be a television channel for which the default set of information types does not apply. The custom set of information types for FLIP overlay **1302** may include various information types that are not included in the default set of FLIP overlay information types (e.g., as shown in FIGS. **7** and **8**) such as logo **1306** for channel **25** and advertisement **1308** that is associated with channel **25** (e.g., an advertisement for a future program on channel **25** or other television channel having the same television broadcaster as channel **25**, an advertisement for a product that is being offered by the television broadcaster of channel **25**, etc.). The television broadcaster for television channel **25** may have, for example, requested that FLIP overlay **1302** only include information that is associated with channel **25** (e.g., or another television channel that has the same television broadcaster). In other examples, a FLIP overlay such as FLIP overlay **1302** may be customized so as to replace advertising information types of the default set of information types (e.g., advertisement **714** (FIG. **7**)) with non-advertising information types (e.g., a program description). Logo **1306** and advertisement **1308** or other information types that are not included in the default set of information types may be positioned and formatted in FLIP overlay **1302** so as to minimize differences in the look and feel of overlay **1302** with, for example, overlay **702** of FIG. **7** for which the default set of information types applies. The custom set of information types for FLIP overlay **1302** may also include various information types that are included in the default set of FLIP overlay information types such as program title **1310**, channel **1312**, rating **1314**, and program run time **1316**.

FIG. **14** shows another illustrative FLIP overlay display screen **1400**. Customized FLIP overlay **1402** may be displayed on top of video **1404** for television channel **25** which, as previously described, may be a television channel for which the default set of FLIP information types does not apply. Similar to illustrative FLIP overlay **1202** of FIG. **12**, the custom set of information types of FLIP overlay **1402** may include less than all information types of the default set of information types. For example, FLIP overlay **1402** may include information of the program schedule information types of program title **1406**, channel **1408**, rating **1410**, and run time **1412**, but not information of the information types of an advertisement and a service provider logo. Information of the custom set of information types of FLIP overlay **1402** may be repositioned and reformatted relative to information of the same information types of the default set of FLIP information types (e.g., as shown in FLIP overlay **702** (FIG. **7**)). For example, information of the program schedule information type of channel **1408** may be repositioned to the left edge of FLIP overlay **1402** to compensate for the fact that an advertisement (e.g., such as advertisement **714** (FIG. **7**)) is not included in FLIP overlay **1402**. This may prevent FLIP overlay **1402** from having empty space when FLIP overlay **1402** includes less than all information types of the default set of information types. The custom set of information types of FLIP overlay **1402** may also include information types that are not included in the default set of information types. For example, FLIP overlay **1402** may include information of the program schedule information type of program description **1414**.

The customized FLIP overlays of FIGS. **12-14** are only illustrative. FLIP overlays may be customized in any other suitable fashion. In some embodiments of the present invention, a different custom set of FLIP information types may be displayed in a FLIP overlay for each television channel for which the default set of FLIP information types does not apply. In some embodiments of the present invention, a single custom set of FLIP overlay information types (e.g., a custom set of information types that excludes one or both of an advertisement and a service provider logo) may be applicable to every television channel for which the default set of FLIP information types does not apply. In some embodiments of the present invention, the interactive television program guide may display one or more custom sets of FLIP overlay information types in FLIP overlays on top of video for a first group of television channels and may disable the display of a FLIP overlay on top of video for a second group of television channels. In some embodiments of the present invention, the display of a FLIP overlay may be customized for every television channel that is available for viewing by the user and there may be no default set of FLIP information types (e.g., a different set of FLIP overlay information types being applicable to each television channel).

In some embodiments of the present invention, the interactive television application may customize only the display of the FLIP overlay on top of video for a given television channel. All other interactive television overlays that are displayed on top of video for the given television channel may include, for example, a global set of information types that is applicable to every television channel that is available for viewing by the user.

In some embodiments of the present invention, the display of one or more interactive television overlays other than the FLIP overlay may be customized (e.g., in addition to customizing the FLIP overlay). For example, the display of a BROWSE overlay on top of video for a given television channel may be customized. Such a BROWSE overlay generally includes program schedule information that is associated with at least one program other than the program that is currently available for viewing by the user on the given television channel. The BROWSE overlay may include any other suitable information (e.g., advertisements, service provider logos, web links, applets, etc.). Any other interactive television overlay that is displayed on top of video for a television channel may be customized in accordance with the present invention. For example, a reminder overlay including information associated with a program that the user scheduled for reminding, a record overlay including information associated with a program that the user scheduled for recording, or any other interactive television overlays such as a home banking overlay or a home shopping overlay may be customized. As another example, one or more interactive television overlays that would otherwise be displayed on top of video for a particular channel may be customized (e.g., disabled) to, for example, prevent advertising content from being displayed simultaneously with video for the particular channel.

FIG. **15** shows an illustrative BROWSE overlay display screen **1500** in accordance with the present invention. BROWSE overlay **1502** is displayed on top of video **1504** for television channel **22**. Channel **22** may be one of a plurality of television channels for which a default set of BROWSE information types applies (e.g., as determined based on negotiations with the television broadcaster for channel **22**). In particular, the BROWSE overlay that is displayed on top of video

for one of the plurality of television channels may include information of the default set of BROWSE information types. BROWSE overlay **1502** may include program schedule information of various default information types such as one or more program titles **1506** for one or more television programs other than the program that is currently broadcasted on channel **22**, channel **1508**, rating **1510**, run time **1512**, or any other suitable information types (e.g., a program description). BROWSE overlay **1502** may also include information of other default information types such as advertisement **1514**, service provider logo **1516** (e.g., for a service provider that provides program schedule information, for a television broadcaster, etc.), and any other suitable information types (e.g., an internet link). The user may change the one or more channels and the time range for which program schedule information is displayed in BROWSE overlay **1502** without removing the display of the video for channel **22** by selecting channel up/down options **1518** and time last/next options **1520** or by pressing the arrow keys **410** on remote control **400** (FIG. **4**).

