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(54) **PANEL USER INTERFACE FOR AN INTELLIGENT TELEVISION**

(71) Applicant: **Flextronics AP, LLC**, San Jose, CA (US)

(72) Inventors: **Sanjiv Sirpal**, Oakville (CA); **Mohammed Selim**, Oakville (CA)

(73) Assignee: **Flextronics AP, LLC**, San Jose, CA (US)

(21) Appl. No.: **13/969,588**

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H04N 21/482	(2006.01)

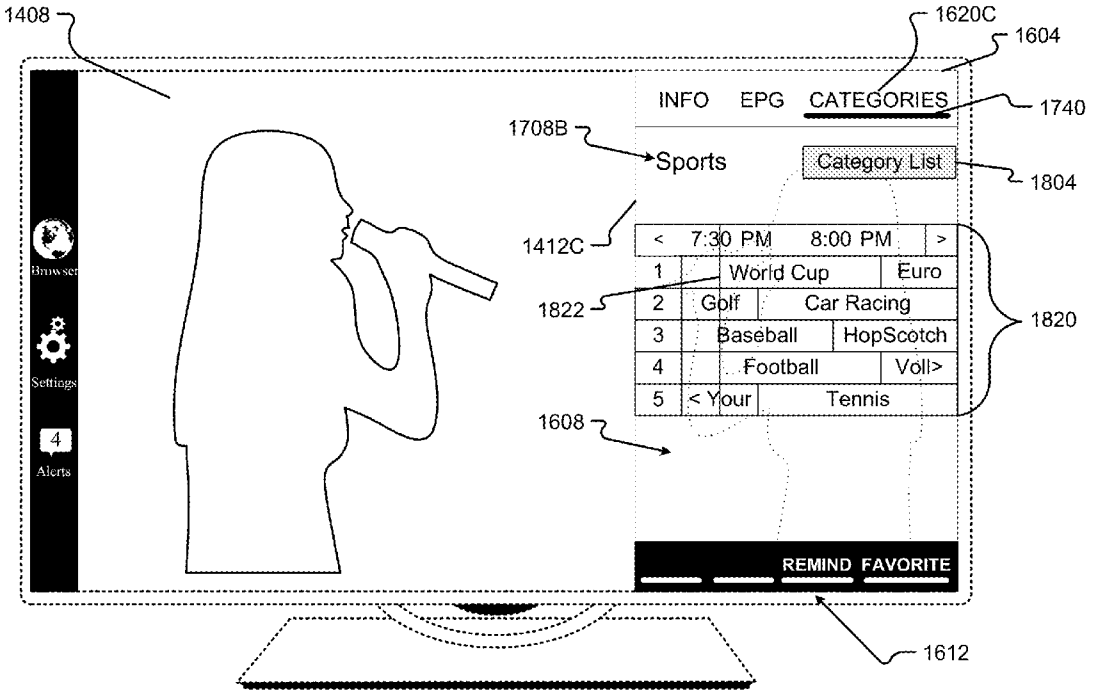
(52) **U.S. Cl.**

CPC ***H04N 21/478*** (2013.01); ***H04N 21/482*** (2013.01); ***H04N 21/488*** (2013.01)

USPC **725/43**

(57) **ABSTRACT**

An intelligent television, methods for displaying content, and methods for user interaction between the intelligent television and the user are provided. In general, a user is provided with an application panel allowing for navigation, categories, favorites, and search options that enable one or more functions associated with the intelligent television. The presentation of options is based on input received by the intelligent television. As a user provides input to the intelligent television via a remote control or other input device. The intelligent television is configured to interpret the input and provide interactive functionality in the form of content presented to the display of the intelligent television without obstructing the user from viewing content displayed on the screen of the intelligent television.



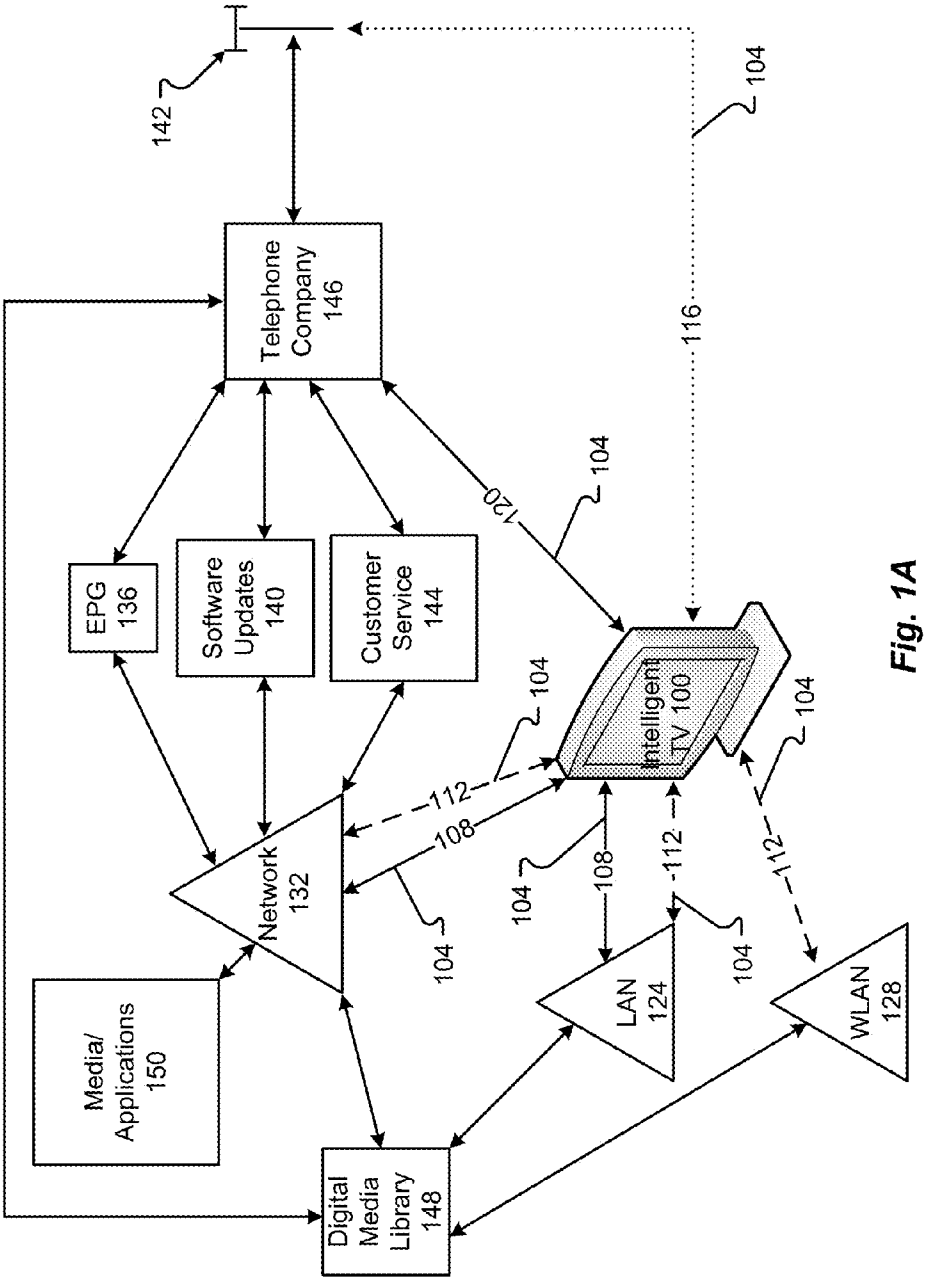

142
104
Telephone Company 146
116
120
104
EPG 136
Software Updates 140
Customer Service 144
104
Intelligent TV 100
104
112
108
Network 132
104
108
104
112
112
104
104
Media/ Applications 150
LAN 124
WLAN 128
Digital Media Library 148

Fig. 1A

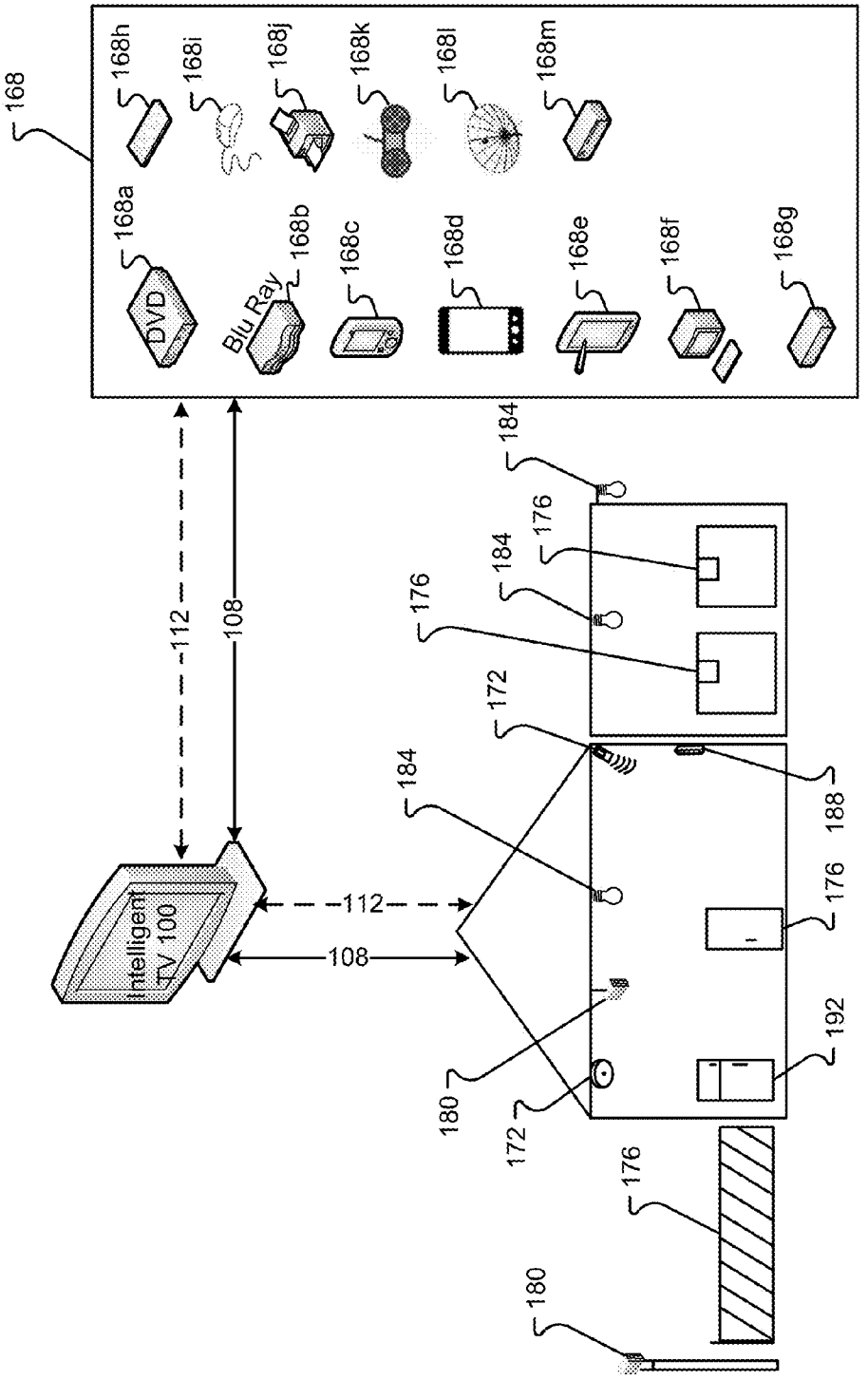

168
168h
168i
168j
168k
168l
168m
168a
DVD
168b
Blu Ray
168c
168d
168e
168f
168g
112
108
184
176
172
188
Intelligent TV 100
180
192

Fig. 1B

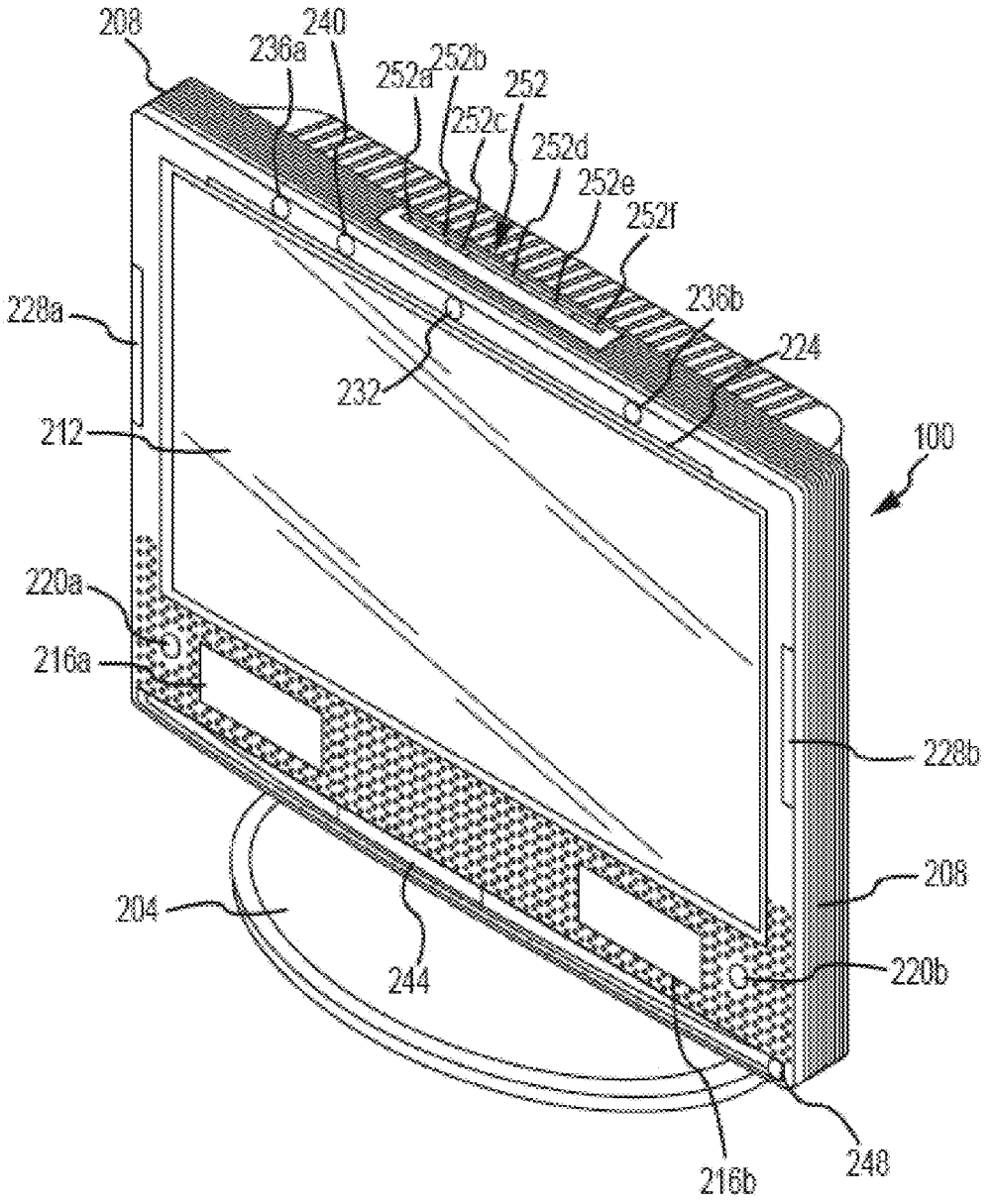

208
240
236a
252a
252b
252
252c
252d
252e
252f
236b
224
228a
232
212
100
220a
216a
228b
208
204
244
220b
248
216b

Fig. 2A

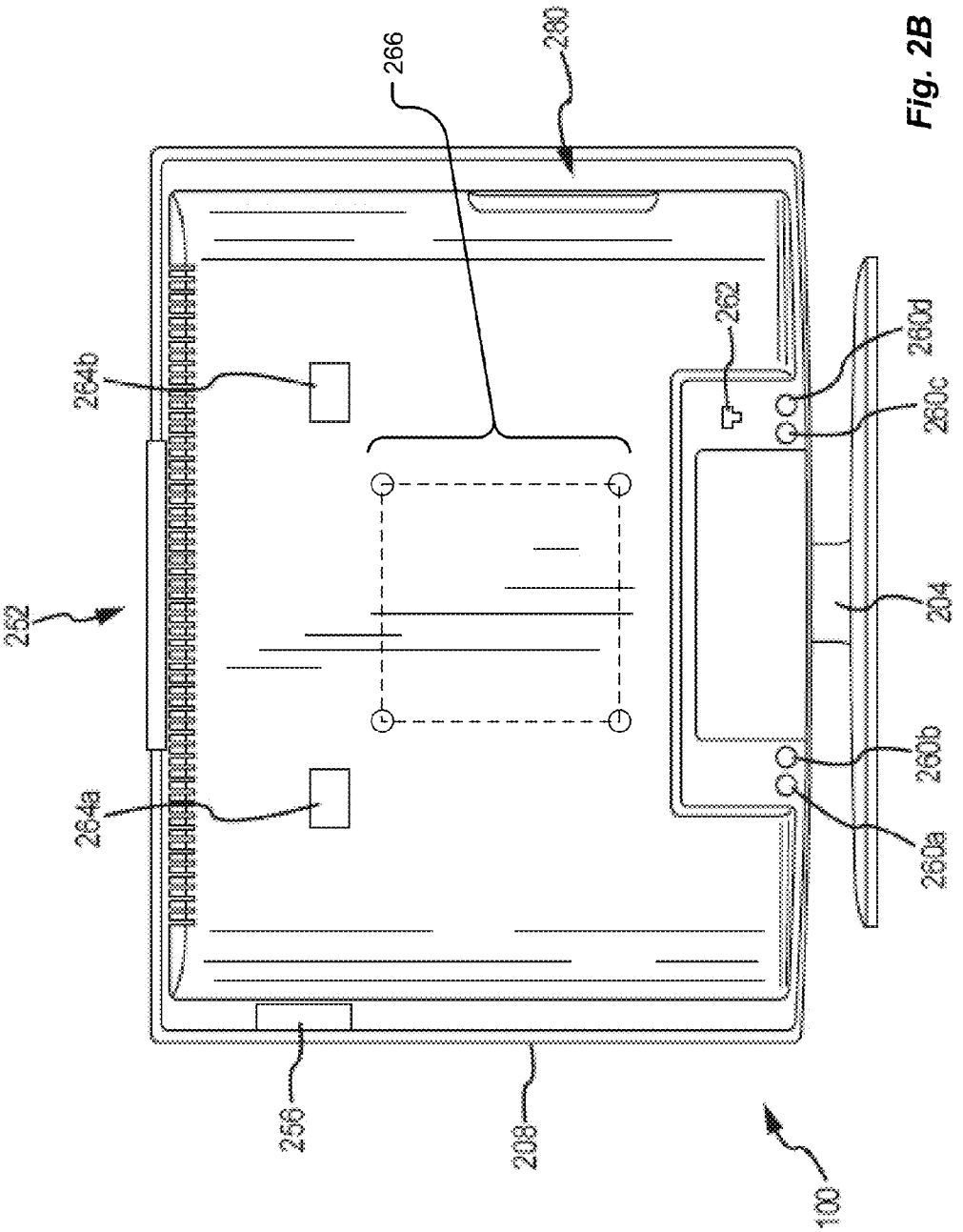


Fig. 2B

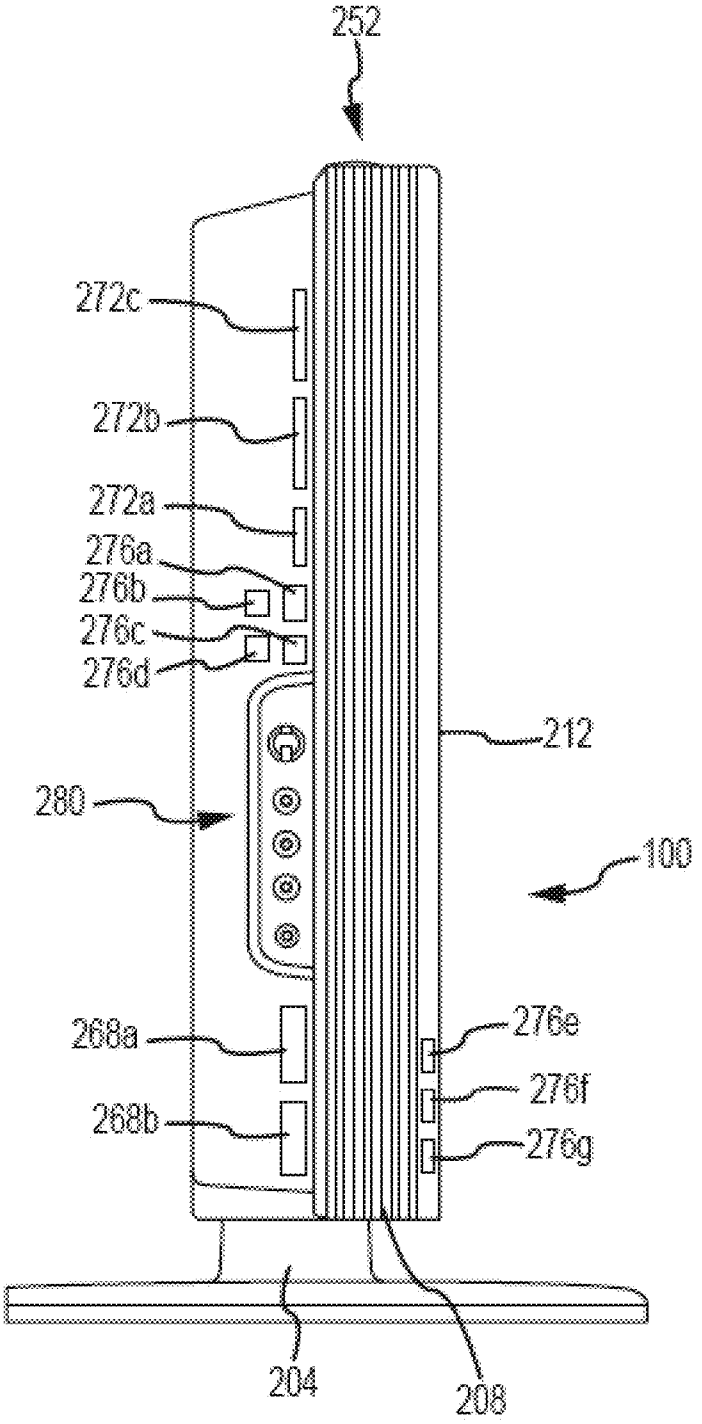

252
272c
272b
272a
276a
276b
276c
276d
212
280
100
268a
268b
276e
276f
276g
204
208

Fig. 2C

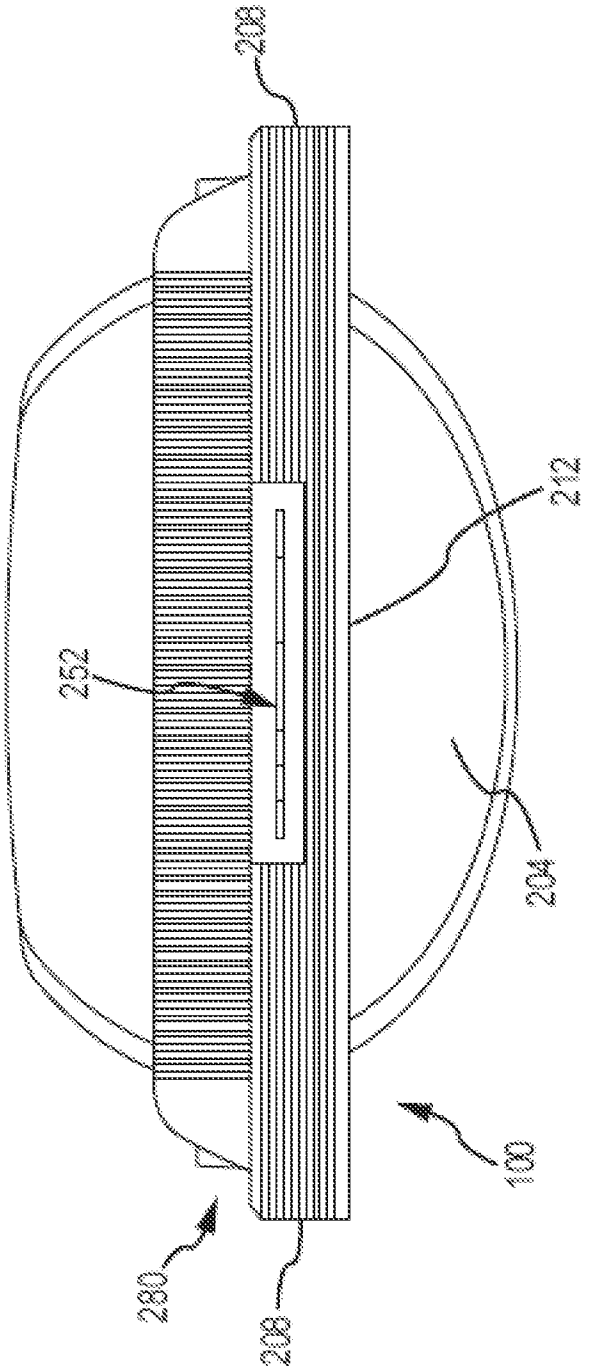


Fig. 2D

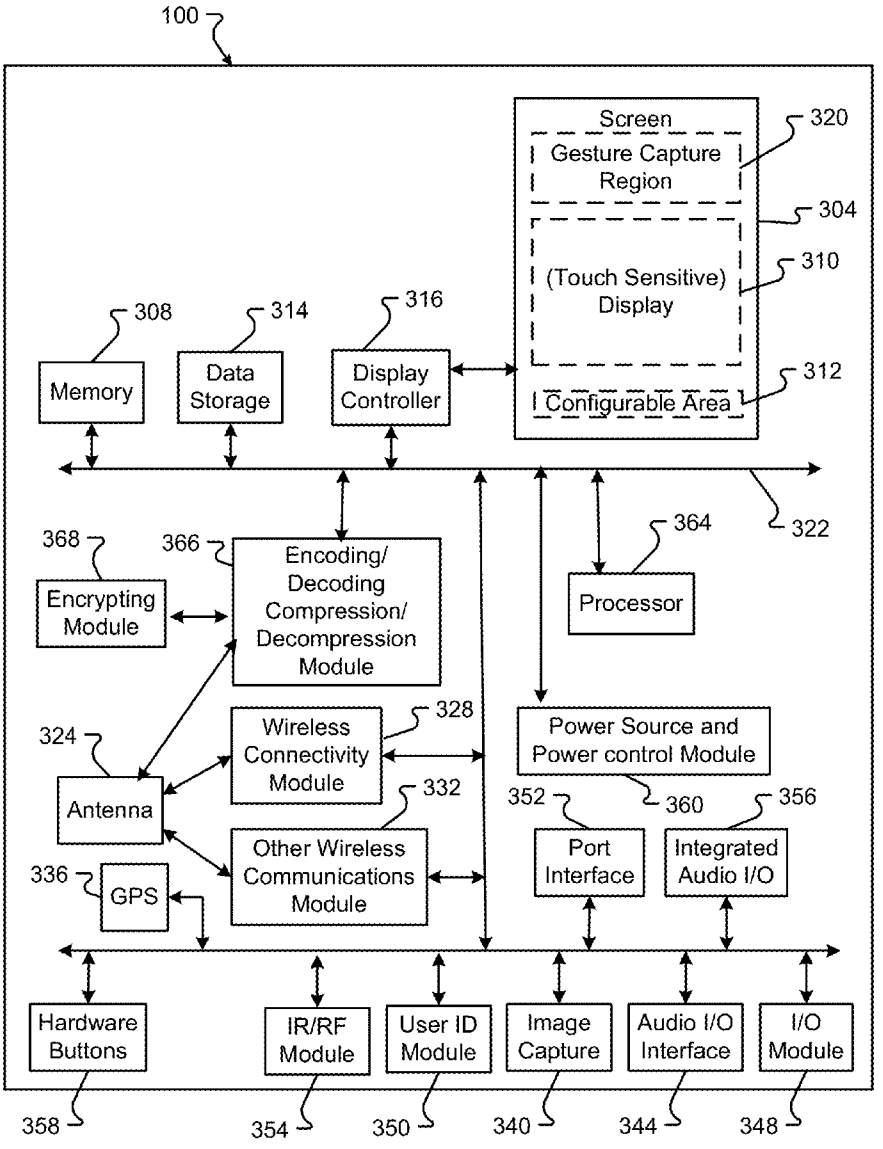

100
Screen
Gesture Capture Region
320
304
(Touch Sensitive) Display
310
312
Configurable Area
308
Memory
314
Data Storage
316
Display Controller
322
364
Processor
368
Encrypting Module
366
Encoding/ Decoding Compression/ Decompression Module
324
Antenna
328
Wireless Connectivity Module
332
Other Wireless Communications Module
336
GPS
Power Source and Power control Module
360
352
Port Interface
356
Integrated Audio I/O
Hardware Buttons
IR/RF Module
User ID Module
Image Capture
Audio I/O Interface
I/O Module
358
354
350
340
344
348

FIG. 3

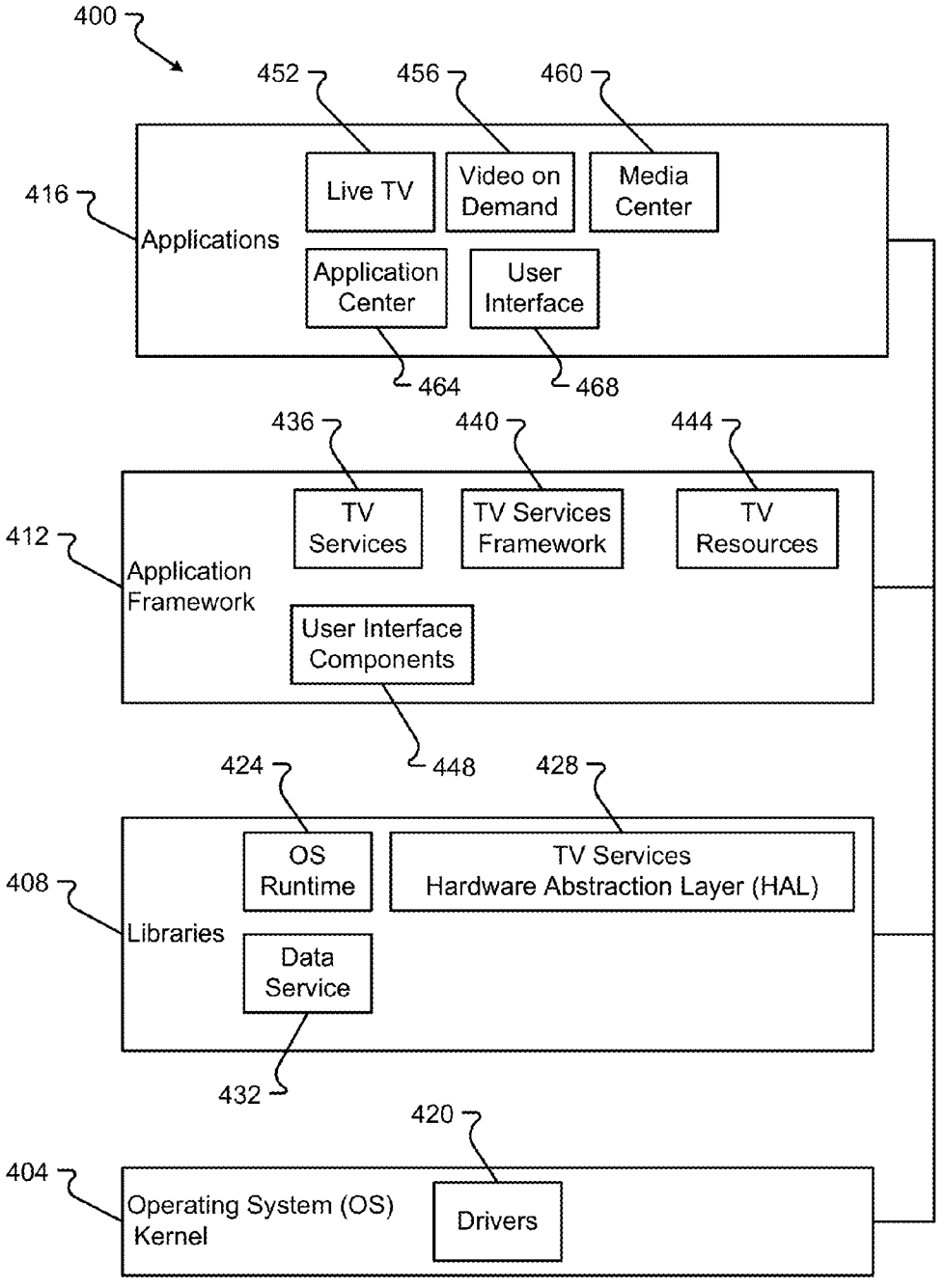

400
452
456
460
416
Applications
Live TV
Video on Demand
Media Center
Application Center
User Interface
464
468
436
440
444
412
Application Framework
TV Services
TV Services Framework
TV Resources
User Interface Components
448
424
428
408
Libraries
OS Runtime
TV Services Hardware Abstraction Layer (HAL)
Data Service
432
420
404
Operating System (OS) Kernel
Drivers

FIG. 4

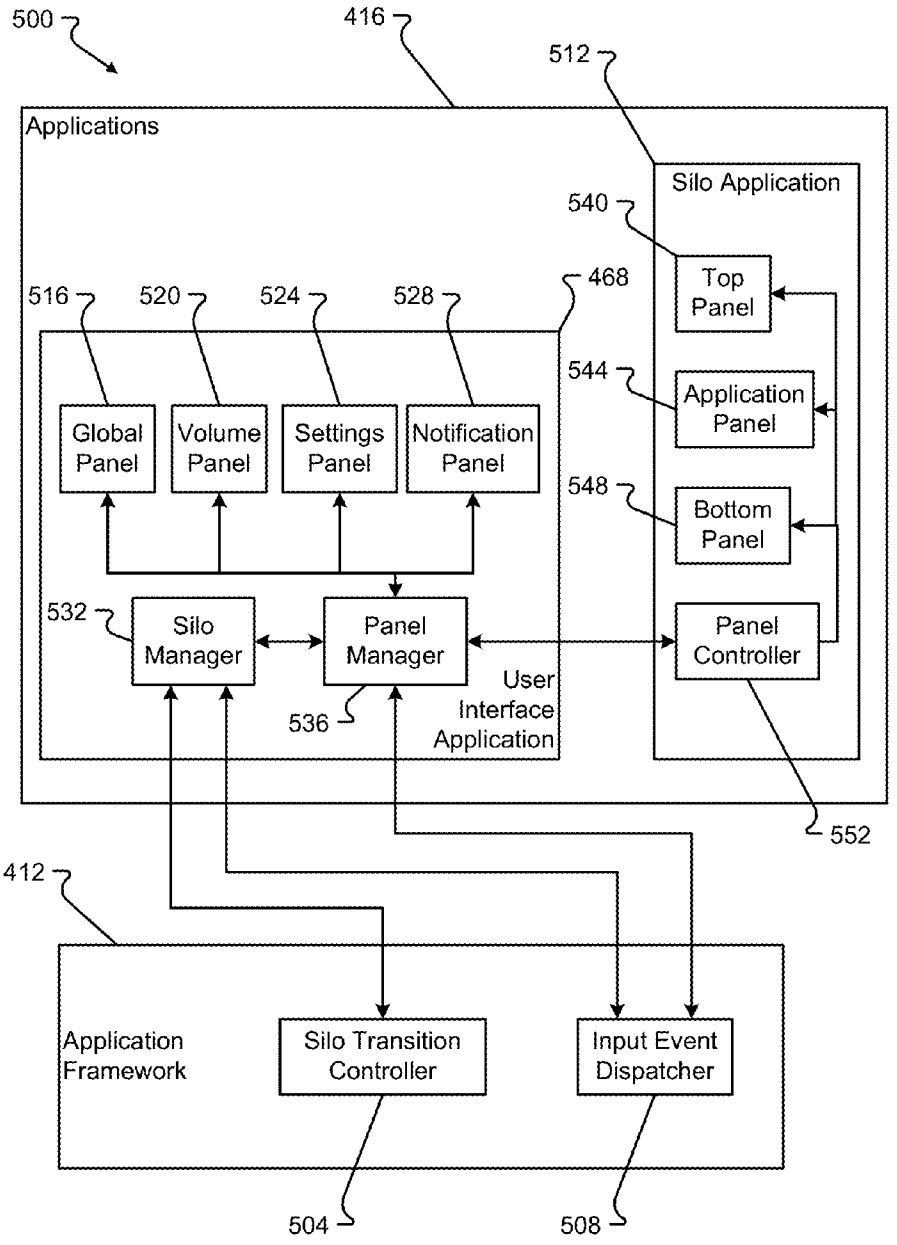

500
416
512
Applications
Silo Application
540
Top Panel
468
516
520
524
528
544
Application Panel
Global Panel
Volume Panel
Settings Panel
Notification Panel
548
Bottom Panel
532
Silo Manager
Panel Manager
Panel Controller
User Interface Application
536
552
412
Application Framework
Silo Transition Controller
Input Event Dispatcher
504
508

