

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

**SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.,**
Petitioners

v.

MAXELL CORPORATION,
Patent Owner

Inter Partes Review No.: IPR2025-01311

**PETITION FOR *INTER PARTES* REVIEW OF
U.S. PATENT NO. U.S. 11,812,091 UNDER 35 U.S.C. §§ 311-319
AND 37 C.F.R. §§ 42.1-100, ET SEQ**

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1004	<i>Blackberry Corp. v. Maxell, Ltd.</i> , IPR2019-00089, Paper 1 ('394 patent IPR petition)
1005	<i>Blackberry Corp. v. Maxell, Ltd.</i> , IPR2019-00089, Paper 10 (PTAB Mar. 29, 2019)
1006	<i>Motorola Mobility, LLC v. Maxell, Ltd.</i> , IPR2022-01348, Paper 1 ('394 patent IPR petition)
1007	<i>Motorola Mobility, LLC v. Maxell, Ltd.</i> , IPR2022-01348, Paper 7 (PTAB Feb. 23, 2023)
1008	<i>Vizio, Inc. v. Maxell, Ltd.</i> , IPR2023-00316, Paper 1 ('394 patent IPR petition)
1009	<i>Vizio, Inc. v. Maxell, Ltd.</i> , IPR2023-00316, Paper 9 (PTAB July 6, 2023)
1010	U.S. Patent No. 7,293,276 to Phillips
1011	U.S. Patent Publication No. 2005/0188408 to Wallis
1012	U.S. Patent 8,170,394 File History
1013	U.S. Patent Publication No. 2012/0087637 to Logan
1014	U.S. Patent Publication No. 2004/0154040 to Ellis
1015	U.S. Patent No. 8,773,360 to Uchida
1016	Shneiderman, B. (2005) <i>Designing the User Interface: Strategies for Effective Human-Computer Interaction, Fourth Edition</i> , Addison-Wesley. ISBN 0-321-19786-0
1017	U.S. Patent No. 7,667,123 to Phillips
1018	<i>Blackberry Corp. v. Maxell, Ltd.</i> , IPR2019-00089, Paper 15 (Termination Decision Document)
1019	<i>Motorola Mobility, LLC v. Maxell, Ltd.</i> , IPR2022-01348, Paper 25 (Order: Settlement as to Motorola Mobility LLC)
1020	<i>Vizio, Inc. v. Maxell, Ltd.</i> , IPR2023-00316, Paper 37 (Termination Due to Settlement After Institution)
1021	U.S. Patent Publication No. 2002/0174430 to Ellis (Ellis'430)
1022	Client/Server Software Architectures--An Overview, available at https://web.archive.org/web/20050228093112/http://sei.cmu.edu

Exhibit No.	Description
	/str/descriptions/clientserver_body.html (February 2005), <i>last accessed</i> September 3, 2025
1023	S. A. Bly and J. K. Rosenberg. 1986. A comparison of tiled and overlapping windows. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '86). Association for Computing Machinery, New York, NY, USA, 101–106. https://doi.org/10.1145/22627.22356
1024	Didier Le Gall. 1991. MPEG: a video compression standard for multimedia applications. Commun. ACM 34, 4 (April 1991), 46–58. https://doi.org/10.1145/103085.103090
1025	Amy K. Karlson, Benjamin B. Bederson, & John SanGiovanni. 2005. AppLens and launchTile: two designs for one-handed thumb use on small devices. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '05). Association for Computing Machinery, New York, NY, USA, 201–210. https://doi.org/10.1145/1054972.1055001
1026	Bederson, B. B., Clamage, A., Czerwinski, M. P., & Robertson, G. G. (2004). DateLens. <i>ACM Transactions on Computer-Human Interaction</i> , 11(1), 90–119. https://doi.org/10.1145/972648.972652

CHART OF CLAIMS	
[1pre]	A digital content reproducing apparatus, comprising:
[1a]	a network communication circuitry configured to receive digital contents and related information from an outside server;
[1b]	a decoder configured to decode the digital contents received via the network communication circuitry;
[1c]	a display; and
[1d]	a controller configured to control reproduction of the digital contents decoded by the decoder and display of the reproduced digital contents on the display,
[1e]	wherein the controller is configured to alternatively display either of a first operation panel including at least one of linear operation buttons, receiving user-instructions regarding linear reproduction functions of the reproduced digital contents, or a second operation panel including at least one of interactive operation buttons, receiving user-instructions of interactive functions to the outside server, together with the reproduced digital contents,
[1f]	wherein the related information includes:
[1g]	time related information which represents a time during which the reproduced digital contents and at least one of the interactive operation buttons are displayed, and
[1h]	panel related information for deciding whether displaying the first operation panel including at least one of the linear operation buttons or the second operation panel including at least one of the interactive operation buttons,
[1i]	wherein the controller, when controlling reproduction of the digital contents, is further configured to:
[1j]	display at least one of the interactive operation buttons during the time represented by the time related information, and
[1k]	other than the time represented by the time related information, display at least one of the linear operation buttons or at least one of the interactive operation buttons based on the panel related information.
[2pre]	The digital content reproducing apparatus according to claim 1,
[2a]	wherein the controller is further configured to display either the first operation panel or the second operation panel in a substantially same panel rendering area as alternative operation panels.
[3pre]	The digital content reproducing apparatus according to claim 1,
[3a]	wherein the controller is further configured to display either the first operation panel or the second operation panel in a lower part of the display.
[4pre]	The digital content reproducing apparatus according to claim 1,

CHART OF CLAIMS
[4a] wherein the controller is further configured to adjust a rendering area size of the reproduced digital contents based on whether the display displays the first operation panel or the second operation panel.
[5pre] The digital content reproducing apparatus according to claim 1,
[5a] wherein the first operation panel or the second operation panel can be displayed independently from displaying the reproduced digital contents.
[6pre] The digital content reproducing apparatus according to claim 1,
[6a] wherein the controller is further configured to control to maintain a rendering area size of the reproduced digital contents, even when the first operation panel or the second operation panel is displayed.
[7pre] The digital content reproducing apparatus according to claim 1,
[7a] wherein all of one or more linear operation buttons and one or more interactive operation buttons provide mutually differing functions from each other.
[8pre] The digital content reproducing apparatus according to claim 1,
[8a] wherein the time related information is an appreciation term corresponding to one digital content of the digital contents.
[9pre] The digital content reproducing apparatus according to claim 7,
[9a] wherein the appreciation term is related to a predetermined date.
[10pre] The digital content reproducing apparatus according to claim 2, wherein the controller further configured to:
[10a] store the digital contents received from the outside server via the network communication circuitry into a storage; and
[10b] reproduce the digital contents stored in the storage.
[11pre] The digital content reproducing apparatus according to claim 1,
[11a] wherein the first operation panel is a linear operation panel in which all of one or more displayed buttons are linear operation button.
[12pre] The digital content reproducing apparatus according to claim 1,
[12a] wherein the second operation panel is an interactive operation panel in which all of one or more displayed buttons are interactive operation button.
[13pre] The digital content reproducing apparatus according to claim 1,
[13a] wherein the outside server is a video on demand server.
[14pre] A digital content reproducing apparatus, comprising:
[14a] a network communication circuitry configured to receive digital contents and related information from a video on demand server;
[14b] a decoder configured to decode the digital contents received via the network communication circuitry;
[14c] a display; and

CHART OF CLAIMS

[14d] a controller configured to control reproduction of the digital contents decoded by the decoder and display of the reproduced digital contents on the display,

[14e] wherein the controller is configured to display at least one of linear operation buttons, receiving user-instructions regarding linear reproduction functions of the reproduced digital contents, or at least one of interactive operation buttons, receiving user-instructions of interactive functions to the video on demand server, together with the reproduced digital contents,

[14f] wherein the related information includes:

[14g] time related information which represents a time during which the reproduced digital contents and at least one of the interactive operation buttons are displayed, and

[14h] panel related information for deciding to display at least one of the linear operation buttons or at least one of the interactive operation buttons,

[14i] wherein the controller, when controlling reproduction of the digital contents, is further configured to:

[14j] display at least one of the interactive operation buttons during the time represented by the time related information, and

[14k] other than the time represented by the time related information, display at least one of the linear operation buttons or at least one of the interactive operation buttons based on the panel related information.

[15pre] The digital content reproducing apparatus according to claim 14,

[15a] wherein the controller is further configured to display at least one of the linear operation buttons or at least one of the interactive operation buttons in a lower part of the display.

[16pre] The digital content reproducing apparatus according to claim 14,

[16a] wherein the controller is further configured to control to maintain a rendering area size of the reproduced digital contents, even when at least one of the linear operation buttons or at least one of the interactive operation buttons are displayed.

[17pre] The digital content reproducing apparatus according to claim 14,

[17a] wherein all of one or more linear operation buttons and one or more interactive operation buttons provide mutually differing functions from each other.

[18pre] The digital content reproducing apparatus according to claim 14,

[18a] wherein the time related information is an appreciation term corresponding to one digital content of the digital contents.

CHART OF CLAIMS	
[19]	The digital content reproducing apparatus according to claim 18, wherein the appreciation term is related to a predetermined date.
[20pre]	The digital content reproducing apparatus according to claim 14, wherein the controller further configured to:
[20a]	store the digital contents received from the video on demand server via the network communication circuitry into a storage; and
[20b]	reproduce the digital contents stored in the storage.

I. INTRODUCTION

Samsung Electronics Co. Ltd. and Samsung Electronics America, Inc. (“Petitioners”) request inter partes review of claims 1-20 (“Challenged Claims”) of U.S. Patent No. 11,812,091 (“’091 patent,” EX1001), owned by Maxell, Ltd. (“PO”), pursuant to 35 U.S.C. §§311–19 and 37 C.F.R. §42.100.

In accordance with 37 C.F.R. §42.104(a), Petitioner certifies that the ’091 patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

II. STATEMENT OF PRECISE RELIEF REQUESTED

In accordance with 35 U.S.C. §311, Petitioner requests cancelation of claims 1-20 of the ’091 patent in view of the following grounds:

Ground	Claims	Stat. Basis	Prior Art
1	1, 3-5, 7, 11-15, 17, and 20	35 U.S.C. §103	Phillips, Wallis
2	1, 3-5, 7, 11-15, 17, and 20	35 U.S.C. §103	Phillips, Wallis, Logan
3	2, 6, 10, and 16	35 U.S.C. §103	Phillips-Wallis combinations, Uchida
4	8, 9, 18, and 19	35 U.S.C. §103	Phillips, Wallis, Ellis
5	8, 9, 18, and 19	35 U.S.C. §103	Phillips, Wallis, Logan, Ellis
6	1-3, 6-9 and 14-19	35 U.S.C. §103	Ellis’430, Wallis

Sections VI-XI demonstrate that there is a reasonable likelihood that Petitioners will prevail with respect to at least one challenged claim. 35 U.S.C. §314(a). Petitioners' arguments are supported by a Declaration from Dr. Benjamin B. Bederson (EX1003).

III. THE '091 PATENT

A. Summary of the '091 Patent

The '091 patent describes a set-top box that utilizes distinct operation panels for “interactive” content, such as a selectable menu of content, and operation panels (fast forward, play, pause, etc.) used for “linear” content, such as audio/video. EX1003, ¶40.

For example, “FIGS. 2 to 4, below, show image display states during digital broadcast reproduction. A monitor A1 has a content display area A2 and an operation panel display area A3. During reproduction of linear contents such as moving image contents, as shown below in Figs. 2 and 3, a linear content operation panel A4 is displayed in the operation panel display area A3.” EX1001, 3:51-59; EX1003, ¶41.