The interactive television application may display a BROWSE overlay at any suitable time. For example, BROWSE overlay **1502** may be displayed in response to the interactive television application receiving a user indication to view the BROWSE overlay (e.g., a user pressing remote control arrow keys **410** (FIG. **4**) while a FLIP overlay is displayed or while watching television, a user selecting a BROWSE option from an on-screen menu, a user pressing a remote control BROWSE key from keys **404**, etc.). As another example, BROWSE overlay **1502** may be displayed automatically by the interactive television program guide in response to, for example, the user exiting another interactive television display screen when channel **22** is a currently tuned channel.

The display of a BROWSE overlay may be customized in any suitable fashion in accordance with the present invention. For example, when the display of a FLIP overlay on top of video for a given television channel is customized in accordance with the present invention, the display of a BROWSE overlay on top of video for the given television channel may be similarly customized. The interactive television application may, for example, disable the display of a BROWSE overlay on top of video for the given television channel (e.g., television channel **25** or other channel for which the default set of BROWSE information types does not apply). A display screen such as display screen **900** (FIG. **9**) that includes only video for the given television channel may be displayed to the user in response to receiving a user indication that would otherwise cause the interactive television application to display the BROWSE overlay. As another example, while video for the given television channel is displayed by user equipment, the interactive television application may prevent the BROWSE overlay from being displayed on top of video for the given television channel by disabling or modifying the functionality of various user input interface functions that would otherwise cause the BROWSE overlay to be displayed. The interactive television application may, for example, display one or more full-screen interactive television display screens such as information display screen **1000** (FIG. **10**) or program listings display screen **1100** (FIG. **11**) in response to receiving a user indication of one or more of the user input interface functions.

In some embodiments of the present invention, the interactive television program guide may display a BROWSE overlay including information of a custom set of information types on top of video for a television channel. An illustrative BROWSE overlay display screen **1600** is shown in FIG. **16**. BROWSE overlay **1602** is displayed on top of video **1604** for television channel **25** which may be a television channel for which the default set of BROWSE information types does not apply (e.g., as determined based on negotiations with the television broadcaster for channel **25**, based on user inputs using remote control **400** (FIG. **4**), based on the default set of FLIP overlay information types or other default set of overlay information types not being applicable to channel **25**, etc.). The custom set of information types for BROWSE overlay **1602** may include less than all information types of the default set of BROWSE overlay information types (e.g., less than all information types that are displayed in BROWSE overlay **1502** (FIG. **15**)). For example, the custom set of information types of BROWSE overlay **1602** may include the program schedule information types of program title **1606**, channel **1608**, rating **1610**, and run time **1612**, but not the information types of an advertisement (e.g., such as advertisement **1514** (FIG. **15**)) and a service provider logo (e.g., such as logo **1516**). The television broadcaster for channel **25** may have, for example, requested that BROWSE overlay **1602** not include these information types. A user may select channel up and down options **1614** and time last and next options **1616** to change the one or more channels and the time range for which program schedule information is displayed in BROWSE overlay **1602** without removing video for channel **25** from the display. In other examples, a customized BROWSE overlay such as overlay **1602** may allow the user to view only program schedule information for one or more programs that are to be broadcast on the currently tuned channel, on a channel having the same television broadcaster, or both (e.g., in response to the television broadcaster of the currently tuned channel requesting that the BROWSE overlay not include program schedule information that is associated with other television broadcasters).

Referring to FIGS. **15** and **16**, the interactive television application may display information of information types that are common to both the default and custom sets of BROWSE overlay information types (e.g., rating (**1510**, **1610**)) in the same position and format in the associated BROWSE overlays. This may streamline the look and feel of the default and customized BROWSE overlays for the user and may allow the user to more easily locate information in the overlays. In other embodiments of the present invention, information of information types that are common to both the default and custom sets of BROWSE overlay information types may be displayed in different locations and formats in the associated BROWSE overlays to, for example, compensate for open space where one of the sets includes a greater number of information types than the other set of information types.

In some embodiments of the present invention, a custom set of BROWSE information types may include one or more information types that is not included in the default set of BROWSE overlay information types. FIG. **17** shows an illustrative BROWSE overlay display screen **1700**. BROWSE overlay **1702** is displayed on top of video **1704** for channel **25** which, as previously described, may be a television channel for which the default set of BROWSE information types does not apply. The custom set of information types of BROWSE overlay **1702** may include various information types that are not included in the default set of BROWSE overlay information types (e.g., as shown in FIG. **15**) such as logo **1706** for channel **25** and advertisement **1708** that is associated with channel **25** (e.g., an advertisement for a future program on channel **25** or other television channel having the same television broadcaster as channel **25**, an advertisement for a product that is being offered by the television broadcaster of channel **25**, etc.). Any other suitable information types may

be included in the custom set of BROWSE information types (e.g., a program description). The television broadcaster for television channel **25** may have, for example, requested that BROWSE overlay **1702** include only information that is associated with channel **25**. The custom set of information types for BROWSE overlay **1702** may also include various information types that are included in the default set of BROWSE overlay information types such as program title **1710**, channel **1712**, rating **1714**, and program run time **1716**. A user may select channel up and down options **1718** and time last and next options **1720** to change the one or more channels and the time range for which program schedule information is displayed in BROWSE overlay **1702** without removing video for channel **25** from the display.