FIG. 5

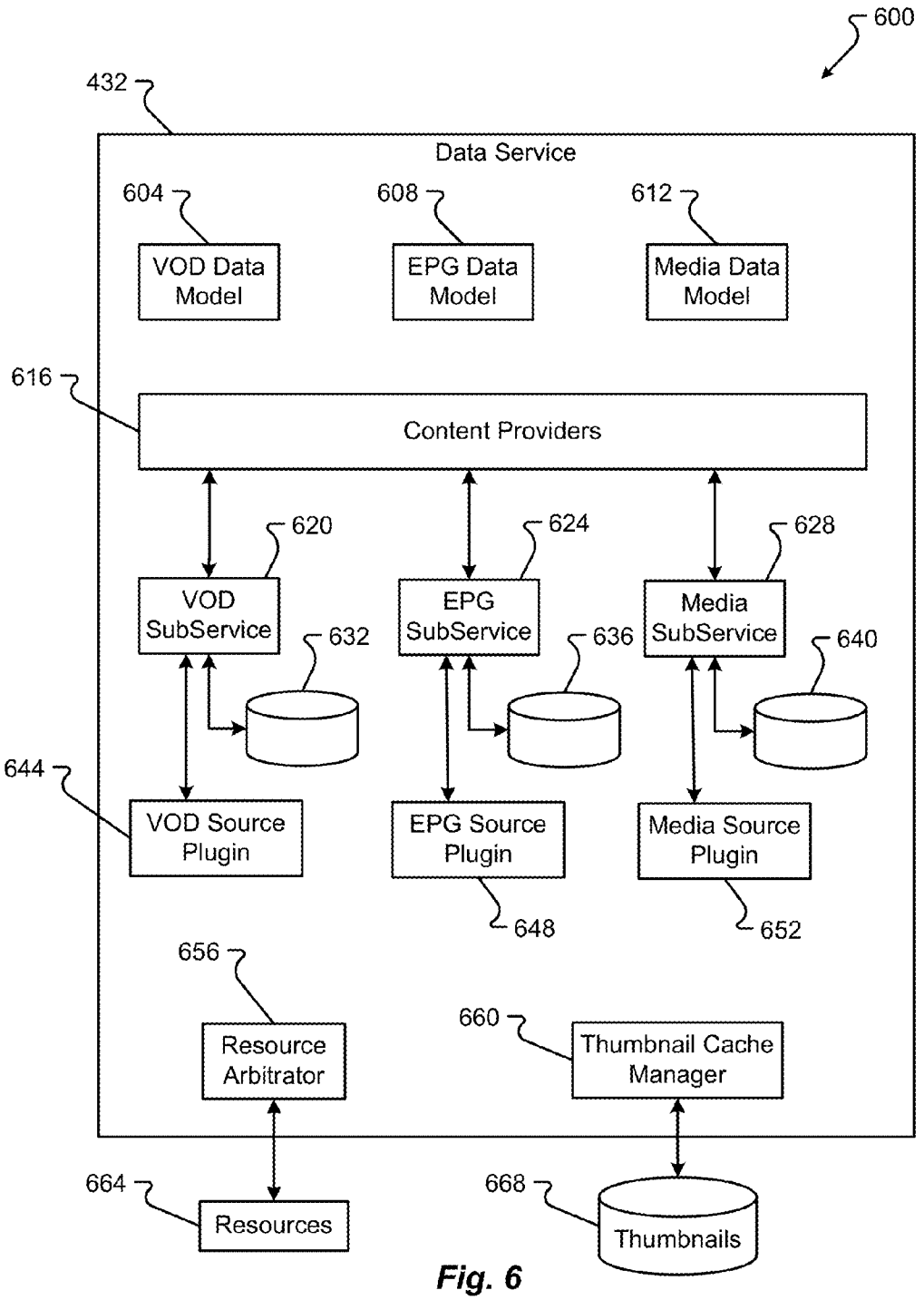

600
432
Data Service
604
608
612
VOD Data Model
EPG Data Model
Media Data Model
616
Content Providers
620
624
628
VOD SubService
EPG SubService
Media SubService
632
636
640
644
VOD Source Plugin
EPG Source Plugin
Media Source Plugin
648
652
656
660
Resource Arbitrator
Thumbnail Cache Manager
664
668
Resources
Thumbnails

Fig. 6

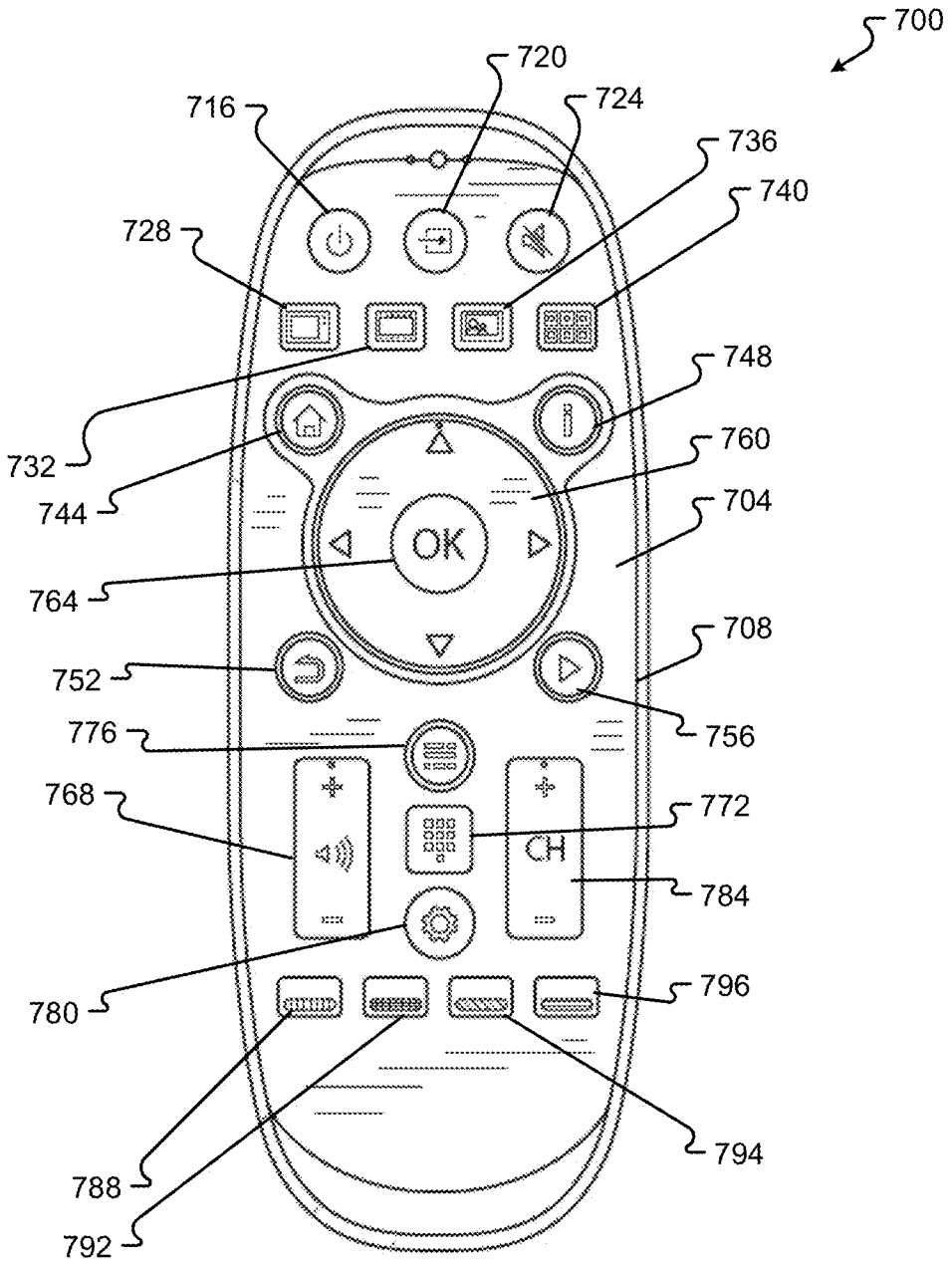

700
720
716
724
736
740
728
748
732
760
744
704
OK
764
708
752
756
776
768
772
CH
784
780
796
794
788
792

Fig. 7

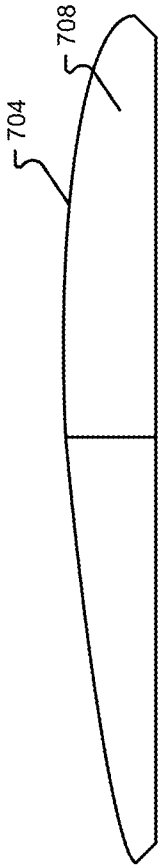


Fig. 8

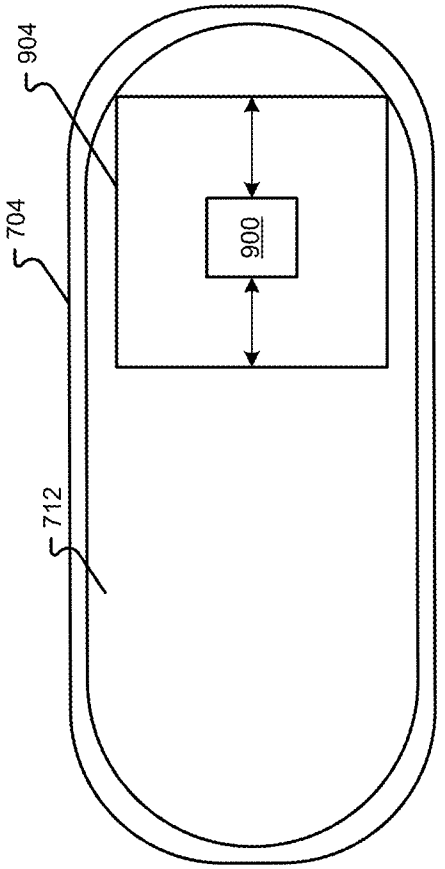


Fig. 9A

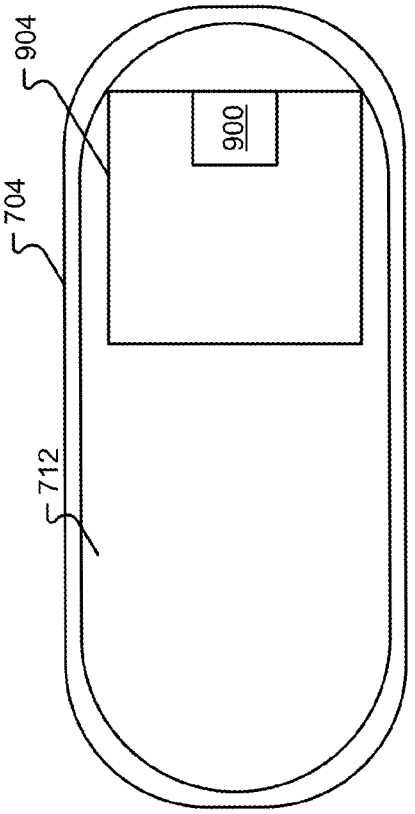


Fig. 9B

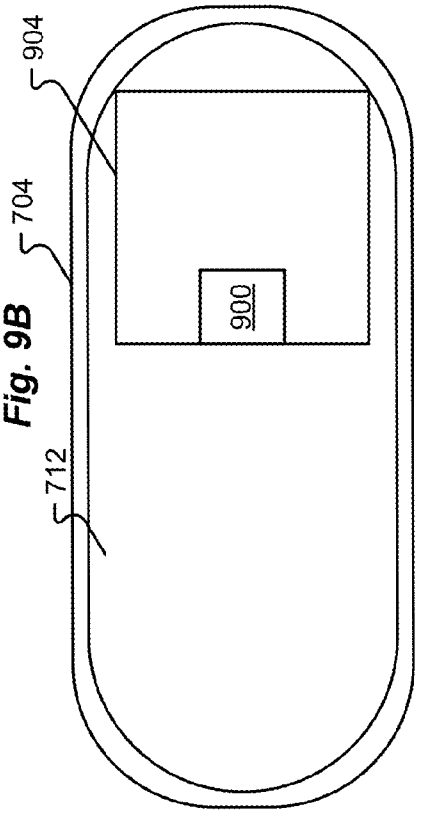


Fig. 9C

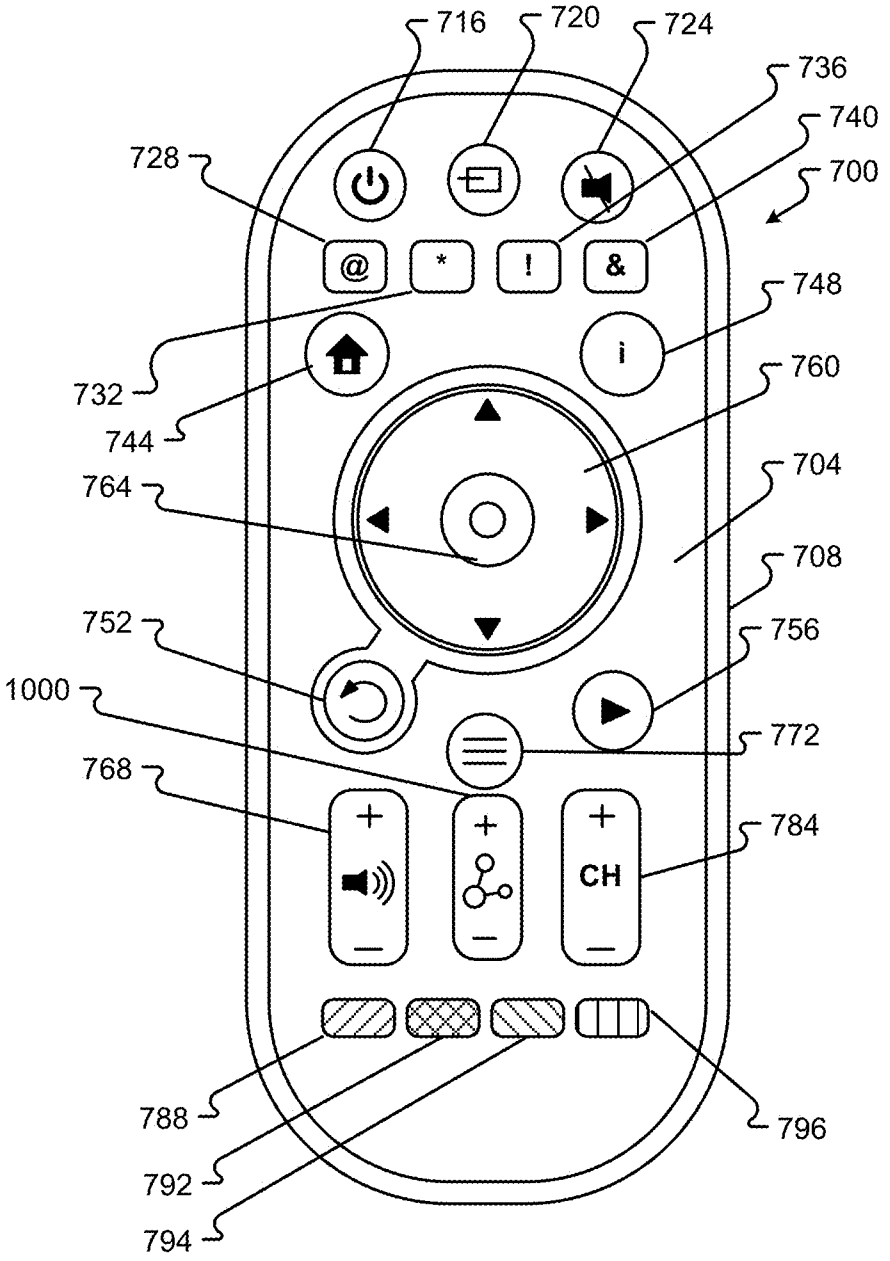

716
720
724
736
740
700
728
@
*
!
&
748
i
732
744
760
764
704
708
752
756
1000
772
768
784
CH
788
792
794
796

Fig. 10

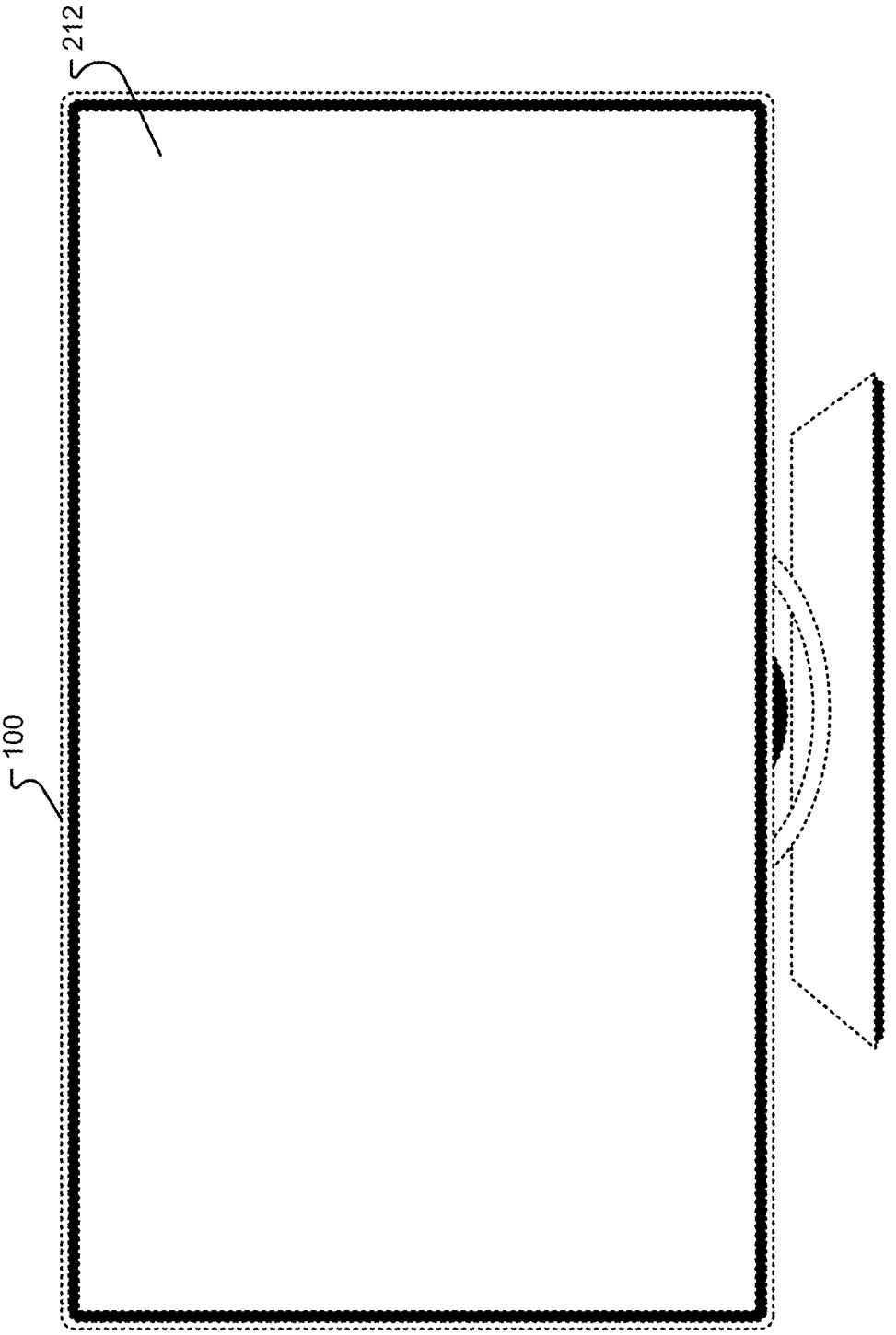


Fig. 11A

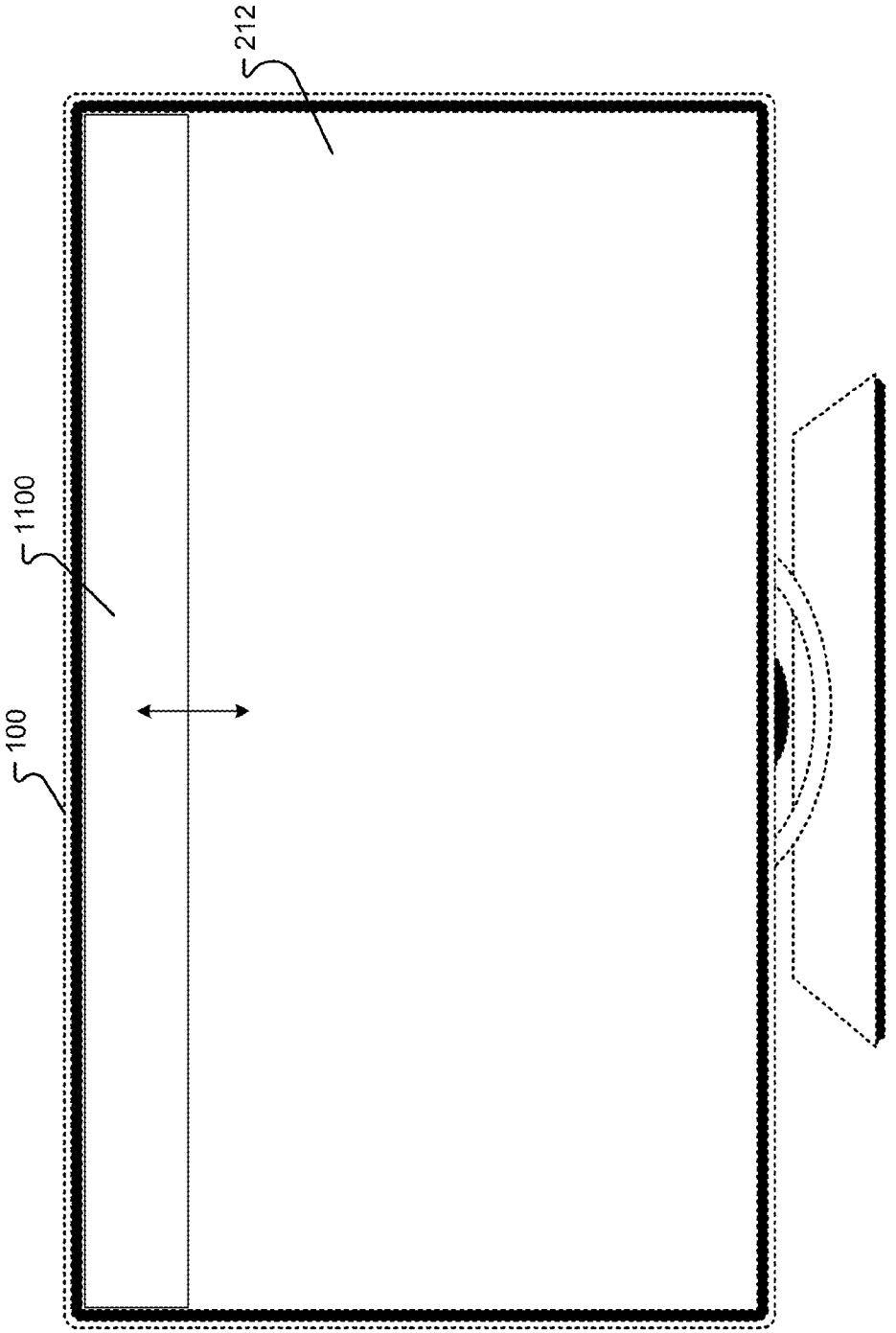


Fig. 11B

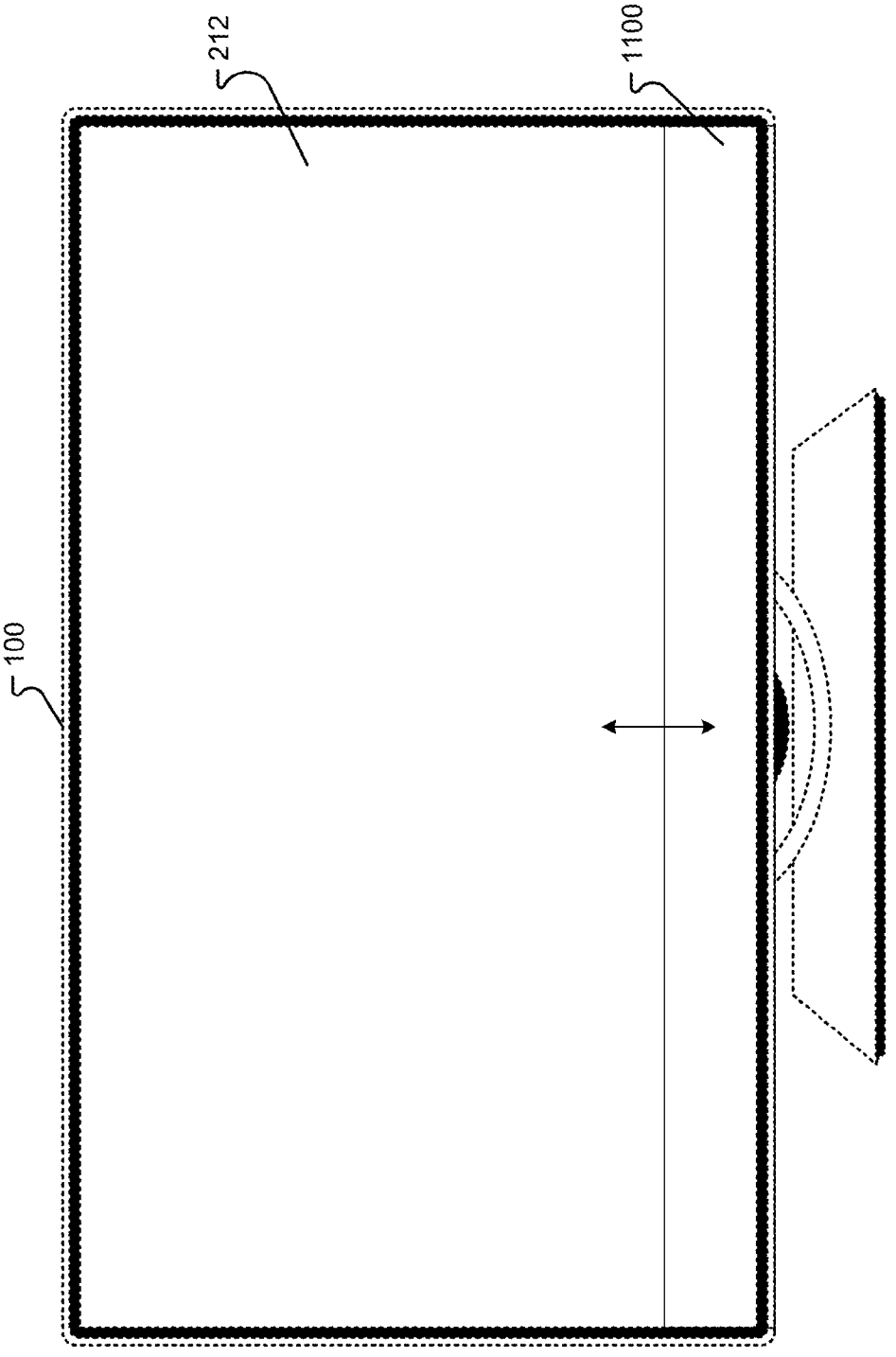


Fig. 11C

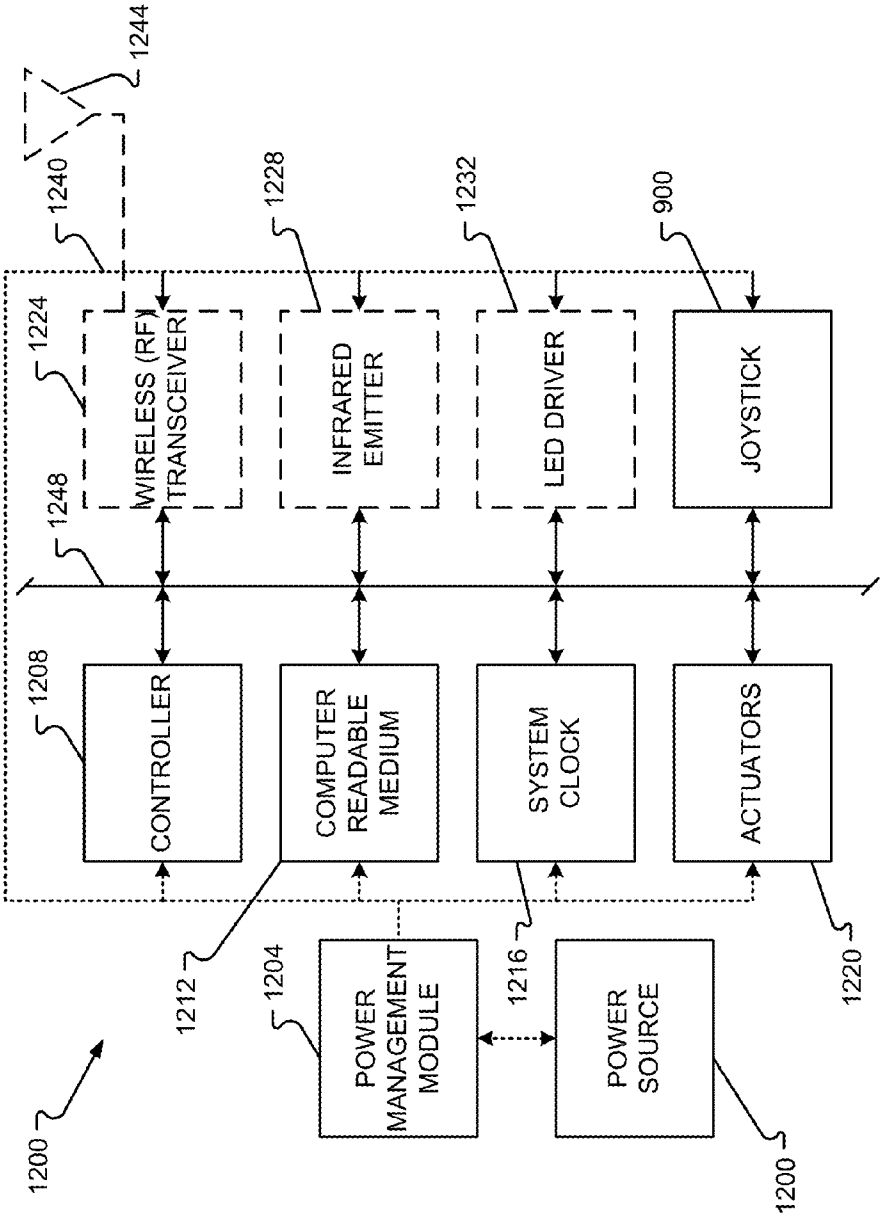

1244
1240
1228
1232
900
1224
WIRELESS (RF) TRANSCEIVER
INFRARED EMITTER
LED DRIVER
JOYSTICK
1248
1208
CONTROLLER
COMPUTER READABLE MEDIUM
SYSTEM CLOCK
ACTUATORS
1212
1204
POWER MANAGEMENT MODULE
1216
POWER SOURCE
1220
1200
1200

Fig. 12

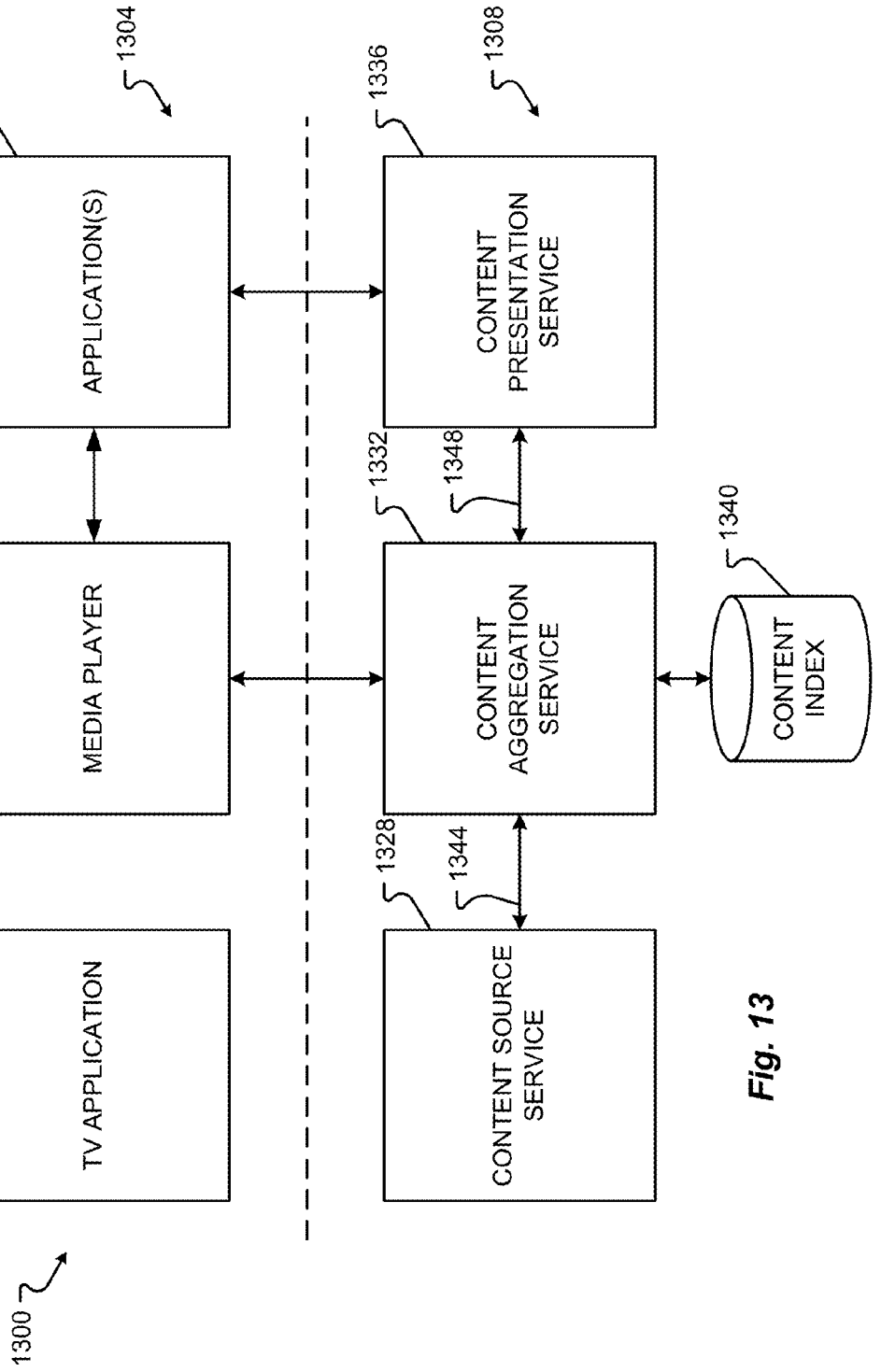

1300
1304
1320
APPLICATION(S)
1308
1336
CONTENT PRESENTATION SERVICE
1316
MEDIA PLAYER
1332
1348
CONTENT AGGREGATION SERVICE
1340
CONTENT INDEX
1312
TV APPLICATION
1328
1344
CONTENT SOURCE SERVICE

Fig. 13

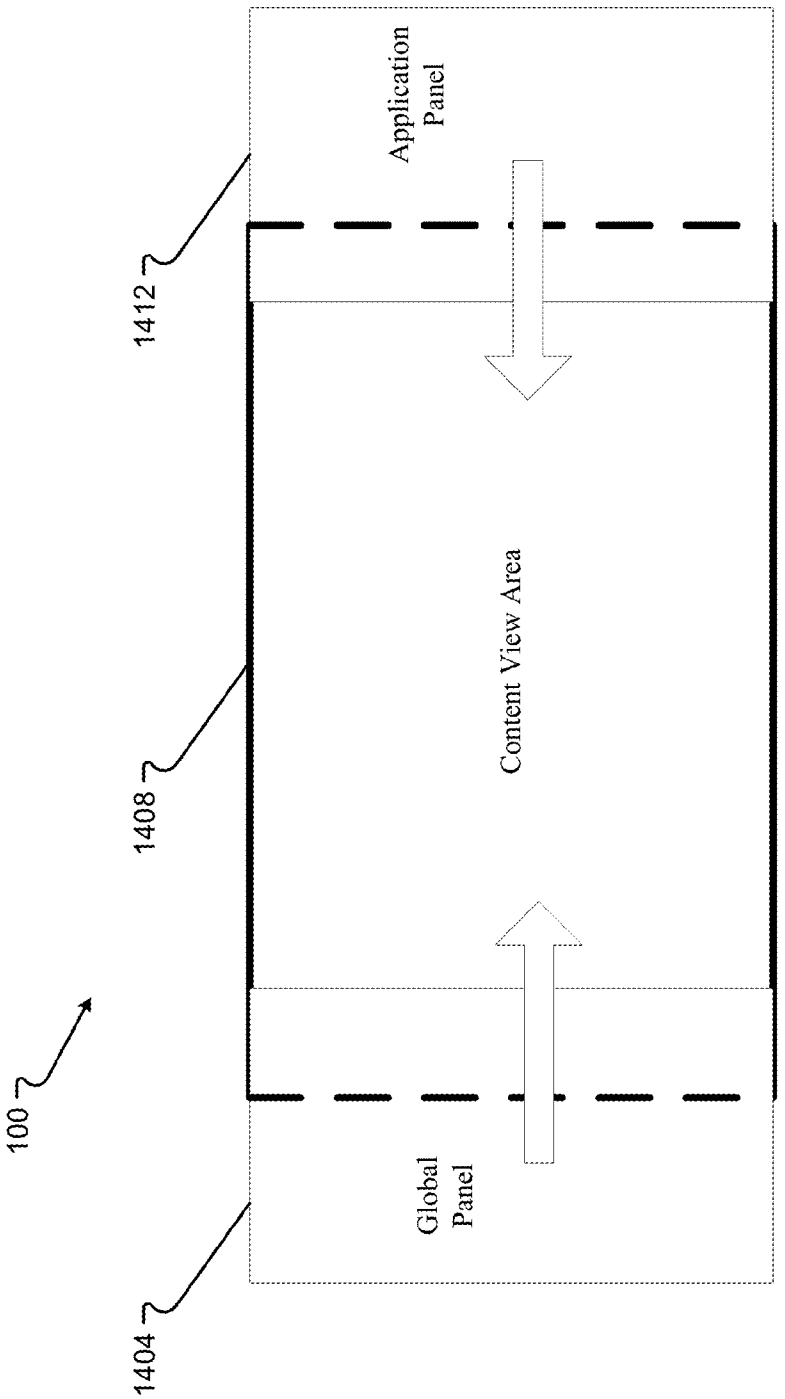

Application Panel
1412
Content View Area
1408
100
Global Panel
1404

Fig. 14

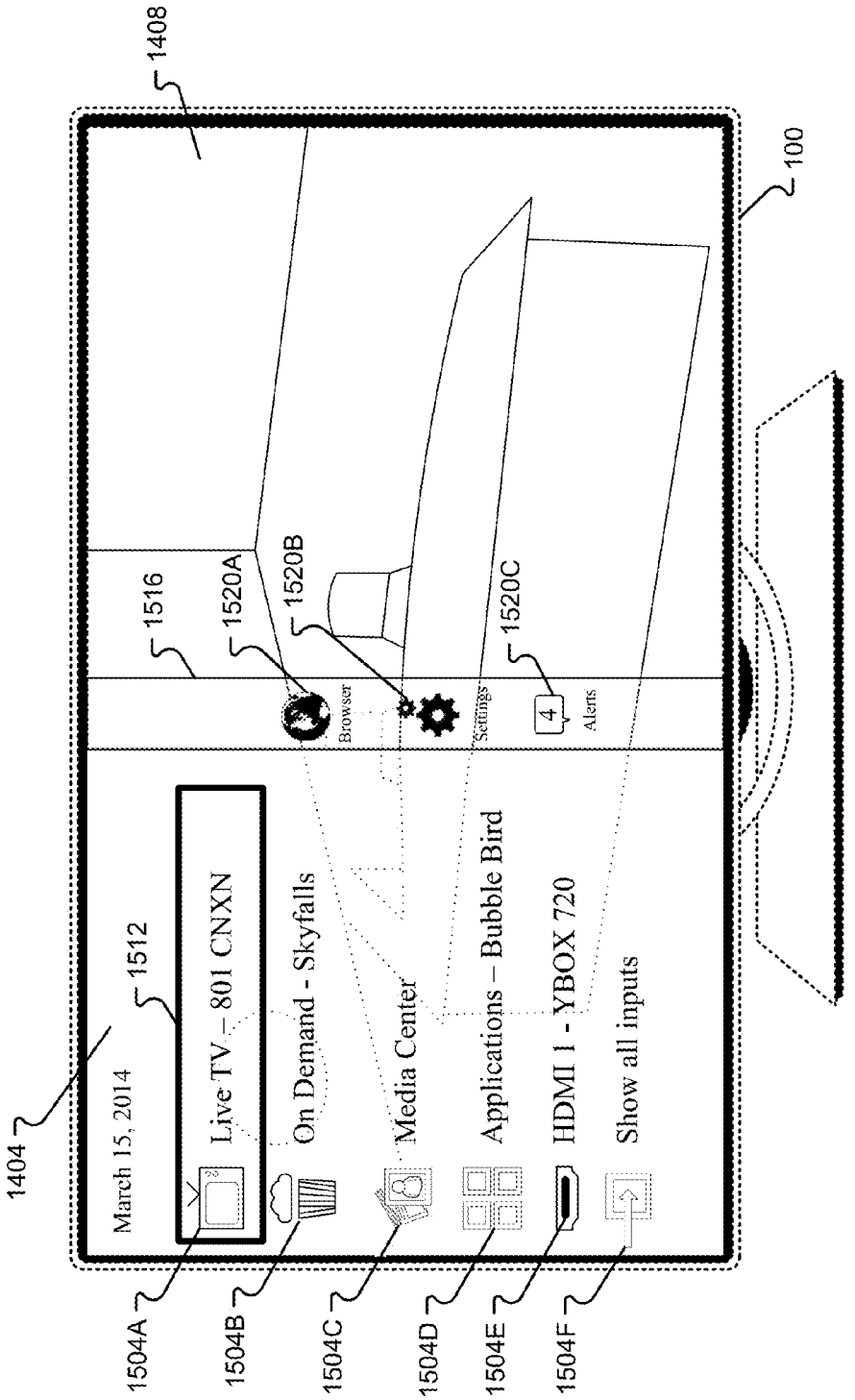

1408
100
1516
1520A
1520B
1520C
Browser
Settings
4
Alerts
1404
March 15, 2014
1512
Live TV – 801 CNXN
On Demand - Skyfalls
Media Center
Applications – Bubble Bird
HDMI 1 - YBOX 720
Show all inputs
1504A
1504B
1504C
1504D
1504E
1504F