FIG. 2

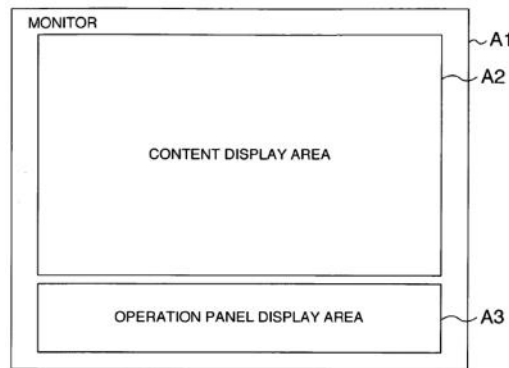


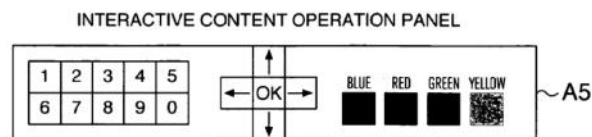
FIG. 3



EX1001, Figs. 2, 3; EX1003, ¶41.

In contrast, “[d]uring reproduction of interactive contents such as data broadcast contents, an interactive content operation panel A5 is displayed in the operation panel display area A3.” EX1001, 3:60-62; EX1003, ¶42. The interactive content operation panel, shown below in Fig. 4, has cursor arrows and an “OK” button for user selection on a menu of content. EX1003, ¶42.

FIG. 4



EX1001, Fig. 4; EX1003, ¶42.

As one way of determining when to display the appropriate operation panel, the '091 patent describes “information on digital contents is monitored, and upon occurrence of a change in the information, the panels are automatically and

exclusively displayed in the operation panel display area A3 of the same panel rendering area size.” EX1001, 4:25-29; EX1003, ¶43.

As another way of determining when to display the appropriate operation panel, the '091 patent describes monitoring “attributes of digital contents” EX1001, 5:35-40, examples of which are shown below in Figure 13. EX1003, ¶44.

FIG.13

ITEM	CONTENTS
RECORD TIME DAY	2005/7/7
INFORMATION ON CONTENTS OF DATA BROADCAST	NEWS
APPRECIATION TERM	2005/7/14
VIEW HISTORY (IMAGE)	80 % DONE
VIEW HISTORY (DATA BROADCAST)	NONE

EX1001, Fig. 13; EX1003, ¶44.

“Appreciation term,” as used in Fig. 13, above, is a pre-set, time-related attribute, outside of which a viewer is unlikely to refer to the contents (*e.g.*, news or weather reports). EX1001, 5:41-48; EX1003, ¶45. As such, if the contents are outside the appreciation term (*e.g.*, one month), the linear content operation panel is displayed but if the contents are within the appreciation term, the interactive content operation panel is displayed. EX1001, 5:46-55; EX1003, ¶45.

B. File History of the '091 Patent

U.S. Application No. 17/868,139 (“’139 application”), the application that issued as the ’091 patent, was filed on 7/19/2022, and claims priority to JP Application No. 2005-248576, filed on 8/30/2005. EX1001 (22), (30); EX1002, 505 (ADS)¹. The ’091 patent is fourth in a series of continuation patents.

The ’139 application was allowed without any Office Actions, though a terminal disclaimer was required to overcome a non-statutory double patenting concern regarding the claims of related patents, including U.S. Patent 8,170,394 (“’394 patent”). EX1002, 91 (TD), 96 (TD approved by PTO), 26 (7/3/2023 Examiner-Initiated Interview Summary).

C. ’394 Patent IPR History

The ’394 patent, the great-great-grandparent of the ’091 patent, was subject to three separate IPR petitions, all of which were instituted. *See* IPR2019-00089, Paper 1 (EX1004, Petition), Paper 10 (EX1005, Institution Decision, “Blackberry IPR”), instituted on 3/29/2019; IPR2022-01348, Paper 1 (EX1006, Petition), Paper

¹ For purposes of this IPR petition, Petitioners do not challenge whether the ’091 patent is entitled to the 8/30/2005 priority date or any priority date before the 7/19/2022 filing date but reserve the right to do so in litigation or in any other proceeding, including a subsequent IPR.

7 (EX1007, Institution Decision, “Motorola IPR”), instituted on 2/24/2023; and IPR2023-00316, Paper 1 (EX1008, Petition), Paper 9 (EX1009, Institution Decision, “Vizio IPR”), instituted on 7/6/2023. Moreover, like the present petition, all three instituted IPRs for the ’394 patent included multiple grounds based on combinations of Phillips, Wallis, and Uchida, among other prior art. All three IPRs were terminated due to settlement. EX1018 (Blackberry IPR, Paper 15); EX1019 (Motorola IPR, Paper 25); EX1020 (Vizio IPR, Paper 37).

IV. SUMMARY OF PRIOR ART

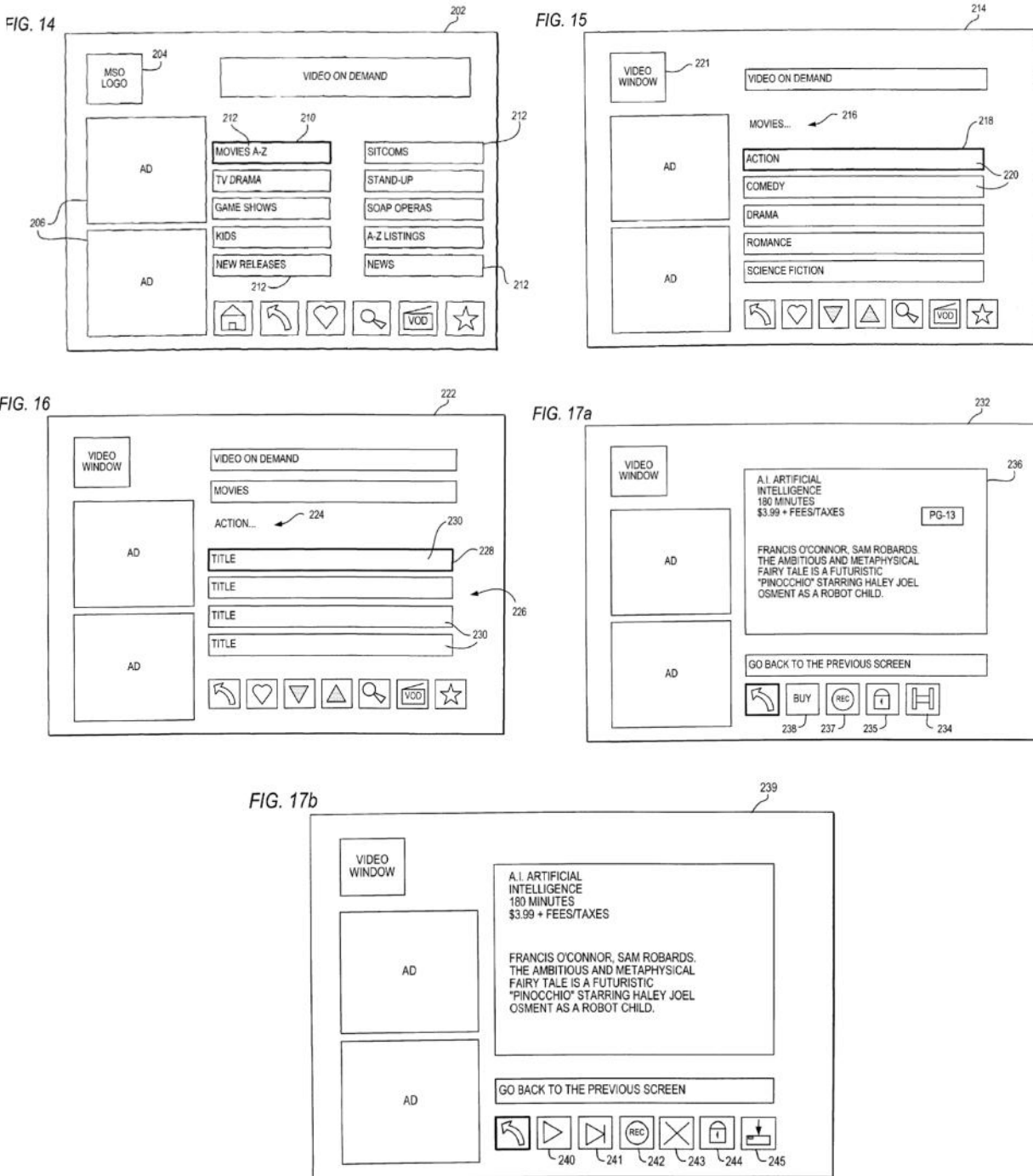
A. Phillips

Phillips was filed on 11/25/2002, issued on 11/6/2007, EX1010, (22), (45), and is prior art under at least pre-AIA §§102(e). Phillips is analogous art to the ’091 patent and was not considered during prosecution of the ’091 patent.

Phillips describes an “Interactive Television Program Guide for Recording Enhanced Video Content” that provides both linear and interactive content to the user. For example, “[c]ontent such as television programming and digital music may be provided from programming sources 12 to television distribution facilities” to user equipment such as a TV or personal computer. EX1010, 6:31-63; EX1003, ¶57.

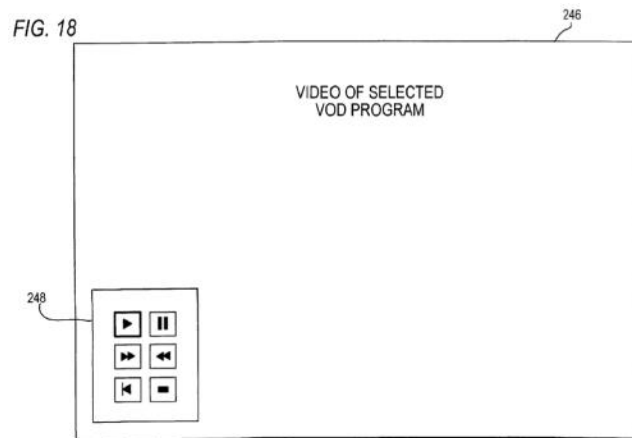
Phillips also provides users with a variety of “interactive television services” such as an “interactive television program guide application, a home shopping application, a home banking application, a video-on-demand [(“VoD”)] application,

game applications, and other applications....” EX1010, 8:45-50; *see also* EX1010, 7:27-9:22; EX1003, ¶58. A series of exemplary interactive VoD menu screens are shown below in Figures 14-17. EX1003, ¶58.



EX1010, Figs. 14-17; EX1003, ¶58.

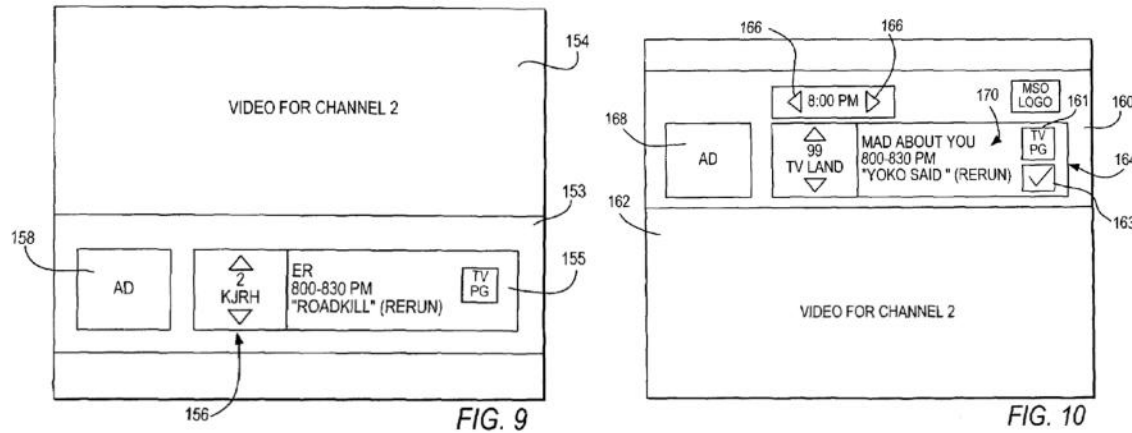
Once a desired video is selected, an exemplary linear display/linear content operation panel is shown in Figure 18, below, which allows “the user to rewind ... to the beginning, rewind, play, fast-forward, pause, [and] stop.” EX1010, 20:18-30; EX1003, ¶59.