In some embodiments of the present invention, the interactive television application may allow the user to customize various conditions related to the display of a FLIP overlay, BROWSE overlay, or any other suitable interactive television overlays on top of video for a given television channel. FIG. **18** shows an illustrative overlay settings display screen **1800**. Overlay settings display screen **1800** may include various user-selectable options for customizing the display of interactive television overlays. For example, overlay settings display screen may include option **1802** to disable the display of interactive television overlays or to adjust the length of time for which the overlays are displayed (e.g., 3 seconds or 5 seconds), option **1804** to customize the types of advertising content included in the overlays, and option **1806** to customize the types of logos included in the overlays (e.g., a logo for a television broadcaster, a logo for interactive television service provider, etc.). Another example is that display screen **1800** may include an option to view video (e.g., video for the television program on top of which the overlay may otherwise be displayed or video for other television programs or promotional clips) in a reduced size video window simultaneously with one or more types of interactive television displays (e.g., a FLIP display). Overlay settings display screen **1800** may also include various user-selectable options for customizing the types of program schedule information that is included in the interactive television overlays such as option **1808** associated with the display of program titles, option **1810** associated with the display of program channels, option **1812** associated with the display of program run times, option **1814** associated with the display of program ratings, and option **1816** associated with the display of program descriptions. The user may also be able to customize other display conditions using other user-selectable options such as option **1818** associated with the size or shape of the overlays (e.g., a banner-like shape, an ovular shape, occupying one quarter of the user's display screen, occupying one third of the user's display, etc.), option **1820** associated with the color of the overlays, option **1822** associated with the font of the overlays, and option **1824** associated with the location of the overlays. The interactive television program guide may display any other suitable user-selectable options associated with the display of interactive television overlays in response to receiving a user selection of option **1826**.

Display screen **1800** may apply to all overlay types (e.g., FLIP, BROWSE, etc.). Alternatively, there may be separate similar screens that can be used to customize the display of different overlay types. The application may not allow all types of overlays to be customized by the user. Furthermore, the application may or may not allow some or all of the options (which may have been customized in accordance with the wishes of a broadcaster) to be overridden by the user. This may be true in general (e.g., the user may never or always be allowed to disable the display of advertisements) or only for a specific channel or set of channels (e.g., a broadcaster may wish to prevent the user from enabling the FLIP overlay on a specific channel for which the broadcaster has disabled it). The user may be allowed to change the set of default configurations that apply to all channels not individually configured.

In the example of FIG. **18**, the user may be able to use display screen **1800** to customize various conditions related to the display of one or more interactive television overlays (e.g., FLIP overlay, BROWSE overlay, etc.) on top of video for channel **25**. For example, when the display of one or both of the FLIP and BROWSE overlays is initially disabled (e.g., based on instructions provided to user equipment by an interactive television service provider to set the display time of the overlays to 0 seconds), the user may be able to use display screen **1800** to enable the display of one or both of the overlays (e.g., using option **1802**). Other display screens (e.g., similar to display screen **1800**) may be provided by the interactive television application for customizing the display of the one or more overlays for other channels (e.g., channel **22**, channel **23**, etc.). In other examples, the user may be able to simultaneously customize the display of the one or more interactive television overlays for a group of related television channels (e.g., a group of channels having the same television broadcaster, the entire group of television channels for which a default set of information types does not apply, etc.). In some embodiments of the present invention, one or more display screens (e.g., similar to display screen **1800**) may be presented to a back-office representative of an interactive television service provider to allow the service provider to customize the display of interactive television overlays for the user (e.g., in accordance with negotiations with one or more television broadcasters). Back-office user interactions with these display screens may, for example, cause instructions for customizing the display of one or more interactive television overlays to be transmitted to user equipment where an interactive television application implemented at least partially on user equipment processes the instructions to generate various interactive television displays.

The conditions that are initially displayed for the user in overlay settings display screen **1800** may represent the conditions that govern the display of interactive television overlays absent user modification of the conditions. The initially displayed conditions may have been determined by, for example, a back office of the interactive television application based on negotiations with the television broadcaster for channel **25**. The initially displayed conditions may have governed the display of, for example, FLIP overlay **1202** (FIG. **12**) and BROWSE overlay **1602** (FIG. **16**) on top of video (**1204**, **1604**) for channel **25**. In particular, referring to FIGS. **12**, **16**, and **18**, the conditions associated with options **1802**-**1810** in overlay settings display screen **1800** may have caused overlays **1202** and **1602** to be enabled, to exclude advertising content, logos or program descriptions, and to include program titles (**1206**, **1606**), channels (**1208**, **1608**), run times (**1212**, **1612**), and ratings (**1210**, **1610**). The conditions associated with options **1812**-**1818** may have caused overlays **1202** and **1602** to be displayed in a banner-like format, in blue color, in Arial bold font, and towards the bottom of the user's display.