Fig. 15

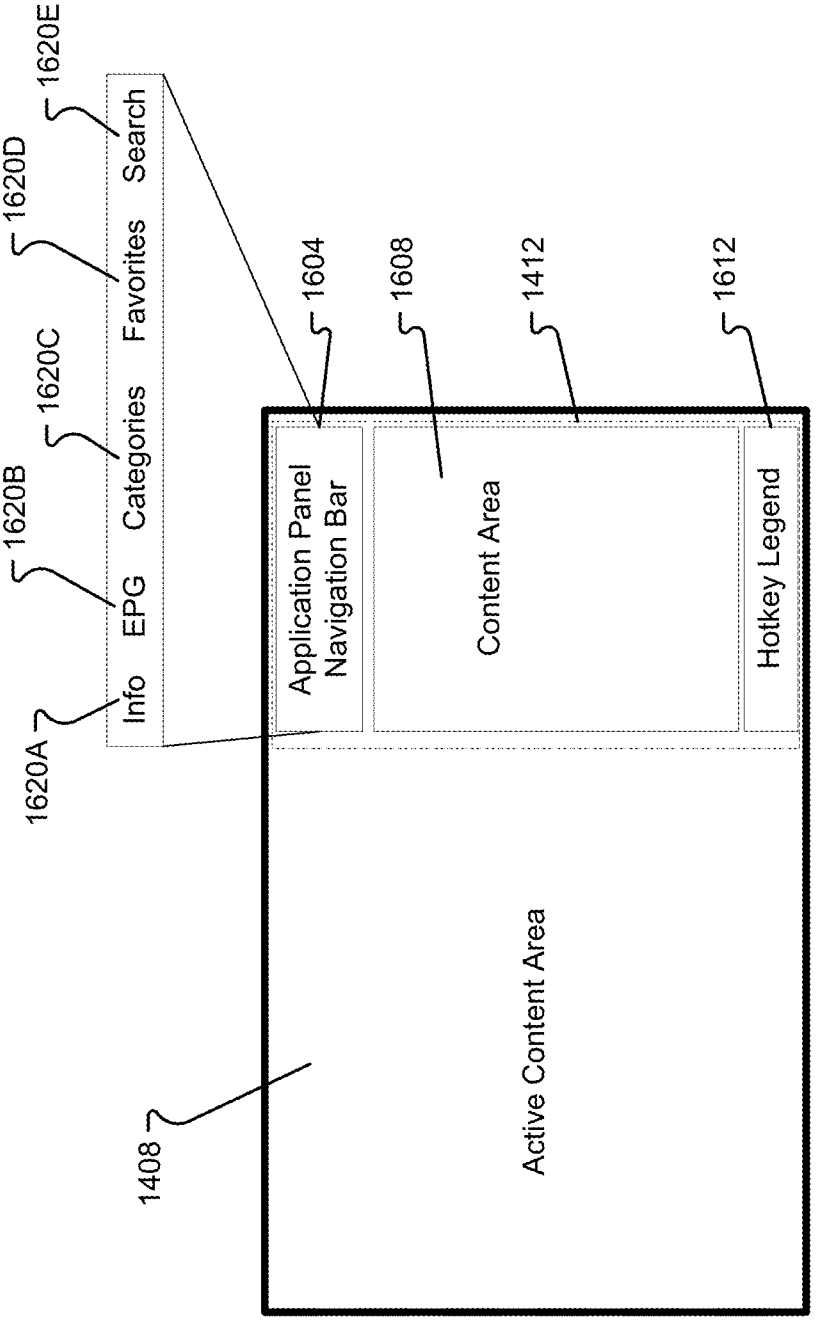

1620E
Search
1620D
Favorites
1620C
Categories
1620B
EPG
1620A
Info
1604
1608
1412
1612
Application Panel Navigation Bar
Content Area
Hotkey Legend
Active Content Area
1408

Fig. 16

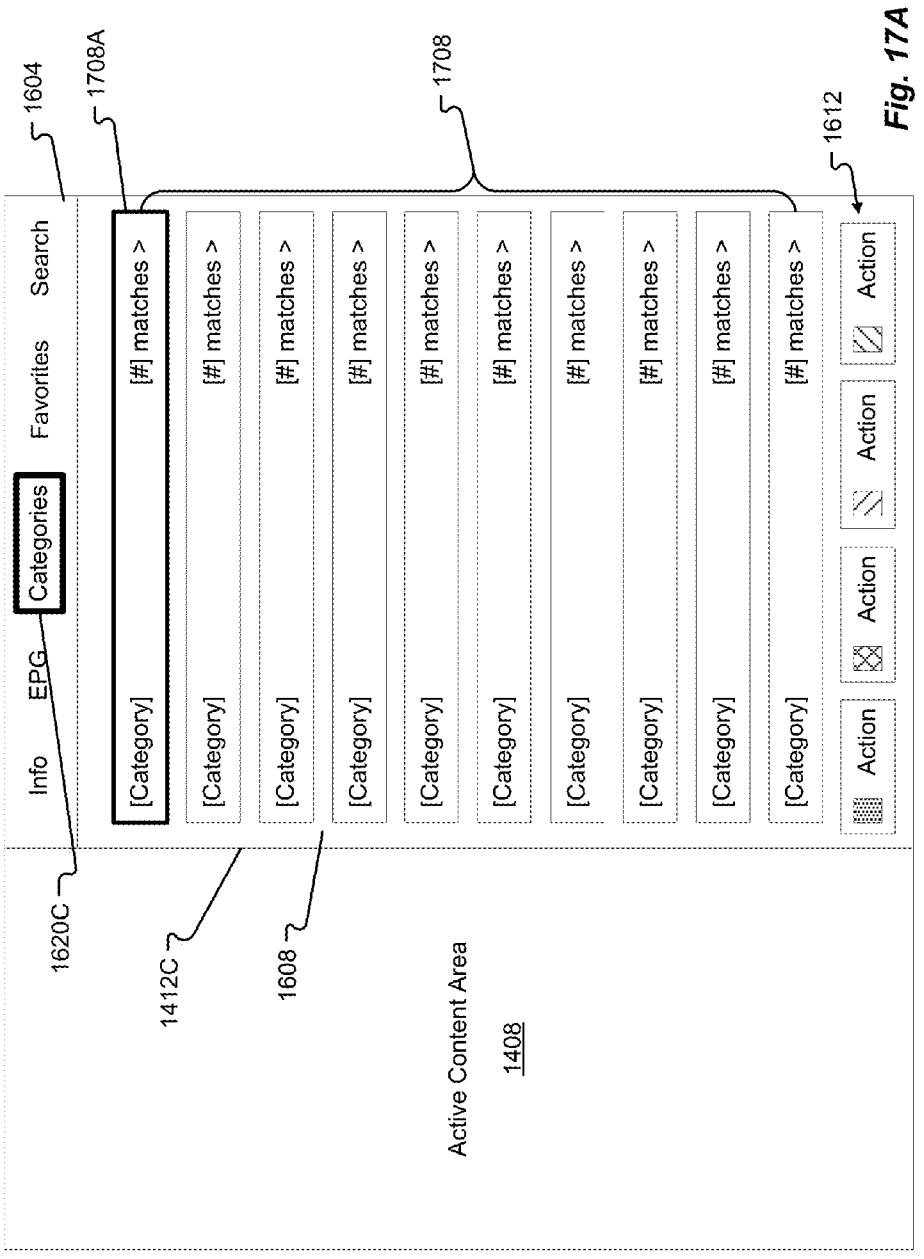

1604
1708A
1708
1612
Info
EPG
Categories
Favorites
Search
[Category]
[#] matches >
Action
1620C
1412C
1608
Active Content Area
1408

Fig. 17A

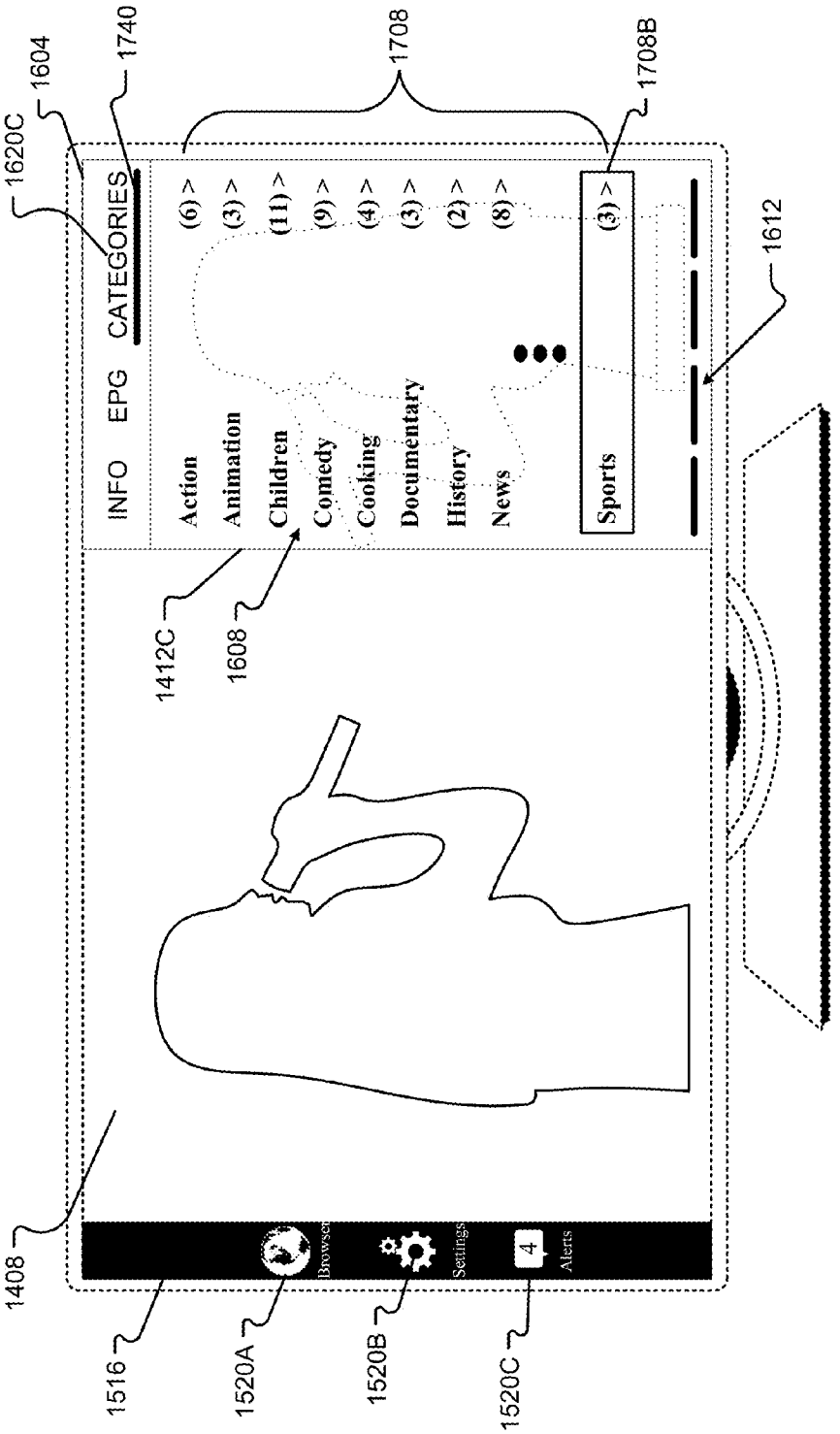

1620C
1604
1740
1708
1708B
INFO
EPG
CATEGORIES
Action (6) >
Animation (3) >
Children (11) >
Comedy (9) >
Cooking (4) >
Documentary (3) >
History (2) >
News (8) >
Sports (3) >
1612
1412C
1608
1408
1516
1520A
1520B
1520C
Browser
Settings
4
Alerts

Fig. 17B

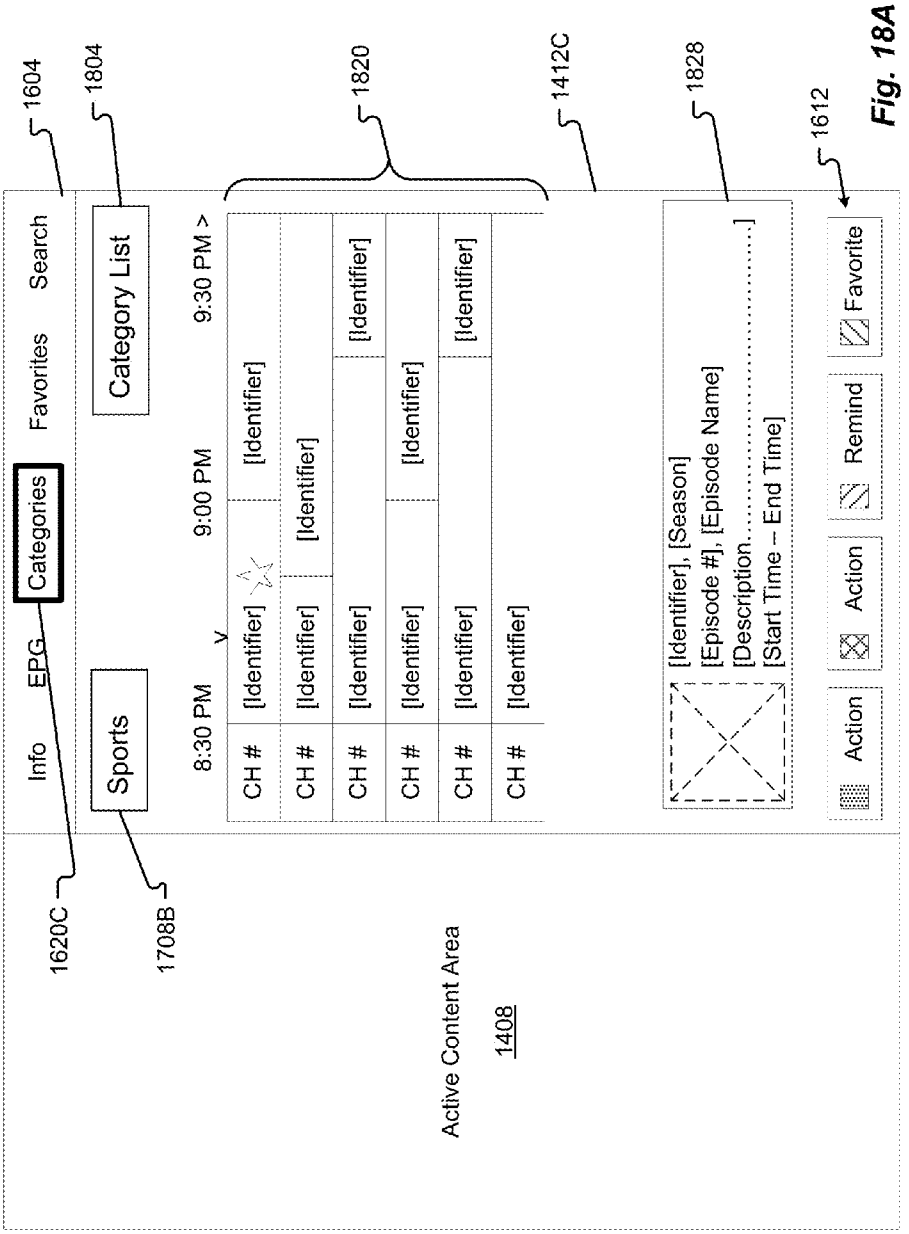

1604
1804
1820
1412C
1828
1612
Info
EPG
Categories
Favorites
Search
Sports
Category List
8:30 PM
9:00 PM
9:30 PM >
CH #
[Identifier]
[Identifier], [Season]
[Episode #], [Episode Name]
[Description.....]
[Start Time – End Time]
Action
Remind
Favorite
1620C
1708B
Active Content Area
1408

Fig. 18A

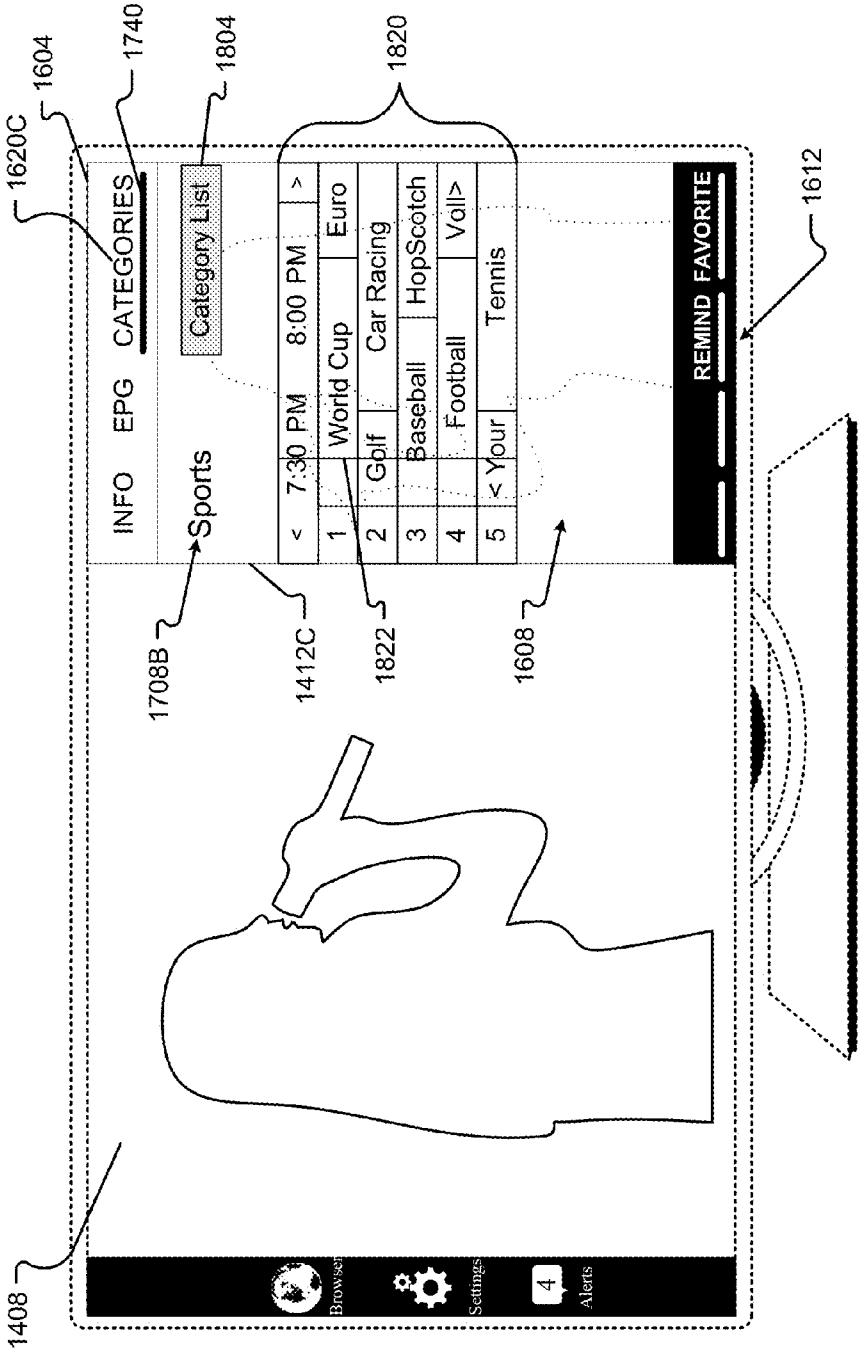

1620C
1604
1740
1804
1820
INFO
EPG
CATEGORIES
Category List
Sports
< 7:30 PM 8:00 PM >
1 World Cup Euro
2 Golf Car Racing
3 Baseball HopScotch
4 Football Voll>
5 < Your Tennis
REMIND FAVORITE
1612
1708B
1412C
1822
1608
1408
Browser
Settings
4
Alerts

Fig. 18B

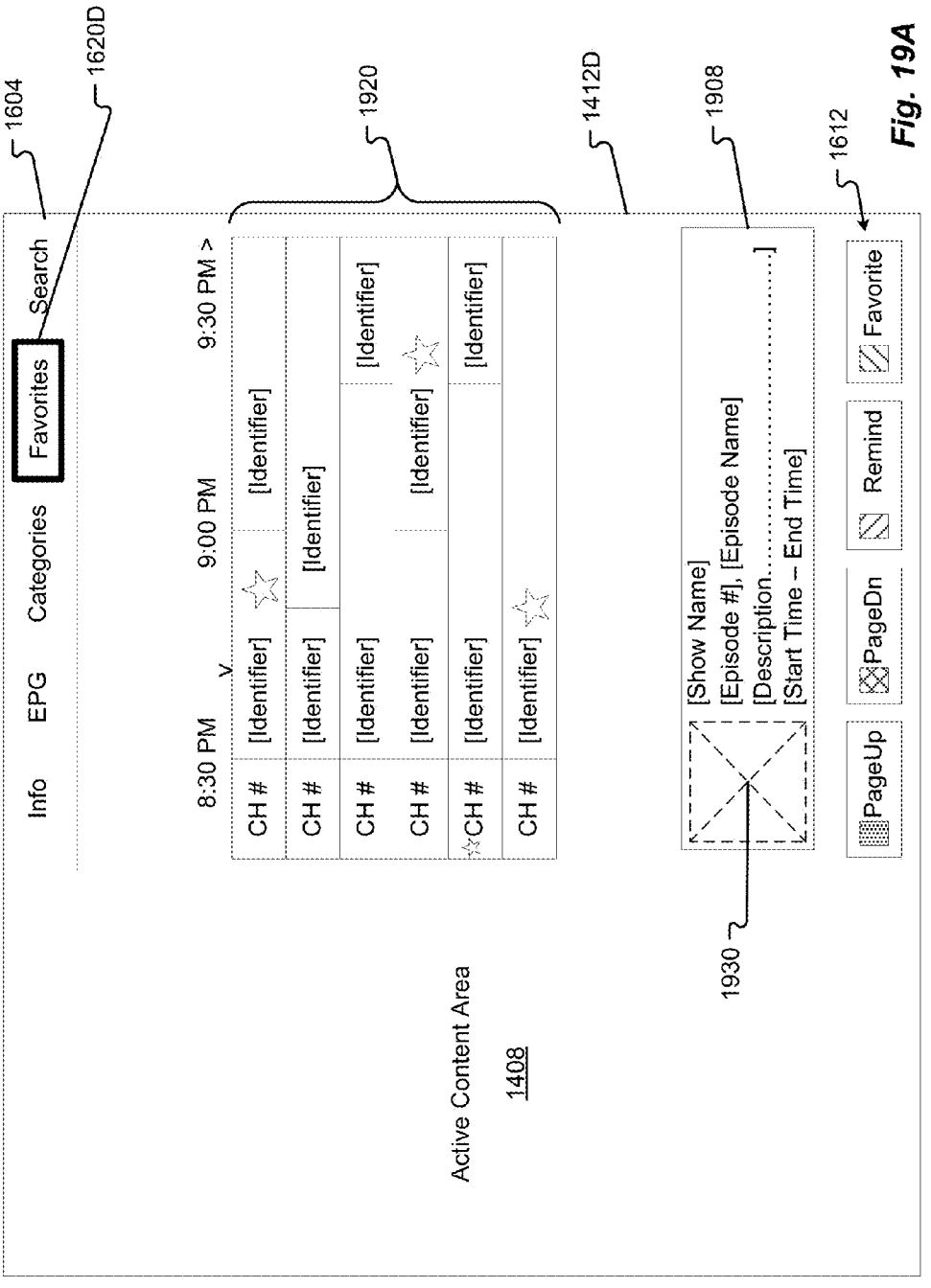

1604
1620D
Info
EPG
Categories
Favorites
Search
8:30 PM
9:00 PM
9:30 PM >
1920
1412D
1908
1612
CH #
[Identifier]
Active Content Area
1408
1930
[Show Name]
[Episode #], [Episode Name]
[Description.....]
[Start Time – End Time]
PageUp
PageDn
Remind
Favorite

Fig. 19A

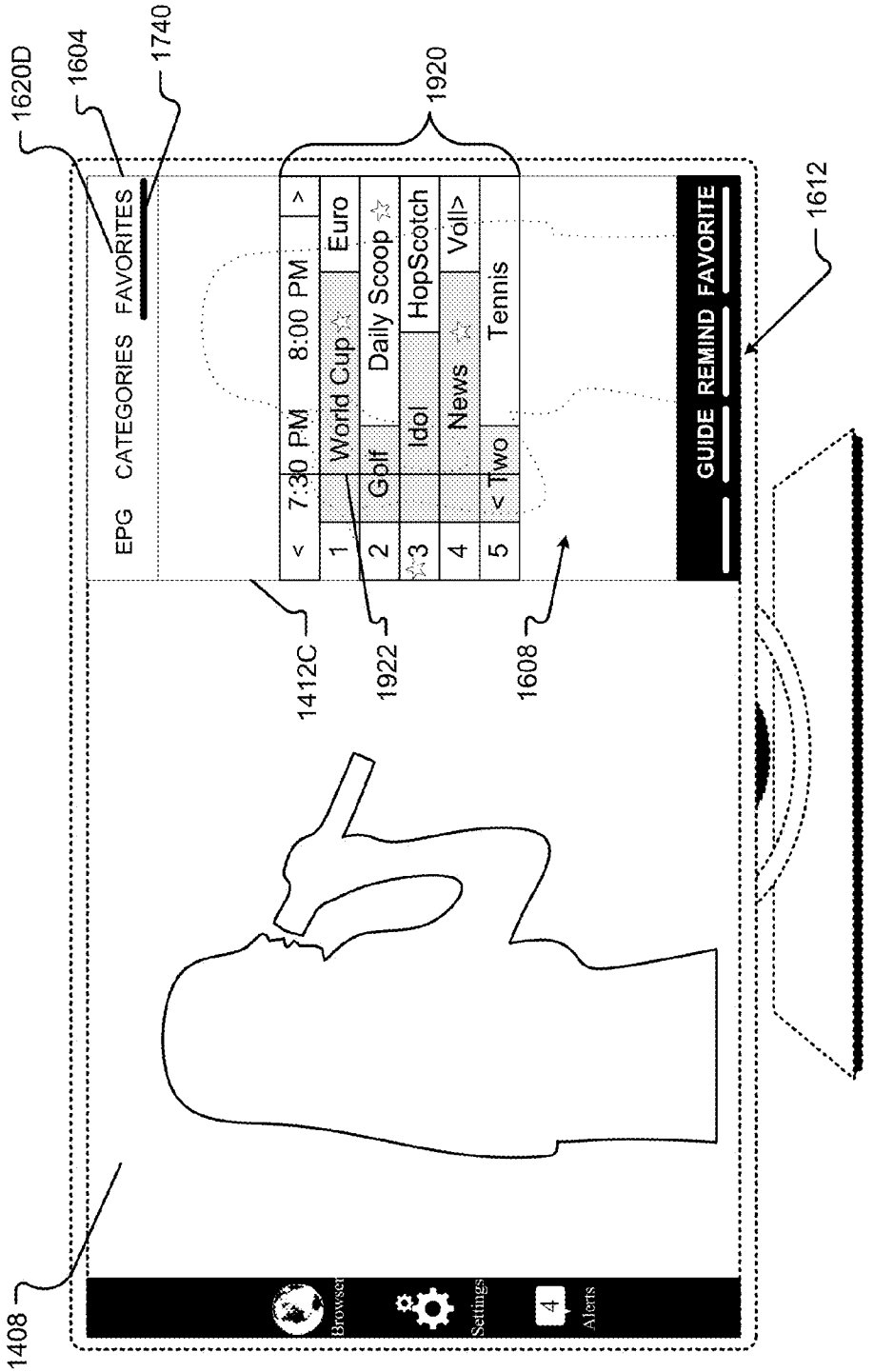

1620D
1604
1740
1920
EPG
CATEGORIES
FAVORITES
< 7:30 PM 8:00 PM >
1 World Cup ☆ Euro
2 Golf Daily Scoop ☆
☆3 Idol HopScotch
4 News ☆ Voll>
5 < Two Tennis
GUIDE REMIND FAVORITE
1612
1412C
1922
1608
1408
Browser
Settings
4
Alerts

Fig. 19B

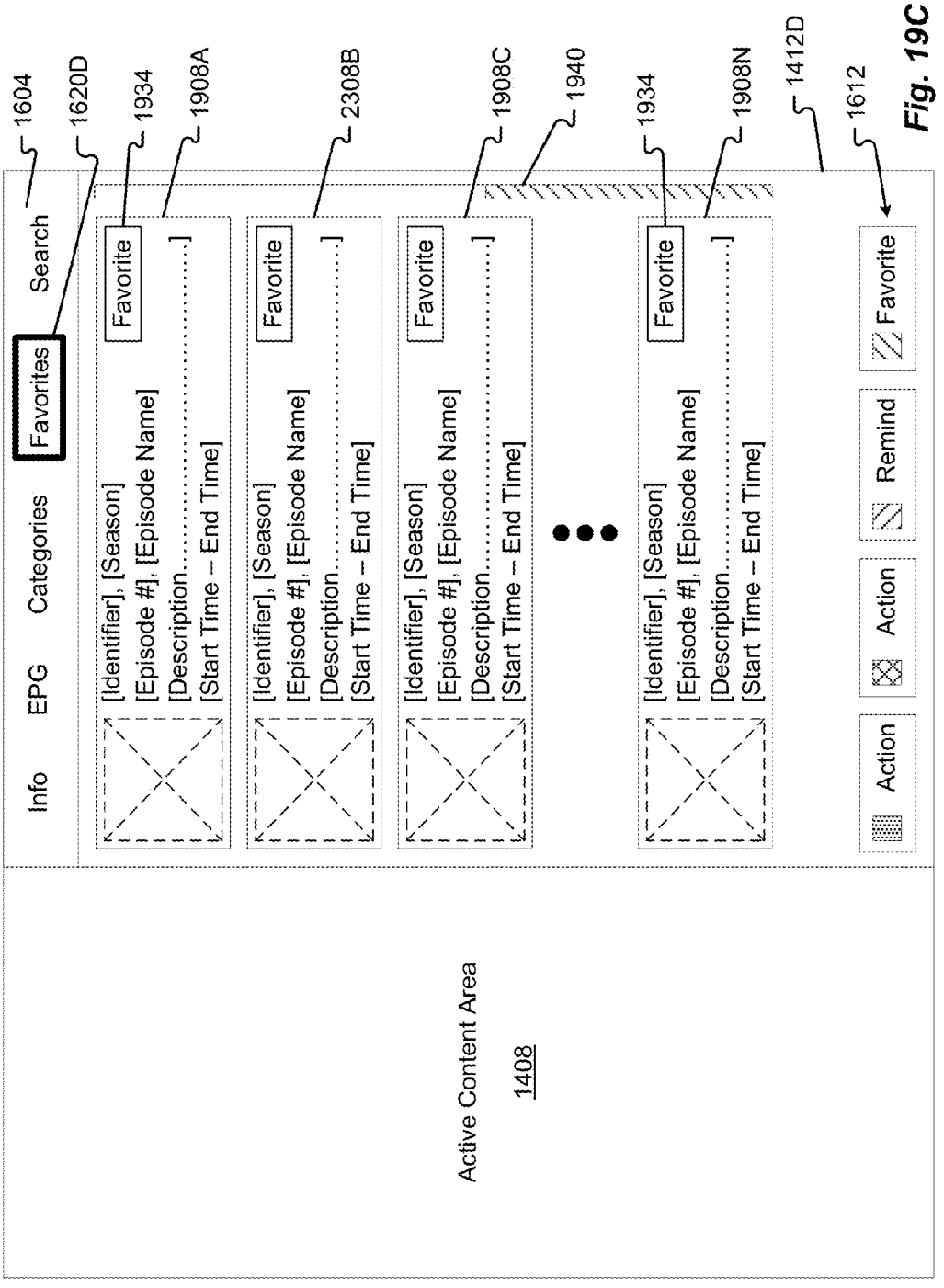

1604
1620D
1934
1908A
2308B
1908C
1940
1934
1908N
1412D
1612
Info
EPG
Categories
Favorites
Search
Favorite
[Identifier], [Season]
[Episode #], [Episode Name]
[Description.....]
[Start Time – End Time]
Action
Action
Remind
Favorite
Active Content Area
1408