EX1010, Fig. 18; EX1003, ¶59.

As shown in the interactive content screens of Figures 14-17 and the linear content screen of Figure 18, the outputted digital content—e.g., video-on-demand menus or the selected video—is displayed concurrently in the same screens as the displayed operation panels, which are themselves unique depending on displayed content. EX1003, ¶60.

Additionally, Phillips’s Figures 9 and 10 depict operation panels for “flip” tuning through TV channels (Figure 9), or for browsing through the TV guide (Figure 10). EX1010, 16:22-17:32; EX1003, ¶61. Both operation panels are “overla[id] on top of the current channel.” EX1010, 16:41-64; EX1003, ¶61.



B. Ellis'430

Ellis'430 was filed 02/21/2002, published 11/21/2002, EX1021, cover, and is prior art under at least pre-AIA §§102(a) and 102(b). Ellis'430 is analogous art to the '091 patent and was not considered during prosecution of the '091 patent.

Ellis'430 describes an interactive television application implemented to provide enhanced personal video recorder ("PVR") and interactive television program guide functionalities, including providing recorded and live programming content to the user. EX1021, Abstract; EX1003, ¶63. User equipment, such as a set-top box, receives content and program guide information, which "may include television program listings data (such as program times, channels, titles, descriptions, program type, genre, actors) or any other suitable data." EX1021, ¶¶159, 170; EX1003, ¶63. The set-top box then sends audio/video signals and signals that are representative of graphics to a display device for presentation to the user. EX1021, ¶173; EX1003, ¶63.

Depending on the content displayed, Ellis'430 describes different panels for interacting with the interactive television application. For example, Figure 16, below, shows a video and an interactive “browse or flip overlay 260” including a change channel option 262, which “may provide the user with the ability to scroll through channels.” EX1021, ¶234; EX1003, ¶64.

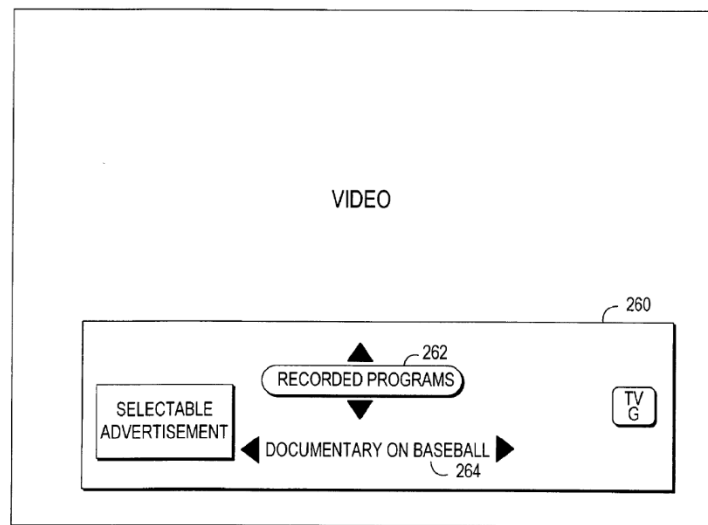


FIG. 16

EX1021, Fig. 16; EX1003, ¶64.

Alternatively, as shown below in Figure 39, Ellis'430 discloses program video content displayed with a linear operation content panel 2404, including a “rewind option 2408, play option 2410, fast-forward option 2412, pause option 2414, [and] stop option 2416.” EX1021, ¶322; EX1003, ¶65.

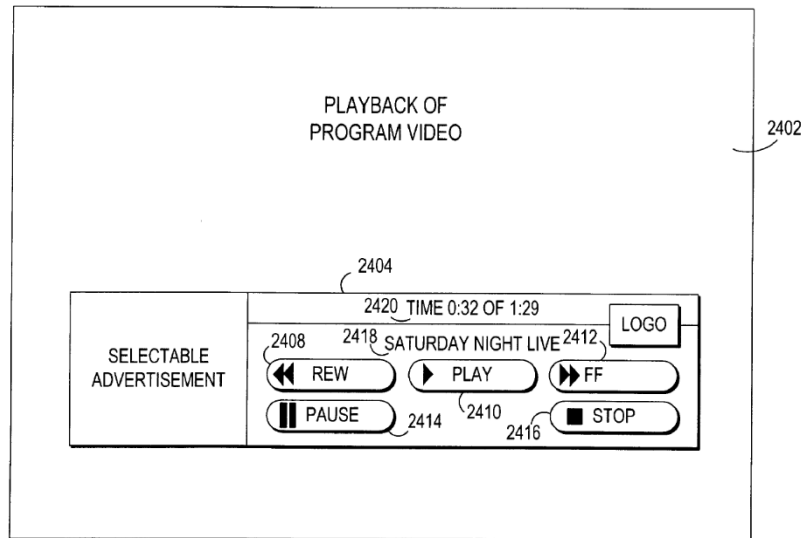


FIG. 39

EX1021, Fig. 39; EX1003, ¶65.

C. Wallis

Wallis was filed on 10/22/2004, published on 08/25/2005, EX1011, (22), (43), and is prior art under at least pre-AIA §§102(a) and 102(e). Wallis is analogous art to the '091 patent and was not considered during prosecution of the '091 patent.

Wallis is titled “Non-Linear Interactive Video Navigation” and describes a “system and method for delivering interactive video and audio content items, *e.g.*, movie clips music videos, adverts, to a user playback device such as a television (TV) set.” EX1011, Abstract; EX1003, ¶67. As the Examiner found during prosecution of the '394 patent, Wallis discloses that it was known in the art to use:

metadata to associate sets of attribute data with respective segments of an A/V content stream, wherein the associated set of attribute data allows the receiver/reproduction circuitry to judge/identify/determine

which of a plurality of different types of navigation controls, i.e., linear and non-linear controls, are active/enabled ..., and wherein the active/enabled navigation controls are incorporated into a GUI for presentation to, and selection by, the user....”

EX1012, 80-81; EX1003, ¶67.

Specifically, Wallis discloses an attribute mapping for digital VoD content, which is shown below in the table of Wallis’s Figure 1.

ATTRIBUTES				
SKIPPABLE	N	Y	N	Y
VCR-LIKE	N	Y	N	Y
TARGET	N	CONTENT F	N	CONTENT G
SAVE TO FAVOURITES	N	Y	N	Y

Fig 1

EX1011, Fig. 1; EX1003, ¶68.

The “Yes”/“No” attributes shown above indicate whether the digital content is, for example, skippable, “VCR-Like,” links to other content (“target”), or can be saved to favorites. EX1011, ¶¶0030-0035; EX1003, ¶69. By way of further example, Wallis discloses that such attribute metadata is stored in a service database and may indicate whether the fast forward, rewind, and pause keys should be active; whether

a skip button should be active; whether a save to favorites button should be active; and whether a button allowing the user to jump to a linked/targeted video should be active. EX1011, ¶¶0057-0065; EX1003, ¶69. Wallis notes that attribute metadata can be saved for “a specific item of content,” “a series of content,” “a TV channel,” “a category of content,” “a credit,” “another VoD screen or service,” “a product,” or “quizzes, competitions and questionnaires.” EX1011, ¶¶0068-0076; *see also* EX1011, ¶¶0077-0083; EX1003, ¶70.

D. Logan

Logan was filed on 10/12/2011, claims a priority date of 1/29/2004, published on 4/12/2012, EX1013, (22), (63) (43), and is prior art under at least pre-AIA §§102(e). Logan is analogous art to the '091 patent and was not considered during prosecution of the '091 patent.

Logan is titled “Methods and Apparatus for Recording and Replaying Video Broadcasts” and describes user-interactive navigational control systems for replaying broadcast sports events on a VOD or personal video recording (“PVR”) system. EX1013, Abstract; EX1003, ¶72. Metadata is used to subdivide the broadcast into segments and associate descriptive information with each segment. EX1013, Abstract, ¶0042; EX1003, ¶72. “Navigation controls including ... specially formatted screen displays, and special functions under the control of a user-operated

remote control, facilitate the interactive selection and control of the presentation.”

EX1013, Abstract; EX1003, ¶72.

One such navigation control is the “Mini-Nav Bar,” a graphic bar displaying segment titles, which allows a viewer to navigate between segments. EX1013, ¶0087; EX1003, ¶73. An example of a Mini-Nav Bar is shown on the right side of the screen in Figure 3:

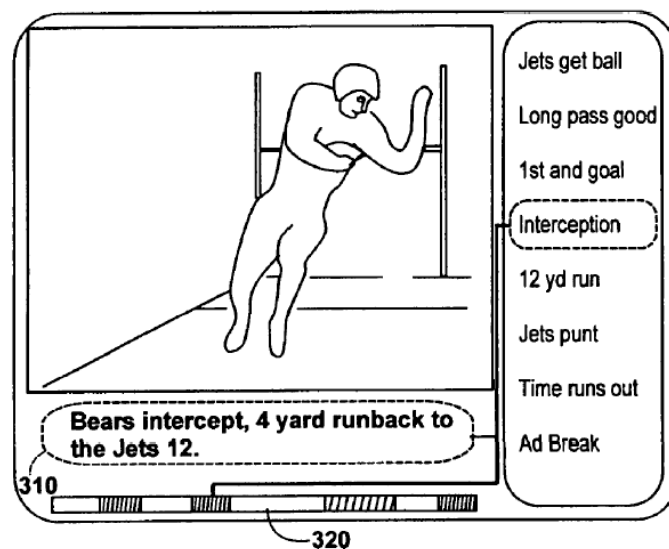


Fig. 3

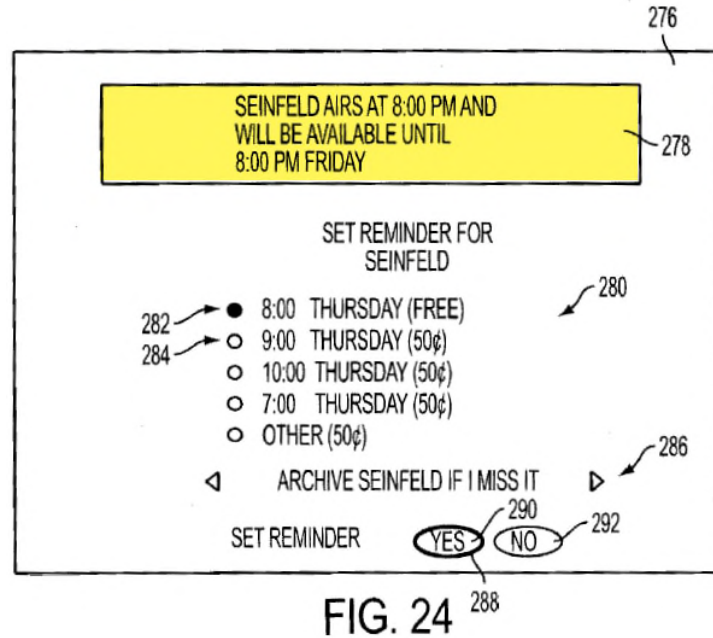
EX1013, Fig. 3; EX1003, ¶73. “After a timeout (*e.g.*, several seconds), the Mini-Nav bar disappears.” EX1013, ¶0089. The “manner in which the Mini-Nav bar is presented may be configured by ... the provider” to control certain characteristics of the Mini-Nav Bar, including (1) where on the screen the Mini-Nav Bar is displayed, (2) the time duration after which the Mini-Nav Bar disappears, and (3) the time the Mini-Nav Bar first appears. EX1013, ¶¶0093-0096; EX1003, ¶74.