In the example of FIG. **18**, the user may customize conditions associated with the display of interactive television overlays on top of video for a given television channel using a plurality of pull-down menus. Any other suitable user input interface feature may be used (e.g., data entry fields, on-screen check boxes, etc.). The user may, for example, select "YES—0s" **1828** from pull-down menu **1802** to cause the interactive television application to set the display time of one

or more types of interactive television overlays that are displayed on top of video for channel **25** to zero seconds. Such a user selection may effectively disable the display of the one or more interactive television overlays on top of video for channel **25**. As another example, if the display of overlays on top of video for television channel **25** were initially disabled, the user may be able to use pull-down menu **1802** to enable the overlays to be displayed. The user may customize any other conditions associated with the display of interactive television overlays on top of video for a given television channel. For example, the user may use pull-down menu **1804** to customize the display of advertising content in interactive television overlays (e.g., to enable the display of advertisements, to enable only the display of advertisements that are associated with channel **25**, etc.). In some embodiments, the user may not be allowed to customize all aspects of an interactive television overlay. For example, the user may not be allowed to disable the display of advertisements in an overlay.

In some embodiments of the present invention, the interactive television application may automatically adjust the display of interactive television overlays (e.g., in real time based on data received by user equipment) based on data indicating the typical content of video for a given television channel or program. For example, the interactive television application may adjust one or more of the size, shape, content and location of one or more types of overlays (e.g., FLIP, BROWSE) based on data indicating that the channel or program on which the overlay is displayed shows, for example, one or more of scrolling headlines, stock quotes, sports scores and statistics (e.g., during broadcast of a baseball game), and closed captions. The display of interactive television overlays may be adjusted in any other way in order to avoid obscuring content typically included in video for a given television channel or program (e.g., displaying an interactive television overlay with a perceived partial transparency such that underlying sports scores that are typically displayed can be viewed by the user, displaying video that is typically displayed under an overlay instead displayed in a reduced size video window). User television equipment may receive data indicating the typical content of a television channel or program in any suitable manner such as, for example, from data source **120** or service provider **142** (FIG. **1**). A television broadcaster may, for example, provide data indicating which of its channels or programs includes data that should not be obscured, or may provide data indicating preferred characteristics (e.g., size, shape, location, etc.) of one or more types of overlays that will prevent specific content of its channels or programs from being obscured. The interactive application may or may not allow the user to change these preferred overlay characteristics. In one embodiment, in response to the interactive television application detecting that a television program is accompanied by closed caption data, the interactive television application may display an overlay in such a way as to avoid obscuring the closed captions. As another example, closed captions may only be avoided when a user has selected an option to view closed captions. FIG. **19** shows a customized FLIP overlay display screen **1900**. FLIP overlay **1902** may be displayed in a top portion of a user's display screen in response to, for example, the interactive television application determining that the video for the underlying television program typically includes sports statistics (e.g., a baseball player's batting average) along the bottom of the display. The display arrangement of FLIP overlay **1902** is only illustrative, and any other suitable display arrangement may be provided. For example, an overlay may be displayed with less content (e.g., fewer information types) in order to reduce the overlay size, thereby reducing the portion of the underlying video that is unobscured.

FIG. **20** is a flow chart of illustrative steps involved in customizing the display of an interactive television overlay where a default set of information types is defined in accordance with one embodiment of the present invention. At step **2002**, the interactive television application (e.g., an interactive television program guide) may define a default set of information types to be included in an interactive television overlay that is displayed on top of video for a given television channel of a plurality of television channels. For example, the interactive television application may define a default set of FLIP information types including the program schedule information types of program title (e.g., title **706** (FIG. **7**)), channel (e.g., channel **708**), rating (e.g., rating **710**), run time (e.g., run time **712**) or any other suitable information types (e.g., a program description). As another example, the interactive television application may define a default set of information types including other information types such as an advertisement (e.g., advertisement **814** (FIG. **8**)), a service provider logo (e.g., logo **816**), and other suitable information types (e.g., an internet link or an applet). The default set of information types may be defined based on, for example, application data received by user equipment (**108**, **110**, **112**) of FIG. **1** from data source **120** or any other suitable equipment or location, user inputs received via user input interface **614** (FIG. **6**), or a combination thereof.

At step **2004**, a television channel of the plurality of television channels may be identified as a channel for which the default set of information types does not apply. For example, a particular television channel (e.g., channel **25**) may be identified as a television channel for which the display of an overlay on top of video for the particular television channel is disabled (e.g., as shown in FIG. **9**). As another example, the particular television channel may be identified as a television channel for which the display of an overlay is to be customized relative to the default set of information types (e.g., FLIP overlay **1302** (FIG. **13**) being customized relative to FLIP overlay **702** (FIG. **7**)). The user may have, for example, used one or more interactive television display screens (e.g., similar to display screen **1800** (FIG. **18**)) to customize the display of the interactive television overlay on top of video for the particular channel.

In some embodiments of the present invention, the particular television channel for which the default set of information types does not apply may be identified based on negotiations with the television broadcaster of the particular television channel.

FIG. **21** is a flow chart of illustrative sub-steps involved in step **2004** (FIG. **19**). At step **2102**, negotiations regarding the display of an interactive television overlay on top of video for a television channel of the plurality of channels may be held with the television broadcaster for that channel. For example, a back-office representative of the interactive television application service provider may negotiate with the television broadcaster of the television channel (e.g., over the telephone, electronically via e-mail, in person, or using any other suitable electronic or non-electronic approach). At step **2104**, the television channel may be identified as a result of the negotiations as the particular television channel for which the default set of information types does not apply. For'example, it may be determined that interactive television overlays that are displayed on top of video for the television channel are not to include advertising content or other content. Suitable equipment in system **100** (FIG. **1**) (e.g., a data source associated with the television broadcaster of the particular channel)

may be used to process this data into an electronic form that is suitable for distribution and use by system **100**.