Fig. 19C

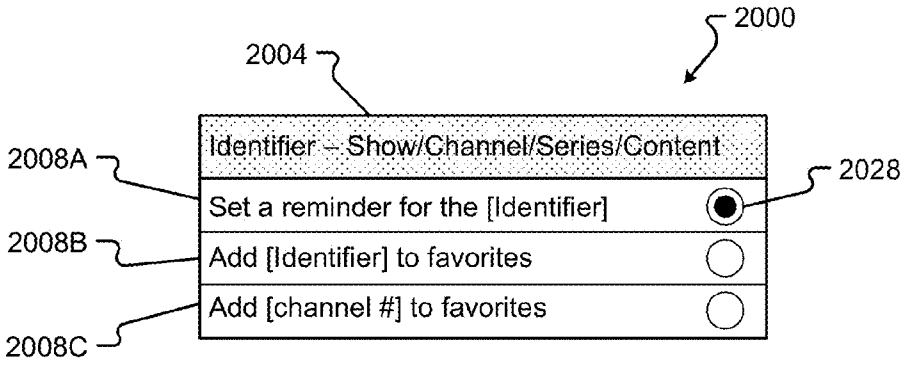


Fig. 20A

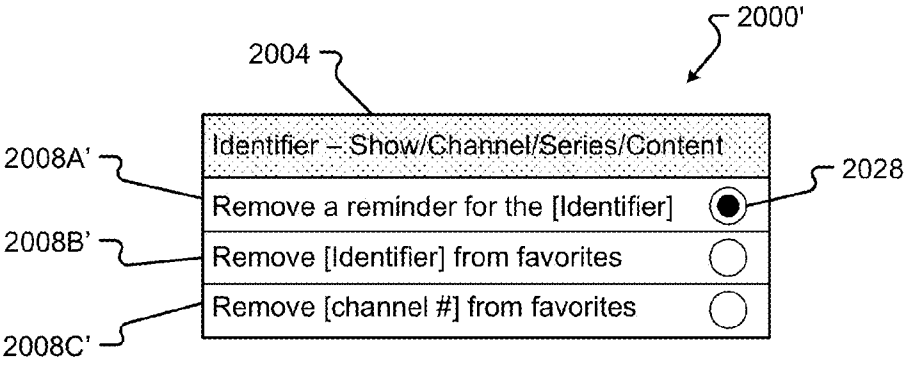


Fig. 20B

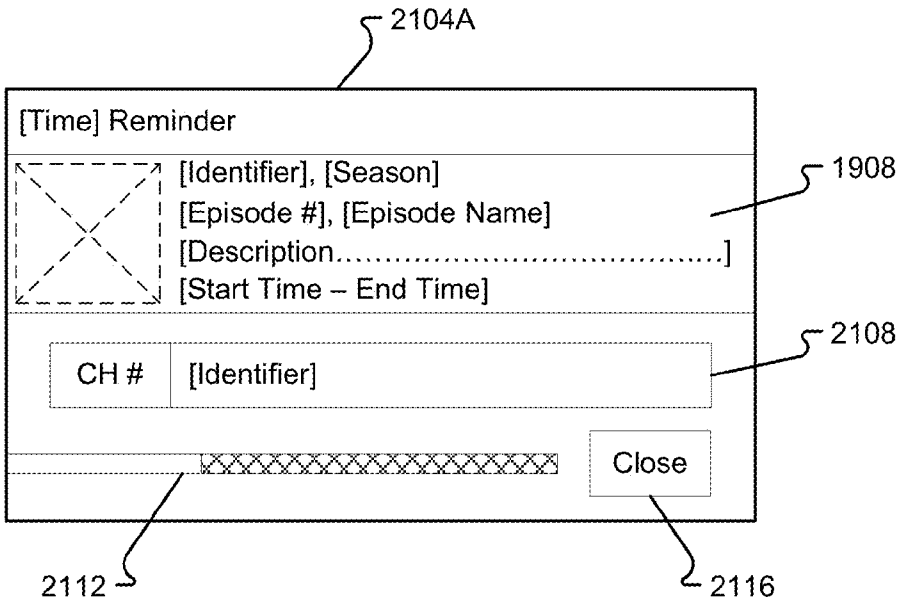


Fig. 21A

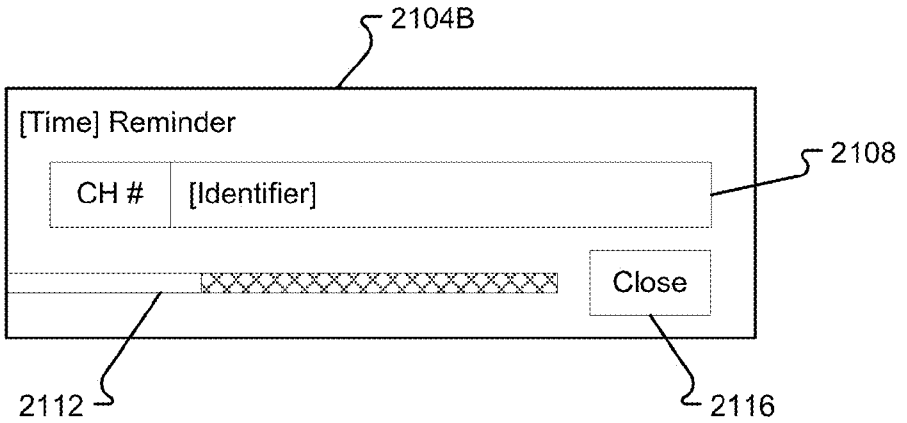


Fig. 21B

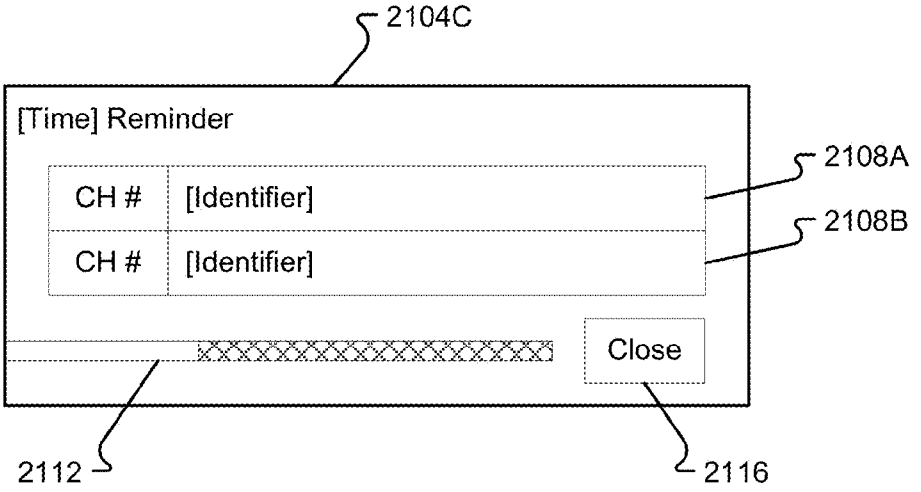


Fig. 21C

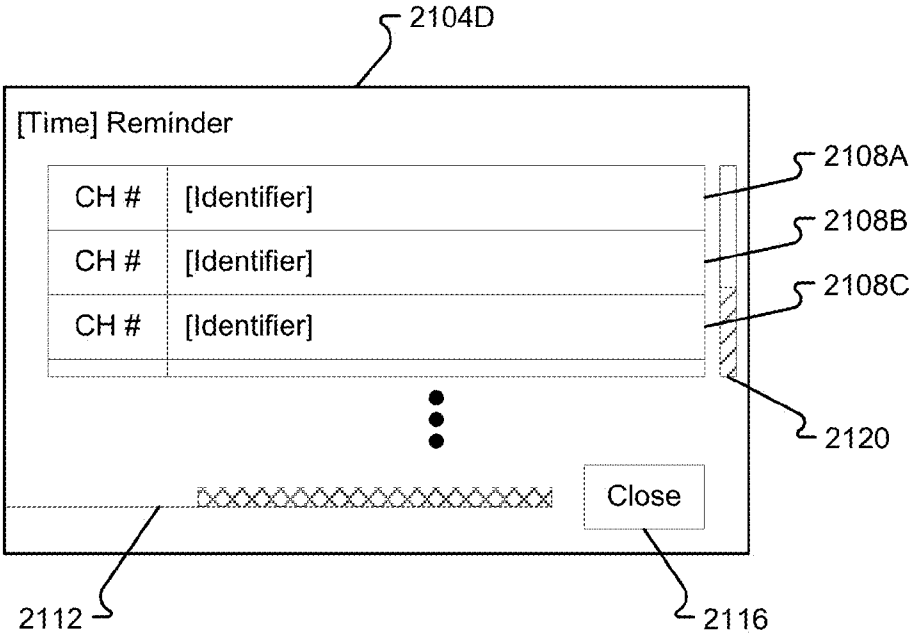


Fig. 21D

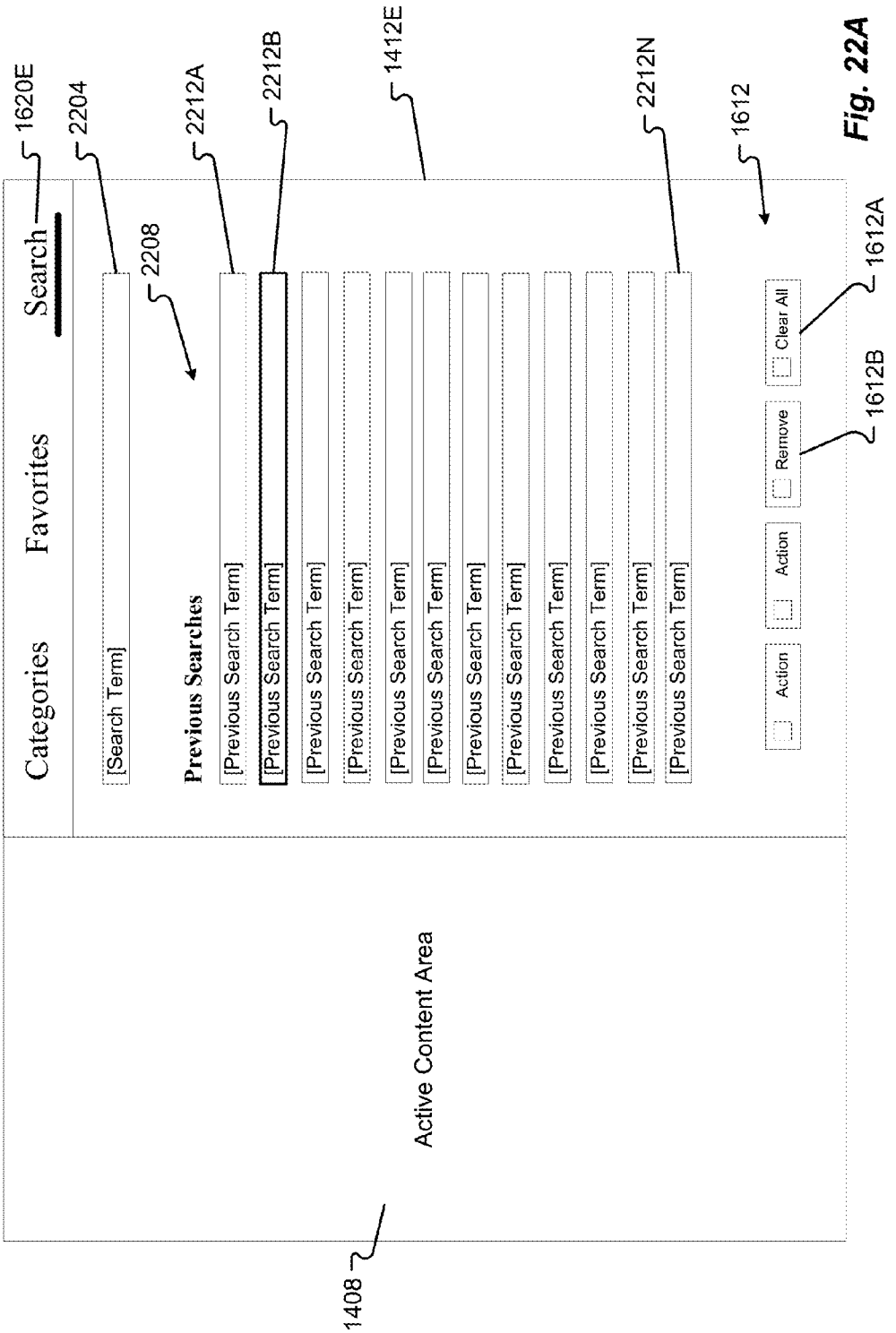

1620E
2204
2212A
2212B
1412E
2212N
1612
Search
Favorites
Categories
[Search Term]
2208
Previous Searches
[Previous Search Term]
Action
Action
Remove
Clear All
1612A
1612B
Active Content Area
1408

Fig. 22A

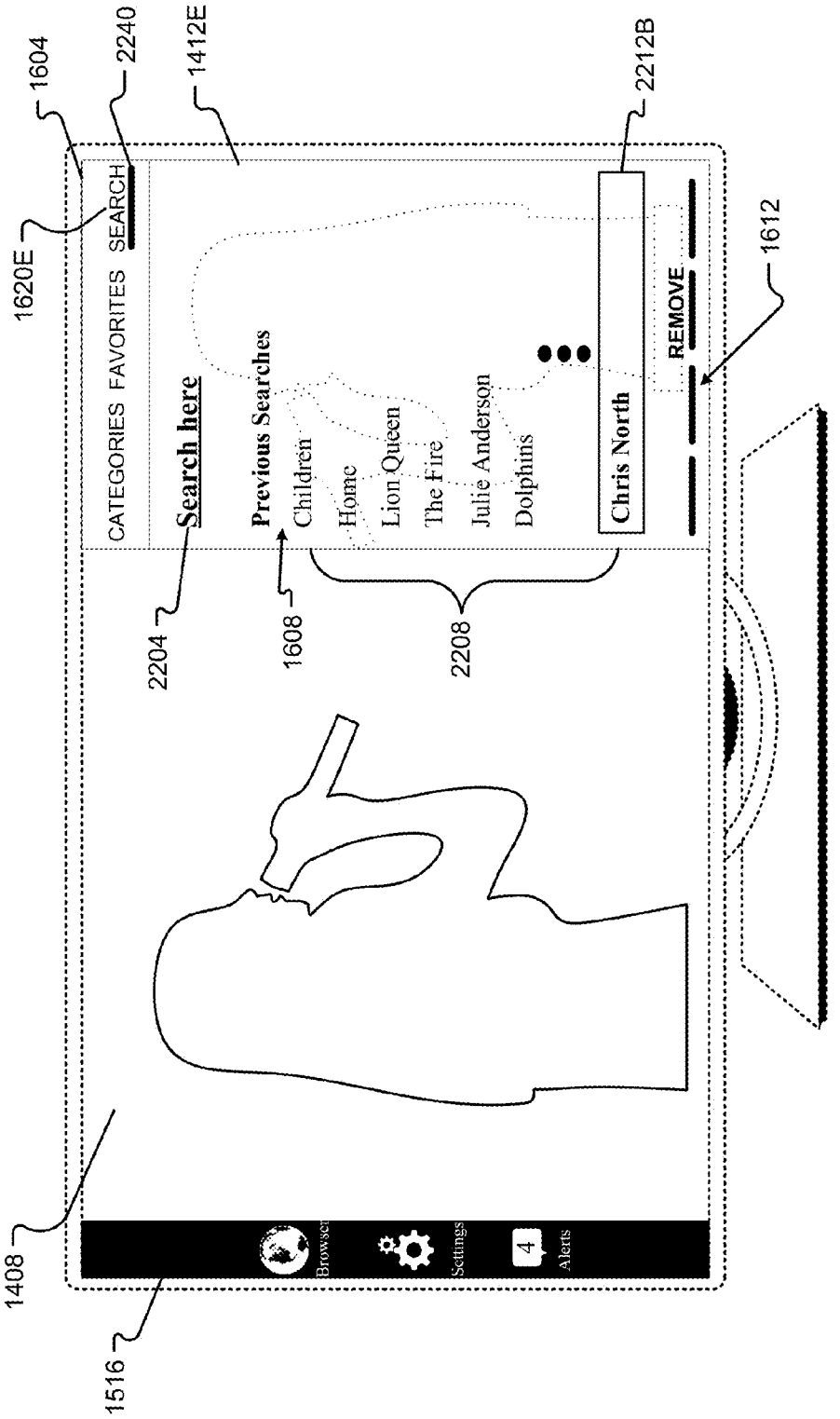

1604
2240
1412E
2212B
1620E
SEARCH
CATEGORIES FAVORITES
Search here
Previous Searches
Children
Home
Lion Queen
The Fire
Julie Anderson
Dolphins
Chris North
REMOVE
1612
2204
1608
2208
1408
1516
Browser
Settings
4
Alerts

Fig. 22B

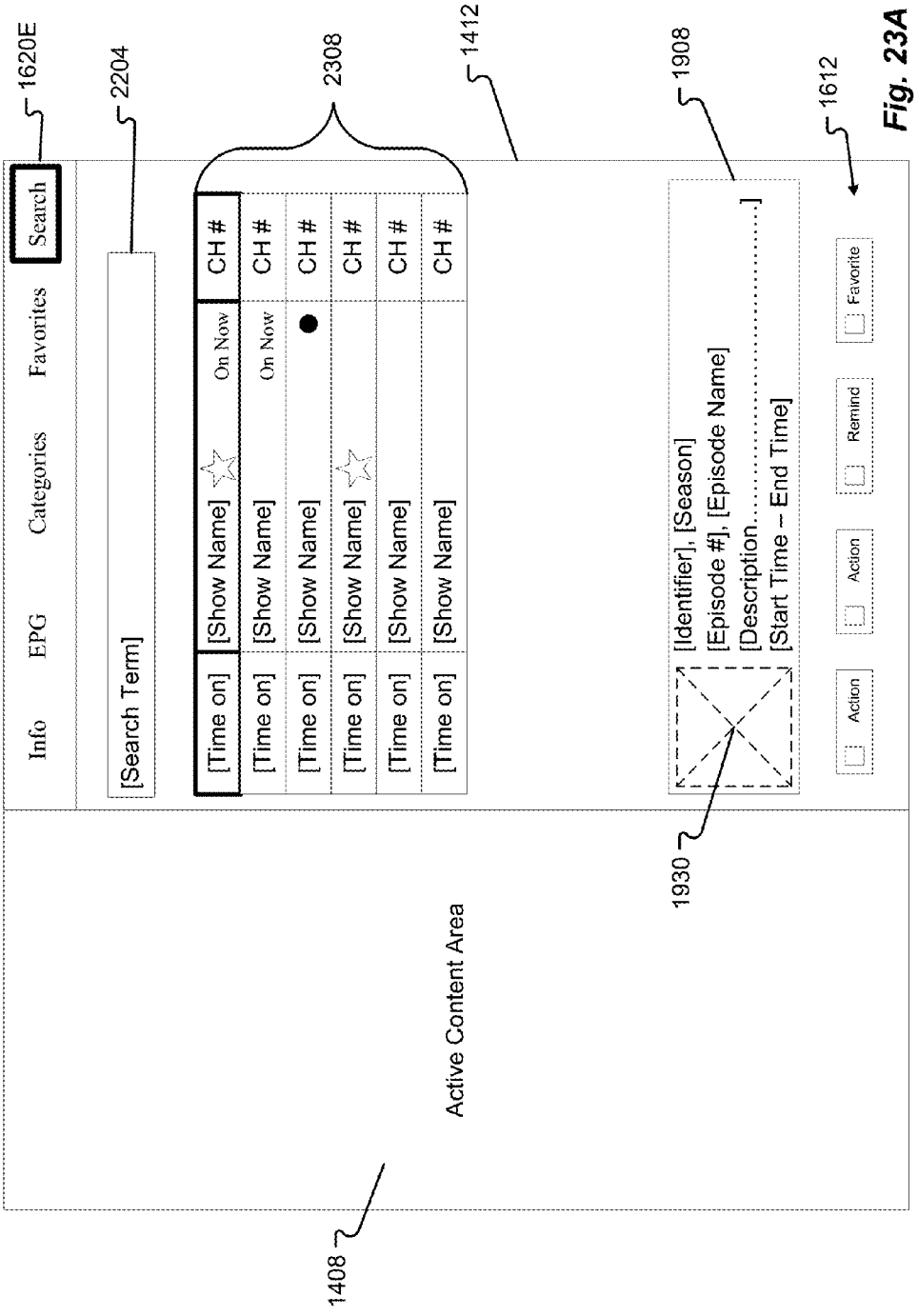

1620E
2204
2308
1412
1908
1612
Info
EPG
Categories
Favorites
Search
[Search Term]
[Time on] [Show Name] On Now CH #
[Time on] [Show Name] On Now CH #
[Time on] [Show Name] CH #
[Time on] [Show Name] CH #
[Time on] [Show Name] CH #
[Time on] [Show Name] CH #
[Identifier], [Season]
[Episode #], [Episode Name]
[Description.....]
[Start Time – End Time]
Action
Action
Remind
Favorite
1930
Active Content Area
1408

Fig. 23A

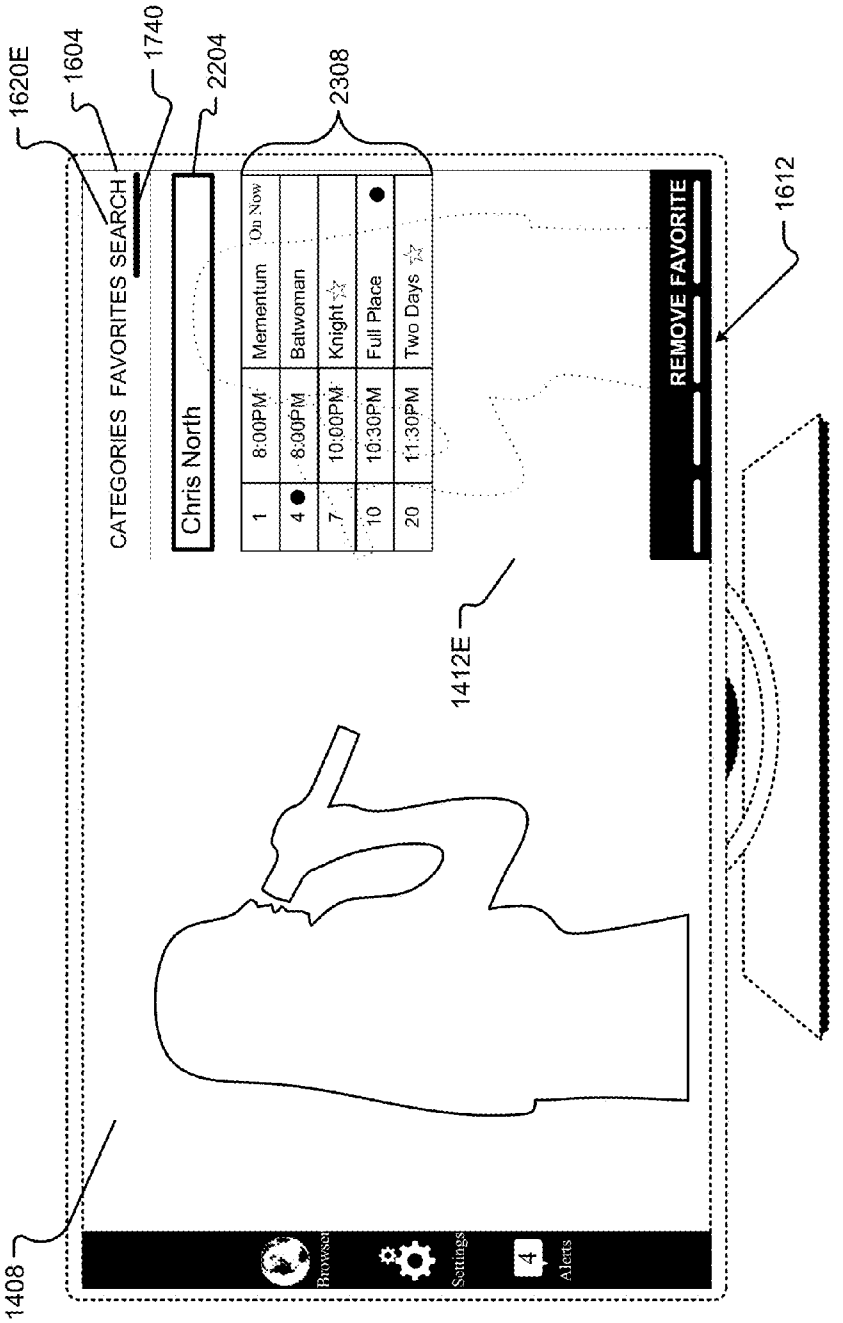

1620E
1604
1740
2204
2308
CATEGORIES FAVORITES SEARCH
Chris North
1 8:00PM Mementum On Now
4 8:00PM Batwoman
7 10:00PM Knight
10 10:30PM Full Place
20 11:30PM Two Days
REMOVE FAVORITE
1612
1412E
1408
Browser
Settings
Alerts

Fig. 23B

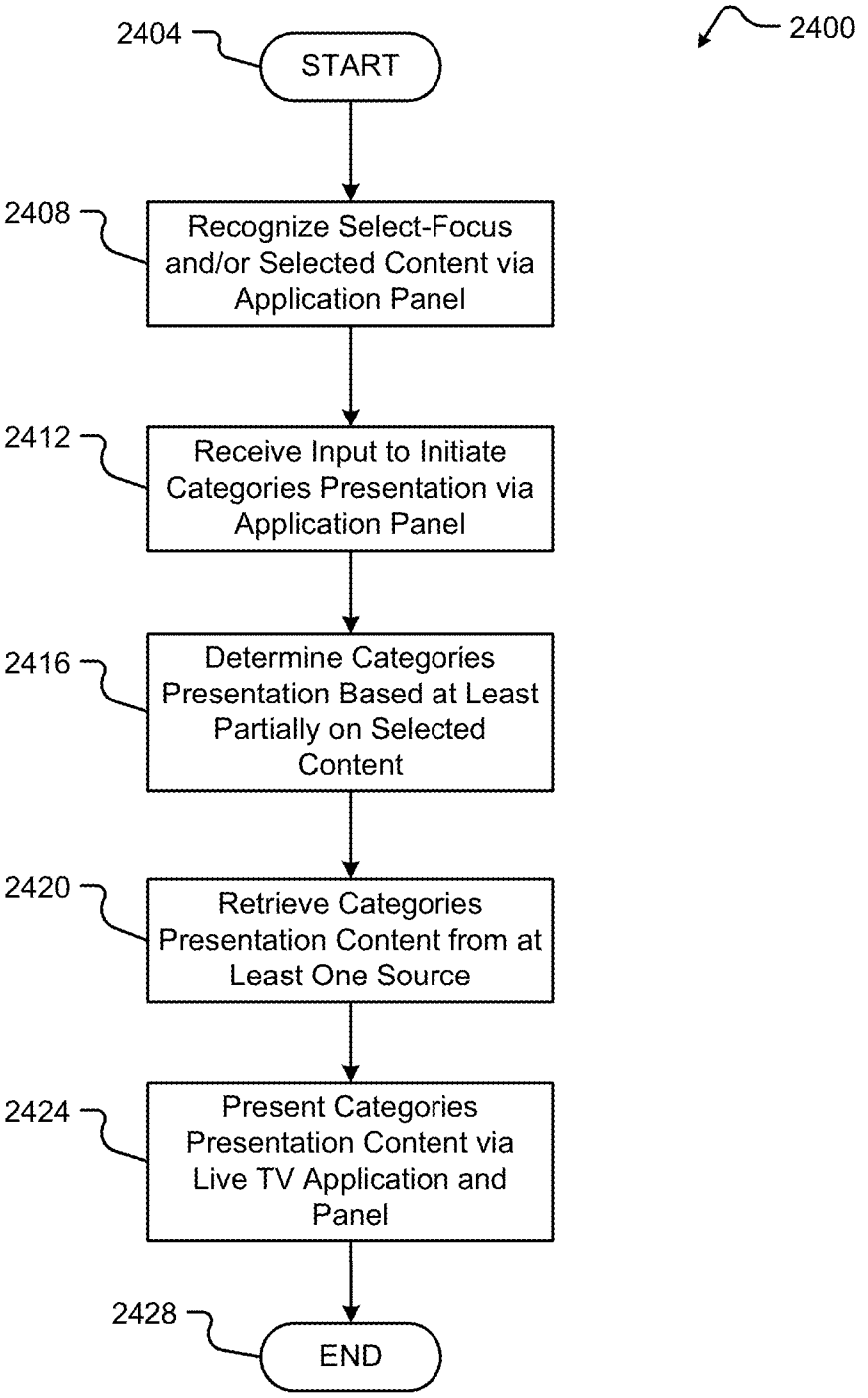

2400
2404
START
2408
Recognize Select-Focus and/or Selected Content via Application Panel
2412
Receive Input to Initiate Categories Presentation via Application Panel
2416
Determine Categories Presentation Based at Least Partially on Selected Content
2420
Retrieve Categories Presentation Content from at Least One Source
2424
Present Categories Presentation Content via Live TV Application and Panel
2428
END

Fig. 24

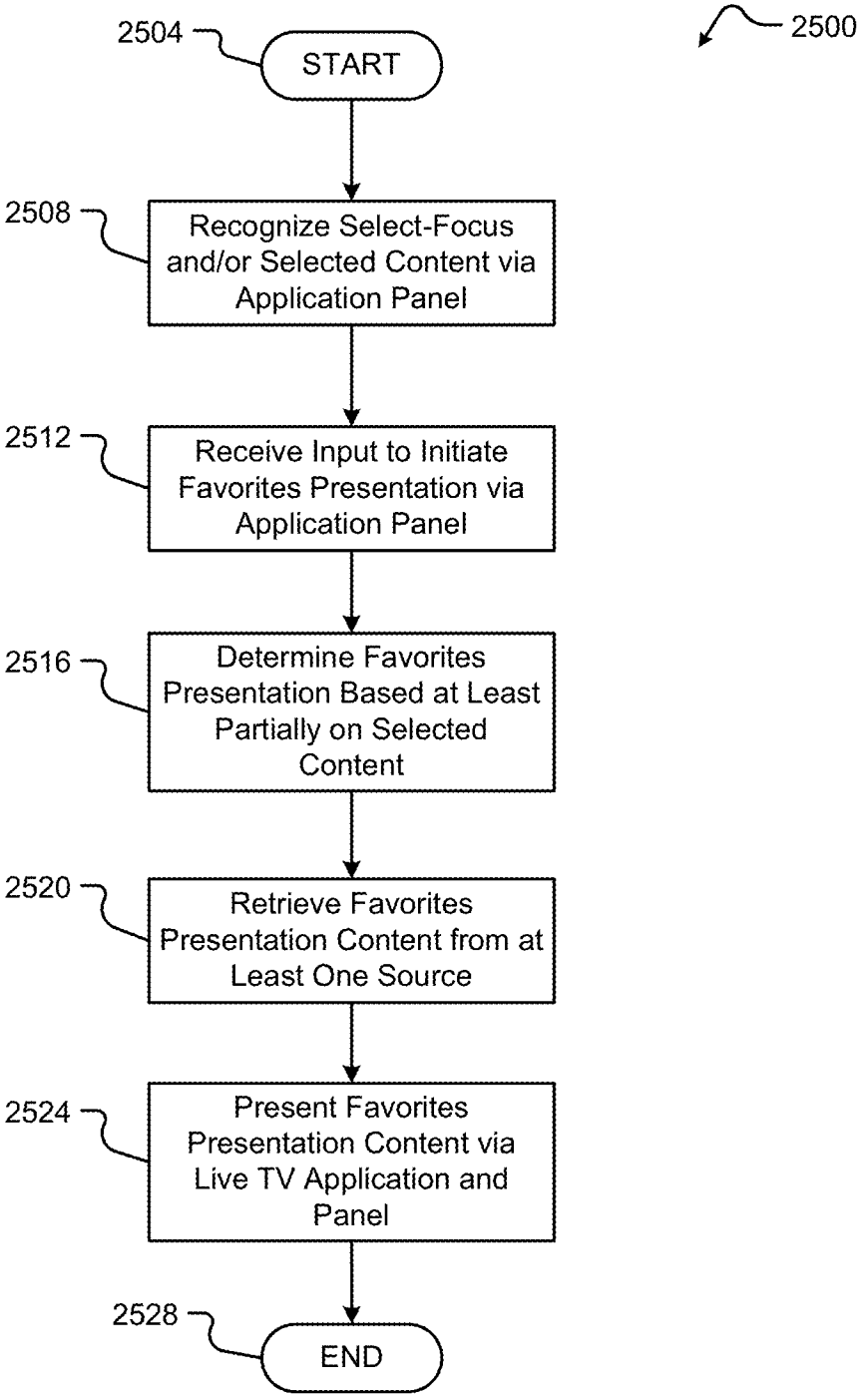

2500
2504
START
2508
Recognize Select-Focus and/or Selected Content via Application Panel
2512
Receive Input to Initiate Favorites Presentation via Application Panel
2516
Determine Favorites Presentation Based at Least Partially on Selected Content
2520
Retrieve Favorites Presentation Content from at Least One Source
2524
Present Favorites Presentation Content via Live TV Application and Panel
2528
END

Fig. 25

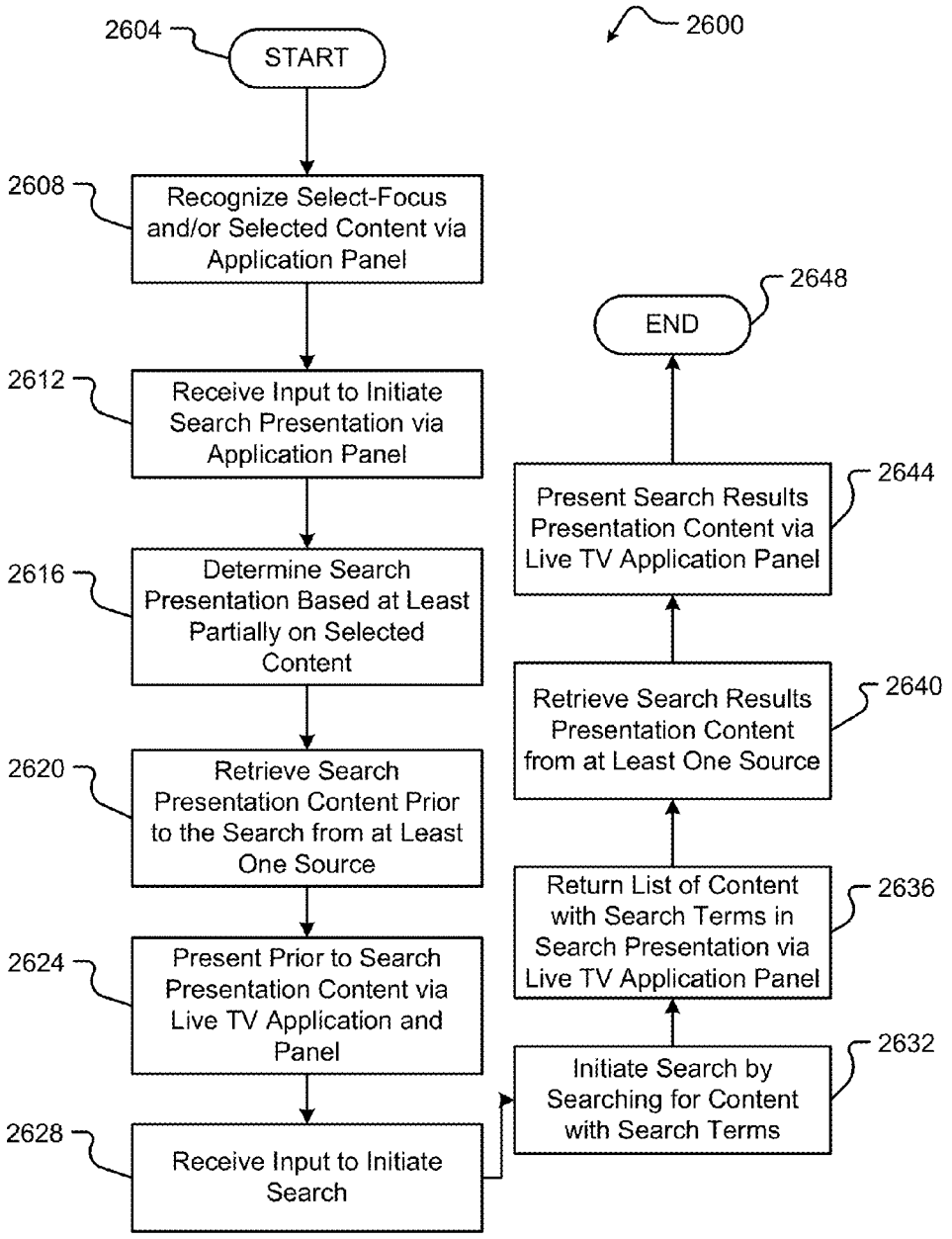

2600
2604
START
2608
Recognize Select-Focus and/or Selected Content via Application Panel
2612
Receive Input to Initiate Search Presentation via Application Panel
2616
Determine Search Presentation Based at Least Partially on Selected Content
2620
Retrieve Search Presentation Content Prior to the Search from at Least One Source
2624
Present Prior to Search Presentation Content via Live TV Application and Panel
2628
Receive Input to Initiate Search
2632
Initiate Search by Searching for Content with Search Terms
2636
Return List of Content with Search Terms in Search Presentation via Live TV Application Panel
2640
Retrieve Search Results Presentation Content from at Least One Source
2644
Present Search Results Presentation Content via Live TV Application Panel
2648
END

Fig. 26

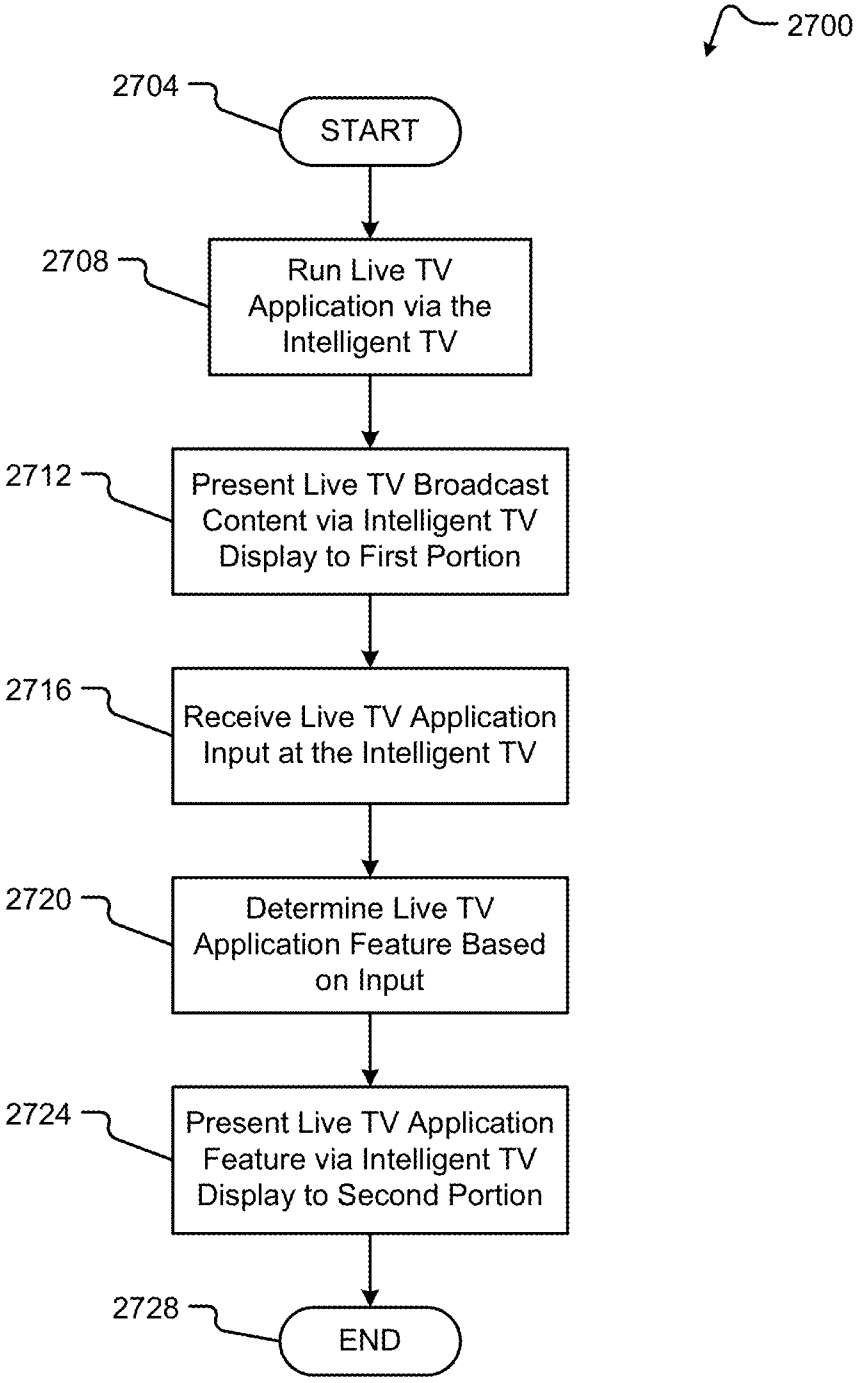

2700
2704
START
2708
Run Live TV Application via the Intelligent TV
2712
Present Live TV Broadcast Content via Intelligent TV Display to First Portion
2716
Receive Live TV Application Input at the Intelligent TV
2720
Determine Live TV Application Feature Based on Input
2724
Present Live TV Application Feature via Intelligent TV Display to Second Portion
2728
END

Fig. 27

PANEL USER INTERFACE FOR AN INTELLIGENT TELEVISION

CROSS REFERENCE TO RELATED APPLICATION

[0001] The present application claims the benefits of and priority, under 35 U.S.C. §119(e), to U.S. Provisional Application Ser. Nos. 61/684,672 filed Aug. 17, 2012, "Smart TV"; 61/702,650 filed Sep. 18, 2012, "Smart TV"; 61/697,710 filed Sep. 6, 2012, "Social TV"; 61/700,182 filed Sep. 12, 2012, "Social TV Roadmap"; 61/736,692 filed Dec. 13, 2012, "SmartTV"; 61/798,821 filed Mar. 15, 2013, "SmartTV"; 61/804,942 filed Mar. 25, 2013, "SmartTV"; 61/804,998 filed Mar. 25, 2013, "SmartTV"; 61/804,971 filed Mar. 25, 2013, "SmartTV"; 61/804,990 filed Mar. 25, 2013, "SmartTV"; 61/805,003 filed Mar. 25, 2013, "SmartTV"; 61/805,053 filed Mar. 25, 2013, "SmartTV"; 61/805,030 filed Mar. 25, 2013, "SmartTV"; 61/805,027 filed Mar. 25, 2013, "SmartTV"; 61/805,042 filed Mar. 25, 2013, "SmartTV"; and 61/805,038 filed Mar. 25, 2013, "SmartTV." Each of the aforementioned documents is incorporated herein by reference in their entirety for all that they teach and for all purposes.

BACKGROUND

[0002] Consolidation of device features or technological convergence is in an increasing trend. Technological convergence describes the tendency for different technological systems to evolve toward performing similar tasks. As people use more devices, the need to carry those devices, charge those devices, update software on those devices, etc. becomes more cumbersome. To compensate for these problems, technology companies have been integrating features from different devices into one or two multi-functional devices. For example, cellular phones are now capable of accessing the Internet, taking photographs, providing calendar functions, etc.

[0003] The consolidation trend is now affecting the design and functionality of devices generally used in the home. For example, audio receivers can access the Internet, digital video recorders can store or provide access to digital photographs, etc. The television in home audio/video systems remains a cornerstone device because the display function cannot be integrated into other devices. As such, consolidating home devices leads to integrating features and functionality into the television. The emergence of the Smart Television (Smart TV) is evidence of the trend to consolidate functionality into the television.