E. Ellis

Ellis was filed on 1/30/2003, published on 8/5/2004, EX1014, (22), (43), and is prior art under at least pre-AIA §§102(a), 102(b) and 102(e). Ellis is analogous art to the '091 patent and although it is listed on the face of the '091 patent, it was not considered by the Examiner in combination with Phillips, Wallis and/or Logan.

Ellis is titled “Interactive Television Systems with Digital Video Recording and Adjustable Reminders,” and discloses an interactive television system on which programs may be available on the system for a predetermined limited amount of time. EX1014, ¶¶0012, 164-165; EX1003, ¶76. Ellis acknowledges that “programs that are of less interest or that are particularly time-sensitive (e.g., nightly news reports) may be maintained on the network-based or local personal video recorder for less time than programs that are of more interest or are less time-sensitive (e.g., a popular situation comedy)” which “allows less desirable programming to be deleted, thereby freeing up storage space for other uses.” EX1014, ¶0012; EX1003, ¶77.

For example, a program may be available to viewers until a predetermined date and time after the original broadcast date, as shown below in Figure 24:



EX1014, Fig. 24; EX1003, ¶78. The viewer can interact with the digital content using the interactive buttons displayed on display screen 276 until the program expires. EX1014, ¶¶164-165; EX1003, ¶79.

F. Uchida

Uchida was filed on 11/17/2004, issued on 7/8/2014, EX1015, (22), (45), and is prior art under at least pre-AIA §102(e). Uchida is analogous art to the '091 patent and was not considered during prosecution of the '091 patent.

Uchida is titled “Display Device, Two-Way Communication System and Display Information Using Method,” and discloses a device and method “which prevent[s] information displayed on a display screen from being hard to see.” EX1015, 2:7-8; EX1003, ¶81. Specifically, Uchida explains that when a single display is used for both content and the content’s operation panel, “an image

displayed on the entire display screen of the display device may hide behind the operation display information to make it difficult to see important information....”

EX1015, 1:47-57; EX1003, ¶82. To solve this problem (as shown in Figures 10A-10C), Uchida’s display 108 is divided into a dedicated content display area and a dedicated control panel (CP) display area. EX1015, 21:36-22:7; EX1003, ¶82. Moreover, as shown below in Figs. 10A, 10B and 10C, the size of the content display area 108 is maintained regardless of which operation panel (CP, CP1, or CP2) is displayed.

FIG. 10A

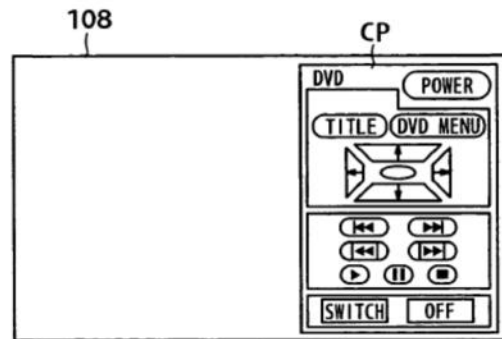


FIG. 10B

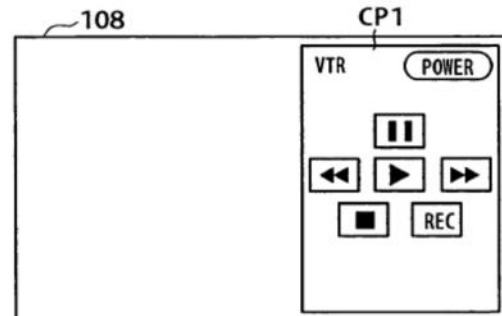
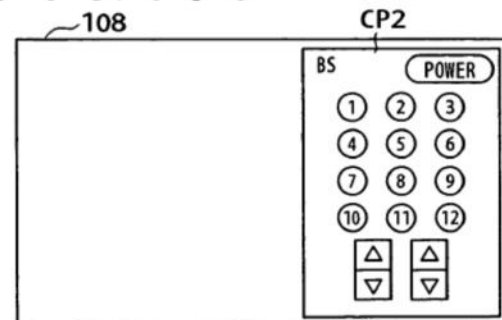


FIG. 10C



EX1015, Figs. 10A, 10B and 10C; EX1003, ¶83.

Uchida further discloses that the control panel display area may alternate between different control panels depending upon what is output to the display. For example, Figure 10A shows a unique control panel for DVD controls, whereas Figures 10B and 10C show different control panels for video tape recorder controls and TV tuner controls, respectively. EX1015, 21:54-67; EX1003, ¶84.

V. CLAIM CONSTRUCTION UNDER 37 C.F.R. §42.104(B)(3)

A. Claim Construction Standards

The Challenged Claims are interpreted using the same claim construction standard that is used to construe the claim in a civil action in federal district court, which is the “ordinary and customary meaning” as understood by a person of ordinary skill in the art (“POSITA”) at the time of the claimed invention. 37 C.F.R. §42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312, 1327 (Fed. Cir. 2005).

For purposes of this petition, Petitioner proposes that each claim term in the Challenged Claims be given its “ordinary and customary meaning,” and that no specific construction of any claim term is required because the prior art relied on in this Petition meets each of the claim terms under any reasonable construction. Petitioner’s proposal to adopt the “ordinary and customary meaning” in this petition in no way limits its rights to assert a different claim construction of any claim term for any other purpose, including litigation or another IPR petition.

B. Person of Ordinary Skill in the Art

A POSITA at the time of the alleged invention of the ’091 patent (August 30, 2005) would have had a Bachelors’ degree in Computer Science, Electrical or Computer Engineering or a comparable field of study, plus approximately one or two years of professional experience with user interface design for mobile devices or other relevant industry experience. Additional graduate education could substitute

for professional experience, and significant experience in the field could substitute for formal education. EX1003, ¶53.

VI. GROUND 1: CLAIMS 1, 3-5, 7, 11-15, 17, AND 20 ARE OBVIOUS OVER PHILLIPS IN VIEW OF WALLIS

A. Claim 1

1. [1pre]

To the extent the preamble is limiting, Phillips discloses it.² EX1003, ¶86. Referring to Fig. 1, below, Phillips discloses an end-user, digital content reproducing apparatus 18 (red box) that receives television, music, and other information from a television distribution facility 14 over various communication paths e.g., path 26. EX1010, 6:51-63; EX1003, ¶87. The structure and function of Phillips's digital content reproducing apparatus is generally depicted in Figures 1-30, which provide different features of Phillips's digital content reproducing apparatus, all operating within a single embodiment of Phillips's set-top box. EX1003, ¶88.

² PO did not contest that Phillips discloses the preamble in, *e.g.*, the Blackberry IPR. EX1004, pp. 17-19.

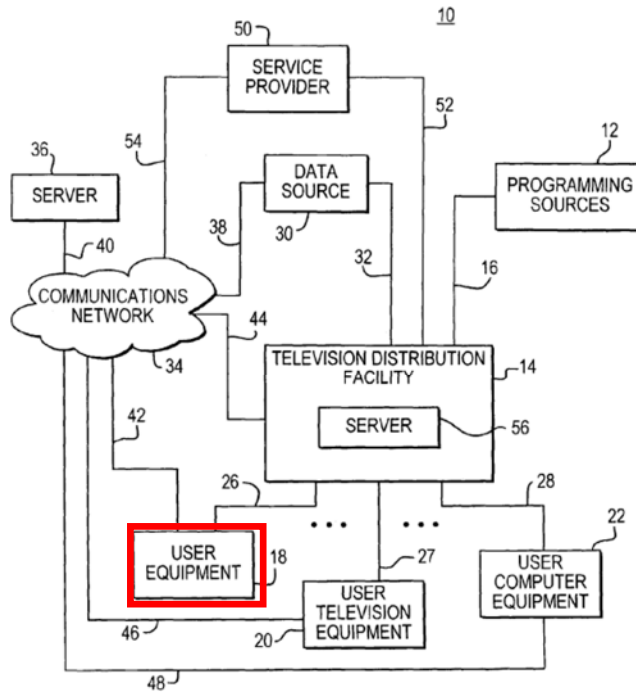


FIG. 1

2. [1a]

Phillips combined with Wallis discloses, or renders obvious, this limitation. EX1003, ¶89. With reference to Fig. 1 (below), Phillips discloses that “user equipment 18 may, for example, be located in user homes” and “may include user television equipment 20 or user computer equipment 22.” EX1010, 6:52-55; EX1003, ¶89. Phillips also discloses that “the user equipment may receive television and music programming [(digital contents)] and other information from television distribution facility 14 [(outside server)] over communications paths such as communication paths 26, 27 and 28,” which “may be ... free space connections (e.g., for broadcast or other wireless signals), satellite links, etc.” EX1010, 6:56-63; EX1003, ¶89.

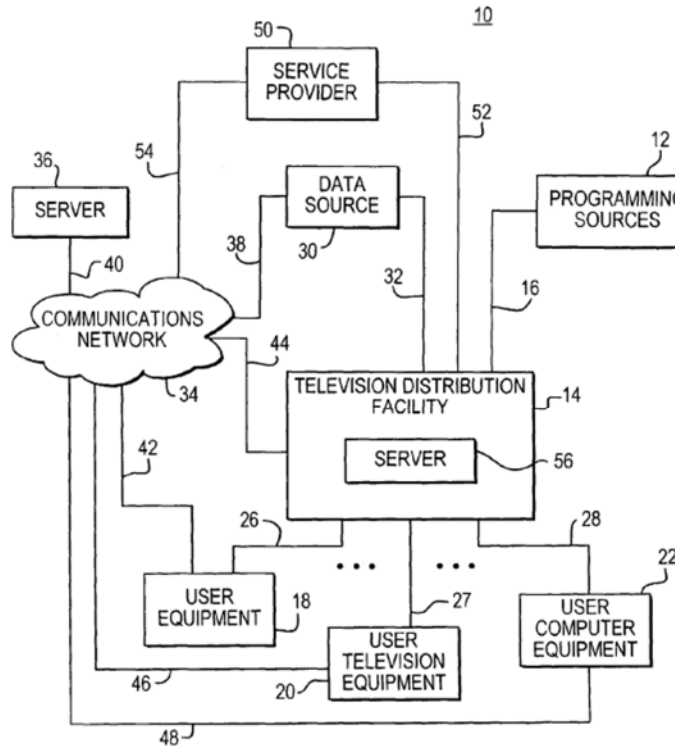


FIG. 1

EX1010, Fig. 1; EX1003, ¶89.

In connection with Fig. 2 (below), Phillips further discloses “user television equipment 20 ... based on a set-top box arrangement” and that “set-top box 60 may ... contain digital decoding circuitry for receiving digital television and music channels [(network communication circuitry)].” EX1010, 9:23-38; EX1003, ¶90.