In some embodiments of the present invention, information of a custom set of information types may be included in an interactive television overlay that is displayed on top of video for a particular television channel. FIG. **22** is a flow chart of illustrative steps involved in displaying an interactive television overlay on top of video for a television channel where both default and custom sets of information types are defined in accordance with the present invention. At step **2202**, the interactive television application may define a custom set of information types for a particular television channel for which the default set of information types does not apply. For example, a custom set of information types comprising less than all information types of the default set of information types may be defined for the particular television channel (e.g., the custom set of FLIP overlay information types of FLIP overlay **1202** (FIG. **12**) comprising less than all information types of FLIP overlay **802** (FIG. **8**)). As another example, a custom set of information types comprising information types that are not included in the default set of information types may be defined for the particular television channel (e.g., the custom set of information types of BROWSE overlay **1702** (FIG. **17**) including information types **1706** and **1708** that are not included in BROWSE overlay **1502** (FIG. **15**)). The custom set of information types may be defined by data source **120** (FIG. **1**), based on user inputs to a suitable display screen such as display screen **1800** (FIG. **18**), or by any other suitable equipment or location.

At step **2204**, the interactive television application may receive a user indication to tune to a given television channel of the plurality of television channels (e.g., channel **22**, channel **23**, channel **25**, etc.). The interactive television application may determine whether the given television channel is the particular television channel for which a custom set of information types is defined at step **2206**. For example, an interactive television application implemented at least partially on user equipment (**108**, **110**, **112**) of FIG. **1** may use stored data (e.g., stored in storage **608** (FIG. **6**)) to determine whether the given television channel is the particular television channel. If the given television channel is the particular television channel, the interactive television application may display an overlay including information of the custom set of information types on top of video for the given television channel at step **2208**. If the given television channel is not the particular television channel, the interactive television application may display an overlay including information of the default set of information types on top of video for the given television channel at step **2210**.

FIG. **23** is a flow chart of illustrative steps involved in disabling the display of an interactive television overlay on top of video for a particular television channel of a plurality of television channels in accordance with the present invention. The interactive television application may identify at least one television channel from the plurality of television channels for which an overlay comprising program listings information is not displayed at step **2302**. For example, a back office of the interactive television application provider may identify the at least one television channel based on negotiations with a television broadcasters of the at least one television channel (e.g., negotiations conducted using steps similar to those of FIG. **20**). As another example, the interactive television application may receive data from a user (e.g., via user input interface **614** (FIG. **6**)) indicating that the display of the overlay on top of video for the at least one television channel is to be disabled.

At step **2304**, the interactive television application may receive a user indication to tune to a given television channel of the plurality of television channels. Video for the given television channel may be displayed for the user at step **2306** (e.g., using user computer equipment **112** (FIG. **1**)). At step **2308**, the interactive television application may determine whether the given television channel is the at least one television channel for which the overlay is not displayed. If the given television channel is the at least one television channel, the interactive television application may not display the overlay on top of the video for the given television channel at step **2310**. If the given television channel is not the at least one television channel, the interactive television application may display the overlay including program listings information (e.g., a FLIP or BROWSE overlay) on top of the video for the given television channel at step **2312**.

FIG. **24** is a flow chart of illustrative steps involved in customizing the display of an interactive television overlay on top of video for a given television channel in accordance with one or more defined conditions for that channel in accordance with the present invention. At step **2402**, the interactive television application may define for some or all of a plurality of television channels at least one condition related to the display of an overlay on top of video for a given television channel. For example, a condition related to whether the overlay is to be displayed on top of video for a particular television channel may be defined. As another example, conditions associated with the size, shape, color, and position of the overlay may be defined. Still another example, conditions associated with the types of information (e.g., types of program schedule information or other types of information) to be included in the overlay may be defined. Conditions related to the display of the interactive television overlays may be defined, for example, by data source **120** (FIG. **1**) or other suitable equipment or location (e.g., television distribution facility **104** (FIG. **1**)) and transmitted to user equipment, or may be defined based on user inputs via a suitable user input interface such as user input interface **614** of FIG. **6** (e.g., user inputs corresponding to user selections in an interactive television display screen such as display screen **1800** (FIG. **18**)). If the display conditions are not specified for a specific channel, the application may use a default set of conditions, which may or may not have been defined by the user.

At step **2404**, the interactive television application may receive a user indication to tune to a particular television channel of the plurality of television channels (e.g., a user pressing numeric keys of remote control keys **404** (FIG. **4**) corresponding to the channel number of the particular channel). Video for the particular television channel may be displayed at step **2406**. At step **2408**, the interactive television application may process the at least one condition of the particular television channel to display the overlay according to the at least one condition. For example, in response receiving a user indication to tune to a particular television channel for which the overlay is to include information of the information type of an advertisement, the interactive television application may display the overlay including an advertisement. As another example, the interactive television application may prevent the display of the overlay if a condition associated with the particular television channel indicates that the overlay is to be disabled (e.g., if the display time of the overlay is set to 0 seconds).

The foregoing is merely illustrative of the principles of this invention and various modifications can be made by those skilled in the art without departing from the scope and spirit of the invention.

What is claimed is:

1. A method for using an interactive television application to provide interactive television features to a user, the method comprising:

defining, for a first group of television channels, a default set of information types for inclusion in an overlay on top of video, wherein the interactive television application displays the overlay on top of video for a given television channel of the first group of television channels;

identifying a second group of television channels for which the default set of information types for inclusion in the overlay on top of video does not apply; and

causing, with control circuitry, information for a television channel to be displayed in the overlay, wherein the information is of a type that is determined based on whether the television channel is in the first group of television channels or is in the second group of television channels.