[0004] A Smart TV is generally conceived as a device that integrates access to the Internet and Web 2.0 features into television sets. The Smart TV represents the trend of technological convergence between computers and television sets. The Smart TV generally focuses on online interactive media, Internet TV, on-demand streaming media, and generally does not focus on traditional broadcast media. Unfortunately, most Smart TVs have yet to provide seamless and intuitive user interfaces for navigating and/or executing the various features of the Smart TV. As such, there are still issues with the consolidation of features and the presentation of these features in Smart TVs.

SUMMARY

[0005] There is a need for an Intelligent TV with intuitive user interfaces and with seamless user interaction capability. These and other needs are addressed by the various aspects, embodiments, and/or configurations of the present disclosure. Also, while the disclosure is presented in terms of exemplary embodiments, it should be appreciated that individual aspects of the disclosure can be separately claimed.

[0006] In some embodiments, a method is provided, comprising: presenting, via a display of an intelligent television (TV), live TV broadcast content, wherein the live TV broadcast content is presented to a first portion of the display; receiving an application panel input at the intelligent TV, wherein the application panel input corresponds to at least one of a categories input, a favorites input, and a search input; determining, by a processor associated with the intelligent TV and in response to receiving the application panel input, live TV application panel content that corresponds to a live TV application and the application panel input received; retrieving, from at least one source, the live TV application panel content; and presenting, via the display, the live TV application panel content to a second portion of the display, wherein the second portion of the display is associated with a live TV application panel, and wherein the live TV application panel overlaps at least a portion of the presented live TV broadcast content. In one embodiment, determining the live TV application panel content further comprises: referring to rules stored in a memory, wherein the rules include one or more application panel content fields mapped to at least one live TV application panel content type; comparing a live TV application panel content type associated with the presented live TV broadcast content with the one or more mapped application panel content fields; determining select application panel content fields from the one or more mapped application panel content fields; and including the select application panel content fields in the live TV application panel content for retrieval. In another embodiment, the live TV application panel content is retrieved from two or more signal sources and the at least one source is at least one of a local memory, a remote memory, a broadcast signal, and a memory located across a network. In a further embodiment, at least one of the live TV application panel content and the live TV application panel is at least partially transparent, and wherein the presented live TV broadcast content is visible beneath the presented live TV application panel content. Thus, a size of the first portion is maintained upon presenting the live TV application panel content via the second portion of the display. In additional embodiments, the presented live TV broadcast content includes at least one of a movie, a TV program, a sport event, a TV special, and a radio program, and wherein the presented live TV application panel content includes at least one of a category, a channel identifier, a thumbnail graphic, an electronic program guide (EPG), a favorite, and a search term.

[0007] In another embodiment, a tangible, non-transitory computer readable medium is provided having instructions stored thereon that, when executed by a processor, perform the method comprising: presenting, via a display of an intelligent television (TV), live TV broadcast content, wherein the live TV broadcast content is presented to a first portion of the display; receiving an application panel input at the intelligent TV, wherein the application panel input corresponds to at least one of a categories input, a favorites input, and a search input; determining, by a processor associated with the intelligent TV and in response to receiving the application panel input, live TV application panel content that corresponds to a live TV application and the application panel input received;

retrieving, from at least one source, the live TV application panel content; and presenting, via the display, the live TV application panel content to a second portion of the display, wherein the second portion of the display is associated with a live TV application panel, and wherein the live TV application panel overlaps at least a portion of the presented live TV broadcast content. In another embodiment, determining the live TV application panel content of the method further comprises: referring to rules stored in a memory, wherein the rules include one or more application panel content fields mapped to at least one live TV application panel content type; comparing a live TV application panel content type associated with the presented live TV broadcast content with the one or more mapped application panel content fields; determining select application panel content fields from the one or more mapped application panel content fields; and including the select application panel content fields in the live TV application panel content for retrieval.

[0008] In yet another embodiment, a system is provided, comprising: an intelligent television (TV) having a display and a tuner, wherein the tuner is configured to receive and convert broadcast content signals to be displayed by the display; an input device associated with the intelligent TV; a memory; and a microprocessor operable to: present, via a display of an intelligent television (TV), live TV broadcast content, wherein the live TV broadcast content is presented to a first portion of the display; receive an application panel input at the intelligent TV, wherein the application panel input corresponds to at least one of a categories input, a favorites input, and a search input; determine, by a processor associated with the intelligent TV and in response to receiving the application panel input, live TV application panel content that corresponds to a live TV application and the application panel input received; retrieve, from at least one source, the live TV application panel content; and present, via the display, the live TV application panel content to a second portion of the display, wherein the second portion of the display is associated with a live TV application panel, and wherein the live TV application panel overlaps at least a portion of the presented live TV broadcast content. In some embodiments, the system may further comprise a microprocessor operable to: refer to rules stored in a memory, wherein the rules include one or more application panel content fields mapped to at least one live TV application panel content type; compare a live TV application panel content type associated with the presented live TV broadcast content with the one or more mapped application panel content fields; determine select application panel content fields from the one or more mapped application panel content fields; and include the select application panel content fields in the live TV application panel content for retrieval. In yet another embodiment, at least one of the live TV application panel content and the live TV application panel is at least partially transparent, and wherein the presented live TV broadcast content is visible beneath the presented live TV application panel content.

[0009] The present disclosure can provide a number of advantages depending on the particular aspect, embodiment, and/or configuration. Among other things, embodiments of the present disclosure allow a user to interface with live television content via a live TV application panel of an intelligent TV. More specifically, a user may be provided with categories, favorites, search, navigation, and/or notification options that are associated with or enable functions of the intelligent TV.

[0010] The current disclosure provides a panel system that aides in the navigation of an intelligent television. For example, a panel system is provided that satisfies the following: allows a user to watch a primary program while also using the features of the panel system. Moreover, information may be displayed in one content area that specifically depends on or contextually dependent on the primary program or active content area. The panel system allows for a same pattern of navigation across different live TV content—all resulting in a unified experience for a user. An application panel is provided that allows quick access to core functionality, provides an unobtrusive design, which allows for the active media to always be in view, provides a consistent user experience across all applications, and provides focused contextual content.

[0011] These and other advantages will be apparent from the disclosure.

[0012] The phrases "at least one", "one or more", and "and/or" are open-ended expressions that are both conjunctive and disjunctive in operation. For example, each of the expressions "at least one of A, B and C", "at least one of A, B, or C", "one or more of A, B, and C", "one or more of A, B, or C" and "A, B, and/or C" means A alone, B alone, C alone, A and B together, A and C together, B and C together, or A, B and C together.

[0013] The term "a" or "an" entity refers to one or more of that entity. As such, the terms "a" (or "an"), "one or more" and "at least one" can be used interchangeably herein. It is also to be noted that the terms "comprising", "including", and "having" can be used interchangeably.

[0014] The term "automatic" and variations thereof, as used herein, refers to any process or operation done without material human input when the process or operation is performed. However, a process or operation can be automatic, even though performance of the process or operation uses material or immaterial human input, if the input is received before performance of the process or operation. Human input is deemed to be material if such input influences how the process or operation will be performed. Human input that consents to the performance of the process or operation is not deemed to be "material."

[0015] A "blog" (a blend of the term web log) is a type of website or part of a website supposed to be updated with new content from time to time. Blogs are usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order.

[0016] A "blogging service" is a blog-publishing service that allows private or multi-user blogs with time-stamped entries.

[0017] The term "cable TV" refers to a system of distributing television programs to subscribers via radio frequency (RF) signals transmitted through coaxial cables or light pulses through fiber-optic cables. This contrasts with traditional broadcast television (terrestrial television) in which the television signal is transmitted over the air by radio waves and received by a television antenna attached to the television.

[0018] The term "channel" or "television channel," as used herein, can be a physical or virtual channel over which a television station or television network is distributed. A physical cannel in analog television can be an amount of bandwidth, typically 6, 7, or 8 MHz, that occupies a predetermine channel frequency. A virtual channel is a representa-

tion, in cable or satellite television, of a data stream for a particular television media provider (e.g., CDS, TNT, HBO, etc.).

[0019] The term "computer-readable medium," as used herein, refers to any tangible storage and/or transmission medium that participate in providing instructions to a processor for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, NVRAM, or magnetic or optical disks. Volatile media includes dynamic memory, such as main memory. Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, magneto-optical medium, a CD-ROM, any other optical medium, punch cards, paper tape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, a solid state medium like a memory card, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read. A digital file attachment to e-mail or other self-contained information archive or set of archives is considered a distribution medium equivalent to a tangible storage medium. When the computer-readable media is configured as a database, it is to be understood that the database may be any type of database, such as relational, hierarchical, object-oriented, and/or the like. Accordingly, the disclosure is considered to include a tangible storage medium or distribution medium and prior art-recognized equivalents and successor media, in which the software implementations of the present disclosure are stored.

[0020] The term "enhanced television" (ETV) refers to a collection of specifications developed under the OpenCable project of CableLabs (Cable Television Laboratories, Inc.) that define an ETV Application consisting of resources (files) adhering to the Enhanced TV Binary Interchange Format (EBIF) content format as well as PNG images, JPEG images, and PFR downloadable fonts. An ETV application is normally delivered through an MPEG transport stream and accompanies an MPEG program containing video and audio elementary streams. An "ETV Application" is a collection of resources (files) that include one or more EBIF resources that represent viewable information in the form of pages. Two forms of a given ETV Application may be distinguished: (1) an interchange form and (2) an execution form. The interchange form of an ETV Application consists of the resources (files) that represent the compiled application prior to its actual execution by an ETV User Agent. The execution form of an ETV Application consists of the stored, and possibly mutated forms of these resources while being decoded, presented, and executed by an ETV User Agent. An "ETV User Agent" is a software component that operates on a set-top box, a television, or any other computing environment capable of receiving, decoding, presenting, and processing an ETV Application. This component usually provides, along with its host hardware environment, one or more mechanisms for an end-user to navigate and interact with the multimedia content represented by ETV Applications.

[0021] The term "high-definition television" (HDTV) provides a resolution that is substantially higher than that of standard-definition television. HDTV may be transmitted in various formats, namely 1080 p-1920×1080 p: 2,073,600 pixels (approximately 2.1 megapixels) per frame, 1080 i (which is typically either 1920×1080 i: 1,036,800 pixels (approximately 1 megapixel) per field or 2,073,600 pixels (approximately 2.1 megapixels) per frame or 1440×1080 i:[1] 777,600 pixels (approximately 0.8 megapixels) per field or 1,555,200 pixels (approximately 1.6 megapixels) per frame), or 720 p-1280×720 p: 921,600 pixels (approximately 0.9 megapixels) per frame. As will be appreciated, "frame size" in pixels is defined as number of horizontal pixels×number of vertical pixels, for example 1280×720 or 1920×1080. Often the number of horizontal pixels is implied from context and is omitted, as in the case of 720 p and 1080 p, "scanning system" is identified with the letter "p" for progressive scanning or "i" for interlaced scanning, and "frame rate" is identified as number of video frames per second. For interlaced systems an alternative form of specifying number of fields per second is often used. For purposes of this disclosure, "high-definition television" is deemed to include other high-definition analog or digital video formats, including ultra high definition television.

[0022] The term "internet television" (otherwise known as Internet TV, Online Television, or Online TV) is the digital distribution of television content via the Internet. It should not be confused with Web television—short programs or videos created by a wide variety of companies and individuals, or Internet protocol television (IPTV)—an emerging internet technology standard for use by television broadcasters. Internet Television is a general term that covers the delivery of television shows and other video content over the internet by video streaming technology, typically by major traditional television broadcasters. It does not describe a technology used to deliver content (see Internet protocol television). Internet television has become very popular through services such as RTÉ Player in Ireland; BBC iPlayer, 4oD, ITV Player (also STV Player and UTV Player) and Demand Five in the United Kingdom; Hulu in the United States; Nederland 24 in the Netherlands; ABC iview and Australia Live TV in Australia; Tivibu in Turkey; and iWanTV! in the Philippines.

[0023] The term "internet protocol television" (IPTV) refers to a system through which television services are delivered using the Internet protocol suite over a packet-switched network such as the Internet, instead of being delivered through traditional terrestrial, satellite signal, and cable television formats. IPTV services may be classified into three main groups, namely live television, with or without interactivity related to the current TV show; time-shifted television: catch-up TV (replays a TV show that was broadcast hours or days ago), start-over TV (replays the current TV show from its beginning); and video on demand (VOD): browse a catalog of videos, not related to TV programming. IPTV is distinguished from Internet television by its on-going standardization process (e.g., European Telecommunications Standards Institute) and preferential deployment scenarios in subscriber-based telecommunications networks with high-speed access channels into end-user premises via set-top boxes or other customer-premises equipment.

[0024] The term "silo," as used herein, can be a logical representation of an input, source, or application. An input can be a device or devices (e.g., DVD, VCR, etc.) electrically connected to the television through a port (e.g., HDMI, video/audio inputs, etc.) or through a network (e.g., LAN WAN, etc.). Rather than a device or devices, the input could be configured as an electrical or physical connection to one or more devices. A source, particularly a content source, can be a data service that provides content (e.g., a media center, a file system, etc.). An application can be a software service that provides a particular type of function (e.g., Live TV, Video on

Demand, User Applications, photograph display, etc.). The silo, as a logical representation, can have an associated definition or property, such as a setting, feature, or other characteristic.

[0025] The term "panel," as used herein, can mean a user interface displayed in at least a portion of the display. The panel may be interactive (e.g., accepts user input) or informational (e.g., does not accept user input). A panel may be translucent whereby the panel obscures but does not mask the underlying content being displayed in the display. Panels may be provided in response to a user input from a button or remote control interface.

[0026] The term "screen," as used herein, refers to a physical structure that includes one or more hardware components that provide the device with the ability to render a user interface and/or receive user input. A screen can encompass any combination of gesture capture region, a touch sensitive display, and/or a configurable area. The device can have one or more physical screens embedded in the hardware. However a screen may also include an external peripheral device that may be attached and detached from the device. In embodiments, multiple external devices may be attached to the device. For example, another screen may be included with a remote control unit that interfaces with the Intelligent TV.

[0027] The term "media" of "multimedia," as used herein, refers to content that may assume one of a combination of different content forms. Multimedia can include one or more of, but is not limited to, text, audio, still images, animation, video, or interactivity content forms.

[0028] The term "Intelligent TV," as used herein, refers to a television configured to provide one or more intuitive user interfaces and interactions based on a unique application platform and architecture. The Intelligent TV utilizes processing resources associated with the television to integrate Internet connectivity with parallel application functionality. This integration allows a user the ability to intuitively access various sources of media and content (e.g., Internet, over-the-top content, on-demand streaming media, over-the-air broadcast media, and/or other forms of information) via the Intelligent TV in a quick and efficient manner. Although the Intelligent TV disclosed herein may comprise one or more components of a "smart TV," it is an aspect of the Intelligent TV to provide expanded intuitive user interaction capability for navigating and executing the various features of the television. A "smart TV," sometimes referred to as a connected TV, or hybrid TV (not to be confused with IPTV, Internet TV, or with Web TV), describes a trend of integration of the Internet and Web 2.0 features into television sets and set-top boxes, as well as the technological convergence between computers and these television sets/set-top boxes. The smart TV devices have a higher focus on online interactive media, Internet TV, over-the-top content, as well as on-demand streaming media, and less focus on traditional broadcast media than traditional television sets and set-top boxes. As can be appreciated, the Intelligent TV encompasses a broader range of technology than that of the smart TV defined above.

[0029] The term "television" is a telecommunication medium, device (or set) or set of associated devices, programming, and/or transmission for transmitting and receiving moving images that can be monochrome (black-and-white) or colored, with or without accompanying sound. Different countries use one of the three main video standards for TVs, namely PAL, NTSC or SECAM. Television is most commonly used for displaying broadcast television signals. The broadcast television system is typically disseminated via radio transmissions on designated channels in the 54-890 MHz frequency band. A common television set comprises multiple internal electronic circuits, including those for receiving and decoding broadcast signals. A visual display device which lacks a tuner is properly called a video monitor, rather than a television. A television may be different from other monitors or displays based on the distance maintained between the user and the television when the user watches the media and based on the inclusion of a tuner or other electronic circuit to receive the broadcast television signal.

[0030] The term "Live TV," as used herein, refers to a television production broadcast in real-time, as events happen, in the present.

[0031] The term "standard-definition television" (SDTV) is a television system that uses a resolution that is not considered to be either high-definition television (HDTV 720 p and 1080 p) or enhanced-definition television (EDTV 480 p). The two common SDTV signal types are 576 i, with 576 interlaced lines of resolution, derived from the European-developed PAL and SECAM systems; and 480 i based on the American National Television System Committee NTSC system. In the US, digital SDTV is broadcast in the same 4:3 aspect ratio as NTSC signals. However, in other parts of the world that used the PAL or SECAM analog standards, standard-definition television is now usually shown with a 16:9 aspect ratio. Standards that support digital SDTV broadcast include DVB, ATSC, and ISDB. Television signals are transmitted in digital form, and their pixels have a rectangular shape, as opposed to square pixels that are used in modern computer monitors and modern implementations of HDTV. The table below summarizes pixel aspect ratios for various kinds of SDTV video signal. Note that the actual image (be it 4:3 or 16:9) is always contained in the center 704 horizontal pixels of the digital frame, regardless of how many horizontal pixels (704 or 720) are used. In case of digital video signal having 720 horizontal pixels, only the center 704 pixels contain actual 4:3 or 16:9 image, and the 8 pixel wide stripes from either side are called nominal analogue blanking and should be discarded before displaying the image. Nominal analogue blanking should not be confused with overscan, as overscan areas are part of the actual 4:3 or 16:9 image.

[0032] The term "video on demand (VOD)," as used herein, refers to systems and processes which allow users to select and watch/listen to video or audio content on demand. VOD systems may stream content, to view the content in real time, or download the content to a storage medium for viewing at a later time.

[0033] The term "satellite positioning system receiver" refers to a wireless receiver or transceiver to receive and/or send location signals from and/or to a satellite positioning system, such as the Global Positioning System ("GPS") (US), GLONASS (Russia), Galileo positioning system (EU), Compass navigation system (China), and Regional Navigational Satellite System (India).

[0034] The term "display," as used herein, refers to at least a portion of a screen used to display the output of the television to a user. A display may be a single-screen display or a multi-screen display, referred to as a composite display. A composite display can encompass the touch sensitive display of one or more screens. A single physical screen can include multiple displays that are managed as separate logical displays. Thus, different content can be displayed on the separate displays although part of the same physical screen.

[0035] The term "displayed image," as used herein, refers to an image produced on the display. A typical displayed image is a television broadcast or menu. The displayed image may occupy all or a portion of the display.

[0036] The term "display orientation," as used herein, refers to the way in which a rectangular display is oriented by a user for viewing. The two most common types of display orientation are portrait and landscape. In landscape mode, the display is oriented such that the width of the display is greater than the height of the display (such as a 4:3 ratio, which is 4 units wide and 3 units tall, or a 16:9 ratio, which is 16 units wide and 9 units tall). Stated differently, the longer dimension of the display is oriented substantially horizontal in landscape mode while the shorter dimension of the display is oriented substantially vertical. In the portrait mode, by contrast, the display is oriented such that the width of the display is less than the height of the display. Stated differently, the shorter dimension of the display is oriented substantially horizontal in the portrait mode while the longer dimension of the display is oriented substantially vertical.

[0037] The term "module," as used herein, refers to any known or later developed hardware, software, firmware, artificial intelligence, fuzzy logic, or combination of hardware and software that is capable of performing the functionality associated with that element.

[0038] The terms "determine," "calculate," and "compute," and variations thereof, as used herein, are used interchangeably and include any type of methodology, process, mathematical operation, or technique.

[0039] The term "touch screen" or "touchscreen" refer to screen that can receive user contact or other tactile input, such as a stylus. The touch screen may sense user contact in a number of different ways, such as by a change in an electrical parameter (e.g., resistance or capacitance), acoustic wave variations, infrared radiation proximity detection, light variation detection, and the like. In a resistive touch screen, for example, normally separated conductive and resistive metallic layers in the screen pass an electrical current. When a user touches the screen, the two layers make contact in the contacted location, whereby a change in electrical field is noted and the coordinates of the contacted location calculated. In a capacitive touch screen, a capacitive layer stores electrical charge, which is discharged to the user upon contact with the touch screen, causing a decrease in the charge of the capacitive layer. The decrease is measured, and the contacted location coordinates determined. In a surface acoustic wave touch screen, an acoustic wave is transmitted through the screen, and the acoustic wave is disturbed by user contact. A receiving transducer detects the user contact instance and determines the contacted location coordinates.

[0040] The term "web television" is original television content produced for broadcast via the World Wide Web. Some major distributors of web television are YouTube, Myspace, Newgrounds, Blip.tv, and Crackle.

[0041] The terms "instant message" and "instant messaging" refer to a form of real-time text communication between two or more people, typically based on typed text.

[0042] The term "internet search engine" refers to a web search engine designed to search for information on the World Wide Web and FTP servers. The search results are generally presented in a list of results often referred to as SERPS, or "search engine results pages". The information may consist of web pages, images, information, and other types of files. Some search engines also mine data available in databases or open directories. Web search engines work by storing information about many web pages, which they retrieve from the html itself. These pages are retrieved by a Web crawler (sometimes also known as a spider)—an automated Web browser which follows every link on the site. The contents of each page are then analyzed to determine how it should be indexed (for example, words are extracted from the titles, headings, or special fields called meta tags). Data about web pages are stored in an index database for use in later queries. Some search engines, such as Google™, store all or part of the source page (referred to as a cache) as well as information about the web pages, whereas others, such as AltaVista™, store every word of every page they find.

[0043] The terms "online community," "e-community," and "virtual community" mean a group of people that primarily interact via a computer network, rather than face to face, for social, professional, educational, or other purposes. The interaction can use a variety of media formats, including wikis, blogs, chat rooms, Internet forums, instant messaging, email, and other forms of electronic media. Many media formats are used in social software separately or in combination, including text-based chatrooms and forums that use voice, video text, or avatars.

[0044] The term "remote control" refers to a component of an electronics device, most commonly a television set, DVD player and/or home theater system for operating the device wirelessly, typically from a short line-of-sight distance. Remote control normally uses infrared and/or radio frequency (RF) signaling and can include WiFi, wireless USB, Bluetooth™ connectivity, motion sensor enabled capabilities and/or voice control. A touchscreen remote control is a handheld remote control device which uses a touchscreen user interface to replace most of the hard, built-in physical buttons used in normal remote control devices.

[0045] The term "satellite TV" refers to television programming delivered by the means of communication satellites and received by an outdoor antenna, usually a parabolic reflector generally referred to as a satellite dish, and as far as household usage is concerned, a satellite receiver either in the form of an external set-top box or a satellite tuner module built into a TV set.

[0046] The term "social network service" is a service provider that builds online communities of people, who share interests and/or activities, or who are interested in exploring the interests and activities of others. Most social network services are web-based and provide a variety of ways for users to interact, such as e-mail and instant messaging services.

[0047] The term "social network" refers to a web-based social network.

[0048] The term "gesture" refers to a user action that expresses an intended idea, action, meaning, result, and/or outcome. The user action can include manipulating a device (e.g., opening or closing a device, changing a device orientation, moving a trackball or wheel, etc.), movement of a body part in relation to the device, movement of an implement or tool in relation to the device, audio inputs, etc. A gesture may be made on a device (such as on the screen) or with the device to interact with the device.

[0049] The term "gesture capture" refers to a sense or otherwise a detection of an instance and/or type of user gesture. The gesture capture can occur in one or more areas of the screen. A gesture region can be on the display, where it may be referred to as a touch sensitive display or off the display where it may be referred to as a gesture capture area.

[0050] The term "electronic address" refers to any contactable address, including a telephone number, instant message handle, e-mail address, Universal Resource Locator (URL), Universal Resource Identifier (URI), Address of Record (AOR), electronic alias in a database, like addresses, and combinations thereof.

[0051] It shall be understood that the term "means," as used herein, shall be given its broadest possible interpretation in accordance with 35 U.S.C., Section 112(f). Accordingly, a claim incorporating the term "means" shall cover all structures, materials, or acts set forth herein, and all of the equivalents thereof. Further, the structures, materials or acts and the equivalents thereof shall include all those described in the summary of the invention, brief description of the drawings, detailed description, abstract, and claims themselves.

[0052] The preceding is a simplified summary of the disclosure to provide an understanding of some aspects of the disclosure. This summary is neither an extensive nor exhaustive overview of the disclosure and its various aspects, embodiments, and/or configurations. It is intended neither to identify key or critical elements of the disclosure nor to delineate the scope of the disclosure but to present selected concepts of the disclosure in a simplified form as an introduction to the more detailed description presented below. As will be appreciated, other aspects, embodiments, and/or configurations of the disclosure are possible utilizing, alone or in combination, one or more of the features set forth above or described in detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0053] FIG. **1**A includes a first view of an embodiment of an environment of an intelligent television;

[0054] FIG. **1**B includes a second view of an embodiment of an environment of an intelligent television;

[0055] FIG. **2**A includes a first view of an embodiment of an intelligent television;

[0056] FIG. **2**B includes a second view of an embodiment of an intelligent television;

[0057] FIG. **2**C includes a third view of an embodiment of an intelligent television;

[0058] FIG. **2**D includes a fourth view of an embodiment of an intelligent television;

[0059] FIG. **3** is a block diagram of an embodiment of the hardware of an intelligent television;

[0060] FIG. **4** is a block diagram of an embodiment of the intelligent television software and/or firmware;

[0061] FIG. **5** is a second block diagram of an embodiment of the intelligent television software and/or firmware;

[0062] FIG. **6** is a third block diagram of an embodiment of the intelligent television software and/or firmware;

[0063] FIG. **7** is a plan view of an embodiment of a handheld remote control;

[0064] FIG. **8** is a side view of an embodiment of a remote control;

[0065] FIG. **9**A is a bottom view of an embodiment of a remote control with a joystick in a neutral position;

[0066] FIG. **9**B is a bottom view of an embodiment of a remote control with the joystick in a lower position;

[0067] FIG. **9**C is a bottom view of an embodiment of a remote control with the joystick in an upper position;

[0068] FIG. **10** is a plan view of another embodiment of a handheld remote control;

[0069] FIG. **11**A is a front view of an embodiment of an Intelligent TV screen;

[0070] FIG. **11**B is a front view of an embodiment of an Intelligent TV screen;

[0071] FIG. **11**C is a front view of an embodiment of an Intelligent TV screen;

[0072] FIG. **12** is a block diagram of an embodiment of a handheld remote control of either FIG. **7** or **10**;

[0073] FIG. **13** is a block diagram of an embodiment of a content data service;

[0074] FIG. **14** is a first panel view of an embodiment of an Intelligent TV;

[0075] FIG. **15** illustrates a layout consistent with at least one embodiment of the present disclosure;

[0076] FIG. **16** is a block diagram of a second panel view of an Intelligent TV in accordance with embodiments of the disclosure;

[0077] FIG. **17**A is a block diagram of a first application panel view of an Intelligent TV in accordance with embodiments of the present disclosure;

[0078] FIG. **17**B an intelligent TV display layout consistent with at least one embodiment of the present disclosure;

[0079] FIG. **18**A depicts an embodiment of a compact electronic programming guide presented via an application panel of an Intelligent TV;

[0080] FIG. **18**B depicts a second embodiment of a compact electronic programming guide presented via an application panel of an Intelligent TV;

[0081] FIG. **19**A illustrates a second application panel view in accordance with embodiments of the present disclosure;

[0082] FIG. **19**B illustrates a third embodiment of a compact electronic programming guide presented via an application panel of an Intelligent TV;

[0083] FIG. **19**C illustrates a third application panel view in accordance with embodiments of the present disclosure;

[0084] FIG. **20**A depicts a first embodiment of a reminder dialog presentation in accordance with embodiments of the present disclosure;

[0085] FIG. **20**B depicts a second embodiment of a reminder dialog presentation in accordance with embodiments of the present disclosure;

[0086] FIG. **21**A depicts a first embodiment of a reminder dialog notification in accordance with embodiments of the present disclosure;

[0087] FIG. **21**B depicts a second embodiment of a reminder dialog notification in accordance with embodiments of the present disclosure;

[0088] FIG. **21**C depicts a third embodiment of a reminder dialog notification in accordance with embodiments of the present disclosure;

[0089] FIG. **21**D depicts a fourth embodiment of a reminder dialog notification in accordance with embodiments of the present disclosure;

[0090] FIG. **22**A illustrates a third live TV application panel view in accordance with embodiments of the present disclosure;

[0091] FIG. **22**B illustrates a fourth live TV application panel view in accordance with embodiments of the present disclosure;

[0092] FIG. **23**A illustrates a fifth live TV application panel view in accordance with embodiments of the present disclosure;

[0093] FIG. **23**B illustrates a sixth live TV application panel view in accordance with embodiments of the present disclosure;

[0094] FIG. **24** is a flow diagram depicting a categories panel presentation method in accordance with embodiments of the present disclosure;

[0095] FIG. **25** is a flow diagram depicting a favorites panel presentation method in accordance with embodiments of the present disclosure;

[0096] FIG. **26** is a flow diagram depicting a search panel presentation method in accordance with embodiments of the present disclosure; and

[0097] FIG. **27** is a flow diagram depicting a live TV presentation method in accordance with embodiments of the present disclosure.

[0098] In the appended figures, similar components and/or features may have the same reference label. Further, various components of the same type may be distinguished by following the reference label by a letter that distinguishes among the similar components. If only the first reference label is used in the specification, the description is applicable to any one of the similar components having the same first reference label irrespective of the second reference label.

DETAILED DESCRIPTION

[0099] Presented herein are embodiments of a device. The device can be a network-enabled telecommunications device, such as a television, an electronic visual display device, or other smart device. The device can include one or more screens, or sections of a screen, that are configured to receive and present information from a number of sources. Further, the device can receive user input in unique ways. The overall design and functionality of the device provides for an enhanced user experience making the device more useful and more efficient.

[0100] Intelligent Television (TV) Environment:

[0101] Referring to FIGS. **1**A and **1**B, an Intelligent TV, or device, **100** is shown. It is anticipated that the Intelligent TV **100** may be used for entertainment, business applications, social interaction, content creation and/or consumption, and to organize and control one or more other devices that are in communication with the Intelligent TV **100**. As can be appreciated, the Intelligent TV **100** can be used to enhance the user interactive experience whether at home or at work.

[0102] In some embodiments, the Intelligent TV **100** may be configured to receive and understand a variety of user and/or device inputs. For example, a user may interface with the Intelligent TV **100** via one or more physical or electrical controls, such as buttons, switches, touch sensitive screens/regions (e.g., capacitive touch, resistive touch, etc.), and/or other controls associated with the Intelligent TV **100**. In some cases, the Intelligent TV **100** may include the one or more interactive controls. Additionally or alternatively, the one or more controls may be associated with a remote control. The remote control may communicate with the Intelligent TV **100** via wired and/or wireless signals. As can be appreciated, the remote control may operate via radio frequency (RF), infrared (IR), and/or a specific wireless communications protocol (e.g., Bluetooth™, Wi-Fi, etc.). In some cases, the controls, whether physical or electrical, may be configured (e.g., programmed) to suit a user's preferences.

[0103] Additionally or alternatively, smart phones, tablets, computers, laptops, netbooks, and other smart devices may be used to control the Intelligent TV **100**. For example, control of the Intelligent TV **100** may be achieved via an application running on a smart device. The application may be configured to present a user with various Intelligent TV **100** controls in an intuitive user interface (UI) on a screen associated with the device **100**. The screen may be a touch sensitive, or touch screen, display. Selections input by a user via the UI may be configured to control the Intelligent TV **100** by the application accessing one or more communication features associated with the smart device.

[0104] It is anticipated that the Intelligent TV **100** can receive input via various input devices including, but in no way limited to, video, audio, radio, light, tactile, and combinations thereof. Among other things, these input devices may be configured to allow the Intelligent TV **100** to see, recognize, and react to user gestures. For instance, a user may talk to the Intelligent TV **100** in a conversational manner. The Intelligent TV **100** may hear and understand voice commands in a manner similar to a smart device's intelligent personal assistant and voice-controlled navigator application (e.g., Apple's Siri, Android's Skyvi, Robin, Iris, and other applications).

[0105] The Intelligent TV **100** may also be a communications device which can establish network connections **104** through many alternate means, including wired **108** or wireless **112** means, over cellular networks **116** to connect via cellular base antenna **142** to telephone networks operated by a telephone company **146**, and by using a telephone line **120** to connect to telephone networks operated by telephone company **146**. These connections **104** enable the Intelligent TV **100** to access one or more communication networks **132**. The communication networks may comprise any type of known communication medium or collection of communication media and may use any type of protocols to transport messages or signals between endpoints. The communication networks may include wired and/or wireless communication technologies. The Internet is an example of a communication network **132** that constitutes an Internet Protocol (IP) network consisting of many computers, computing networks, and other communication devices located all over the world, which are connected through many telephone systems and other means.

[0106] Other examples of the communication network **132** include, without limitation, a standard Plain Old Telephone System (POTS), an Integrated Services Digital Network (ISDN), the Public Switched Telephone Network (PSTN), a Local Area Network (LAN), a Wide Area Network (WAN), a cellular network, and any other type of packet-switched or circuit-switched network known in the art. In addition, it can be appreciated that the communication network **132** need not be limited to any one network type, and instead may be comprised of a number of different networks and/or network types.

[0107] In some embodiments, the Intelligent TV **100** may be equipped with multiple communication means. The multiple communication means may allow the Intelligent TV **100** to communicate across Local Area Networks (LANs) **124**, wireless local area networks (WLANs) **128**, and other networks **132**. The networks **132** may be connected in a redundant manner to ensure network access. In other words, if one connection is interrupted, the intelligent TV **100** can use an alternate communications path to reestablish and/or maintain the network connection **104**. Among other things, the Intelligent TV **100** may use these network connections **104** to send and receive information, interact with an electronic program guide (EPG) **136**, receive software updates **140**, contact customer service **144** (e.g., to receive help or service, etc.), and/or access remotely stored digital media libraries **148**. In addi-

tion, these connections can allow the Intelligent TV **100** to make phone calls, send and/or receive email messages, send and/or receive text messages (such as email and instant messages), surf the Internet using an internet search engine, post blogs by a blogging service, and connect/interact with social media sites and/or an online community (e.g., Facebook™, Twitter™, LinkedIn™, Pinterest™, Google+™, MySpace™, and the like) maintained by a social network service. In combination with other components of the Intelligent TV **100** described in more detail below, these network connections **104** also enable the Intelligent TV **100** to conduct video teleconferences, electronic meetings, and other communications. The Intelligent TV **100** may capture and store images and sound, using associated cameras, microphones, and other sensors. Additionally or alternatively, the Intelligent TV **100** may create and save screen shots of media, images, and data displayed on a screen associated with the Intelligent TV **100**.

[0108] Further, as shown in FIG. **1**B, the Intelligent TV **100** can interact with other electronic devices **168** by either by the wired **108** and/or wireless **112** connections. As described herein, components of the Intelligent TV **100** allow the device **100** to be connected to devices **168** including, but not limited to, DVD players **168***a*, BluRay players **168***b*, portable digital media devices **168***c*, smart phones **168***d*, tablet devices **168***e*, personal computers **168***f*, external cable boxes **168***g*, keyboards **168***h*, pointing devices **168***i*, printers **168***j*, game controllers and/or game pads **168***k*, satellite dishes **1681**, external display devices **168***m*, and other universal serial bus (USB), local area network (LAN), Bluetooth™, or high-definition multimedia interface (HDMI) compliant devices, and/or wireless devices. When connected to an external cable box **168***g* or satellite dish **1681**, the Intelligent TV **100** can access additional media content. Also, as further described below, the Intelligent TV **100** is capable of receiving digital and/or analog signals broadcast by TV stations. The Intelligent TV **100** can be configured as one or more of a standard-definition television, enhanced television, and high-definition television. It may operate as one or more of cable, Internet, Internet Protocol, satellite, web, and/or smart television. The Intelligent TV **100** may also be used to control the operation of, and may interface with, other smart components such as security systems **172**, door/gate controllers **176**, remote video cameras **180**, lighting systems **184**, thermostats **188**, refrigerators **192**, and other appliances.

[0109] Intelligent TV:

[0110] FIGS. **2**A-**2**D illustrate components of the Intelligent TV **100**. In general, as shown by FIG. **2**A, the Intelligent TV **100** can be supported by a removable base or stand **204** that is attached to a frame **208**. The frame **208** surrounds edges of a display screen **212**, leaving a front surface of the display screen **212** uncovered. The display screen **212** may comprise a Liquid Crystal Display (LCD) screen, a plasma screen, Light Emitting Diode (LED) screen, or other screen types. In embodiments, the entire front surface of the screen **212** may be touch sensitive and capable of receiving input by the user touching the front surface of the screen **212**.

[0111] The Intelligent TV **100** may include integrated speakers **216** and at least one microphone **220**. A first area of the frame **208** may comprise a horizontal gesture capture region **224** and second areas comprise vertical gesture capture regions **228**. The gesture capture regions **224**, **228** may comprise areas or regions that are capable of receiving input by recognizing gestures made by the user, and in some examples, without the need for the user to actually touch the screen **212** surface of the Intelligent TV **100**. However, the gesture capture regions **224**, **228** may not include pixels that can perform a display function or capability.

[0112] One or more image capture devices **232**, such as a camera, can be included for capturing still and/or video images. The image capture device **232** can include or be associated with additional elements, such as a flash or other light source **236** and a range finding device **240** to assist focusing of the image capture device. In addition, the microphone **220**, gesture capture regions **224**, **228**, image capture device **232**, and range finding device **240** may be used by the Intelligent TV **100** to recognize individual users. Additionally or alternatively, the Intelligent TV **100** may learn and remember preferences associated with the individual users. In some embodiments, the learning and remembering (i.e., identifying and recalling stored information) may be associated with the recognition of a user.

[0113] An IR transmitter and receiver **244** may also be provided to connect the Intelligent TV **100** with a remote control device (not shown) or other IR devices. Additionally or alternatively, the remote control device may transmit wireless signals via RF, light, and/or a means other than IR. Also shown in FIG. **2**A is an audio jack **248**, which may be hidden behind a panel that is hinged or removable. The audio jack **248** accommodates a tip, ring, sleeve (TRS) connector, for example, to allow the user to utilize headphones, a headset, or other external audio equipment.