20

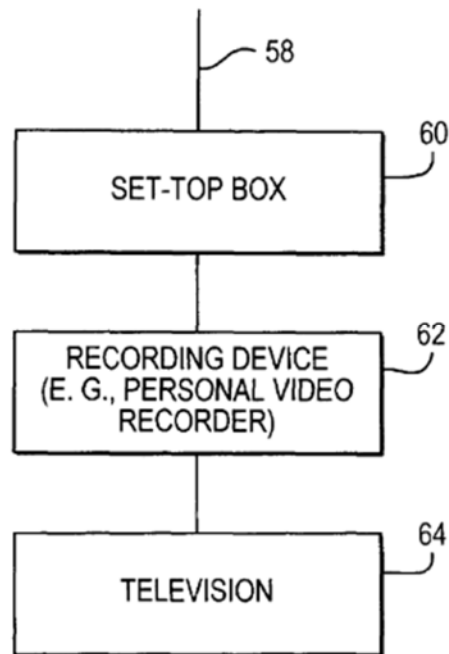
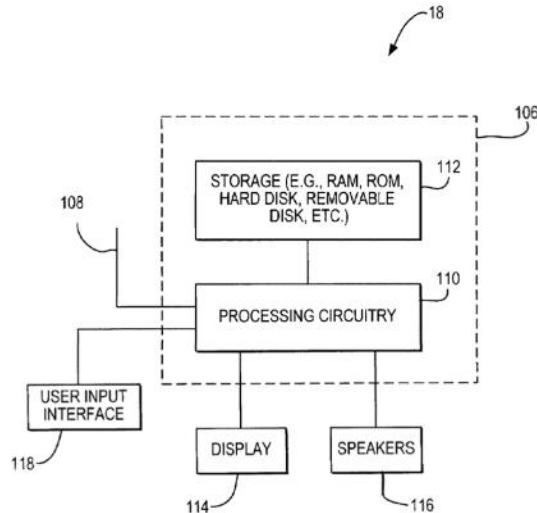


FIG. 2

Phillips also discloses, in connection with Figure 6 (below), that user equipment 18 includes “control circuitry 106 [] connected to input/output 108” which may be connected to one or more communications paths such as paths 26, 27, 28, 42, 46, and 48 of FIG. 1. Television and music programming may be received via input/output 108 (e.g., from programming sources 12, servers or other equipment such as server 36, service providers such as service provider 50, and television distribution facility 14).” EX1010, 13:50-64; EX1003, ¶91. This is further disclosure of network communication circuitry configured to receive digital contents from an outside server. EX1003, ¶91.



EX1010, Fig. 6; EX1003, ¶91.

Lastly, as described below (§§VI.A.7 and VI.A.8.), the combination of Phillips and Wallis disclose that the “related information,” which includes both time related information and panel related information, is received from an outside server. EX1003, ¶92. Specifically, Phillips discloses time related information is received from an outside server. See §§VI.A.7 and VI.A.8.; EX1003, ¶92. And Wallis discloses panel information is received from an outside server. EX1011, ¶¶35-41; §§VI.A.7 and VI.A.8.; EX1003, ¶92.

3. [1b]

Phillips discloses this limitation. EX1003, ¶93. Phillips’s control circuitry 106 includes “[t]uning circuitry, such as one or more analog tuners, one or more MPEG-2 decoders [(a decoder)] or other digital video circuitry, or any other suitable tuning or video circuits or combinations of such circuits,” as well as “[e]ncoding circuitry (e.g., for converting over-the-air or cable analog signals to MPEG signals for

storage).” EX1010, 14:5-11; EX1003, ¶93. “The tuning and encoding circuitry may be used by the user equipment to receive and display or play or record a particular television or music channel or other desired audio and video content (*e.g.*, video-on-demand content or requested network-based or local video recorder playback)” (*to decode the digital contents received via the network communication device*). EX1010, 14:11-16; EX1003, ¶93.

4. [1c]

Phillips discloses this limitation. EX1003, ¶94. Phillips discloses that “[TV] programming and other video and on-screen options and information may be displayed on display 114,” which “may be a monitor, a television, or any other suitable equipment for displaying visual images.” EX1010, 14:18-20; EX1003, ¶94.

5. [1d]

Phillips discloses this limitation. EX1003, ¶95. For example, in connection with Fig. 6, below, Phillips discloses “control circuitry 106 is connected to input/output 108 [and] input/output 108 may be connected to one more communications paths such as paths 26, 27, 28, 42, 46 and 48.” EX1010, 13:50-53; EX1003, ¶95.

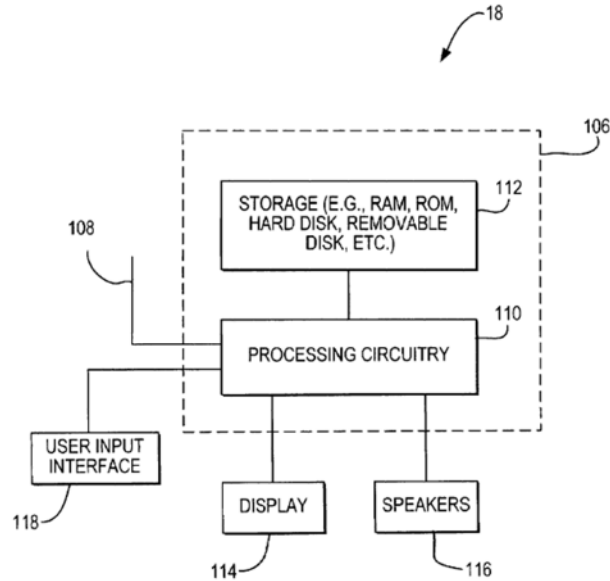


FIG. 6

EX1010, Fig. 6; EX1003, ¶95.

Control circuitry 106 includes processing circuitry 110 “based on one or more microprocessors, microcontrollers, digital signal processors, programmable logic devices, etc.” EX1010, 13:65-14:1; EX1003, ¶96. Phillips also discloses that “[t]uning circuitry such as one or more analog tuners, one or more MPEG-2 decoders or other digital video circuitry ... may also be included as part of circuitry 106.” EX1010, 14:5-11; EX1003, ¶96. Phillips further discloses in connection with Fig. 6 that “[t]elelevision programming and other video and on-screen options and information may be displayed on display 114 [which] may be a monitor, a television or any other suitable equipment for displaying visual images.” EX1010, 14:16-20; EX1003, ¶96.

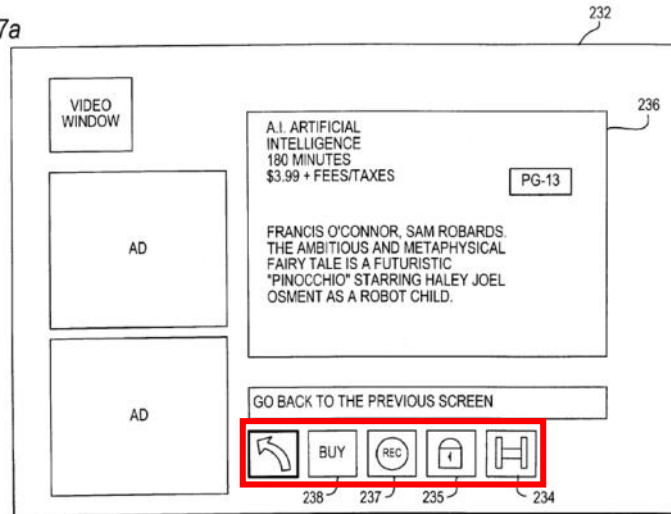
Thus, Phillips discloses control circuitry which includes processing circuitry, tuning circuitry and digital video circuitry (*a controller*) that controls reproduction of digital contents decoded by the decoder (*e.g.*, one or more MPEG-2 decoders), and displays the reproduced contents on the attached display 114. EX1003, ¶97.

6. [1e]

Phillips discloses this limitation. EX1003, ¶98. For example, Phillips's display 114, which displays the reproduced digital content, is depicted in Figures 7-18. With specific reference to Figures 14-18, Phillips displays either interactive content, as shown in the VoD screens of Figures 14-17, or linear content, as shown in the video display of Figure 18. And depending on the digital content displayed, Phillips shows a linear content operation panel allowing user-instruction regarding the linear reproduction functions, or an interactive content operation panel allowing user-instruction of interactive functions to an outside server of the digital content reproducing apparatus. EX1003, ¶98.

For example, as shown below in Figure 17a, an interactive content screen 236 displaying interactive VoD content, and an interactive content operation panel is shown at the bottom of the screen (red box). The interactive content operation panel includes a back arrow to return to the previous screen (EX1010, 17:50-52 (describing element 174 of Figure 11)), a buy button 238, a record button 237, a parental control button 235, and a preview button 234 (EX1010, 19:30-57.)

FIG. 17a

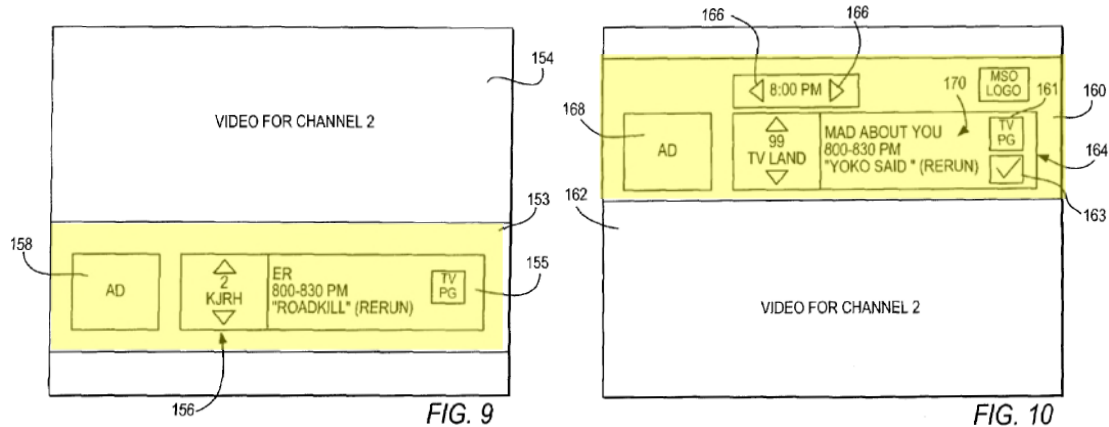


EX1010, Fig. 17a; EX1003, ¶99.

The interactive content operation panel allows user-instruction of interactive functions to the outside server by, for example, informing server 36 or 56 that the user wishes to buy the video (button 238) or wishes to view a clip of the video (button 234):

- “If the user selects option 234, the interactive television application may display a video clip containing information on the video-on-demand content of interest[.] ... *The video clip may be delivered to the user equipment 18 from a server such as server 36 or server 56 of FIG. 1 or from equipment at a service provider such a service provider 50.*” EX1010, 19:37-57 (emphasis added); EX1003, ¶100.
- “In response to a user ordering selected content..., the interactive television application may deliver the ordered video-on-demand content to the user equipment *from a server such as server 36 or server 56 or from a service provider such as 15 service provider 50.*” EX1010, 20:8-17 (emphasis added); EX1003, ¶100.