2. The method of claim 1 wherein defining a default set of information types comprises defining a default set of information types comprising an advertisement.

3. The method of claim 1 wherein defining a default set of information types comprises defining a default set of information types comprising a logo for a service provider.

4. The method of claim 1 wherein defining a default set of information types comprises defining a default set of information types comprising a program schedule information type.

5. The method of claim 4 wherein defining a default set of information types comprising a program schedule information type comprises defining a default set of information types comprising a program title for the currently broadcasted program on the given television channel.

6. The method of claim 4 wherein defining a default set of information types comprising a program schedule information type comprises defining a default set of information types comprising a program title for a program other than the currently broadcasted program on the given television channel.

7. The method of claim 1 wherein identifying a second group of television channels comprises:

negotiating with a broadcaster of the second group of television channels regarding the display of an overlay on top of video for one of the second group of television channels; and

identifying, as a result of the negotiating, the one of the second group of television channels to be the television channel for which the default set of information types does not apply.

8. The method of claim 1 wherein identifying a second group of television channels comprises receiving a user indication that the default set of information types does not apply to the second group of television channels.

9. The method of claim 1 further comprising:

receiving a user indication to tune to one of the first group of television channels;

tuning to the one of the first group of television channels in response to receiving the user indication; and

displaying an overlay on top of video for the one of the first group of television channels, the overlay on top of the video for the one of the first group of television channels comprising information of the default set of information types.

10. The method of claim 1 further comprising:

defining a custom set of information types for the second group of television channels, wherein the custom set of information types includes less than all information types of the default set of information types;

receiving a user indication to tune to one of the second group of television channels;

tuning to the one of the second group of television channels in response to receiving the user indication; and

displaying an overlay on top of video for the one of the second group of television channels, the overlay comprising information of the custom set of information types.

11. The method of claim 10 wherein:

defining a default set of information types comprises defining a default set of information types comprising an advertisement; and

defining a custom set of information types comprises defining a custom set of information types that does not comprise an advertisement.

12. The method of claim 10 wherein:

defining a default set of information types comprises defining a default set of information types comprising a logo for a service provider; and defining a custom set of information types comprises defining a custom set of information types that does not comprise a logo for a service provider.

13. The method of claim 10 wherein defining a custom set of information types comprises defining a custom set of information types that comprises less than all information types of the default set of information types and that comprises at least one information type that is not an information type in the default set of information types.

14. The method of claim 1 further comprising:

receiving, while video is displayed for one of the first group of television channels, a user indication to view interactive television information; and

displaying an overlay on top of the video for the one of the first group of television channels in response to receiving the user indication, the overlay comprising information of the default set of information types.

15. The method of claim 1 further comprising:

defining a custom set of information types for the second group of television channels, wherein the custom set of information types includes less than all information types of the default set of information types;

receiving, while video is displayed for one of the second group of television channels, a user indication to view interactive television information; and

displaying an overlay on top of the video for the one of the second group of television channels, the overlay comprising information of the custom set of information types.

16. The method of claim 15 wherein:

defining a default set of information types comprises defining a default set of information types comprising an advertisement; and

defining a custom set of information types comprises defining a custom set of information types that does not comprise an advertisement.

17. The method of claim 15 wherein:

defining a default set of information types comprises defining a default set of information types comprising a logo for a service provider; and

defining a custom set of information types comprises defining a custom set of information types that does not comprise a logo for a service provider.

18. The method of claim 15 wherein defining a custom set of information types comprises defining a custom set of information types that comprises less than all information types of the default set of information types and that comprises at least

one information type that is not an information type in the default set of information types.

19. A system for implementing an interactive television application operative to provide interactive television features to a user, the system comprising:

means for defining, for a first group of television channels, a default set of information types for inclusion in an overlay on top of video, wherein the interactive television application displays the overlay on top of video for a given television channel of the first group of television channels;

means for identifying a second group of television channels for which the default set of information types for inclusion in the overlay on top of video does not apply;

means for storing the definition for the default set of information types; and

means for causing, with control circuitry, information for a television channel to be displayed in the overlay, wherein the information is of a type that is determined based on whether the television channel is in the first group of television channels or is in the second group of television channels.

20. The system of claim **19** wherein the means for defining a default set of information types comprises means for defining a default set of information types comprising an advertisement.

21. The system of claim **19** wherein the means for defining a default set of information types comprises means for defining a default set of information types comprising a logo for a service provider.

22. The system of claim **19** wherein the means for defining a default set of information types comprises means for defining a default set of information types comprising a program schedule information type.

23. The system of claim **22** wherein the means for defining a default set of information types comprising a program schedule information type comprises means for defining a default set of information types comprising a program title for the currently broadcasted program on the given television channel.

24. The system of claim **22** wherein the means for defining a default set of information types comprising a program schedule information type comprises means for defining a default set of information types comprising a program title for a program other than the currently broadcasted program on the given television channel.

25. The system of claim **19** wherein the means for identifying a second group of television channels comprises:

means for negotiating with a broadcaster of the second group of television channels regarding the display of an overlay on top of video for one of the second group of television channels; and

means for identifying, as a result of the negotiating, the one of the second group of television channels to be the television channel for which the default set of information types does not apply.

26. The system of claim **19**

wherein the means for identifying a second group of television channels comprises receiving a user indication that the default set of information types does not apply to the second group of television channels.