[0114] The Intelligent TV **100** can also include a number of buttons **252**. For example, FIG. **2**A illustrates the buttons **252** on the top of the Intelligent TV **100**, although the buttons could be placed at other locations. As shown, the Intelligent TV **100** includes six buttons **252***a-f*, which can be configured for specific inputs. For example, the first button **252***a* may be configured as an on/off button used to control overall system power to the Intelligent TV **100**. The buttons **252** may be configured, in combination or alone, to control a number of aspects of the Intelligent TV **100**. Some non-limiting examples include, but are not limited to, overall system volume, brightness, the image capture device, the microphone, and initiation/termination of a video conference. Instead of separate buttons, two of the buttons may be combined into a rocker button. This rocker button arrangement may be useful in situations where the buttons are configured to control features such as volume or brightness. In some embodiments, one or more of the buttons **252** are capable of supporting different user commands. By way of example, a normal press has a duration commonly of less than about 1 second and resembles a quick input. A medium press has a duration commonly of 1 second or more but less than about 12 seconds. A long press has a duration commonly of about 12 seconds or more. The function of the buttons is normally specific to the application that is active on the Intelligent TV **100**. In the video conference application for instance and depending on the particular button, a normal, medium, or long press can mean end the video conference, increase or decrease the volume, increase a rate speed associated with a response to an input, and toggle microphone mute. Depending on the particular button, a normal, medium, or long press can also control the image capture device **232** to increase zoom, decrease zoom, take a photograph, or record video.

[0115] In support of communications functions or capabilities, the Intelligent TV **100** can include one or more shared or dedicated antennae **256** and wired broadband connections **260** as shown in FIG. **2**B. The antennae **256** also enable the

Intelligent TV **100** to receive digital and/or analog broadcast TV channels. The wired broadband connections **260** are, for example, a Digital Subscriber Line (DSL), an optical line, an Ethernet port, an IEEE 1394 interface, or other interfaces. The Intelligent TV **100** also has a telephone line jack **262** to further provide communications capability.

[0116] In addition to the removable base **204**, the Intelligent TV **100** may include hardware and mounting points **264** on a rear surface to facilitate mounting the Intelligent TV **100** to a surface, such as a wall. In one example, the Intelligent TV **100** may incorporate at least one Video Equipment Standards Association (VESA) mounting interface for attaching the device **100** to the surface.

[0117] As shown in FIG. **2**C, the Intelligent TV **100** may include docking interfaces or ports **268**. The docking ports **268** may include proprietary or universal ports to support the interconnection of the Intelligent TV **100** to other devices or components, which may or may not include additional or different capabilities from those integral to the Intelligent TV **100**. In addition to supporting an exchange of communication signals between the Intelligent TV **100** and a connected device or component, the docking ports **268** can support the supply of power to the connected device or component. The docking ports **268** can also comprise an intelligent element that comprises a docking module for controlling communications or other interactions between the Intelligent TV **100** and the connected device or component.

[0118] The Intelligent TV **100** also includes a number of card slots **272** and network or peripheral interface ports **276**. The card slots **272** may accommodate different types of cards including subscriber identity modules (SIM), secure digital (SD) cards, MiniSD cards, flash memory cards, and other cards. Ports **276** in embodiments may include input/output (I/O) ports, such as universal serial bus (USB) ports, parallel ports, game ports, and high-definition multimedia interface (HDMI) connectors.

[0119] An audio/video (A/V) I/O module **280** can be included to provide audio to an interconnected speaker or other device, and to receive audio input from a connected microphone or other device. As an example, the audio input/output interface **280** may comprise an associated amplifier and analog-to-digital converter.

[0120] Hardware Features:

[0121] FIG. **3** illustrates components of a Intelligent TV **100** in accordance with embodiments of the present disclosure. In general, the Intelligent TV **100** includes a primary screen **304**. Screen **304** can be a touch sensitive screen and can include different operative areas.

[0122] For example, a first operative area, within the screen **304**, may comprise a display **310**. In some embodiments, the display **310** may be touch sensitive. In general, the display **310** may comprise a full color, display.

[0123] A second area within the screen **304** may comprise a gesture capture region **320**. The gesture capture region **320** may comprise an area or region that is outside of the display **310** area, and that is capable of receiving input, for example in the form of gestures provided by a user. However, the gesture capture region **320** does not include pixels that can perform a display function or capability.

[0124] A third region of the screen **304** may comprise a configurable area **312**. The configurable area **312** is capable of receiving input and has display or limited display capabilities. In embodiments, the configurable area **312** may present different input options to the user. For example, the configurable area **312** may display buttons or other relatable items. Moreover, the identity of displayed buttons, or whether any buttons are displayed at all within the configurable area **312** of a screen **304**, may be determined from the context in which the Intelligent TV **100** is used and/or operated.

[0125] In an exemplary touch sensitive screen **304** embodiment, the touch sensitive screen **304** comprises a liquid crystal display extending across at least those regions of the touch sensitive screen **304** that are capable of providing visual output to a user, and a capacitive input matrix over those regions of the touch sensitive screen **304** that are capable of receiving input from the user.

[0126] One or more display controllers **316** may be provided for controlling the operation of the screen **304**. The display controller **316** may control the operation of the touch sensitive screen **304**, including input (touch sensing) and output (display) functions. The display controller **316** may also control the operation of the screen **304** and may interface with other inputs, such as infrared and/or radio input signals (e.g., door/gate controllers, alarm system components, etc.). In accordance with still other embodiments, the functions of a display controller **316** may be incorporated into other components, such as a processor **364**.

[0127] The processor **364** may comprise a general purpose programmable processor or controller for executing application programming or instructions. In accordance with at least some embodiments, the processor **364** may include multiple processor cores, and/or implement multiple virtual processors. In accordance with still other embodiments, the processor **364** may include multiple physical processors. As a particular example, the processor **364** may comprise a specially configured application specific integrated circuit (ASIC) or other integrated circuit, a digital signal processor, a controller, a hardwired electronic or logic circuit, a programmable logic device or gate array, a special purpose computer, or the like. The processor **364** generally functions to run programming code or instructions implementing various functions of the Intelligent TV **100**.

[0128] In support of connectivity functions or capabilities, the Intelligent TV **100** can include a module for encoding/decoding and/or compression/decompression **366** for receiving and managing digital television information. Encoding/decoding compression/decompression module **366** enables decompression and/or decoding of analog and/or digital information dispatched by a public television chain or in a private television network and received across antenna **324**, I/O module **348**, wireless connectivity module **328**, and/or other wireless communications module **332**. The television information may be sent to screen **304** and/or attached speakers receiving analog or digital reception signals. Any encoding/decoding and compression/decompression is performable on the basis of various formats (e.g., audio, video, and data). Encrypting module **368** is in communication with encoding/decoding compression/decompression module **366** and enables the confidentiality of all the data received or transmitted by the user or supplier.

[0129] In support of communications functions or capabilities, the Intelligent TV **100** can include a wireless connectivity module **328**. As examples, the wireless connectivity module **328** can comprise a GSM, CDMA, FDMA, and/or analog cellular telephony transceiver capable of supporting voice, multimedia, and/or data transfers over a cellular network. Alternatively or additionally, the Intelligent TV **100** can include an additional or other wireless communications mod-

ule **332**. As examples, the other wireless communications module **332** can comprise a Wi-Fi, Blutooth™, WiMax, infrared, or other wireless communications link. The wireless connectivity module **328** and the other wireless communications module **332** can each be associated with a shared or a dedicated antenna **324** and a shared or dedicated I/O module **348**.

[0130] An input/output module **348** and associated ports may be included to support communications over wired networks or links, for example with other communication devices, server devices, and/or peripheral devices. Examples of an input/output module **348** include an Ethernet port, a Universal Serial Bus (USB) port, Thunderbolt™ or Light Peak interface, Institute of Electrical and Electronics Engineers (IEEE) 1394 port, or other interface.

[0131] An audio input/output interface/device(s) **344** can be included to provide analog audio to an interconnected speaker or other device, and to receive analog audio input from a connected microphone or other device. As an example, the audio input/output interface/device(s) **344** may comprise an associated amplifier and analog-to-digital converter. Alternatively or in addition, the Intelligent TV **100** can include an integrated audio input/output device **356** and/or an audio jack for interconnecting an external speaker or microphone. For example, an integrated speaker and an integrated microphone can be provided, to support near talk or speaker phone operations.

[0132] A port interface **352** may be included. The port interface **352** may include proprietary or universal ports to support the interconnection of the device **100** to other devices or components, such as a dock, which may or may not include additional or different capabilities from those integral to the device **100**. In addition to supporting an exchange of communication signals between the device **100** and another device or component, the docking port **136** and/or port interface **352** can support the supply of power to or from the device **100**. The port interface **352** also comprises an intelligent element that comprises a docking module for controlling communications or other interactions between the Intelligent TV **100** and a connected device or component. The docking module may interface with software applications that allow for the remote control of other devices or components (e.g., media centers, media players, and computer systems).

[0133] An Intelligent TV **100** may also include memory **308** for use in connection with the execution of application programming or instructions by the processor **364**, and for the temporary or long term storage of program instructions and/or data. As examples, the memory **308** may comprise RAM, DRAM, SDRAM, or other solid state memory. Alternatively or in addition, data storage **314** may be provided. Like the memory **308**, the data storage **314** may comprise a solid state memory device or devices. Alternatively or in addition, the data storage **314** may comprise a hard disk drive or other random access memory.

[0134] Hardware buttons **358** can be included for example for use in connection with certain control operations. One or more image capture interfaces/devices **340**, such as a camera, can be included for capturing still and/or video images. Alternatively or in addition, an image capture interface/device **340** can include a scanner, code reader, or motion sensor. An image capture interface/device **340** can include or be associated with additional elements, such as a flash or other light source. The image capture interfaces/devices **340** may interface with a user ID module **350** that assists in identifying users of the Intelligent TV **100**.

[0135] The Intelligent TV **100** can also include a global positioning system (GPS) receiver **336**. In accordance with embodiments of the present invention, the GPS receiver **336** may further comprise a GPS module that is capable of providing absolute location information to other components of the Intelligent TV **100**. As will be appreciated, other satellite-positioning system receivers can be used in lieu of or in addition to GPS.

[0136] Power can be supplied to the components of the Intelligent TV **100** from a power source and/or power control module **360**. The power control module **360** can, for example, include a battery, an AC-to-DC converter, power control logic, and/or ports for interconnecting the Intelligent TV **100** to an external source of power.

[0137] Communication between components of the Intelligent TV **100** is provided by bus **322**. Bus **322** may comprise one or more physical buses for control, addressing, and/or data transmission. Bus **322** may be parallel, serial, a hybrid thereof, or other technology.

[0138] Firmware and Software:

[0139] An embodiment of the software system components and modules **400** is shown in FIG. **4**. The software system **400** may comprise one or more layers including, but not limited to, an operating system kernel **404**, one or more libraries **408**, an application framework **412**, and one or more applications **416**. The one or more layers **404**-**416** can communicate with each other to perform functions for the Intelligent TV **100**.

[0140] An operating system (OS) kernel **404** contains the primary functions that allow the software to interact with hardware associated with the Intelligent TV **100**. Kernel **404** can include a collection of software that manages the computer hardware resources and provides services for other computer programs or software code. The operating system kernel **404** is the main component of the operating system and acts as an intermediary between the applications and data processing done with the hardware components. Part of the operating system kernel **404** can include one or more device drivers **420**. A device driver **420** can be any code within the operating system that helps operate or control a device or hardware attached to or associated with the Intelligent TV. The driver **420** can include code for operating video, audio, and/or other multimedia components of the Intelligent TV **100**. Examples of drivers include display, camera, flash, binder (IPC), keypad, WiFi, and audio drivers.

[0141] Library **408** can contain code or other components that may be accessed and implemented during the operation of the software system **400**. The library **408** may contain one or more of, but is not limited to, an operating system runtime library **424**, a TV services hypertext application language (HAL) library **428**, and/or a data service library **432**. The OS runtime library **424** may contain the code required by the operating system kernel **404** or other operating system functions to be executed during the runtime of the software system **400**. The library can include the code that is initiated during the running of the software system **400**.

[0142] The TV services hypertext application language library **428** can include code required by TV services either executed in the application framework **412** or an application **416**. The TV services HAL library **428** is specific to the Intelligent TV **100** operations that control different functions of the Intelligent TV. The TV service HAL library **428** can also be formed from other types of application languages or

embodiments of different types of code or formats for code beyond the hypertext application language.

[0143] The data services library **432** can include the one or more components or codes to implement components for the data services function. The data services function can be implemented in the application framework **412** and/or applications layer **416**. An embodiment of a function of the data services and the type of components that may be included is shown in FIG. **6**.

[0144] The application framework **412** can include a general abstraction for providing functionality that can be selected by one or more applications **416** to provide specific application functions or software for those applications. Thus, the framework **412** can include one or more different services, or other applications, that can be accessed by the applications **416** to provide general functions across two or more applications. Such functions include, for example, management of one or more of windows or panels, surfaces, activities, content, and resources, The application framework **412** can include one or more, but is not limited to, TV services **434**, TV services framework **440**, TV resources **444**, and user interface components **448**.

[0145] The TV services framework **440** can provide an additional abstraction for different TV services. TV services framework **440** allows for the general access and function of services that are associated with the TV functionality. The TV services **436** are general services provided within the TV services framework **440** that can be accessed by applications in the applications layer **416**. The TV resources **444** provide code for accessing TV resources **444** including any type of storage, video, audio, or other functionality provided with the Intelligent TV **100**. The TV resources **444**, TV services **436**, and TV services framework **440** provide for the different implementations of TV functionality that may occur with the Intelligent TV **100**.

[0146] One or more user interface components **448** can provide general components for display of the Intelligent TV **100**. The user interface components **448** might be general components that may be accessed by different applications provided in the application framework **412**. The user interface components **448** may be accessed to provide for panels and silos as described in conjunction with FIG. **5**.

[0147] The applications layer **416** can both contain and execute applications associated with the Intelligent TV **100**. Applications layer **416** may include one or more of, but is not limited to, a live TV application **452**, a video on demand application **456**, a media center application **460**, an application center application **464**, and a user interface application **468**. The Live TV application **452** can provide Live TV over different signal sources. For example, the Live TV application **452** can provide TV from input from cable television, over air broadcasts, from satellite services, or other types of Live TV services. Live TV application **452** may then present the multimedia presentation or video and audio presentation of the live television signal over the display of the Intelligent TV **100**.

[0148] The video on demand application **456** can provide for video from different storage sources. Unlike Live TV application **452**, video on demand **456** provides for display of videos that are accessed from some memory source. The sources of the video on demand can be associated with users or with the Intelligent TV or some other type of service. For example, the video on demand **456** may be provided from an iTunes library stored in a cloud, from a local disc storage that contains stored video programs, or from some other source.

[0149] The media center application **460** can provide applications for different types of media presentation. For example, the media center **460** can provide for displaying pictures or audio that is different from, but still accessible by the user, Live TV or video on demand. The media center **460** allows for the access of different sources to obtain the media in the display of such media on the Intelligent TV **100**.

[0150] The application center **464** allows for the provision, storage, and use of applications. An application can be a game, a productivity application, or some other application generally associated with computer systems or other devices, but may be operated within the Intelligent TV. An application center **464** may obtain these applications from different sources, store them locally, and then execute those types of applications for the user on the Intelligent TV **100**.

[0151] User interface application **468** provides for the specific user interfaces associated with the Intelligent TV **100**. These user interfaces can include the silos and panels that are described in FIG. **5**. An embodiment of the user interface software **500** is shown in FIG. **5**. Here the application framework **412** contains one or more code components which help control the user interface events while one or more applications in the applications layer **416** affects the user interface use for the Intelligent TV **100**. The application framework **412** can include a silo transition controller **504** and/or an input event dispatcher **508**. There may be more or fewer code components in the application framework **412** than those shown in FIG. **5**. The silo transition controller **504** contains the code and language that manages the transitions between one or more silos. A silo can be a vertical user interface feature on the Intelligent TV that contains information for user. The transition controller **504** can manage the changes between two silos when an event occurs in the user interface. The input event dispatcher **508** can receive user interface events that may be received from the operating system and provided to the input event dispatcher **508**. These events can include selections of buttons on a remote control or on the TV or other types of user interface inputs. The input event dispatcher **508** may then send these events to a silo manager **532** or panel manager **536** depending on the type of the event. The silo transition controller **504** can interface with the silo manager **532** to affect changes in the silos.

[0152] The applications layer **416** can include a user interface application **468** and/or a silo application **512**. The applications layer **416** can include more or fewer user interface applications as necessary to control the user interface of the Intelligent TV **100** than those shown in FIG. **5**. The user interface application **468** can include a silo manager **532**, a panel manager **536**, and one or more types of panels **516**-**528**. The silo manager **532** manages the display and/or features of silos. The silo manager **532** can receive or send information from the silo transition controller **504** or the input event dispatcher **508** to change the silos displayed and/or to determine types of input received in the silos.

[0153] A panel manager **536** is operable to display panels in the user interface to manage transitions between those panels or to affect user interface inputs received in the panel. The panel manager **536** may thus be in communication with different user interface panels such as a global panel **516**, a volume panel **520**, a settings panel **524**, and/or a notification panel **528**. The panel manager **536** can display these types of panels depending on the inputs received from the input event

dispatcher **508**. The global panel **516** may include information that is associated with the home screen or top level hierarchal information for the user. A volume panel **520** may display information about an audio volume control or other settings for volume. A settings panel **524** can include information displayed about the settings of the audio or video, or other settable characteristics of the Intelligent TV **100**. A notification panel **528** can provide information about notifications to a user. These notifications can be associated with information, such as, video on demand displays, favorites, currently provided programs, or other information. Notifications can be associated with the media or with some type of setting, or operation or the Intelligent TV **100**. The panel manager **536** may be in communication with the panel controller **552** of the silo application **512**.

[0154] The panel controller **552** may operate to control portions of the panels of the types described previously. Thus, the panel controller **552** may be in communication with a top panel application **540**, an application panel **544**, and/or bottom panel **548**. These types of panels may be differently displayed in the user interface of the Intelligent TV **100**. The panel control thus may be based on the configuration of the system or the type of display being used currently, put the types of panels **516-528** into a certain display orientation governed by the top panel application **540**, application panel **544**, or bottom panel application **548**.

[0155] An embodiment of the data service **432** and the operation of the data management is shown in FIG. **6**. The data management **600** can include one or more code components that are associated with different types of data. For example, there may be code components within the data service **432** that execute and are associated with video on demand, the electronic program guide, or media data. There may be more or fewer types of data service **432** components than those shown in FIG. **6**. Each of the different types of data may include a data model **604-612**. The data models govern what information is to be stored and how that information will be stored by the data service. Thus, the data model can govern regardless of where the data comes from, how the data will be received or managed within the Intelligent TV system. Thus, the data model **604**, **608**, and/or **612**, can provide a translation ability or affect the ability to translate data from one form to another to be used by the Intelligent TV **100**.

[0156] The different types of data services (video on demand, electronic programming guide, media) each have a data subservice **620**, **624**, and/or **628** that is in communication with one or more internal and/or external content providers **616**. The data subservices **620**, **624**, and **628** that communicate with the content providers **616** to obtain data that may then be stored in databases **632**, **636**, and **640**. The subservices **620**, **624**, and **628** may communicate with and initiate or enable one or more source plug-ins **644**, **648**, and **652** to communicate with the content provider. For each content provider **616**, there may be a different source plug-in **644**, **648**, and **652**. Thus, if there is more than one source of content for the data, each of the data subservices **620**, **624**, and **628** may determine and then enable or initiate a different source plug-in **644**, **648**, and/or **652**. The content providers **616** may also provide information to a resource arbitrator **656** and/or thumbnail cache manager **660**. The resource arbitrator **656** may operate to communicate with resources **664** that are external to the data service **432**. Thus, the resource arbitrator **656** may communicate with cloud based storage, network based storage, or other types of external storage in the resources **664**. This information may then be provided through the content provider module **616** to the data subservices **620**, **624**, **628**. Likewise, a thumbnail cache manager **660** may obtain thumbnail information from one of the data subservices **620**, **624**, **628** and store that information in the thumbnails database **668**. Further, the thumbnail cache manager **660** may extract or retrieve that information from the thumbnails database **668** to provide to one of the data subservices **620**, **624**, **628**.

[0157] An exemplary content aggregation architecture **1300** is shown in FIG. **13**. The architecture can include a user interface layer **1304** and a content aggregation layer **1308**. The user interface layer **1304** may include a TV application **1312**, media player **1316**, and application(s) **1320**. The TV application **1312** enables the viewer to view channels received via an appropriate transmission medium, such as cable, satellite, and/or the Internet. The media player **1316** views other types of media received via an appropriate transmission medium, such as the Internet. The application(s) **1320** include other TV-related (pre-installed) applications, such as content viewing, content searching, device viewing, and setup algorithms, and coordinates with the media player **1316** to provide information to the viewer.

[0158] The content source layer **1308** includes, as data services, a content source service **1328**, a content aggregation service **1332**, and a content presentation service **1336**. The content source service **1328** can manage content source investigators, including local and/or network file system(s), digital network device manager (which discovers handheld and non-handheld devices (e.g., digital media servers, players, renderers, controllers, printers, uploaders, downloaders, network connectivity functions, and interoperability units) by known techniques, such as a multicast universal plug and play or UPnP discovery techniques, and, for each discovered device, retrieves, parses, and encodes device descriptors, notifies the content source service of the newly discovered device, and provides information, such as an index, on previously discovered devices), Internet Protocol Television (IPTV), digital television (DTV) (including high definition and enhanced TV), third party services (such as those referenced above), and applications (such as Android applications).

[0159] Content source investigators can track content sources and are typically configured as binaries. The content source service **1328** starts content source investigators and maintains open and persistent channels for communications. The communications include query or command and response pairs. The content aggregation service **1332** can manage content metadata fetchers, such as for video, audio, and/or picture metadata. The content presentation service **1336** may provide interfaces to the content index **1340**, such as an Android application interface and digital device interfaces.

[0160] The content source service **1328** can send and receive communications **1344** to and from the content aggregation service **1332**. The communications can include notifications regarding new and removed digital devices and/or content and search queries and results. The content aggregation service **1332** can send and receive communications **1348** to and from the content presentation service **1336** including device and/or content lookup notifications, content-of-interest advisories and notifications, and search queries and results.

[0161] When a search is performed, particularly when the user is searching or browsing content, a user request may be received from the user interface layer **1300**, by the content presentation service **1336**, which responsively opens a socket and sends the request to the content aggregation service **1332**. The content aggregation service **1332** first returns results from the local database **1340**. The local database **1340** includes an index or data model and indexed metadata. The content source service **1328** further issues search and browse requests for all content source investigators and other data management systems. The results are forwarded to the content aggregation service **1332**, which updates the database **1340** to reflect the further search results and provides the original content aggregation database search results and the data updates, reflecting the additional content source service search results, over the previously opened socket to the content presentation service **1336**. The content presentation service **1336** then provides the results to one or more components in the user interface layer **1300** for presentation to the viewer. When the search session is over (e.g., the search session is terminated by the user or by an action associated with user), the user interface layer **1300** disconnects the socket. As shown, media can be provided directly by the content aggregation service **1332** to the media player **1316** for presentation to the user.

[0162] Remote Control:

[0163] A handheld remote control can be provided to enable user interaction with the Intelligent TV **100**. An exemplary handheld remote control is shown in FIGS. **7-9**. The remote control **700** can include one or more of, but is not limited to, top, side, and bottom housings **704**, **708**, and **712**, an (on/off) power button **716**, an input source button **720** (to select input source such as Live TV, video on demand, media center, application center, high definition multimedia interface (HDMI), component (COMP), audio/video (A/V), digital or analog television (DTV/ATV), and video graphics array (VGA)), a (volume) mute button **724**, a Live TV button **728** (to activate or select the Live TV silo), a video on demand (VOD) button **732** (to activate or select the video on demand silo), a media center button **736** (to activate or select the media center application or silo, which access various types of media such as music, TV programming, videos, and the like), an application center button **740** (to activate or select the application center application or silo), a global panel button **744**, an application panel button **748**, a back button **752** (to select a prior user operation or Intelligent TV state and/or navigate up a hierarchy of any displayed image or object(s) (in which case the back button **752** does not navigate within application panels or across application silos), a play button **756** (to play or pause media), a D-pad **760** (which includes north, east, west, and south directional arrows to navigate among displayed images and/or move between levels of an application's or object's hierarchy such as application view navigation, panel navigation, and collection navigation), an OK (or select) button **764** (to select a highlighted displayed image (such as displayed speed control, rewind, forward, play, and pause objects and/or objects on menu bar or in a menu box) and/or navigate down a hierarchy of any displayed image or object(s)), a rocker-type volume-up and volume-down button **768** (to adjust the volume), a menu/guide button **772** (to select for display a menu or guide of programming), a 0-9 (number) button **776** (to display a number pad on the TV screen), a settings button **780** (which launches an application to access current and change TV settings (such as channel settings and settings used to adjust picture and sound effects (e.g., image mode (e.g., standard, playground, game, cinema, concert, and studio), brightness, contrast, saturation, color temperature, energy savings, 3D noise reduction, hue, sharpness, zoom mode (e.g., full screen, standard, smart zoom, and dot-to-dot), picture position, 3D mode, for picture, and sound retrieval system or SRS TruSurround, sound mode (e.g., standard, live **1**, live **2**, theatre, music, speech, user equalizer mode, Left/Right speaker balance, auto volume control, Sony/Philips Interconnect Format or S/PDIF (off, auto, pulse code modulation or PCM) for sound) and system settings (such as system (e.g., selected language for graphical user interface, user geographical and/or geopolitical location information, input method, area settings, and sleep time), network (e.g., WiFi, WiFi hotspot, WiFi direct, Point-to-Point Protocol over Ethernet or PPPoE (asymmetric digital subscriber line or ADSL), Ethernet) settings (e.g., enabled and disabled and selected and non-selected) and information (e.g., network information (e.g., electronic address such as Internet Protocol or IP address, subnet mask, gateway, domain name server information, domain name, Media Access Control or MAC address, service set identification or SSID, security information, and password information) and inline status), manage applications (e.g., currently installed applications, currently executing applications, and internal and external computer readable medium usage), and view user information regarding the Intelligent TV **100**)), a rocker-type channel-up and channel-down button **784** (to increment or decrement the selected channel), and first, second, third, and fourth hotkeys **788**, **792**, **794**, and **796**, and/or a moveable joystick **900** on a bottom of the remote control **700**. The first, second, third, and fourth hotkeys **788**, **792**, **794**, and **796** are generally assigned different colors, which color indexing is depicted as visual indicia on a selected panel to show the currently assigned function, if any, for each hotkey. As can be seen, the actuator layout can provide a highly efficient, satisfactory, and easily usable experience to the end user.

[0164] Unlike the functional associations and functions of many of the actuators, those of some of the actuators are not readily apparent. A number of examples will now be discussed by way of illustration.

[0165] The media center button **736**, when selected, can provide information regarding music, videos, photographs, collections or groupings of music, videos, and/or photographs, and internal and external computational devices (such as personal computers, laptops, tablet computers, wireless phones, removable computer readable media, and the like), which can be grouped in a selected manner (such as favorites, most recently viewed, most watched or viewed, and most recently added). The information can includes previews (which can include selected portions of the media content, duration, file size, date created, date last watched, times watched or viewed, and audio and/or video format information).

[0166] The application center button **740**, when selected, may provide information regarding pre-installed and downloaded applications. Unlike downloaded applications, pre-installed applications cannot be removed by the user or manually updated. Exemplary pre-installed applications include web browser, settings control, and content search algorithms. By way of illustration, the application center button **740** can provide a scrollable graphical grid of icons (each icon being associated with an application) currently available in the application center.

[0167] The global panel button **744**, when selected, can provide the user, via one or more panels or windows, with access to one or more of, but not limited to, silos, notifications, a web browser, system settings, and information associated therewith. For example, the global panel button **744** can enable the user to determine what external devices are currently connected to and/or disconnected from the Intelligent TV **100**, determine what inputs (e.g., HDMI ports) are currently available for connecting to external devices, determine a connection and/or operational status of a selected external device and/or network (e.g., WiFi connected, Ethernet connected, and offline), assign a custom (or user selected) name to each input source, determine what content is currently being offered on Live TV, on demand, the media center, and/or the application center, access vendor messages and notifications to the user (e.g., system and/or application updates are available), activate the Internet browser, and/or access shortcuts on a displayed shortcut bar to more frequently used and desired applications. Common shortcuts are Internet browser (e.g., Internet search engine), system settings, and notifications. The common types of panels are for information (which is typically information related to a currently displayed image and/or content (e.g., title, date/time, audio/visual indicator, rating, and genre), browse requests, and/or search requests (such as search term field)). Each of the panel types may include a panel navigation bar, detailed information or relevant content to the panel function, operation and/or purpose, and a hotkey bar (defining currently enabled functional associations of hotkeys).

[0168] The application panel button **748**, when selected, can display an application window or panel. One application panel may be an information panel regarding a selected (preinstalled or previously downloaded) application icon. The information panel can one or more of identify the selected application, provide a description of the functionality (including application developer and/or vendor, version, release, and/or last update date and a category or type of application based on the application's functionality) and user ratings and/or degree of other user downloading of the application (e.g., a star rating assigned based on one or more of the foregoing inputs), provide the option to launch, remove, update, and add to favorites the identified application, and provide a listing of selectable links of other (not yet downloaded) recommended applications that provide similar functionality to the identified application. The latter listing can, in turn, provide a description of the functionality (including application developer and/or vendor, version, release, and/or last update date and a category or type of application based on the application's functionality) and user ratings and/or degree of other user downloading of the application (e.g., a star rating assigned based on one or more of the foregoing inputs).

[0169] The functions of the first, second, third, and fourth hotkeys **788**, **792**, **794**, and **796** can change depending on system state, context, and/or, within a selected screen and/or panel, based on a content or currently selected portion of (or relative cursor position on) the screen. Commonly, a currently assigned function of any of the first, second, third, and fourth hotkeys **788**, **792**, **794**, and **796** depends on a currently accessed silo and/or panel (with which the user is currently interacting within the silo). In other words, a first function of one of the first, second, third, and fourth hotkeys **788**, **792**, **794**, and **796** is activated by the respective hotkey in a first system state while a different second function is activated by the respective hotkey in a different second system state. In another example, a third function of one of the first, second, third, and fourth hotkeys **788**, **792**, **794**, and **796** is activated by the respective hotkey when a user focus (or currently selected cursor position or screen portion) is at a first screen position while a different fourth function is activated by the respective hotkey when a user focus (or currently selected cursor position or screen portion) is at a different second screen position. The first screen position can, for instance, be within an icon while the second screen position is outside of the icon. Hotkey functionality that could be enabled when in the first screen position may be "configure" and "remove" and disabled is "add", and, when in the second position hotkey functionality enabled can be "add" and disabled is "configure" and "remove". Generally, the states of hotkeys can include normal (for enabled actions or functions), disabled (when an action or function is temporarily disabled), pressed (when selected by a user to command an action or function to be performed), and unavailable (when no association between the hotkey and an action or function is currently available). While examples of hotkey functions are discussed below, it is to be understood that these are not intended to be exhaustive or limiting examples.

[0170] The first hotkey **788**, when selected in a first system state, can enable the user to assign, change, or edit a name of an input source. It is typically enabled only when the input source of HDMI, Comp/YPbPr (e.g., component video cables), video output, and VGA is in focus. When selected in a second system state, the first hotkey **788** can return the user to a top of a scrollable collection of objects, such as application icons.

[0171] The second hotkey **792** may show all or less. In other words, the hotkey **792** can allow the user to show all inputs, including the unconnected/undetected ones and to hide the unconnected/undetected inputs, e.g., to expand and collapse the silo/input list. Each input source can have one of two states, namely connected/detected and unconnected/undetected. Some input sources, including Live TV, video on demand, media center, and application center, are always connected/detected.

[0172] The moveable joystick **900** on the bottom of the remote control **700**, when manipulated, can cause a displayed image on the Intelligent TV **100** screen to be displaced a proportional amount. In other words, the displayed image is displaced substantially simultaneously with displacement of the joystick **900** within the joystick aperture **904** in the bottom housing **712** of the remote control. As shown in FIGS. **9**B-C, the joystick **900** moves or slides between forward and reverse positions. Releasing the joystick **900** causes the joystick **900** to return to the center position of FIG. **9**A, and the window to move or slide upwardly (when the joystick is released from the joystick position of FIG. **9**B) or downwardly (when the joystick is released from the joystick position of FIG. **9**C) until it disappears from view as shown in FIG. **11**A. The effect on the screen of the Intelligent TV **100** is shown in FIGS. **11**A-C. In FIG. **11**A, video content, such as TV programming, a video, movie, and the like, is being displayed by front surface of the screen **212**. In FIG. **11**B, the joystick **900** is moved or slid to the upper position of FIG. **9**B, and a drop down window or panel **1100** moves or slides down (at the substantially the same rate of joystick **900** movement) at the top of the screen **212**. In FIG. **11**C, the joystick **900** is moved or slid to the lower position of FIG. **9**C, and a drop up window or panel **1100** moves or slides up (at the substantially the same rate of joystick **900** movement) at the bottom of the screen

212. The window **1100** partially covers the video content appearing on the remainder of the screen **212** and/or causes a portion of the screen **212** displaying video content to move and/or compress up or down the height of the window **1100**.

[0173] The window **1100** can include one or more of information (which is typically information related to a currently displayed image and/or content (e.g., panel navigation bar, detailed information (e.g., title, date/time, audio/visual indicator, rating, and genre), and hotkey bar (defining current functional associations of hotkeys)), browse requests, and/or search requests. Commonly, the window **1100** includes suitable information about the content (such as name, duration, and/or remaining viewing duration of content), settings information, TV or system control information, application (activation) icons (such as for pre-installed and/or downloaded applications such as application center, media center and Web browser), and/or information about input source(s), When the joystick **900** is in either the forward or reverse position, the user can select an actuator on the front of the remote control, such as the OK button **764**, and be taken, by displayed images on the screen **212**, to another location in the user interface, such as a desktop. This process can be done in an nonintrusive manner and without affecting the flow of content that is pushed up or down. The joystick **900** could be moved, additionally or differently, from side-to-side to cause the window to appear at the left or right edge of the screen **212**.

[0174] An alternative actuator configuration is shown in FIG. **10**. The actuators are substantially the same as those of FIGS. **7-9** except that the social network button **1000**, when selected, can automatically select content and publish, via a social network service or other social media, the content to a social network or online community. User or viewer comments and/or other messages can be included in the outbound message. For example, all or one or frames or portions of media content (such as a video, music, a photograph, a picture, or text) can be provided automatically to a predetermined or selected group of people via Linked-In™, Myspace™, Twitter™, YouTube™, DailyMotion™, Facebook™, Google+™, or Second Life™ The user, upon activating the button **1000** could, in response, select a social forum or media upon which the selected content (which is the content displayed to the user when the social network button **1000** is activated) is to be posted and/or a predetermined group within that social media to which the content is to be posted. Alternatively, these selections could be preconfigured or preselected by the user.

[0175] The social network button can also be used to "turn up" or "turn down" a social volume visualization. The Intelligent TV **100** can create dynamically a visualization of aggregated connections (and inbound and/or outbound messages) from a variety of social networks. The aggregation (and inbound and outbound messages) can be depicted graphically on the screen as a volume of connections to influence the viewer user. With a social volume visualization, selected contents of each linked social network profile of a social contact (and inbound and/or outbound messages from or to the linked social network contact and/or current activity of the social contact (such as watching the same programming or content the viewer is currently watching) can be presented in a separate tile (or visually displayed object). The size of the tile can be related to any number of criteria, including a relationship of the linked social contact (e.g., a relative degree of importance or type of relationship can determine the relative size of the tile, a degree of influence of the linked social contact to the current viewer, a geographic proximity of the linked social contact to the current viewer, a degree to which the currently provided media content is of interest to both the viewer and linked social contact (e.g., both parties enjoy war movies, murder mysteries, musicals, comedies, and the like), an assigned ranking of the linked viewer by the viewer, a type of social network type linking the viewer with the linked social contact, a current activity of the social network contact (e.g., currently watching the same content that the viewer is currently watching), a current online or offline status of the linked social contact, and a social network grouping type or category to which both the viewer and linked social contact belong (e.g., work contact, best friend, family member, etc.).

[0176] The viewer can designate a portion of the screen to depict the social network aggregation. By turning the social volume up (+) or down (−), the viewer can increase the size and/or numbers of linked contact tiles provided to the viewer. In other words, by increasing the social volume the viewer can view, access, and/or push more social content from those of his or her social networks associated with him or her in a memory of the Intelligent TV. By decreasing the social volume, the viewer can view, access, and/or push less social content from his or her associated social networks. By selecting the mute button **724**, the viewer can stop or pause any interactivity with his or her associated social networks (e.g., inbound or outbound messages). Social volume and/or mute can be separated into two (or more) volume settings for outbound and inbound social network activity. By way of illustration, a first volume setting, control, and/or button can control the volume for outbound social network activity (e.g., outbound social messages) while a second (different) volume setting, control, and/or button can control the volume for inbound social network activity (e.g., inbound social messages). By way of further illustration, a first mute setting, control, and/or button can stop or pause outbound social network activity (e.g., outbound social messages) while a second (different) mute setting, control, and/or button can stop or pause inbound social network activity (e.g., inbound social messages).

[0177] A functional block diagram of the remote control is shown in FIG. **12**. The remote control **700** includes a controller **1208** to control and supervise remote control operations, optional wireless (RF) transceiver **1224** and antenna **1244** to send and receive wireless signals to and from the Intelligent TV **100** and other external components, optional infrared emitter **1228** to emit infrared signals to the Intelligent TV **100**, optional light emitting diode or LED driver **1232** to control LED operation to provide video-enabled feedback to the user, actuators **1220** (including the various buttons and other actuators discussed above in connection with FIGS. **7** and **10**), and joystick **900**, all interconnected via a bus **1248**. An on board power source **1200** and power management module **1204** provide power to each of these components via power circuitry **1240**. The infrared emitter **1228** and receiver (not shown) on the Intelligent TV system **100** can be used to determine a displayed object illuminated by the infrared signal and therefore adjust the displayed image, for example to indicate a focus of the user (e.g., illuminate a displayed object or show cursor position relative to displayed objects on the screen) and to determine and activate a desired command of the user. This can be done by tracking a position of the remote control in relation to infrared tracking reference points (e.g., a sensor bar or infrared LED's) positioned on or adjacent to the screen of the Intelligent TV **100**. Motion tracking can

further be augmented using position information received from a multi-axis gyroscope and/or accelerometer on board the remote control (not shown).

[0178] Referring now to FIG. **14**, a panel configuration in accordance with embodiments of the present disclosure is illustrated. As previously discussed, the panel manager **536** is operable to display panels in the user interface, to manage transitions between those panels, or to affect user interface inputs received in the panel. The panel manager **536** may thus be in communication with different user interface panels such as a global panel **516**, a volume panel **520**, a settings panel **524**, an application panel **544**, and/or a notification panel **528**. The panel manager **536** can display these types of panels depending on the inputs received from the input event dispatcher **508**. The panel system is designed to provide a quick access to extended functionality while still maintaining visibility into the main content view.