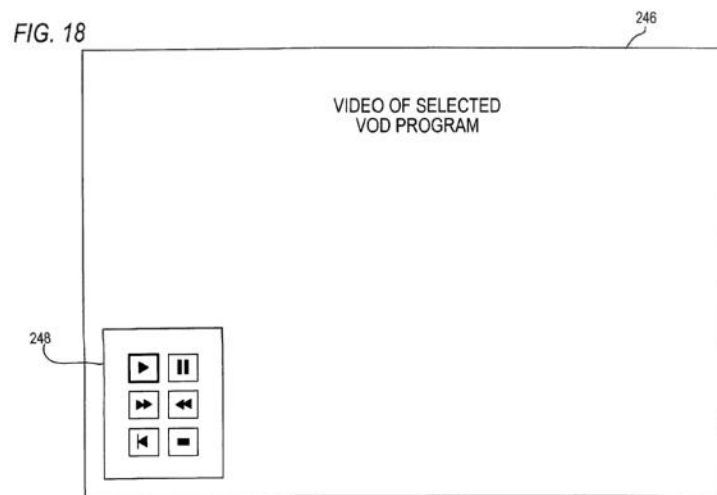
Additional examples of interactive operation panels are described with reference to Figures 9 and 10, below. Specifically, Phillips discloses interactive operation panels for “flip” tuning through TV channels (Figure 9), or for browsing through the TV guide (Figure 10). EX1010, 16:22-17:32; EX1003, ¶101.



When the flip tuning (or flip mode) feature is invoked, interactive operation buttons are displayed on flip display 153 (highlighted in Fig. 9, above) allowing the viewer to “change the channel using channel up and down keys [] or using user interface 118 to issue other suitable channel change commands.” EX1010, 16:2-32; EX1003, ¶102. Similarly, when browsing, interactive operation buttons are displayed on browse display 160 (highlighted in Fig. 10, above) allowing the viewer to browse advertisements, program and program-related information, or the like. EX1010, 16:58-17:20. Based on these disclosed features, it would have been obvious to a POSITA that the flip display and the browse display receive inputs from the user and then interact with an outside server. EX1003, ¶102.

Phillips also describes a variety of other interactive content screens including interactive content operation panels. *See* Figures 19, 22-24, 26, and 28. While not necessary, it would have been at the very least obvious to a POSITA that each interactive button on these additional interactive content operation panels receives user-instruction of interactive functions to the outside server. EX1003, ¶103. It was well understood that interactive button operations can either be implemented locally or through interaction with an outside server. A POSITA would have found either way equally obvious with respective advantages. For example, some functions, such as switching channels, recording, downloading, or playing previews, would almost certainly interact with an outside server so that the selected media would be displayed. Other functions, such as buying, parental locks, managing or searching favorites, searching, scheduling recordings, etc. would be implemented through interaction with an outside server advantageously because such configurations would be remembered by the server and thus such configuration would be available on other devices or if the current device were restarted or otherwise lost its memory. Finally, various other functions, such as a “back” button would typically interact with an outside server in order to retrieve the information, such as show metadata, that is displayed on the screen that the user navigates back to. EX1003, ¶103.

Referring to Figure 18 (below), Phillips also discloses linear content (VoD program) and that “interactive options may be displayed in a toolbar 248^[3] or other suitable format” thereby allowing “the user to rewind the video-on-demand content to the beginning, rewind, play, fast-forward, pause, stop delivery of the video-on-demand content, or perform other video playback options.” EX1010, 20:18-30; see also Figure 21 (22:59-23:9), Figure 27 (26:45-63); EX1003, ¶104.



EX1010, Fig. 18; EX1003, ¶104.

As acknowledged by the Board in the Blackberry IPR, “Figures 17a and 18 are examples of the alternative display of either the linear content operation panel or

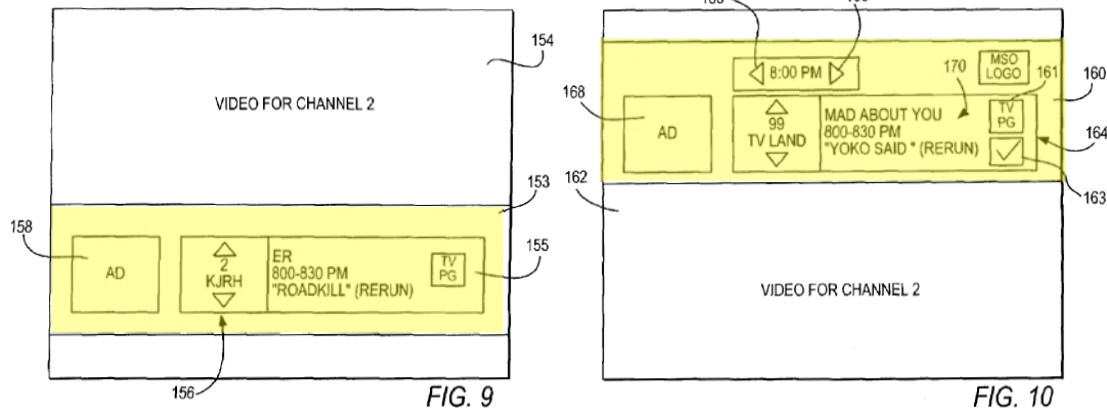
³ Although Phillips calls control buttons such as “rewind, play, fast-forward, pause, stop delivery,” etc. “interactive options 248,” they are linear buttons as described in the '091 patent. EX1003, ¶104.

the interactive content operation panel..., together with outputted digital content.”
EX1004 at 29; EX1003, ¶105.

Phillips’s also discloses “receiving user-instructions regarding linear reproduction functions of the reproduced digital contents,” and “receiving user-instructions of interactive functions to the outside server.” For example, Phillips discloses control circuitry 106 is controlled by the user with “user input interface 118,” which “may be any suitable user interface, such as a mouse, trackball, keypad, keyboard, touch screen, touch pad, voice recognition interface, remote control, etc.” EX1010, 14:24-28; EX1003, ¶106. The user’s interaction with Phillips’s device causes the control circuitry 106 to control the alternative display of either an operation panel including at least one of linear operation buttons or an operation panel including at least one of interactive operation buttons, depending upon the user’s selection as explained above. EX1003, ¶106.

7. [1f]

Phillips and the knowledge of a POSITA disclose, or render obvious, this limitation. EX1003, ¶107. For example, Phillips’s Figures 9 and 10, below, depict interactive operation panels for “flip” tuning through TV channels (Figure 9), or for browsing through the TV guide (Figure 10). EX1010, 16:22-17-32; EX1003, ¶107.



When the flip tuning (or flip mode) feature is invoked, interactive operation buttons are displayed on flip display 153 (highlighted in Fig. 9, above) allowing the viewer to “change the channel using channel up and down keys [] or using user interface 118 to issue other suitable channel change commands.” EX1010, 16:22-32; EX1003, ¶108. Similarly, when browsing, interactive operation buttons are displayed on browse display 160 (highlighted in Fig. 10, above) allowing the viewer to browse advertisements, program and program-related information, or the like. EX1010, 16:58-17:20; EX1003, ¶108.

Both flip display 153 and browse display 160 “may be removed automatically from [the] display screen” *e.g.*, “after a few seconds or a minute or two,” after which time the interactive operation buttons are no longer displayed. EX1010, 16:36-38, 17:25-28; EX1003, ¶109. This disclosure in Phillips of a time period during which the reproduced digital contents including either the flip tuning or browsing features (e.g., on display 154 in Fig. 9, or on display 162 in Fig. 10) and at least one of the

interactive buttons (e.g., interactive buttons in region 156 of Fig. 9 or interactive buttons 166 in Fig. 10) are displayed is time related information.

Moreover, Phillips discloses that the time related information is received from an outside server, as required for “related information” in limitation [1a] (§VI.A.2). EX1003, ¶110. For example, Phillips discloses that “[p]rogram guide application functions and the functions of other interactive television applications may be supported using server 36 and other servers connected to communications network 34 such as server 56.” EX1010, 8:1-7; EX1003, ¶110. A POSITA would understand that both the flip tuning and browse features are “program guide application functions” and/or “other interactive television applications” and that they are supported by servers 36, 34 or 56, each of which are outside servers. EX1003, ¶110.

To the extent PO argues that Phillips does not expressly disclose that the time related information is received from an outside server, it would have been obvious to a POSITA based on this disclosure in Phillips. EX1003, ¶111. Since “[p]rogram guide application functions and the functions of other interactive television applications” (e.g., the flip tuning and browse features) are received from various outside servers, it only makes sense that the time period during which the program guide application functions are displayed (time related information) would also be received by these same outside servers. EX1003, ¶111.

For example, as Dr. Bederson explains, it was well known to a POSITA that graphical user interfaces (GUIs) often have numerous settings that control details of the display (often including fonts, colors, timing, and more). EX1003, ¶112. It was also known that it could be a challenge to maintain consistency of GUIs, especially when running the same or similar program on multiple devices. Striving for consistency is the first of Ben Shneiderman’s well-known “Eight Golden Rules of Interface Design” that are described in his book⁴ “Designing the User Interface, Third Edition.” Describing this golden rule, Shneiderman explains that “consistent color, layout, capitalization, fonts, and so on should be employed throughout.” EX1016, p. 74; EX1003, ¶112.

A POSITA would have known that one of the simplest ways to ensure consistency of such settings is to have them configured centrally, for example, through a content or service provider. This way, if there is any reason to change them, they can be changed consistently for all users. EX1003, ¶113. Thus, at the very least, it would have been obvious to a POSITA that the time related information

⁴ EX1016 (Shneiderman, B. (1998) *Designing the User Interface: Strategies for Effective Human-Computer Interaction, Third Edition*, Addison-Wesley. ISBN 0-201-69497-2.)

disclosed in Phillips would have been received from an outside server. EX1003, ¶113.

8. [1g]

Phillips does not explicitly disclose this limitation, but Wallis does. For example, the digital VoD content in Wallis “has associated attributes that detail the navigational properties for that content item.” EX1011, Abstract. These attributes (*panel related information*) include various property indicators and flags that “govern the presentation of selectable portions of the screen” (*i.e., deciding whether to display linear operation buttons or interactive operation buttons*). EX1011, ¶¶0018, 0019, 0056; EX1003, ¶114. Specifically, Wallis discloses attributes that determine whether interactive operation buttons are displayed, such as the “can save to favourites” attribute which determines “whether a button press can cause an item to be added to the user’s favourites list,” and the “target” attribute which determines whether the content links to other content. EX1011, ¶¶0060, 0063; EX1003, ¶115. That is, when the “can save to favourites” attribute is present, an interactive button which can cause an item to be added to the user’s favourites list is displayed. EX1003, ¶115. The “can skip” attribute is another example of an interactive operation button; when present, a navigation action is available indicating that the content item is skippable. EX1011, ¶¶12, 80; EX1003, ¶115.

Wallis also discloses attributes that determine whether linear operation buttons are displayed, such as the “video controllable” attribute, which determines “whether the ff/rew/pause keys [are] active” (*i.e.*, whether fast forward, rewind, and pause keys are active). EX1011, ¶0061; EX1003, ¶116. That is, when the “video controllable” attribute is present, a linear operation panel enabling control of a video is displayed. EX1003, ¶116. Thus, the attribute data disclosed in Wallis is panel related information because it is used for deciding whether to display linear operation buttons or interactive operation buttons along with the digital contents. EX1003, ¶116.

Wallis also discloses that the attribute data (*panel related information*) is delivered, along with the content items, to the user playback device (e.g., TV) from another source (*an outside server*). See §VI.A.2; EX1003, ¶117.

9. [1h]

Phillips discloses this limitation. See §VI.A.5; EX1003, ¶118.