27. The system of claim **19** further comprising:

means for receiving a user indication to tune to one of the first group of television channels;

means for tuning to the one of the first group of television channels in response to receiving the user indication; and

means for displaying an overlay on top of video for the one of the first group of television channels, the overlay on top of the video for the one of the first group of television channels comprising information of the default set of information types.

28. The system of claim **19** further comprising:

means for defining a custom set of information types for the second group of television channels, wherein the custom set of information types includes less than all information types of the default set of information types;

means for receiving a user indication to tune to one of the second group of television channels;

means for tuning to the one of the second group of television channels in response to receiving the user indication; and

means for displaying an overlay on top of video for the one of the second group of television channels, the overlay comprising information of the custom set of information types.

29. The system of claim **28** wherein:

the means for defining a default set of information types comprises means for defining a default set of information types comprising an advertisement; and

the means for defining a custom set of information types comprises means for defining a custom set of information types that does not comprise an advertisement.

30. The system of claim **28** wherein:

the means for defining a default set of information types comprises means for defining a default set of information types comprising a logo for a service provider; and

the means for defining a custom set of information types comprises means for defining a custom set of information types that does not comprise a logo for a service provider.

31. The system of claim **28** wherein the means for defining a custom set of information types comprises means for defining a custom set of information types that comprises less than all information types of the default set of information types and that comprises at least one information type that is not an information type in the default set of information types.

32. The system of claim **19** further comprising:

means for receiving, while video is displayed for one of the first group of television channels, a user indication to view interactive television information; and

means for displaying an overlay on top of the video for the one of the first group of television channels in response to receiving the user indication, the overlay comprising information of the default set of information types.

33. The system of claim **19** further comprising:

means for defining a custom set of information types for the second group of television channels, wherein the custom set of information types includes less than all information types of the default set of information types;

means for receiving, while video is displayed for one of the second group of television channels, a user indication to view interactive television information; and

means for displaying an overlay on top of the video for the one of the second group of television channels, the overlay comprising information of the custom set of information types.

34. The system of claim **33** wherein:

the means for defining a default set of information types comprises means for defining a default set of information types comprising an advertisement; and

the means for defining a custom set of information types comprises means for defining a custom set of information types that does not comprise an advertisement.

35. The system of claim 33 wherein:

the means for defining a default set of information types comprises means for defining a default set of information types comprising a logo for a service provider; and

the means for defining a custom set of information types comprises means for defining a custom set of information types that does not comprise a logo for a service provider.

36. The system of claim 33 wherein the means for defining a custom set of information types comprises means for defining a custom set of information types that comprises less than all information types of the default set of information types and that comprises at least one information type that is not an information type in the default set of information types.

37. A system for providing interactive television features to a user, the system comprising:

a display device;

one or more data sources; and

an interactive television application implemented at least partially on user equipment configured to:

define, for a first group of television channels using data provided at least partially by the one or more data sources, a default set of information types for inclusion in an overlay on top of video, wherein the interactive television application displays the overlay on top of video for a given television channel of the first group of television channels;

identify a second group of television channels for which the default set of information types for inclusion in the overlay on top of video does not apply using data at least partially provided by the one or more data sources; and

cause information for a television channel to be displayed in the overlay, wherein the information is of a type that is determined based on whether the television channel is in the first group of television channels or is in the second group of television channels.

38. The system of claim 37 wherein the default set of information types comprises an advertisement.

39. The system of claim 37 wherein the default set of information types comprises a logo for a service provider.

40. The system of claim 37 wherein the default set of information types comprises a program schedule information type.

41. The system of claim 37 wherein the program schedule information type comprises a program title for the currently broadcasted program on the given television channel.

42. The system of claim 37 wherein the program schedule information type comprises a program title for a program other than the currently broadcasted program on the given television channel.

43. The system of claim 37

wherein the interactive television application is further configured to identify the second group of television channels using data that is generated as a result of negotiations with a broadcaster of the second group of plurality of television channels, the negotiations regarding the display of an overlay on top of video for one of the second group of television channels.

44. The system of claim 37 further comprising:

a user input device for receiving a user indication that the default set of information types does not apply to the second group of television channels, wherein:

the interactive television application is further configured to identify the second group of television channels in response to receiving the user indication.

45. The system of claim 37 further comprising:

a user input device for receiving a user indication to tune to one of the first group of television channels; and

a tuner for tuning to the one of the first group of television channels in response to receiving the user indication, wherein:

the interactive television application is further configured to direct the display device to display an overlay on top of video for the one of the first group of television channels, the overlay comprising information of the default set of information types.

46. The system of claim 37 further comprising:

a user input device for receiving a user indication to tune to one of the second group of television channels; and

a tuner for tuning to the one of the second group of television channels in response to receiving the user indication, wherein:

the interactive television application is further configured to:

define a custom set of information types for the one of the second group of television channels using data provided at least partially by the one or more data sources, wherein the custom set of information types includes less than all information types of the default set of information types; and

direct the display device to display an overlay on top of video for the one of the second group of television channels, the overlay comprising information of the custom set of information types.

47. The system of claim 46 wherein:

the default set of information types comprises an advertisement; and

the custom set of information types does not comprise an advertisement.

48. The system of claim 46 wherein:

the default set of information types comprises a logo for a service provider; and

the custom set of information types does not comprise a logo for a service provider.

49. The system of claim 46 wherein the custom set of information types comprises less than all information types of the default set of information types and at least one information type that is not an information type in the default set of information types.