[0179] As illustrated in FIG. **14**, an Intelligent TV **100** may display a global panel **1404**, an active content view **1408**, and an application panel **1412**. The global panel **1404** may be the same or similar to global panel **516**. The global panel **1404** may include information that is associated with the home screen or top level hierarchal information for the user. For instance, global panel **1404** may be used to contain and access functionality that exists at a system level; this functionality may be completely independent of the currently viewed content. The global panel **1404** may be displayed in such a manner as to not disrupt the content view area **1404**; that is, the global panel **1404** may be displayed in such a manner as to provide a user the ability to view content displayed in the content view area **1408**. For example, the global panel **1404** may be translucent in nature such that the content displayed in the content view area **1408** is displayed (i.e., still viewable to a user), behind the global panel **1404**. The global panel **1404** may provide a consistent access to high level actions across all applications, an anchor for all views, a unified experience, and further may follow the same pattern as the application panel **1412**. Moreover, and as previously discussed, global panel **1404** may be displayed by the Intelligent TV **100** such that the active content in the content view area **1408** is always in view. In some embodiments, the global panel **1404** and the contents of the global panel **1404** may depend on the user; that is, the global panel **1404** may be specific to one or more users. Therefore, the global panel **1404** may also be thought of as a home panel.

[0180] As further illustrated in FIG. **14**, an Intelligent TV **100** may display an application panel **1412**. The application panel **1412** may be the same or similar to application panel **544**. The application panel **1412** may provide access to contextually relevant functionality based on the currently viewing/recently viewed material. Similar to the global panel **1404**, the application panel **1412** may provide such access without disrupting the content view area **1408**. That is, the application panel **1412** may be displayed in such a manner as to provide a user the ability to view content displayed in convent view area **1408**. For example, the application panel **1412** may be translucent in nature such that the content displayed in the content view area **1408** is displayed (i.e., still viewable to a user), behind the application panel **1412**. The application panel **1412** may provide quick access to core functionality of the Intelligent TV **100** such that the active content in the content view area **1408** is always in view. Moreover, the application panel **1412** may provide a consistent user experience across all applications and may include focused contextual content.

[0181] Referring now to FIG. **15**, a detailed global panel **1404** configuration is illustrated in accordance with embodiments of the present disclosure. The global panel **1404** may include one or more sources represented by icons and text, or shortcuts, **1504**A-E. Of course, more or less icons and text **1504**A-E may be displayed. As previously discussed, each icon and text **1504**A-E may be associated with one or more sources of content. For example, icon and text **1504**A may be associated with the Live TV application **452**; icon and text **1504**B may be associated with the video on demand application **456**; icon and text **1504**C may be associated with the media center application **460**; icon and text **1504**D may be associated with the application center application **464**; and icon and text **1504**E may be associated with one or more sources of content, either internal or external. Moreover, icon and text **1504**F may provide the ability for all sources of content to be displayed within global panel **1404**. Global panel **1404** may additionally indicate a source that is selected or highlight using indicator **1512**; for example, indicator **1512** may comprise a box positioned around Live TV—801 CNXN. Although illustrated as a box, other methods or configurations which provide for icon selection and/or identification may be used. For example, instead of a box, indicator **1512** may be a line or circle or may comprise adjusting the background of an icon and text **1504** such that the color, shade, highlight, spotlight, or hue is different. Alternatively or additionally, indicator **1512** may comprise enlarging or magnifying the icon and text **1504**.

[0182] The text portion of icon and text **1504**A-**1504**F may additionally include the current application, source, or channel that is currently maintained, on hold, active, and/or associated with another content that is not currently displayed in content display area **1408**. For example, active content area **1408**, in reference to FIG. **15**, is currently displaying a Live TV view (specifically 801 CNXN). The other icons and text, **1504**B-**1504**E, may display the previously active content, or content that was previously displayed in active area **1408**, at one time, but is now currently in a hold, an inactive, or a paused state. For example, icon and text **1504**B displays "On Demand—Skyfalls"; that is the video on demand application **456** may have previously been displaying some form of content—video, image, TV show, etc. The text of icon and text **1504**B includes a title of the content that was previously displayed: "Skyfalls." Similarly, the text portion of icon and text **1504**D displays a previously displayed, or active, application—for example, "Bubble Bird." The application "Bubble Bird" may still reside in some form of application memory associated with application center application **464**. As another example, the text portion of icon and text **1504**E includes HDMI 1—YBOX **720**; source content on the HDMI 1 port from a YBOX **720** was previously displayed in content area **1408**.

[0183] Additionally, global panel **1404** may include a shortcut area **1516**. The shortcut area **1516** may provide access to frequently used applications, sources, or areas of intelligent TV **100**. Moreover, shortcut area **1516** may be user configurable; that is a user may be able to decide what applications or sources are displayed. As illustrated in FIG. **15**, the shortcut area **1516** displays an icon for a browser **1520**A, an icon for a settings menu **1520**B, and an icon for alerts **1520**C. The settings **1520**B may provide a user access to one or more

intelligent TV **100** configurations. Additionally, the alerts icon **1520**C, may indicate a number of alerts, or messages, a user has. The alert messages may be messages involving the operation and configuration of Intelligent TV **100**, messages received from one or more users, indications that new content has arrived, or the like.

[0184] In addition, the global panel **1404** may be displayed such that the actively displayed content is displayed in active content area **1408** and is further visible behind global panel **1404**. For example, the content currently displayed on the Intelligent TV **100** is of a desk; the global panel **1404** may be translucent such that the content is displayed below or behind the global panel **1404**, as represented by the dotted lines in FIG. **15**.

[0185] The Intelligent TV **100** may include an application panel **1412** as shown in FIG. **16**. The content displayed in the application panel **1412** depends on the content displayed in the content view area **1408**. Stated another way, the application panel **1412** is contextually dependent upon the source of content and the content itself in the content view area **1408**. The application panel **1412** also provides customized information for each application. The application panel **1412** may comprise application panel elements including an application panel navigation bar **1604**, a panel content area **1608**, and a hotkey legend **1612**. The application panel navigation bar **1604** is presented such that the navigation pattern and content remain consistent across all applications. That is, the navigation bar **1604** may include the same or similar elements such that an easy navigation is maintained no matter which application and/or sources are selected and displayed. For example, the panel navigation bar **1604** may include fixed tab regions (also called tabs, panel tabs, or panel views herein) **1620**A-**1620**E corresponding to Live TV navigable menus and further comprising Info **1620**A, EPG **1620**B, Categories **1620**C, Favorites **1620**D, and Search **1620**E. Although, Info **1620**A, EPG **1620**B, Categories **1620**C, Favorites **1620**D, and Search **1620**E are illustrated in FIG. **16**, additional or fewer tab regions **1620** may be displayed.

[0186] The panel content area in **1608** is panel view specific. For example, depending on the panel view focus, the panel content area **1608** may update, as further described below. Moreover, the application panel **1412** may include a hotkey legend **1612** corresponding to one or more hotkeys. The hotkey legend **1612** is positioned at the bottom of the panel **1412** across all applications. The function of the hotkeys is context sensitive and may vary depending on the application selected and/or displayed in the active content view area **1408**. However, generally speaking, some hotkeys are generally navigation based while others may be action based. For example, the hotkeys may correspond to shortcuts such as marking a series, program, show, or channel as a favorite. In another example, at least one of the hotkeys may correspond to a reminder such that a series, program, or show can be marked for a reminder. However, in some embodiments, the red and yellow keys are navigation based shortcuts, and the green and blue keys are action based shortcuts, such as marking a series as favorite. These colors and actions may vary in different embodiments and across different applications.

[0187] The Intelligent TV **100** may include a categories panel **1412**C displayed in the application panel **1412**, as shown in FIGS. **17**A and **17**B. The categories panel **1412**C may comprise a panel navigation bar **1604**, a panel content area **1608**, and a hotkey legend **1612**.

[0188] The categories panel **1412**C is displayed when the user launches the application panel **1412** and navigates to the categories tab **1620**C in the panel navigation bar **1604**. A list of categories **1708** with available content is shown in the panel content area **1608**. If any category contains no content, then it is not shown in the list. In alternate embodiments, a category with no content is shown but is not selectable. The categories list **1708** is defined by the content provider and may be dynamically updated. Unlike genres, content can only belong to one category.

[0189] The list of categories **1708** is vertically scrollable and arranged in a specific order. That order may be alphabetical, decreasing number of items in the category, most watched categories, etc. The category list **1708** may show the name of the category and the number of matches (i.e., number of items in the category). Thus, each available category **1708** is presented with the number of matched programs that are currently on Live TV.

[0190] The list of categories **1708** may include Action, Animation, Children, Comedy, Cooking, Documentary, History, News, Reality, Romance, Science Fiction, Sports, Thriller, and/or Variety. In one embodiment, the initial list of categories **1708**—before a user alters the categories—may include Movies, Sports, Reality TV, Comedy, Talk Shows, Documentary, History, Children, and/or Other. Movies are not sorted by categories and are grouped into their own category.

[0191] A user may select a category **1708**A by scrolling down to the category **1708**A (using the up/down arrows on the remote or on the D-Pad) and press select or another select-type button on the remote to select the category **1708**A. The hotkeys **1612** may be associated with navigation or other functions. For example, in some embodiments, the red hotkey may navigate the user to the top of the panel. The default focus of the categories panel **1412**C is the first category **1708**A listed, as shown in FIG. **17**A. Alternatively the default focus may be the first recommended series. The user may scroll down to a different category **1708**B, e.g., sports, and select that category **1708**B. Selecting a category refreshes the view of the categories panel **1412**C with a focused mini electronic programming guide (EPG) of those programs (see FIGS. **18**A-B). If the user is at the categories panel **1412**C shown in FIG. **17**B, then the user may select a specific category. If the user scrolls to the left or right at this view (FIG. **17**B), then the panel will change to a different application panel **1412**, e.g., the EPG panel, info panel, favorites panel, or search panel.

[0192] FIG. **18**A depicts an embodiment of a compact EPG **1820** presented via an application panel **1412** of an Intelligent TV **100** showing Live TV. As shown, the select-focus associated with the application panel navigation bar **1604** is set to the categories tab **1620**C. In some cases the selection of the categories tab **1620**C may be indicated via a select-focus in the form of a highlight, an underline, a specific font style, an action (e.g., movement of the categories tab **1620**C indicator **1740**, brightness adjustment, highlight, spotlight, etc.), combinations thereof, and the like. This select-focus indication may be associated with the categories tab **1620**C. Programs that match the selected category may be visually highlighted within the mini EPG **1820**. The application panel **1412** may also include a hotkey legend **1612** similar to other application panels **1412** displayed via the Intelligent TV **100**. As previously discussed, the hotkeys provided in the hotkey legend **1612** may be customized to facilitate shortcut navigation and/or special features associated with the Intelligent TV **100**

and/or the application panel **1412**. For instance, the hotkeys may be context sensitive to a particular application panel **1412** displayed. As shown in FIGS. **18**A-B, the hotkey legend **1612** may include Remind, Favorite, and other actions associated with one or more hotkeys. The Remind hotkey may be green and may toggle a reminder on or off for the selected program, i.e., the program highlighted or in focus in the compact EPG **1820**. In one embodiment, the Favorite hotkey may correspond to a shortcut marking a series, program, show, or channel as a favorite. The hotkey legend **1612** may also include a Page Up hotkey and/or a Page Down hotkey to allow the user to navigate the compact EPG **1820**. The hotkeys may be associated, or mapped, to one or more inputs of a remote control or other input device.

[0193] The application panel **1412** includes an EPG layout header **1804** and shows the selected category **1708**B. The EPG layout header **1804** may be used to alter the format of a displayed compact EPG **1820**. For instance, the EPG layout header **1804** shows "Category List" in FIG. **18**B and is a button the user can select to return to the categories list **1708**, while the compact EPG **1820** is presenting the compact, or "mini," EPG in a chosen category format. A user may select the EPG layout header **1804** to change, remove, create, or select categories that the compact EPG **1820** will display. Categories available via the "Category List" may include, but are not limited to, time-based, genre, title, program type (e.g., movie, TV special, sport, radio, undefined, etc.), channel-based, reminders, combinations thereof, and even user-created categories. In this example, the chosen category **1708**B EPG list is shown by channel number on the left-hand side of the compact EPG **1820**. In some embodiments, a user may select the EPG layout header **1804** to modify the presentation of the compact EPG **1820** in the application panel **1412**. Upon selecting the EPG layout header **1804**, the user may be presented with a number of compact EPG **1820** layout options. One example of such a presentation layout option may include displaying the compact EPG **1820** as any one of the categories disclosed above that can be chosen via a selection from within the categories tab **1620**C of the application panel **1412**. In a "Time-Based" category presentation, the compact EPG **1820** may be arranged by time (as opposed to channel number, as previously discussed above). In another embodiment, a user may select a "Movie" category from the "Category List," in which case the compact EPG **1820** displays a list of movies that are available for viewing via the Intelligent TV **100**. Other variations and presentation layouts regarding categories, as disclosed above, may be made to the compact EPG **1820**.

[0194] Additionally or alternatively, the application panel **1412** may include a program preview pane **1828** that may include a program thumbnail graphic, an identifier, description, times, and other information that is associated with the channel and/or the program. The program preview pane **1828** may change to display new information as time passes or as a user navigates through selected channels, programs, or rows in the compact EPG **1820**. In some embodiments, the Intelligent TV **100** may select EPG content information to display via the program preview pane **1828**. This selection may be based on stored rules. In some cases, the program preview pane **1828** may be configured to display information associated with the first channel on the compact EPG **1820** list, as a default.

[0195] The compact EPG **1820** may be configured to present one or more programs for each channel in a list format that is accompanied by an EPG time scale. A program in the compact EPG **1820** may include a text, graphic, and/or combination thereof identifier. In some embodiments, the compact EPG **1820** may be configured to display a specific number of lines, rows, programs, and/or information. The identifier may be used to identify the program to a user of the Intelligent TV **100**. Although shown with a finite number of rows displayed via the list of the compact EPG **1820**, it is anticipated that other channels may be caused to display to the compact EPG **1820** list given a user provided input. For instance, a user may scroll to another line, or page, on the list, by using a remote control or other input device. As another example, a user may navigate through channels in the compact EPG **1820** by providing a directional input (e.g., via arrow keys, channel up/down buttons, etc.) from a remote control or other input device. The mini EPG **1820** may be vertically scrollable and horizontally scrollable. In some embodiments, programs that match the selected category **1708**B are visually highlighted within the mini EPG **1820**. If a program is currently on the air, then the user may select that program and the categories panel **1412**C will be dismissed and the Intelligent TV **100** will switch the channel to the selected channel.

[0196] In some embodiments, the EPG time scale may include a current time indicator **1822**. The current time indicator **1822** may be represented by a graphic that is associated with the EPG time scale and that is capable of moving relative to the EPG time scale. FIG. **18**B shows a line **1822** positioned between the 7:30 PM and 8:00 PM on the mini EPG **1820**. Alternatively, a small arrow, or caret symbol, may be used instead of a line **1822**. The position of the caret symbol along the time indicates the current time. Although shown as a line, it is anticipated that any graphic may be used to provide an indication to a user. Moreover, while a moveable time indicator is disclosed above, it is anticipated that some embodiments may employ a fixed current time indicator while the EPG time scale itself moves relative to the fixed current time indicator.

[0197] In some embodiments the compact EPG **1820** may include symbols or stars indicating that a particular program or channel is marked as a favorite.

[0198] FIG. **19**A depicts an embodiment of a compact favorites EPG **1920** with favorites presented via an application panel **1412** of an Intelligent TV **100** showing Live TV. Note that the favorites EPG list **1920** may be called a compact EPG displayed in the favorites tab **1620**D, a favorite based EPG, or a compact favorites EPG herein. As shown, the select-focus associated with the application panel navigation bar **1604** is set to the favorites tab **1620**D. In some cases the selection of the favorites tab **1620**D may be indicated via a select-focus in the form of a highlight, an underline, a specific font style, an action (e.g., movement of the favorites tab **1620**D indicator **1740**, brightness adjustment, highlight, spotlight, etc.), combinations thereof, and the like. This select-focus indication may be associated with the favorites tab **1620**D.

[0199] The application panel **1412** may also include a hotkey legend **1612** similar to other application panels **1412** displayed via the Intelligent TV **100**. As previously discussed, the hotkeys provided in the hotkey legend **1612** may be customized to facilitate shortcut navigation and/or special features associated with the Intelligent TV **100** and/or the application panel **1412**. For instance, the hotkeys may be context sensitive to a particular application panel **1412** displayed. As

shown in FIG. **19**A, the hotkey legend **1612** may include Remind, Favorite, Page Up, and Page Down or other actions associated with one or more hotkeys. As shown in FIG. **19**B, the hotkey legend **1612** may include Guide, Remind, Favorite, and other actions associated with one or more hotkeys. The Remind hotkey may be green and may toggle a reminder on or off for the selected program, i.e., the program highlighted or in focus in the compact favorites EPG **1920**. The Remind hotkey may be green and may toggle a reminder on or off for the selected program, i.e., the program highlighted or in focus in the compact EPG **1820**. One hotkey, such as the yellow hotkey, may toggle between a view of the complete EPG (i.e., show all) and a filtered EPG (i.e., show favorites) only displaying favorite channels and/or channels with content marked as favorite. In one embodiment, the Favorite hotkey may correspond to a shortcut marking or unmarking a series, program, show, or channel as a favorite. The Favorite hotkey may provide a modal with two choices: (1) "Add [Show Name] to Favorites"; or (2) "Add [Channel #] to Favorite Channels." If the item is already a favorite then the message would be "Remove from" instead of "Add _____ to." The hotkey legend **1612** may also include a Page Up hotkey and/or a Page Down hotkey to allow the user to navigate the compact favorites EPG **1920**. The hotkeys may be associated, or mapped, to one or more inputs of a remote control or other input device.

[0200] The default focus of the compact favorites EPG **1920** is the currently watching listing, if available, in the compact favorites EPG **1920**. Otherwise, the default focus of the compact favorites EPG **1920** is the first item listed in the compact favorites EPG **1920**. In some embodiments, the compact favorites EPG **1920** follows the patterns, functionality, and rules as compact EPGs in other tabs **1620**. The content of the compact favorites EPG **1920** is limited to favorite channels and favorite programs currently playing or that are about to start within the next 15 minutes on Live TV. The compact favorites EPG **1920** is dynamic and once a favorite program ends for a channel that is not favorite channel, that row is removed from the compact favorites EPG **1920**.

[0201] In this example, the favorites EPG list **1920** is shown by channel number on the left-hand side of the compact EPG **1920**. One example of such a presentation layout option may include displaying the compact favorites EPG **1920** with stars indicating favorites, e.g., favorite channels and favorite programs or series, and displayed from within the favorites tab **1620**D of the application panel **1412**. Icons or symbols other than stars may also be used to indicate a favorite program or channel. In a "Time-Based" category presentation, the compact favorites EPG **1920** may be arranged by time (as opposed to channel number, as previously discussed above). In one embodiment, the compact favorites EPG **1920** displays a list of movies that are available for viewing via the Intelligent TV **100**. Other variations and presentation layouts regarding categories, as disclosed above, may be made to the compact favorites EPG **1920**.

[0202] The compact favorites EPG **1920** may be configured to present one or more programs or channels marked as a favorite for each channel in a list format. The compact favorites EPG **1920** may only show those channels marked as a favorite or containing programs marked as a favorite. The compact favorites EPG **1920** may be accompanied by an EPG time scale. A program in the compact favorites EPG **1920** may include a text, graphic, and/or combination thereof identifier. In some embodiments, the compact favorites EPG **1920** may be configured to display a specific number of lines, rows, programs, and/or information. An identifier, such as highlighting, a box, a line, or other indicator may be used to identify the program to a user of the Intelligent TV **100**. Although shown with a finite number of rows displayed via the list of the compact favorites EPG **1920**, it is anticipated that other channels may be caused to display to the compact favorites EPG **1920** list given a user provided input. For instance, a user may scroll vertically or horizontally to another line, or page, on the list, by using a remote control or other input device. As another example, a user may navigate through channels in the compact favorites EPG **1920** by providing a directional input (e.g., via arrow keys, channel up/down buttons, etc.) from a remote control or other input device. The compact favorites EPG **1920** may be vertically scrollable and horizontally scrollable. In some embodiments, programs marked as a favorite are visually highlighted within the mini EPG. If a program displayed in the compact favorites EPG **1920** is currently on the air, then the user may select that program and the favorites panel **1412**D will be dismissed and the Intelligent TV **100** will switch the channel to the selected channel.

[0203] In some embodiments, the EPG time scale may include a current time indicator **1922** to indicate the current time. The current time indicator **1922** may be represented by a graphic that is associated with the EPG time scale and that is capable of moving relative to the EPG time scale. FIG. **19**B shows a line current time indicator **1922** positioned between the 7:30 PM and 8:00 PM on the compact favorites EPG **1920**. Alternatively and as shown in FIG. **19**A, a small arrow, or caret symbol, may be used instead of a line. The position of the current time indicator **1922** along the time scale indicates the current time. Although shown as a line or a caret, it is anticipated that any graphic may be used to provide an indication to a user. Moreover, while a moveable time indicator is disclosed above, it is anticipated that some embodiments may employ a fixed current time indicator **1922** while the EPG time scale and/or the programs themselves move relative to the fixed current time indicator **1922**. Furthermore, programs that are currently on air may be highlighted or shaded to indicate that they are currently on air.

[0204] Additionally or alternatively, the application panel **1412** may include a program preview pane **1908** that may include a program thumbnail graphic **1930**, an identifier, description, times, episode number, episode name, and other information associated with the channel and/or the program. The program preview pane **1908** may change to display new information as time passes or as a user navigates through selected channels, programs, or rows in the compact favorites EPG **1920**. In some embodiments, the Intelligent TV **100** may select EPG content information to display via the program preview pane **1908**. This selection may be based on stored rules. In some cases, the program preview pane **1908** may be configured to display information associated with the first channel on the favorites EPG list **1920**, as a default.

[0205] FIG. **19**C depicts a grouped content panel presented via an application panel **1412** of the Intelligent TV **100**. In particular, FIG. **19**C shows content that has been marked as a favorite by a user or Intelligent TV **100**. In other words, the content grouped in the favorites tab **1620**D is preferred over ungrouped content by at least one user. As shown, the select-focus associated with the application panel navigation bar **1604** is set to the favorites tab **1620**D. In some cases the

selection of the favorites tab **1620**D may be indicated via a select-focus in the form of a highlight, an underline, a specific font style, an action (e.g., movement of the favorites tab **1620**D indicator, brightness adjustment, etc.), combinations thereof, and the like. This select-focus indication may be associated with the favorites tab **1620**D. The application panel **1412** may also include a hotkey legend **1612** similar to other application panels **1412** displayed via the Intelligent TV **100**. As previously discussed, the hotkeys provided in the hotkey legend **1612** may be customized to facilitate shortcut navigation and/or special features associated with the Intelligent TV **100** and/or the application panel **1412**. For instance, the hotkeys may be context sensitive to a particular application panel **1412** displayed. As shown in FIG. **19**C, the hotkey legend **1912** may include Remind, Favorite, and other actions associated with one or more hotkeys. The hotkeys may be associated, or mapped, to one or more inputs of a remote control or other input device.

[0206] In some embodiments, the content in favorites may be displayed as an EPG list. For example, an EPG list may display programs that are currently airing on channels marked as favorite (see FIGS. **19**A-**19**B). As such each row of the list may correspond to a favorite channel, and show current program that is airing on that channel at the moment the EPG list is displayed. In the event that the EPG list is too large to display to the application panel **1412**, a scroll bar **1940** may be included to allow a user to adjust the visibly displayed content.

[0207] In other embodiments, the content in favorites may comprise an EPG list that identifies programs currently airing that have been identified as preferred, or favorite. The view of the EPG list can be configured as dynamic and based on time. As time progresses, programs currently listed in the application panel **1412** that end may be removed from the EPG list automatically. Additionally or alternatively, favorite programs that begin can be added to the EPG list automatically. In the event that the EPG list is too large to display to the application panel **1412**, a scroll bar **1940** may be included to allow a user to adjust the visibly displayed content. In any case a user may select one of the items in the EPG list to close the Live TV application and tune the Intelligent TV **100** to the signal source associated with the selected item.

[0208] When the favorites tab **1620**D is selected, the application panel **1412** may include content that has been determined as a favorite. This determination of whether content is a favorite may be made by a user. For example, a user may be watching content on the Intelligent TV **100** and provide an input via the remote control or other input device to identify the content as a favorite. In some cases, this input may include marking a show as a favorite by toggling a favorite button or identifier. In some embodiments, the determination of favorite content may be made via the Intelligent TV **100**. Among other things, the Intelligent TV **100** may store viewing habits and behavior and mark content as favorites based on the stored habits and behavior. Additionally or alternatively, the presentation of favorite content shown in the application panel **1412** may be ordered via the Intelligent TV **100**. The order may be associated with a rank that is determined from stored viewing habits and behavior. For example, if a user watches a specific show more often than others, the specific show may be ordered higher in rank than the others. In the application panel **1412** a high rank may correspond to a high position in the list. Accordingly, the highest ranked show may be placed at the top position on the list displayed to the application panel **1412**.

[0209] Among other things, the application panel **1412** shown in FIG. **19**C may include a program preview pane **1908**A-N, and a favorite identifier **1934**, or toggle button for one or more Live TV program, show, or content. The favorite identifier **1934** may indicate that a particular program is included in the favorites list. Additionally or alternatively, the favorite identifier **1934** may be configured as a user-interactive feature. For example, the favorite identifier **1934** may be used to remove a program from the favorites list. Continuing the example, a user may select the favorite identifier **1934** via an input from a remote control or other input device. Once selected, the user may be presented with an option to remove the content from the favorite list. The user may then select the appropriate option to remove or keep the content on the favorite list. The favorites list may be stored in a memory as disclosed herein, and may be accessed at least via the favorites tab **1620**D of the application panel navigation bar **1604**. In some embodiments, content identified as favorites may be displayed in the application panel **1412** without at least one of a thumbnail graphic, description, time, and other features.

[0210] FIG. **20**A depicts a first embodiment of a reminder dialog presentation **2000** in accordance with embodiments of the present disclosure. A reminder may be set for a program, show, channel, time, and combinations thereof. The reminder may be associated with an initiation condition, including but not limited to, a timer, an input from an EPG, in response to another condition, some other input, or combinations thereof. Continuing the example, when the initiation condition is satisfied for the reminder, the reminder may display to the Intelligent TV **100**. In some cases, the reminder may be displayed within a specific timeframe of a scheduled program or show. The reminder dialog presentation may utilize one or more of the dialog presentations disclosed above.

[0211] The reminder dialog presentation **2000** includes a reminder header **2004** and a reminder body comprising one or more reminder prompts **2008**A-C. The reminder header **2004** may include an identifier associated with a show, channel, series, content, reminder, program, time, etc. For example, the reminder header **2004** may display the title of a program that is available via the Live TV application **452**. The reminder body can include prompts **2008**A, **2008**B, **2008**C, along with one or more selectable inputs **2028**, such that a user may select an input that is associated with the prompts **2008**A, **2008**B, **2008**C. As can be appreciated, a user may navigate among these prompts **2008**A, **2008**B, **2008**C, to select a corresponding action that may be performed by the Live TV application **452**. In the present example, the reminder setting prompt **2008**A is highlighted by default. A user may move the position of the highlight via a remote control or other input device.

[0212] In some embodiments, the reminder dialog presentation **2000** may be initiated in response to a user input. A user may desire to add a reminder for a specific program, show, channel, etc. As such, a user may utilize a "remind" input associated with a remote control or other input device. In one example, a "remind" input may be provided via a hotkey associated with the remote control or other input device. For instance, a user may be viewing an EPG via the application panel **1412** of an Intelligent TV **100** and notice that an interesting program is scheduled to start in an hour. Desiring to be reminded of the program, the user may select the program,

activate the reminder input (e.g., via the "remind" hotkey, or other input) to initiate the reminder dialog presentation **2000**. Then, the user may select the first prompt **2008**A to set a reminder for the program.

[0213] The second prompt **2008**B allows a user to add the Live TV content (e.g., show, series, program, etc.) to a "Favorites" compilation, or group. In a similar fashion, the third prompt **2008**C listed on the reminder dialog presentation **2000** may be configured to provide an option for a user to add a selected channel to the "Favorites" compilation, or group. As can be appreciated, the "Favorites" group may be arranged at least by channel and content.

[0214] Referring to FIG. **20**B a second embodiment of a reminder dialog presentation **2000'** is depicted in accordance with embodiments of the present disclosure. In the event that a reminder is previously set for Live TV content, a user may initiate the second reminder dialog presentation **2000'** shown in FIG. **20**B. Among other things, the user may modify settings associated with the previously set reminder via the second reminder dialog presentation **2000'**. The second reminder dialog presentation **2000'** can be initiated in a similar manner as the reminder dialog presentation **2000**. Additionally or alternatively, the second reminder dialog presentation **2000'** may be initiated by a user selecting a previously set reminder, or a program that is associated with a previously set reminder. Upon providing the selection input, the user may view the second reminder dialog presentation **2000'**.

[0215] The second reminder dialog presentation **2000'** includes a reminder header **2004** and a reminder body comprising one or more reminder prompts **2008**A'-C'. As shown in FIG. **20**B, the reminder prompts **2008**A'-C' have changed from setting a reminder and adding a channel or content as a favorite to removing a reminder and channel or content from a "Favorites" group. In the event that a user wishes to remove the reminder from particular content, the user may initiate the second reminder dialog presentation **2000'** (as disclosed above) and select the "remove reminder" prompt from the appropriate reminder prompt **2008**A'. Although FIGS. **20**A-B show exemplary reminder dialog presentations **2000**, **2000'**, it should be appreciated that the presentation of user prompts **2008**A-C, **2008**A'-C' can vary in the number of prompts presented as well as the order in which they are presented.

[0216] FIGS. **21**A-D depict embodiments of reminder dialog notifications in accordance with embodiments of the present disclosure. In particular, FIGS. **21**A-D show various reminder dialogs that are presented to the display of the Intelligent TV **100** upon receiving a reminder initiation input. The reminder initiation input may be provided by one or more of, a user, the Live TV application **452**, other applications associated with the Intelligent TV **100**, and/or one or more components of the Intelligent TV **100**. For instance, a reminder may have been set, or programmed, for a specific program or show that is scheduled to play on Live TV.

[0217] In some embodiments, a reminder may be set for a specific program. The reminder may notify a user when the specific program is about to start, regardless of where the user is in the Intelligent TV **100** system (e.g., on another channel, silo, etc.). In one embodiment, a reminder may be set and created for a specific instance of a complete series. For example, if a program is on every Friday night at 8:00 PM on channel **3**, then setting a reminder for the program may create a reminder that is provided every Friday at 7:58 PM. Additionally or alternatively, if a program is a single airing event (such as a movie or TV special), then a reminder may only be provided for that singular instance. In some embodiments, if a user changes a channel from a reminder the

[0218] Reminders may be created for one or more parameters including, but not limited to, program names at program times on a program channel. The reminder may be stored in a memory and whenever a program is on that matches the one or more parameters the reminder may be set. The program logic used to create and/or set reminders does not require consideration of the day of the week associated with the one or more parameters. As such, all of the logical configurations may be covered. For example, reminders may be set for weekdays only (e.g., a soap opera, talk show, etc.), every day (e.g., news), twice a week (e.g., variety shows, competition shows having a competition day and a voting results day, etc.), once a week (e.g., a situation comedy (sitcom), drama show, etc.), and even once only (e.g., movie, TV special, etc.). This configuration may cover scenarios where shows go off the air for some time period between seasons.

[0219] In any event, a reminder may be associated with an initiation condition, including but not limited to, a timer, an input from an EPG, in response to another condition, some other input, or combinations thereof. Continuing the example, when the initiation condition is satisfied for the reminder, the reminder may display to the Intelligent TV **100** in the form of at least one of the reminder dialog presentations shown in FIGS. **21**A-D. In some cases, the reminder may be displayed within a specific timeframe of a scheduled program or show. The notifications may be displayed to the active content area **1408** of the Intelligent TV **100**. Additionally or alternatively, the notifications may be translucent, or semi-transparent, to allow content from the active content area **1408** to show through the notifications.

[0220] Among other things, the reminder time bar **2112** may be configured to display an amount of time that is associated with the visual presentation of the reminder dialog notification. In other words, the reminder time bar **2112**, may indicate how long a reminder is expected to be displayed before the reminder notification disappears. By way of example, the reminder time bar **2112** may be configured as a progress bar that increases in dimension (e.g., length, width, height, combinations thereof, etc.) until the dimension reaches a specific size, at which point the reminder notification disappears. In another embodiment, the reminder time bar **2112** may be arranged as a timed progress bar that decreases in dimension (e.g., length, width, height, combinations thereof, etc.) until the progress bar disappears with the notification. The reminder time bar **2112** that decreases in size may be called a reverse progress bar. In any event, at the end of a specific period of time set, or upon reaching a time goal, for a reminder notification, the notification may be configured to disappear.

[0221] A user may interact with a reminder dialog notification. For instance, a reminder dialog notification **2104**A-D may be configured with a user interface button **2116**. In some cases, the user interface button **2116** may include a text or graphic that indicates an associated function with the button **2116**. Additionally or alternatively, it is anticipated that a user may interact with a content identification bar **2108** and even a preview pane **1908**. In one example, a user may select the content identification bar **2108** associated with a notification. In some cases, this selection may tune the Intelligent TV **100** to the signal source associated with the bar **2108**. Depending on one or more of the style of reminder dialog notification **2104**A-D, the content associated with the reminder, user pref-

erences, and Intelligent TV **100** settings, any of the various reminder dialog notifications may be presented to a user via the display of the Intelligent TV **100**.

[0222] The Live TV application **452** may be configured to receive multiple reminder notifications at the same time. When multiple reminder notifications are received at the same time, the reminders may be queued. In some embodiments, requests to the user interface of the Intelligent TV **100** are sent one at a time to display the notification to the user. If the user chooses not to change the channel associated with the notification, the Live TV application **452** may proceed to process the next reminder notification in queue.

[0223] FIG. **21**A depicts a first reminder dialog notification **2104**A configured with a program preview pane **1908**, a content identification bar **2108**, a reminder time bar **2112**, and a user interface button **2116**. The reminder dialog notification may be accompanied by one or more of a time and reminder title in the header of the notification **2104**A. The content identification bar **2108** may include a channel number, identifier, graphic, description, and the like associated with Live TV content. This configuration of reminder dialog notification allows for a great amount of information to be included in the reminder. As can be appreciated, the size of the first reminder dialog notification **2104**A may occupy a substantial portion of the viewing area of the active content area **1408**. It should be appreciated, however, that the dialog notification may be justified (bottom, left, right, top, middle, combinations thereof, etc.) to occupy a specific portion of the Intelligent TV **100** active content area **1408**. In some embodiments, the first reminder dialog notification **2104**A may be presented only at a first time to a user, while subsequent reminders for the same content may utilize another dialog notification as disclosed herein.

[0224] FIG. **21**B depicts a compact reminder dialog notification **2104**B configured with a content identification bar **2108**, a reminder time bar **2112**, and a user interface button **2116**. Although shown with a combination of features, the compact reminder dialog notification **2104**B may include more or less features than shown. For example, an unobtrusive compact reminder dialog notification may only include the content identification bar **2108** and possibly a reminder time bar **2112** to use a limited amount of space on the Intelligent TV **100** display, especially when compared to the first reminder dialog notification **2104**A. As such, the compact notification **2104**B may be displayed to the active content area **1408** of the Intelligent TV **100** to appear smaller than the first reminder dialog notification **2104**A. This compact reminder dialog notification **2104**B may be useful in subsequent reminders or in reminders for content already observed/acknowledged by a user.

[0225] FIG. **21**C depicts a multiple reminder dialog notification **2104**C configured with a first content identification bar **2108**A, a second content identification bar **2108**B, a reminder time bar **2112**, and a user interface button **2116**. Among other things, the multiple reminder dialog notification **2104**C can alert a user of multiple reminders that were previously set. From the multiple reminder dialog notification **2104**C, a user may navigate between the various interactive features. For example, a user may at least navigate between the first content identification bar **2108**A and the second content identification bar **2108**B. Continuing this example, a user may select the first content identification bar **2108**A associated with the multiple reminder dialog notification **2104**C. In some cases, this selection may tune the Intelligent TV **100** to the signal source associated with the bar **2108**. Conversely, the user may select the second content identification bar **2108**B associated with the multiple reminder dialog notification **2104**C. In this case, this selection may tune the Intelligent TV **100** to the signal source associated with the second bar **2108**B.

[0226] It is anticipated that the multiple reminder dialog notification **2104**C may be used in instances where two or more reminders are set for Live TV content. In one embodiment, the maximum number of displayed reminders, or content identification bars, may be limited to a specific number. For instance, even if thirty reminders are set for Live TV content on the Intelligent TV **100**, and all are about to initiate a reminder dialog, only two would be presented via the embodiment above. In another embodiment, however, the number of displayed reminders, or content identification bars may not be so limited. As such, the notification **2104**C may increase in size to fit the number of reminders set and configured to alert at the same time.

[0227] FIG. **21**D depicts a scrollable multiple reminder dialog notification **2104**D configured with a first content identification bar **2108**A, a second content identification bar **2108**B, a third content notification bar **2108**C, a dialog scroll bar **2120**, a reminder time bar **2112**, and a user interface button **2116**. Among other things, the scrollable multiple reminder dialog notification **2104**C can alert a user of multiple reminders that have been previously set. From the multiple reminder dialog notification **2104**C, a user may navigate between the various interactive features. For example, a user may at least navigate between the first content identification bar **2108**A, the second content identification bar **2108**B, the third content identification bar **2108**C, and more via the dialog scroll bar **2120**. Similar to the previous dialog notifications **2104**A-C, a user may select any one of the content identification bars **2108**A-C, even those not presently visible without movement of the dialog scroll bar **2120**, that are associated with the scrollable multiple reminder dialog notification **2104**D.

[0228] In accordance with some embodiments of the present disclosure, the application panel **1412** may display content resulting from a user search when the tab **1620**E has the focus, as illustrated in FIGS. **22**A-B. FIGS. **22**A-B are the view the user sees prior to filling in the search terms. Alternatively, or in addition, a user may enter one or more search terms into the term box **2204**. The results of the search (see FIGS. **23**A-**23**B), either based on the search terms, or based on the previous search, may then be displayed to a user using a search panel **1412**E, for example. In some cases, the selection of the search tab **1620**E may be indicated via a select-focus in the form of a highlight, an underline, a specific font style, an action (e.g., movement of the search tab **1620**E indicator **2240**, brightness adjustment, highlight, spotlight, etc.), combinations thereof, and the like. This select-focus indication may be associated with the search tab **1620**E.