10. [1i]

Phillips discloses this limitation. EX1003, ¶119. As described with respect to limitation [1f] (§VI.A.7), when Phillips’s flip or browse mode is invoked, interactive operation buttons are displayed for a short period of time (*time represented by the time related information*). See limitation [1f] (§VI.A.7), (flip display 153 allows the viewer to change the “channel ... that the user is currently tuned to” and issue other

commands and browse display 160 allows the viewer to browse advertisements, program and program-related information, or the like). The interactive operation buttons are displayed only during the time represented by the time related information, i.e., when flip display 153 and browse display 160 are displayed. “The flip display 153 may be removed manually or automatically (e.g., after a few seconds or other suitable time period of user inactivity).” EX1010, 16:36-38, 17:25-28; EX1003, ¶119. After that time, the interactive operation buttons are no longer displayed. See §VI.A.7.; EX1003, ¶119.

11. [1j]

Phillips in view of Wallis discloses this limitation. EX1003, ¶120. As described above, the attributes associated with content disclosed by Wallis “govern the presentation of selectable portions of the screen” (*i.e.*, display at least one of the linear operation buttons or at least one of the interactive operation buttons based on Wallis’s attributes). See §VI.A.8; EX1003, ¶120. Stated another way, when either the flip tuning or browse features disclosed by Phillips are not being invoked by the user, the flip or browse interactive buttons will not be displayed temporarily (*other than the time represented by the time related information*). In this case, the panel related information disclosed in Wallis controls whether the linear operation buttons or the interactive operation buttons are displayed (*display at least one of the linear*

operation buttons or at least one of the interactive buttons based on the panel related information). See (§VI.A.8) (limitation [1g]); EX1003, ¶121.

In one example, when the interactive operation buttons associated with the flip tuning feature disappear from the display (after a short period of time), the linear operation panel (e.g., as shown in Fig. 18, above) would then be displayed on the channel being viewed, for example, based on Wallis's panel related information associated with the content. Phillips discloses the user equipment may be a digital video recorder or a personal video recorder. EX1010, 8:36-39, 3:23-25. A POSITA would have understood this means live television broadcasts on the channel being viewed would be controlled using the linear buttons such as those disclosed in Fig. 18, above. EX1003, ¶122.

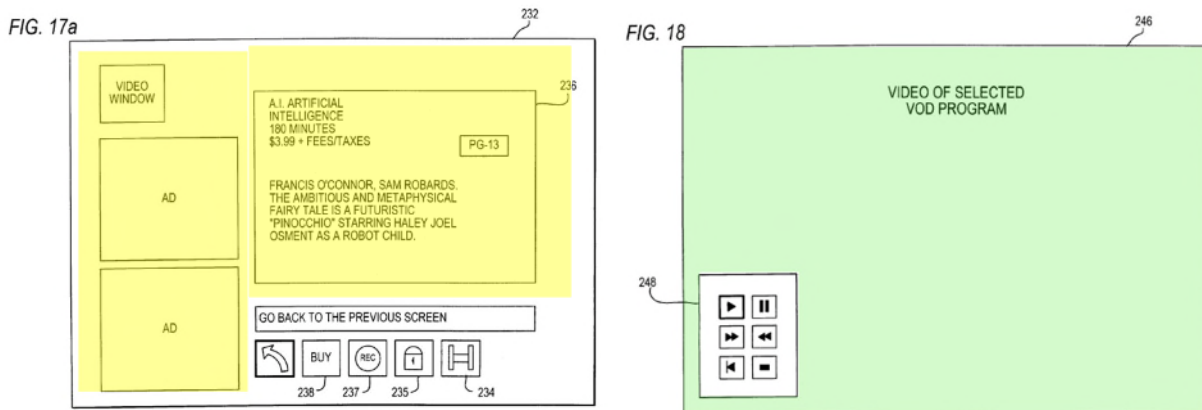
B. Claim 3:

Phillips discloses this limitation. EX1003, ¶123. Phillips's control circuitry 106 displays both the interactive operation panel (e.g., in Figure 17a) and linear operation panel (e.g., in Figure 18) near the bottom/lower part of the display (*in a lower part of the display*). EX1010, Figures 17a and 18; EX1003, ¶123.

C. Claim 4:

Phillips discloses this limitation. EX1003, ¶124. As shown below, depending on whether Phillips's control circuitry 106 displays either the interactive operation panel (e.g., in Figure 17a on the left) or the linear operation panel (e.g., in Figure 18

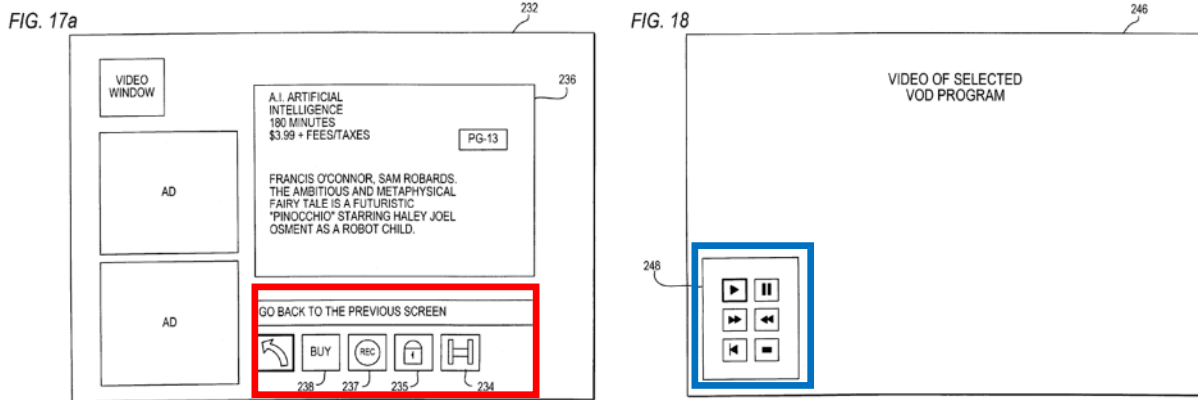
on the right), it adjusts a rendering area size of the reproduced digital contents (i.e., all displayed contents other than the operation panel). As shown, the rendering area size of the digital contents is slightly smaller when the interactive operation panel is displayed (see yellow highlighted area on left) as compared with when the linear operation panel is displayed (see green highlighted area on right) (*adjust a rendering area size of the reproduced digital contents based on whether the display displays the first operation panel or the second operation panel*). EX1003, ¶124.



EX1010, Figs. 17a and 18; EX1003, ¶124.

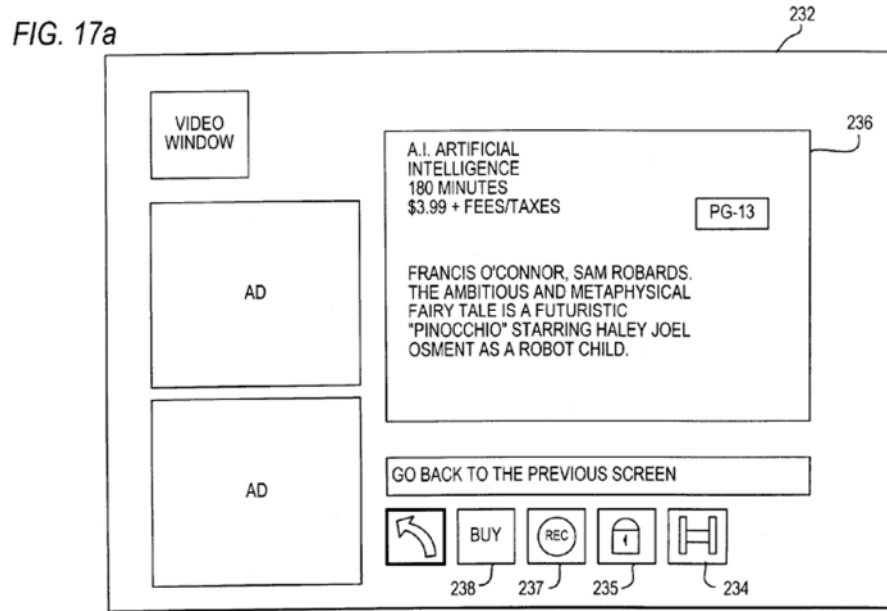
D. Claim 5:

Phillips discloses this limitation. EX1003, ¶125. As shown below, both the interactive operation panel (e.g., in Figure 17a, red box) or the linear operation panel (e.g., in Figure 18, blue box), are displayed separately (*independently*) from displaying the reproduced digital contents. EX1003, ¶125.



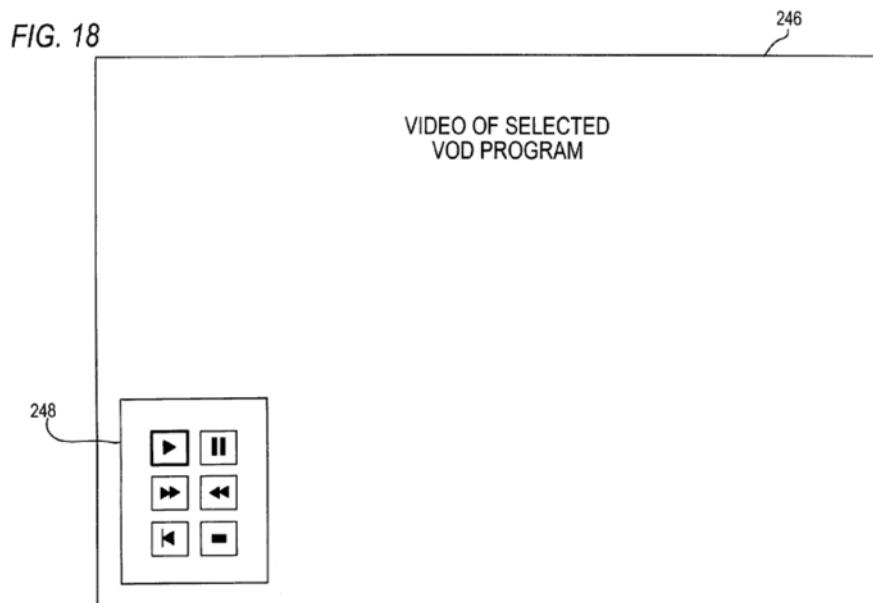
E. Claim 7:

Phillips discloses this limitation. EX1003, ¶126. For example, Phillips's linear operation buttons and interactive operation buttons provide mutually different functions. Figure 17a, below, depicts an interactive content operation panel with buttons 234, 235, 237, and 238. Button 234 enables the display of a video clip containing information on the VoD content. EX1010, 19:45-48; EX1003, ¶126. Button 235 accesses options for parental controls. EX1010, 19:43-44. Button 237 accesses options for recording the selected content. EX1010, 19:41-43. Button 238 accesses options for ordering the selected VoD content. EX1010, 19:40-41. And a back arrow button for going back to a previous screen. EX1003, ¶126.



EX1010, Fig. 17a; EX1003, ¶126.

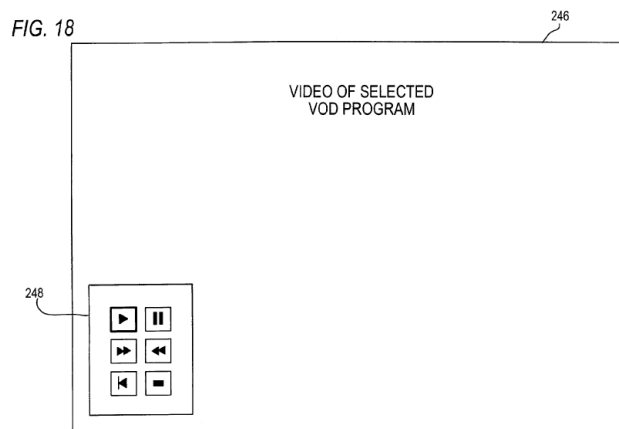
In contrast, Figure 18, below, shows linear operation panel 248 which provides the following functions: play, rewind, fast-forward, pause, stop, and rewind to the beginning. EX1010, 20:20-30; EX1003, ¶127.