50. The system of claim 37 further comprising:

a user input device for receiving, while video is displayed for one of the first group of television channels, a user indication to view interactive television information, wherein:

the interactive television application is further configured to direct the display device to display an overlay on top of the video for the one of the first group of television channels in response to receiving the user indication, the overlay comprising information of the default set of information types.

51. The system of claim 37 further comprising:

a user input device for receiving, while video is displayed for one of the second group of television channels, a user indication to view interactive television information, wherein:

the interactive television application is further configured to:

define a custom set of information types for the second group of television channels using data provided at least partially provided by the one or more data sources, wherein the custom set of information types

includes less than all information types of the default set of information types; and

direct the display device to display an overlay on top of the video for the one of the second group of television channels, the overlay comprising information of the custom set of information types.

52. The system of claim **51** wherein:

the default set of information types comprises an advertisement; and

the custom set of information types does not comprise an advertisement.

53. The system of claim **51** wherein:

the default set of information types comprises a logo for a service provider; and

the custom set of information types does not comprise a logo for a service provider.

54. The system of claim **51** wherein the custom set of information types comprises less than all information types of the default set of information types and at least one information type that is not an information type in the default set of information types.

55. A non-transitory machine-readable medium for an interactive television application, the machine-readable medium having machine program logic recorded thereon for:

defining, for a first group of television channels, a default set of information types for inclusion in an overlay on top of video, wherein the interactive television application displays the overlay on top of video for a given television channel of the first group of television channels;

identifying a second group of television channels for which the default set of information types for inclusion in the overlay on top of video does not apply; and

causing information for a television channel to be displayed in the overlay, wherein the information is of a type that is determined based on whether the television channel is in the first group of television channels or is in the second group of television channels.

56. The machine-readable medium of claim **55** wherein defining a default set of information types comprises defining a default set of information types comprising an advertisement.

57. The machine-readable medium of claim **55** wherein defining a default set of information types comprises defining a default set of information types comprising a logo for a service provider.

58. The machine-readable medium of claim **55** wherein defining a default set of information types comprises defining a default set of information types comprising a program schedule information type.

59. The machine-readable medium of claim **58** wherein defining a default set of information types comprising a program schedule information type comprises defining a default set of information types comprising a program title for the currently broadcasted program on the given television channel.

60. The machine-readable medium of claim **58** wherein defining a default set of information types comprising a program schedule information type comprises defining a default set of information types comprising a program title for a program other than the currently broadcasted program on the given television channel.

61. The machine-readable medium of claim **55** wherein identifying a second group of television channels comprises:

negotiating with a broadcaster of the second group of television channels regarding the display of an overlay on top of video for one of the second group of television channels; and

identifying, as a result of the negotiating, the one of the second group of television channels to be the television channel for which the default set of information types does not apply.

62. The machine-readable medium of claim **55** wherein identifying a second group of television channels comprises receiving a user indication that the default set of information types does not apply to the second group of television channels.

63. The machine-readable medium of claim **55** comprising additional program logic recorded thereon for:

receiving a user indication to tune to one of the first group of television channels;

tuning to the one of the first group of television channels in response to receiving the user indication; and

displaying an overlay on top of video for the one of the first group of television channels, the overlay on top of the video for the one of the first group of television channels comprising information of the default set of information types.

64. The machine-readable medium of claim **55** comprising additional program logic recorded thereon for:

defining a custom set of information types for the second group of television channels, wherein the custom set of information types includes less than all information types of the default set of information types;

receiving a user indication to tune to one of the second group of television channels;

tuning to the one of the second group of television channels in response to receiving the user indication; and

displaying an overlay on top of video for the one of the second group of television channels, the overlay comprising information of the custom set of information types.

65. The machine-readable medium of claim **61** wherein:

defining a default set of information types comprises defining a default set of information types comprising an advertisement; and

defining a custom set of information types comprises defining a custom set of information types that does not comprise an advertisement.

66. The machine-readable medium of claim **64** wherein:

defining a default set of information types comprises defining a default set of information types comprising a logo for a service provider; and

defining a custom set of information types comprises defining a custom set of information types that does not comprise a logo for a service provider.

67. The machine-readable medium of claim **64** wherein defining a custom set of information types comprises defining a custom set of information types that comprises less than all information types of the default set of information types and that comprises at least one information type that is not an information type in the default set of information types.

68. The machine-readable medium of claim **55** comprising additional program logic recorded thereon for:

receiving, while video is displayed for one of the first group of television channels, a user indication to view interactive television information; and

displaying an overlay on top of the video for the one of the first group of television channels in response to receiving the user indication, the overlay comprising information of the default set of information types.

69. The machine-readable medium of claim **55** comprising additional program logic recorded thereon for:

defining a custom set of information types for the second group of television channels, wherein the custom set of information types includes less than all information types of the default set of information types;

receiving, while video is displayed for one of the second group of television channels, a user indication to view interactive television information; and

displaying an overlay on top of the video for the one of the second group of television channels, the overlay comprising information of the custom set of information types.

70. The machine-readable medium of claim **69** wherein:

defining a default set of information types comprises defining a default set of information types comprising an advertisement; and

defining a custom set of information types comprises defining a custom set of information types that does not comprise an advertisement.

71. The machine-readable medium of claim **69** wherein:

defining a default set of information types comprises defining a default set of information types comprising a logo for a service provider; and

defining a custom set of information types comprises defining a custom set of information types that does not comprise a logo for a service provider.

72. The machine-readable medium of claim **69** wherein defining a custom set of information types comprises defining a custom set of information types that comprises less than all information types of the default set of information types and that comprises at least one information type that is not an information type in the default set of information types.

* * * * *