[0229] The search panel **1412**E allows the user to search for media within the EPG for content currently playing on Live TV or content that will be available within the next 7 days. For example, based on a search term or terms entered into a search box **2204**, content matching the search term or terms may be returned to a user. Moreover, as the search panel **1412**E is used to navigate through a search on the Intelligent television **100**, the search panel **1412**E itself does not obstruct the user from viewing content displayed on the screen of the Intelligent TV **100**. Prior to searching however, a search panel, such as search panel **1412**E, may first be displayed. Search panel

1412E may contain a one or more previous search terms **2208** and display each specific search term **2212**A-**2212**N for a user to navigate to and select. Therefore, if a user decides to select a previously searched term **2212**B based on the previous searches **2208**, search results matching the previously searched term **2212**B may be displayed. The select button on a remote may be used to select a previous search term. The previous search terms **2212**A-N are listed with most recent searched terms appearing on the top of the list. The default focus of the search panel **1412**E prior to searching is the first item on the previous search term list **2208**. In some embodiments, the maximum number of previous search terms displayed is 10.

[0230] The search panel **1412**E is vertically scrollable. The navigation panel bar **1604** is horizontally scrollable and the panel content area **1608** may be vertically scrollable. The hotkey legend **1612** for the search panel **1412**E prior to searching may include a "Remove" hotkey **1612**B, which may be green in some embodiments, to remove a selected term **2212**B from the search history. The hotkey legend **1612** for the search panel **1412**E prior to searching may include a "Clear All" hotkey **1612**A, which may be blue in some embodiments, to clear all search history. The up and down arrows on the remote allow the user to scroll vertically through the search term list **2208**. If a previous search term is in focus, pressing the select key on the remote initiates the search process with the selected search term and takes the user to the search results.

[0231] The results of the search, either based on the new search terms or based on a previous search, may then be displayed to a user using the search panel **1412**E, for example, as illustrated in FIGS. **23**A-**23**B. FIG. **23**A may include one or more content areas embodying the results of the search. The content area may include associated content, such as an image thumbnail, a series name, a description of the content, an episode number and the like. The search results update in real time while the user fills in the search terms. The search results provide a collection of programs that are related to the search term. The default focus of the search panel **1412**E showing the search results list **2308** is the first item on the search result list. Once focus is placed on the a search result header **2204** that shows a selected search term **2204**, any text input will clear the existing search results and begin repopulating the search result list **2308** with new results dynamically. In some embodiments, a maximum of 10 results are displayed at a time.

[0232] FIG. **23**A depicts an embodiment of a search results list **2308** presented via an application panel **1412** of an Intelligent TV **100** showing Live TV. As shown, the select-focus associated with the application panel navigation bar **1604** is set to the search tab **1620**E. In some cases the selection of the search tab **1620**E may be indicated via a select-focus in the form of a highlight, an underline, a specific font style, an action (e.g., movement of the search tab **1620**E indicator **1740**, brightness adjustment, highlight, spotlight, etc.), combinations thereof, and the like. This select-focus indication may be associated with the search tab **1620**E. Programs or movies that are marked as favorites may be visually highlighted or comprise a symbol, star, or other icon within the search results list **2308**. Programs or movies that are currently being recorded or that are already recorded may be visually highlighted or comprise a circle icon or other icon within the search results list **2308**.

[0233] In some embodiments, the search results list **2308** is a time based mini EPG, such as the compact EPGs described above. Thus, if the search results list **2308** is a time based mini EPG, then the compact EPG will follow all patterns and functionality as the compact EPG's described above. The content of the compact EPG may be limited to all airing of one program ordered by time and covering the next 2 hours. The compact EPG will support normal vertical scrolling if space requires it.

[0234] The search panel **1412**E may also include a hotkey legend **1612** similar to other application panels **1412** displayed via the Intelligent TV **100**. As previously discussed, the hotkeys provided in the hotkey legend **1612** may be customized to facilitate shortcut navigation and/or special features associated with the Intelligent TV **100** and/or the application panel **1412**. For instance, the hotkeys may be context sensitive to a particular application panel **1412** displayed. As shown in FIGS. **23**A-B, the hotkey legend **1612** may include Remind, Remove, Favorite, and other actions associated with one or more hotkeys. The Remind hotkey may be green and may toggle a reminder on or off for the selected program, i.e., the program highlighted or in focus in the search results list **2308**. In one embodiment, the Favorite hotkey may correspond to a shortcut marking or unmarking a series, program, show, or channel as a favorite. The Favorite hotkey may provide a modal with two choices: (1) "Add [Show Name] to Favorites"; or (2) "Add [Channel #] to Favorite Channels." If the item is already a favorite then the message would be "Remove from" instead of "Add _____ to." The hotkey legend **1612** may also include a Page Up hotkey and/or a Page Down hotkey to allow the user to navigate the search results list **2308**. The hotkeys may be associated, or mapped, to one or more inputs of a remote control or other input device.

[0235] The application panel **1412** includes a search result header **2204** and shows the selected search term **2204**. The search result header **2204** may be used to alter the format of a displayed search results list **2308**. For instance, the search result header **2204** shows "Chris North" in FIG. **23**B and is a button the user can select to return to the search results list **2308**. A user may select the search result header **2204** to change, remove, create, or select results that the search results list **2308** will display. In this example, the chosen search results list **2308** is shown by channel number on the left-hand side of the search results list **2308**. In some embodiments, a user may select the search result header **2204** to modify the presentation of the search results list **2308** in the application panel **1412**. Upon selecting the search result header **1804**, the user may be presented with a number of search results list **2308** layout options. One example of such a presentation layout option may include displaying the search results list **2308** in a "Time-Based" result presentation, the search results list **2308** may be arranged by time (as opposed to channel number, as previously discussed above). Thus, results that are currently on air may be arranged at the top of the list and have text or an icon indicating that the content with the search result is "On Now." Other variations and presentation layouts regarding categories, as disclosed above, may be made to the search results list **2308**.

[0236] The search results list **2308** may be configured to present one or more programs for each channel in a list format. A program in the search results list **2308** may include a text, graphic, and/or combination thereof identifier. In some embodiments, the search results list **2308** may be configured to display a specific number of lines, rows, programs, and/or

information. The identifier may be used to identify the program to a user of the Intelligent TV **100**. Although shown with a finite number of rows displayed via the list of the search results list **2308**, it is anticipated that other channels may be caused to display to the search results list **2308** given a user provided input. For instance, a user may scroll to another line, or page, on the list, by using a remote control or other input device. Thus, the search results list **2308** may be vertically scrollable. As another example, a user may navigate through channels in the search results list **2308** by providing a directional input (e.g., via arrow keys, channel up/down buttons, etc.) from a remote control or other input device. If a program is currently on the air, then the user may select that program and the categories panel **1412**C will be dismissed and the Intelligent TV **100** will switch the channel to the selected channel.

[0237] The search results are reset to the prior search terms screen when one of the following happens: (1) the user exits the Live TV silo; (2) the user turns off the Intelligent TV **100**; or (3) a certain amount of time (e.g., 5 minutes) passes from the time of the search.

[0238] In embodiments where the search results list **2308** is displayed as a search result EPG (i.e., a compact EPG), the application panel **1412** may also include a program preview pane **1908** that may include a program thumbnail graphic **1930**, an identifier, description, times, episode number, episode name, and other information associated with the channel and/or the program. The program preview pane **1908** may change to display new information as time passes or as a user navigates through selected channels, programs, or rows in the search results list or EPG **2308**. In some embodiments, the Intelligent TV **100** may select EPG content information to display via the program preview pane **1908**. This selection may be based on stored rules. In some cases, the program preview pane **1908** may be configured to display information associated with the first result on the search results EPG **2308**, as a default. The program preview pane **1908** may be visible at all times while the search results EPG **2308** is in view. The program preview pane **1908** cannot receive focus.

[0239] FIG. **24** shows a flow diagram depicting a categories panel presentation method **2400** in accordance with embodiments of the present disclosure. The method **2400** begins at step **2404** and proceeds by recognizing a select-focus and/or selected content via the application panel **1412** (step **2408**). In some embodiments, the select-focus may correspond to a position of a user's cursor, or indicator **1740**, on the application panel **1412**. A select-focus may include a default focus associated with one or more of the fixed tab regions **1604**. The select-focus may be moved via a user input from a remote control or other input device. One example of moving or shifting the select-focus may include providing a directional input via a remote control. Selected content may be recognized via an input provided in association with a selection-focus. Additionally or alternatively, selected content may be recognized by detecting an input that is independent of a selection-focus. For example, although an indicator **1740** may be associated with a portion of the application panel **1412**, a user may provide an input corresponding to a different portion of the application panel **1412**. In this example, a user may select a program hotkey, provide a directional input (e.g., up, down, left, right, angles, and combinations thereof), a swipe input, and/or a hold input to select content.

[0240] If the select-focus is associated with a categories tab region **1620**C, the method **2400** continues by receiving an input to initiate the categories presentation via the application panel **1412** (step **2412**). The input may be provided by a user via a remote control or other input device. In some embodiments, the user-provided input may be a selection input based on a corresponding position of a select-focus associated with the navigation bar **1604**. In other embodiments, a categories input may be provided via a categories button associated with a remote control or other input device. In this case, a select-focus may not be required to display category content via the Live TV application panel **1412**. Additionally or alternatively, the input may be provided via the Intelligent TV **100** in response to a condition. For example, a timer may be configured to change Live TV channels on the Intelligent TV **100** at a given time. Once the channel is changed, the categories tab **1620**C may be automatically selected and categories may be shown via the application panel **1412**. This automatic selection and presentation may be provided by one or more of the components associated with the Intelligent TV **100**. As can be appreciated, rules and/or preferences may be used to determine the automatic selection and/or presentation of categories via the categories tab **1620**C and the application panel **1412**.

[0241] Upon receiving an input to initiate the categories presentation via the application panel **1412**, the method **2400** continues by determining the presentation of categories based at least partially on the selection (step **2416**). The presentation of categories may include, but is not limited to, a list of categories, the number of results/matches for each category, layout, a graphical representation, selected fields, descriptions, a mini EPG, program times, favorites, and the like. As such, certain presentations of categories may be governed by the content related to the selection input. In one example, a selection input may be provided to show categories relating to broadcast content playing via Live TV in the active content area **1408**. Continuing this example, if a movie is playing in the active content area **1408**, the categories presentation selected for the application panel **1412** may include a list of movie categories, the number of movie matches for each movie category, layout, a graphical representation, selected fields, descriptions, movie times, favorite icons, and more. On the other hand, if a radio station program is playing in the active content area **1408**, the categories presentation selected for display in the application panel **1412** may include the a list of radio categories, the number of station matches for each radio category, layout, a graphical representation, selected fields, descriptions, favorite icons, radio station program channel number, a default image, etc. In some embodiments, a size of the active content area **1408** may include the total viewable area of the Intelligent TV **100** display.

[0242] The method **2400** continues by retrieving the categories presentation content from at least one source (step **2420**). For instance, if the categories presentation content includes a list of categories with content currently playing on Live TV, the Intelligent TV **100** may retrieve this categories list from at least one broadcast signal. Typically, such programming categories may be included in the data accompanying a broadcast signal. Additionally or alternatively, if the categories presentation content includes "recommended" or "favorite" content, the Intelligent TV **100** may refer to a memory where such content may be stored. In one embodiment, the memory may be associated with the hardware of the Intelligent TV **100**. In some cases, this content may be stored in a memory remote from the Intelligent TV **100**, in which case, the Intelligent TV **100** and its various components may

be caused to communicate across a network to retrieve the content. Among other things, the content retrieved across the network may include, but is in no way limited to, programming information, thumbnail graphics, EPGs, categories, etc. One example of the network may include, but is not limited to, the Internet.

[0243] Next, the Intelligent TV **100** may present the categories presentation content via the Live TV application **452** and application panel **1412** (step **2424**). As disclosed herein, the presentation may include a visual, audible, and/or combination presentation via the Live TV application **452**. In some embodiments, the presentation of categories may be associated within the application panel **1412** alone. The presentation of categories may include, but is not limited to, a layout, a graphical representation, selected fields, descriptions, and the like. In any event, the presentation layout is displayed to the Intelligent TV **100** as determined in step **2416**. This presentation of categories may include any of the layouts shown in the application panels **1412** of the appended figures. Additionally or alternatively, the presentation of categories, and even the application panel **1412**, may be at least partially transparent. In some embodiments, the content presented to the active content area may be at least partially visible beneath, or through, the Live TV application panel **1412** and even the categories presentation content that is presented via the application panel **1412**. In one embodiment, the size of the active content area is maintained upon presenting the categories presentation content via the application panel **1412**. For example, the application panel **1412** in some instances does not affect the size of the displayed active content. The method **2400** ends at step **2428**.

[0244] FIG. **25** shows a flow diagram depicting a favorites panel presentation method **2500** in accordance with embodiments of the present disclosure. The method **2500** begins at step **2604** and proceeds by recognizing a select-focus and/or selected content via the application panel **1412** (step **2508**). In some embodiments, the select-focus may correspond to a position of a user's cursor, or indicator **1740**, on the application panel **1412**. A select-focus may include a default focus associated with one or more of the fixed tab regions **1604**. The select-focus may be moved via a user input from a remote control or other input device. One example of moving or shifting the select-focus may include providing a directional input via a remote control. Selected content may be recognized via an input provided in association with a selection-focus. Additionally or alternatively, selected content may be recognized by detecting an input that is independent of a selection-focus. For example, although an indicator **1740** may be associated with a portion of the application panel **1412**, a user may provide an input corresponding to a different portion of the application panel **1412**. In this example, a user may select a program hotkey, provide a directional input (e.g., up, down, left, right, angles, and combinations thereof), a swipe input, and/or a hold input to select content.

[0245] If the select-focus is associated with a favorites tab region **1620**D, the method **2500** continues by receiving an input to initiate the favorites presentation via the application panel **1412** (step **2512**). The input may be provided by a user via a remote control or other input device. In some embodiments, the user-provided input may be a selection input based on a corresponding position of a select-focus associated with the navigation bar **1604**. In other embodiments, a favorites input may be provided via a favorites button associated with a remote control or other input device. In this case, a select-focus may not be required to display category content via the Live TV application panel **1412**. Additionally or alternatively, the input may be provided via the Intelligent TV **100** in response to a condition. For example, a timer may be configured to change Live TV channels on the Intelligent TV **100** at a given time. Once the channel is changed, the favorites tab **1620**D may be automatically selected and favorites may be shown via the application panel **1412**. This automatic selection and presentation may be provided by one or more of the components associated with the Intelligent TV **100**. As can be appreciated, rules and/or preferences may be used to determine the automatic selection and/or presentation of favorites via the favorites tab **1620**D and the application panel **1412**.

[0246] Upon receiving an input to initiate the favorites presentation via the application panel **1412**, the method **2500** continues by determining the presentation of favorites based at least partially on the selection (step **2516**). The presentation of favorites may include, but is not limited to, a list of favorite programs and channels, layout, a graphical representation, selected fields, thumbnails, images, descriptions, a mini EPG, program times, favorite icons, and the like. As such, certain presentations of favorites may be governed by the content related to the selection input. In one example, a selection input may be provided to show favorites relating to broadcast content playing via Live TV in the active content area **1408**. Continuing this example, if a movie is playing in the active content area **1408**, the favorites presentation selected for the application panel **1412** may include a list of movies marked as favorites, the time each movie favorite is playing, layout, a graphical representation, selected fields, descriptions, movie times, favorite icons, and more. On the other hand, if a radio station program is playing in the active content area **1408**, the favorites presentation selected for display in the application panel **1412** may include the a list of radio favorites, layout, a graphical representation, selected fields, descriptions, favorite icons, radio station program channel number, a default image, etc. In some embodiments, a size of the active content area **1408** may include the total viewable area of the Intelligent TV **100** display.

[0247] The method **2500** continues by retrieving the favorites presentation content from at least one source (step **2520**). For instance, if the favorites presentation content includes a list of favorite programs and/or favorite channels currently playing on Live TV, the Intelligent TV **100** may retrieve this list of favorites currently playing from at least one broadcast signal. Additionally, because the favorites presentation content includes "favorite" content, the Intelligent TV **100** may refer to a memory where such content may be stored. In one embodiment, the memory may be associated with the hardware of the Intelligent TV **100**. In some cases, this content may be stored in a memory remote from the Intelligent TV **100**, in which case, the Intelligent TV **100** and its various components may be caused to communicate across a network to retrieve the content. Among other things, the content retrieved across the network may include, but is in no way limited to, programming information, thumbnail graphics, EPGs, categories, etc. One example of the network may include, but is not limited to, the Internet.

[0248] Next, the Intelligent TV **100** may present the favorites presentation content via the Live TV application **452** and application panel **1412** (step **2524**). As disclosed herein, the presentation may include a visual, audible, and/or combination presentation via the Live TV application **452**. In some embodiments, the presentation of favorites may be associated

within the application panel **1412** alone. The presentation of favorites may include, but is not limited to, a layout, a graphical representation, selected fields, descriptions, favorite icons (e.g., stars) and the like. In any event, the presentation layout is displayed to the Intelligent TV **100** as determined in step **2516**. This presentation of favorites may include any of the layouts shown in the application panels **1412** of the appended figures. Additionally or alternatively, the presentation of favorites, and even the application panel **1412**, may be at least partially transparent. In some embodiments, the content presented to the active content area may be at least partially visible beneath, or through, the Live TV application panel **1412** and even the favorites presentation content that is presented via the application panel **1412**. In one embodiment, the size of the active content area is maintained upon presenting the favorites presentation content via the application panel **1412**. For example, the application panel **1412** in some instances does not affect the size of the displayed active content. The method **2500** ends at step **2528**.

[0249] FIG. **26** shows a flow diagram depicting a search panel presentation method **2600** in accordance with embodiments of the present disclosure. The method **2600** begins at step **2604** and proceeds by recognizing a select-focus and/or selected content via the application panel **1412** (step **2608**). In some embodiments, the select-focus may correspond to a position of a user's cursor, or indicator **1740**, on the application panel **1412**. A select-focus may include a default focus associated with one or more of the fixed tab regions **1604**. The select-focus may be moved via a user input from a remote control or other input device. One example of moving or shifting the select-focus may include providing a directional input via a remote control. Selected content may be recognized via an input provided in association with a selection-focus. Additionally or alternatively, selected content may be recognized by detecting an input that is independent of a selection-focus. For example, although an indicator **1740** may be associated with a portion of the application panel **1412**, a user may provide an input corresponding to a different portion of the application panel **1412**. In this example, a user may select a program hotkey, provide a directional input (e.g., up, down, left, right, angles, and combinations thereof), a swipe input, and/or a hold input to select content.

[0250] If the select-focus is associated with a search tab region **1620**E, the method **2600** continues by receiving an input to initiate the search presentation via the application panel **1412** (step **2612**). The input may be provided by a user via a remote control or other input device. In some embodiments, the user-provided input may be a selection input based on a corresponding position of a select-focus associated with the navigation bar **1604**. In other embodiments, a search input may be provided via a search button associated with a remote control or other input device. In this case, a select-focus may not be required to display category content via the Live TV application panel **1412**. Additionally or alternatively, the input may be provided via the Intelligent TV **100** in response to a condition. For example, a timer may be configured to change Live TV channels on the Intelligent TV **100** at a given time. Once the channel is changed, the search tab **1620**E may be automatically selected and the search panel **1620**E may be shown via the application panel **1412**. This automatic selection and presentation may be provided by one or more of the components associated with the Intelligent TV **100**. As can be appreciated, rules and/or preferences may be used to determine the automatic selection and/or presentation of search terms and results via the search tab **1620**D and the application panel **1412**.

[0251] Upon receiving an input to initiate the search presentation via the application panel **1412**, the method **2600** continues by determining the presentation of search information prior to the user initiating the search based at least partially on the selection (step **2616**). The presentation of pre-search information may include, but is not limited to, a list of previous search terms, the time or date of the previous searches, a new search term, space for a user to input a search term, layout, a graphical representation, selected fields, thumbnails, images, and the like. As such, certain presentations of search terms may be governed by the content related to the selection input. In one example, a selection input may be provided to show previous search terms relating to broadcast content playing via Live TV in the active content area **1408**. In some embodiments, a size of the active content area **1408** may include the total viewable area of the Intelligent TV **100** display.

[0252] The method **2600** continues by retrieving the pre-search presentation content from at least one source (step **2620**). For instance, if the search presentation content prior to the search includes a list of previously searched terms, the Intelligent TV **100** may retrieve this list of search terms with content currently playing on Live TV from at least one broadcast signal. Additionally, because the search presentation content includes previous search term content, the Intelligent TV **100** may refer to a memory where such content may be stored. In one embodiment, the memory may be associated with the hardware of the Intelligent TV **100**. In some cases, this content may be stored in a memory remote from the Intelligent TV **100**, in which case, the Intelligent TV **100** and its various components may be caused to communicate across a network to retrieve the content. One example of the network may include, but is not limited to, the Internet.

[0253] Next, the Intelligent TV **100** may present the pre-search presentation content via the Live TV application **452** and application panel **1412** (step **2624**). As disclosed herein, the presentation may include a visual, audible, and/or combination presentation via the Live TV application **452**. In some embodiments, the presentation of previous and current search terms may be associated within the application panel **1412** alone. The presentation of previous and current search terms may include, but is not limited to, a layout, a graphical representation, selected fields, and the like. In any event, the presentation layout is displayed to the Intelligent TV **100** as determined in step **2616**. This presentation of the search content prior to the search may include any of the layouts shown in the application panels **1412** of the appended figures. Additionally or alternatively, the presentation of the search content prior to the search, and even the application panel **1412**, may be at least partially transparent. In some embodiments, the content presented to the active content area may be at least partially visible beneath, or through, the Live TV application panel **1412** and even the pre-search presentation content that is presented via the application panel **1412**. In one embodiment, the size of the active content area is maintained upon presenting the search presentation content via the application panel **1412**. For example, the application panel **1412** in some instances does not affect the size of the displayed active content.

[0254] The method **2600** continues by receiving an input to initiate a search for a specific search term via the application

panel **1412** (step **2628**). The input may be provided by a user via a remote control or other input device. In some embodiments, the user-provided input may be a selection input based on a corresponding position of a select-focus associated with the search panel **1620**E.

[0255] Upon receiving an input to initiate the search, the method **2600** continues by initiating the search by searching for content with the search terms (**2632**). Next, the method **2600** returns a list of content with search terms in the search results presentation via the Live TV application panel **1412** (step **2636**).

[0256] Next, the method continues by presenting the search result content and search result presentation via the Live TV application panel **1412** (step **2640**). The presentation of search result information may include, but is not limited to, a list of programs and channels, layout, a graphical representation, selected fields, thumbnails, images, descriptions, a mini EPG, program times, favorite icons, and the like. As such, certain presentations of search results may be governed by the content related to the selection input. In one example, a selection input may be provided to show search results relating to broadcast content playing via Live TV in the active content area **1408**. Continuing this example, if a movie is playing in the active content area **1408**, the search presentation selected for the application panel **1412** may include a list of movies matching the search terms, the time each movie result is playing, layout, a graphical representation, selected fields, descriptions, movie length times, favorite icons, and more. In some embodiments, a size of the active content area **1408** may include the total viewable area of the Intelligent TV **100** display.

[0257] The method **2600** continues by retrieving the search results presentation content from at least one source (step **2640**). For instance, if the search results presentation content includes a list of programs currently playing on Live TV, the Intelligent TV **100** may retrieve this list of programs currently playing from at least one broadcast signal. Additionally, because the search presentation content may include "favorite" content, the Intelligent TV **100** may refer to a memory where such content may be stored. In one embodiment, the memory may be associated with the hardware of the Intelligent TV **100**. In some cases, this content may be stored in a memory remote from the Intelligent TV **100**, in which case, the Intelligent TV **100** and its various components may be caused to communicate across a network to retrieve the content. Among other things, the content retrieved across the network may include, but is in no way limited to, programming information, thumbnail graphics, EPGs, categories, etc. One example of the network may include, but is not limited to, the Internet.

[0258] Next, the Intelligent TV **100** may present the search result presentation content via the Live TV application **452** and application panel **1412** (step **2644**). As disclosed herein, the presentation may include a visual, audible, and/or combination presentation via the Live TV application **452**. In some embodiments, the presentation of search results may be associated within the application panel **1412** alone. The presentation of search results may include, but is not limited to, a layout, a graphical representation, selected fields, descriptions, favorite icons (e.g., stars) and the like. In any event, the presentation layout is displayed to the Intelligent TV **100** as determined in step **2616**. This presentation of search results may include any of the layouts shown in the application panels **1412** of the appended figures. Additionally or alternatively, the presentation of search results, and even the application panel **1412**, may be at least partially transparent. In some embodiments, the content presented to the active content area may be at least partially visible beneath, or through, the Live TV application panel **1412** and even the search presentation content that is presented via the application panel **1412**. In one embodiment, the size of the active content area is maintained upon presenting the search presentation content via the application panel **1412**. For example, the application panel **1412** in some instances does not affect the size of the displayed active content. The method **2600** ends at step **2648**.

[0259] FIG. **27** shows a flow diagram of a Live TV presentation method **2700** in accordance with embodiments of the present disclosure. The method **2700** begins at step **2704** and proceeds by running a Live TV application **452** via the Intelligent TV **100** (step **2708**). While the Live TV application **452** is running (e.g., via a processor associated with the Intelligent TV **100**), the Intelligent TV **100** may simultaneously present Live TV broadcast content (step **2712**). In one embodiment, the Live TV application **452** may be configured to run on top of Live TV content. For instance, the Intelligent TV **100** may be displaying Live TV content via a display of the Intelligent TV **100**. The Live TV content may be displayed, or presented, to a first portion of the Intelligent TV **100**. In some embodiments, the first portion of the Intelligent TV **100** may be equivalent to an area of the display of the Intelligent TV **100** that is greater than 50% of the total area of the display.

[0260] Next, the method **2700** continues by receiving an input that initiates a feature of the Live TV application **452** (step **2716**). This Live TV application input may be provided by at least one of, a user, an input device, automatically in response to a condition, combinations thereof and the like. In some cases, the input may be provided via a user operating the input device associated with the Intelligent TV **100**. A typical input device associated with the Intelligent TV **100** may include a remote control. The remote control may be a dedicated device, a tablet, a smart phone, or other device configured to run a remote control application that is capable of communicating with the Intelligent TV **100**.

[0261] A Live TV application feature may then be determined based at least partially on the received input (step **2720**). In some embodiments, the Live TV application feature may be determined based on the input and rules stored in a memory associated with the Intelligent TV **100**. Once the Live TV application feature is determined, the feature may be presented to the display of the Intelligent TV **100** (step **2724**). In one embodiment, the presentation of the Live TV application feature may include displaying, or presenting, the feature to a second portion of the display of the Intelligent TV **100**. The second portion of the display may be configured to overlap at least a portion of the first portion of the display. Additionally or alternatively, the second portion may include at least a partial transparency or translucency. This partial transparency may allow content from the first portion to be visible through the second portion. For example, while Live TV content continues to display to the Intelligent TV, the Live TV application may run simultaneously with the displayed Live TV content. Among other things, the simultaneous playing of Live TV content and Live TV application functionality can allow a user access to interactive Live TV application functions without interrupting Live TV content displayed by the Intelligent TV **100**. In some cases the Live TV application feature and any associated content may include, but is not

limited to, a presentation that is at least partially transparent, at least partially opaque, and combinations thereof. The method **2700** ends at step **2728**.

[0262] The exemplary systems and methods of this disclosure have been described in relation to televisions and associated devices. However, to avoid unnecessarily obscuring the present disclosure, the preceding description omits a number of known structures and devices. This omission is not to be construed as a limitation of the scopes of the claims. Specific details are set forth to provide an understanding of the present disclosure. It should however be appreciated that the present disclosure may be practiced in a variety of ways beyond the specific detail set forth herein.

[0263] Furthermore, while the exemplary aspects, embodiments, and/or configurations illustrated herein show the various components of the system collocated, certain components of the system can be located remotely, at distant portions of a distributed network, such as a LAN and/or the Internet, or within a dedicated system. Thus, it should be appreciated, that the components of the system can be combined into one or more devices, such as a television, or collocated on a particular node of a distributed network, such as an analog and/or digital telecommunications network, a packet-switch network, or a circuit-switched network. It will be appreciated from the preceding description, and for reasons of computational efficiency, that the components of the system can be arranged at any location within a distributed network of components without affecting the operation of the system. For example, the various components can be located in a switch such as a PBX and media server, gateway, in one or more communications devices, at one or more users' premises, or some combination thereof. Similarly, one or more functional portions of the system could be distributed between a telecommunications device(s) and an associated computing device.

[0264] Furthermore, it should be appreciated that the various links connecting the elements can be wired or wireless links, or any combination thereof, or any other known or later developed element(s) that is capable of supplying and/or communicating data to and from the connected elements. These wired or wireless links can also be secure links and may be capable of communicating encrypted information. Transmission media used as links, for example, can be any suitable carrier for electrical signals, including coaxial cables, copper wire and fiber optics, and may take the form of acoustic or light waves, such as those generated during radio-wave and infra-red data communications.

[0265] Also, while the flowcharts have been discussed and illustrated in relation to a particular sequence of events, it should be appreciated that changes, additions, and omissions to this sequence can occur without materially affecting the operation of the disclosed embodiments, configuration, and aspects.

[0266] A number of variations and modifications of the disclosure can be used. It would be possible to provide for some features of the disclosure without providing others.

[0267] In yet another embodiment, the systems and methods of this disclosure can be implemented in conjunction with a special purpose computer, a programmed microprocessor or microcontroller and peripheral integrated circuit element(s), an ASIC or other integrated circuit, a digital signal processor, a hard-wired electronic or logic circuit such as discrete element circuit, a programmable logic device or gate array such as PLD, PLA, FPGA, PAL, special purpose computer, any comparable means, or the like. In general, any device(s) or means capable of implementing the methodology illustrated herein can be used to implement the various aspects of this disclosure. Exemplary hardware that can be used for the disclosed embodiments, configurations and aspects includes computers, handheld devices, telephones (e.g., cellular, Internet enabled, digital, analog, hybrids, and others), and other hardware known in the art. Some of these devices include processors (e.g., a single or multiple microprocessors), memory, nonvolatile storage, input devices, and output devices. Furthermore, alternative software implementations including, but not limited to, distributed processing or component/object distributed processing, parallel processing, or virtual machine processing can also be constructed to implement the methods described herein.

[0268] In yet another embodiment, the disclosed methods may be readily implemented in conjunction with software using object or object-oriented software development environments that provide portable source code that can be used on a variety of computer or workstation platforms. Alternatively, the disclosed system may be implemented partially or fully in hardware using standard logic circuits or VLSI design. Whether software or hardware is used to implement the systems in accordance with this disclosure is dependent on the speed and/or efficiency requirements of the system, the particular function, and the particular software or hardware systems or microprocessor or microcomputer systems being utilized.

[0269] In yet another embodiment, the disclosed methods may be partially implemented in software that can be stored on a storage medium, executed on programmed general-purpose computer with the cooperation of a controller and memory, a special purpose computer, a microprocessor, or the like. In these instances, the systems and methods of this disclosure can be implemented as program embedded on personal computer such as an applet, JAVA®, or CGI script, as a resource residing on a server or computer workstation, as a routine embedded in a dedicated measurement system, system component, or the like. The system can also be implemented by physically incorporating the system and/or method into a software and/or hardware system.

[0270] Although the present disclosure describes components and functions implemented in the aspects, embodiments, and/or configurations with reference to particular standards and protocols, the aspects, embodiments, and/or configurations are not limited to such standards and protocols. Other similar standards and protocols not mentioned herein are in existence and are considered to be included in the present disclosure. Moreover, the standards and protocols mentioned herein and other similar standards and protocols not mentioned herein are periodically superseded by faster or more effective equivalents having essentially the same functions. Such replacement standards and protocols having the same functions are considered equivalents included in the present disclosure.

[0271] The present disclosure, in various aspects, embodiments, and/or configurations, includes components, methods, processes, systems and/or apparatus substantially as depicted and described herein, including various aspects, embodiments, configurations embodiments, subcombinations, and/or subsets thereof. Those of skill in the art will understand how to make and use the disclosed aspects, embodiments, and/or configurations after understanding the present disclosure. The present disclosure, in various aspects, embodi-

ments, and/or configurations, includes providing devices and processes in the absence of items not depicted and/or described herein or in various aspects, embodiments, and/or configurations hereof, including in the absence of such items as may have been used in previous devices or processes, e.g., for improving performance, achieving ease and\or reducing cost of implementation.

[0272] The foregoing discussion has been presented for purposes of illustration and description. The foregoing is not intended to limit the disclosure to the form or forms disclosed herein. In the foregoing Detailed Description for example, various features of the disclosure are grouped together in one or more aspects, embodiments, and/or configurations for the purpose of streamlining the disclosure. The features of the aspects, embodiments, and/or configurations of the disclosure may be combined in alternate aspects, embodiments, and/or configurations other than those discussed above. This method of disclosure is not to be interpreted as reflecting an intention that the claims require more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive aspects lie in less than all features of a single foregoing disclosed aspect, embodiment, and/or configuration. Thus, the following claims are hereby incorporated into this Detailed Description, with each claim standing on its own as a separate preferred embodiment of the disclosure.

[0273] Moreover, though the description has included description of one or more aspects, embodiments, and/or configurations and certain variations and modifications, other variations, combinations, and modifications are within the scope of the disclosure, e.g., as may be within the skill and knowledge of those in the art, after understanding the present disclosure. It is intended to obtain rights which include alternative aspects, embodiments, and/or configurations to the extent permitted, including alternate, interchangeable and/or equivalent structures, functions, ranges or steps to those claimed, whether or not such alternate, interchangeable and/or equivalent structures, functions, ranges or steps are disclosed herein, and without intending to publicly dedicate any patentable subject matter.

What is claimed is:

1. A method, comprising:

presenting, via a display of an intelligent television (TV), live TV broadcast content, wherein the live TV broadcast content is presented to a first portion of the display;

receiving an application panel input at the intelligent TV, wherein the application panel input corresponds to at least one of a categories input, a favorites input, and a search input;

determining, by a processor associated with the intelligent TV and in response to receiving the application panel input, live TV application panel content that corresponds to a live TV application and the application panel input received;

retrieving, from at least one source, the live TV application panel content; and

presenting, via the display, the live TV application panel content to a second portion of the display, wherein the second portion of the display is associated with a live TV application panel, and wherein the live TV application panel overlaps at least a portion of the presented live TV broadcast content.

2. The method of claim **1**, wherein determining the live TV application panel content further comprises:

referring to rules stored in a memory, wherein the rules include one or more application panel content fields mapped to at least one live TV application panel content type;

comparing a live TV application panel content type associated with the presented live TV broadcast content with the one or more mapped application panel content fields;

determining select application panel content fields from the one or more mapped application panel content fields; and

including the select application panel content fields in the live TV application panel content for retrieval.

3. The method of claim **1**, wherein the live TV application panel content is retrieved from two or more signal sources.

4. The method of claim **1**, wherein the at least one source is at least one of a local memory, a remote memory, a broadcast signal, and a memory located across a network.

5. The method of claim **1**, wherein at least one of the live TV application panel content and the live TV application panel is at least partially transparent, and wherein the presented live TV broadcast content is visible beneath the presented live TV application panel content.

6. The method of claim **1**, wherein a size of the first portion is maintained upon presenting the live TV application panel content via the second portion of the display.

7. The method of claim **1**, wherein the presented live TV broadcast content includes at least one of a movie, a TV program, a sport event, a TV special, and a radio program.

8. The method of claim **7**, wherein the presented live TV application panel content includes at least one of a category, a channel identifier, a thumbnail graphic, an electronic program guide (EPG), a favorite, and a search term.

9. A tangible, non-transitory computer readable medium having instructions stored thereon that, when executed by a processor, perform the method comprising:

presenting, via a display of an intelligent television (TV), live TV broadcast content, wherein the live TV broadcast content is presented to a first portion of the display;

receiving an application panel input at the intelligent TV, wherein the application panel input corresponds to at least one of a categories input, a favorites input, and a search input;

determining, by a processor associated with the intelligent TV and in response to receiving the application panel input, live TV application panel content that corresponds to a live TV application and the application panel input received;

retrieving, from at least one source, the live TV application panel content; and

presenting, via the display, the live TV application panel content to a second portion of the display, wherein the second portion of the display is associated with a live TV application panel, and wherein the live TV application panel overlaps at least a portion of the presented live TV broadcast content.

10. The tangible, non-transitory computer readable medium of claim **9**, wherein determining the live TV application panel content of the method further comprises:

referring to rules stored in a memory, wherein the rules include one or more application panel content fields mapped to at least one live TV application panel content type;

comparing a live TV application panel content type associated with the presented live TV broadcast content with the one or more mapped application panel content fields;

determining select application panel content fields from the one or more mapped application panel content fields; and

including the select application panel content fields in the live TV application panel content for retrieval.

11. The tangible, non-transitory computer readable medium of claim **9**, wherein the live TV application panel content is retrieved from two or more signal sources.

12. The tangible, non-transitory computer readable medium of claim **9**, wherein the at least one source is at least one of a local memory, a remote memory, a broadcast signal, and a memory located across a network.

13. The tangible, non-transitory computer readable medium of claim **9**, wherein at least one of the live TV application panel content and the live TV application panel is at least partially transparent, and wherein the presented live TV broadcast content is visible beneath the presented live TV application panel content.

14. The tangible, non-transitory computer readable medium of claim **9**, wherein a size of the first portion is maintained upon presenting the live TV application panel content via the second portion of the display.

15. The tangible, non-transitory computer readable medium of claim **9**, wherein the application panel input is provided via an input device associated with the intelligent TV.

16. The tangible, non-transitory computer readable medium of claim **9**, wherein the presented live TV broadcast content includes at least one of a movie, a TV program, a sport event, a TV special, and a radio program.

17. The tangible, non-transitory computer readable medium of claim **16**, wherein the presented live TV application panel content includes at least one of a program description, a channel identifier, a thumbnail graphic, an electronic program guide (EPG), and preference information.

18. A system, comprising:

an intelligent television (TV) having a display and a tuner, wherein the tuner is configured to receive and convert broadcast content signals to be displayed by the display;

an input device associated with the intelligent TV;

a memory; and

a microprocessor operable to:

present, via a display of an intelligent television (TV), live TV broadcast content, wherein the live TV broadcast content is presented to a first portion of the display;

receive an application panel input at the intelligent TV, wherein the application panel input corresponds to at least one of a categories input, a favorites input, and a search input;

determine, by a processor associated with the intelligent TV and in response to receiving the application panel input, live TV application panel content that corresponds to a live TV application and the application panel input received;

retrieve, from at least one source, the live TV application panel content; and

present, via the display, the live TV application panel content to a second portion of the display, wherein the second portion of the display is associated with a live TV application panel, and wherein the live TV application panel overlaps at least a portion of the presented live TV broadcast content.

19. The system of claim **18**, wherein the microprocessor is further operable to:

refer to rules stored in a memory, wherein the rules include one or more application panel content fields mapped to at least one live TV application panel content type;

compare a live TV application panel content type associated with the presented live TV broadcast content with the one or more mapped application panel content fields;

determine select application panel content fields from the one or more mapped application panel content fields; and

include the select application panel content fields in the live TV application panel content for retrieval.

20. The system of claim **18**, wherein at least one of the live TV application panel content and the live TV application panel is at least partially transparent, and wherein the presented live TV broadcast content is visible beneath the presented live TV application panel content.

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