EX1010, Fig. 18; EX1003, ¶127.

F. Claim 11:

Phillips discloses this limitation. EX1003, ¶128. For example, as shown in Fig. 18 (below), all buttons in Phillips's linear operation panel are linear operation buttons:

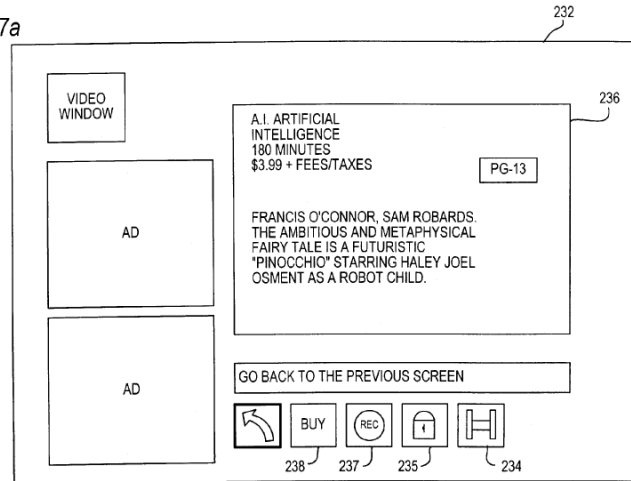


EX1010, Fig. 18; EX1003, ¶128. The linear functions represented are play, pause, fast forward, rewind, rewind to the beginning, and stop. EX1010, 20:20-27, Fig. 18; EX1003, ¶128.

G. Claim 12:

Phillips discloses this limitation. EX1003, ¶129. For example, as shown in Fig. 17a (below), all buttons in Phillips's interactive operation panel are interactive operation buttons:

FIG. 17a



EX1010, Fig. 17a; EX1003, ¶129. The interactive functions represented are display of a video clip containing information on the VoD content (234), parental controls (235), options for recording the selected content (237), options for ordering the selected VoD content (238) and a back arrow button for going back to a previous screen. EX1010, 19:37-48, Fig. 17a; EX1003, ¶130.

H. Claim 13:

Phillips discloses this limitation. EX1003, ¶131. Phillips discloses that “[v]ideo-on-demand content and video recorded using a network-based video recorder arrangement may be stored on server 56 or server 36 or at service provider 50 and may be provided to the user equipment when requested by users.” EX1010, 8:32-36; EX1003, ¶131.

I. Claim 14

1. [14pre]

See claim [1pre].

2. [14a]

See claims [1a] and 13.

3. [14b]

See claim [1b].

4. [14c]

See claim [1c].

5. [14d]

See claim [1d].

6. [14e]

See claim [1e].

7. [14f]

See claim [1f].

8. [14g]

See claim [1g].

9. [14h]

See claim [1h].

10. [14i]

See claim [1i].

11. [14j]

See claim [1j].

J. Claim 15:

See claim 3.

K. Claim 17:

See claim 7.

L. Claim 20

1. [20pre]

See claim 14 (§VI.I.).

2. [20a]

See claim [10a] (§VIII.C.2.).

3. [20b]

See claim [10b] (§VIII.C.3.).

M. Motivation to Combine

A POSITA would have been motivated to combine Phillips and Wallis at least because they are analogous art to the '091 patent as they are directed to the same field of endeavor, *i.e.*, interactive televisions systems that provide enhanced user experiences through specially formatted screen displays and presentation of user controls. EX1003, ¶149. Moreover, like the '091 patent, the object of the disclosures of Phillips and Wallis is to make user interaction with digital contents received from an outside server or VoD more convenient and as intuitive as possible. *See e.g.*, EX1010, 1:55-2:39; EX1011, ¶0010; EX1003, ¶149.

A POSITA would have been specifically motivated to incorporate Wallis's metadata attribute table, as described above, *e.g.*, §VI.A.8, into Phillips's systems to control whether an interactive operation panel or a linear operation panel is displayed

to the user and, within each type of operation panel, what specific buttons to include. For example, rather than having a set operation panel that populates when a given VoD screen is displayed, or a set operation panel that populates when video or music is playing, Phillips's system as modified by Wallis would allow for Phillips's operation panel display to dynamically populate a set of interactive content control buttons or linear content control buttons based on the attribute data associated with the digital content. EX1003, ¶150.

Programming Phillips's systems in this way would provide a more customized experience for the user, tailored to the particular content being displayed. Further, by associating the user interface with metadata delivered with the digital content (as in Wallis) rather than coding to a specific type of content, e.g., linear or interactive (as in Phillips), the software architecture would more naturally accommodate other, future, data types. That is, there is no need to rely on a programmer to create a new/discrete operation panel with, e.g., customized buttons for each new digital content screen received from an outside server. Instead, by implementing attribute data as disclosed in Wallis, the appropriate operation panel, with customized buttons based on the digital content, would be selected/populated simply by looking at the attribute values within Wallis (Figure 1 and [0056]-[0065]), which is also received from an outside server along with the digital content. Each of these benefits would

have motivated one of ordinary skill in the art to modify Phillips in view of Wallis. EX1003, ¶151.

Wallis's attribute table could easily, and with a reasonable expectation of success, be integrated into Phillips. Deciding which operation panel (or buttons within an operation panel) to display would be a simple and predictable outcome of a condition in an "if" programming statement. EX1003, ¶152. As explained by Dr. Bederson, changing Phillips's existing decision-making process (based on a user-interface screen) to a condition (based on Wallis's attribute table) would be a straightforward application of well-known programming techniques, and would be well within the capabilities of a POSITA. Given the simple nature of this change—creating a condition of an "if" statement to be based on a data attribute—one of ordinary skill in the art would find the outcome predictable and obvious and is similar to how a POSITA would understand Phillips to already work in deciding which of its multiple operation panels to display. EX1003, ¶152.

Moreover, the combination of Phillips and Wallis simply expands Phillips's functionality, as proposed above, and does not alter the fact that Phillips's control circuitry controls the alternative display of either of a linear content operation panel or an interactive content operation panel depending upon the presently displayed/selected screen. EX1003, ¶153.

**VII. GROUND 2: CLAIMS 1, 3-5, 7, 11-15, 17, AND 20 ARE OBVIOUS
OVER PHILLIPS IN VIEW OF WALLIS AND LOGAN**

To the extent that PO argues that Phillips’s “flip” tuning and “browse” features are not “time related information” that is “receive[d] from an outside server,” (as required in limitations 1[a] and 1[f], (§§VI.A.2, VI.A.7)), Logan discloses this limitation. EX1003, ¶155.

For example, referring to Fig. 3, below, Logan discloses a “Mini-Nav Bar,” *i.e.*, a small graphic bar which displays segment titles (red box), and “allows a viewer to navigate when the display is in fullscreen mode (that is, the video consumes the entire screen).” “This feature is a small graphic bar displayed near or at the bottom of the screen, either as an overlay on top of the video or as a bar across the bottom that that slightly vertically shrinks the video image.” EX1013, ¶0087, Fig. 3; EX1003, ¶156.

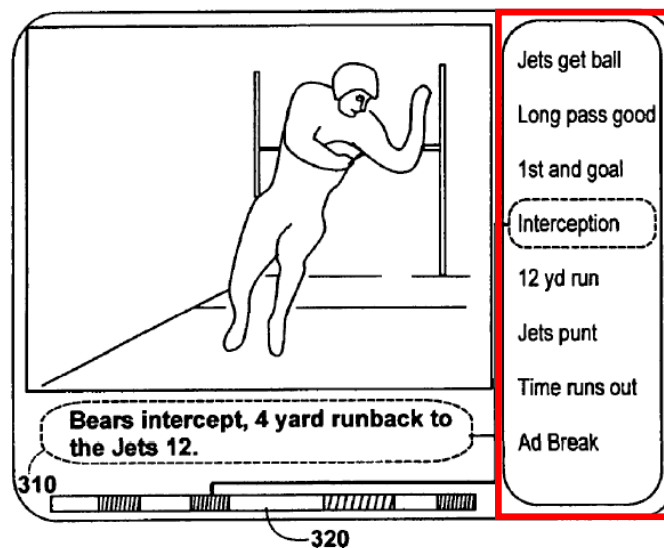


Fig. 3

EX1013, Fig. 3; EX1003, ¶156. “After a timeout (*e.g.*, several seconds), the Mini-Nav bar disappears, leaving only fullscreen video.” EX1013, ¶0089; EX1003, ¶157. Thus, the time period during which both the Mini-Nav bar is displayed and the display is in fullscreen mode is “time related information which represents a time during which the reproduced digital contents and at least one of the interactive buttons are displayed.”

Moreover, the “manner in which the Mini-Nav bar is presented may be configured by ... the provider” (*received from an outside server*) to control certain characteristics of the Mini-Nav Bar, including “the time duration after which the Mini-Nav Bar disappears.” (*time related information*). EX1013, ¶¶0093-0096, EX1003, ¶158. Thus, Logan expressly discloses “time related information” that is “receive[d] from an outside server.” EX1003, ¶158.

A. Motivation to Combine

As described under Ground 1, a POSITA would have been motivated to combine Phillips and Wallis. See §VI.M. Similarly, a POSITA would have been motivated to combine the teachings of Logan with that of Phillips and Wallis because all three references share the same field of interactive televisions systems that provide enhanced user experiences through specially formatted screen displays and presentation of user controls. EX1003, ¶159. These same characteristics also make them analogous art to the '091 patent. EX1013, Abstract; EX1003, ¶159.

Like Phillips and Wallis, Logan also discloses “[n]avigation controls including segment lists, specially formatted screen displays, and special functions under the control of a user-operated remote control, facilitate the interactive selection and control of the presentation.” EX1013, Abstract; *see, e.g.*, EX1010, Abstract, 1:55-4:50, Figs. 17a, 18; EX1011, Abstract, ¶¶9-10, 18-21, 30-35; EX1003, ¶160. Phillips and Logan similarly disclose time-related information which represents a time during which digital contents and interactive operation buttons are displayed. For example, Phillips discloses flip tuning and browsing features, whereas Logan discloses a Mini-Nav bar. *See* EX1010, 16:22-17:32; EX1013, ¶¶0087, 0093-96; EX1003, ¶161.

A POSITA therefore would have been motivated to add the Mini-Nav Bar feature of Logan with the flip tuning and browse features of Phillips because doing so would add another like feature very similar to those already disclosed by Phillips. Doing so would enhance the user experience by providing yet another way in which the user can interact with the digital content. Doing so would have been a simple software modification and well within the capabilities of a POSITA. EX1003, ¶162.

A POSITA would have found this addition to Phillips to be a simple substitution of elements well known in the art and would have had a reasonable expectation of success in achieving the benefits disclosed in all three references by making the modification. EX1003, ¶163. Further, the addition of Logan’s Mini-Nav

bar simply expands the functionality of the Phillips-Wallis combination, as proposed above, and does not alter the fact that Phillips's control circuitry controls the alternative display of either of a linear content operation panel or an interactive content operation panel depending upon the presently displayed/selected screen.

Moreover, a POSITA would have been motivated to combine Logan with the Phillips-Wallis combination for at least the same reasons it would have been obvious to combine Phillips and Wallis, as described in Section VI.M above. For example, it was well known to a POSITA that GUIs often have numerous settings that control details of the display (*e.g.*, layouts, fonts, colors, timing, and more). EX1003, ¶164. It was also known that it could be a challenge to maintain consistency of GUIs, especially when running the same or similar program on multiple devices. Striving for consistency is the first of Ben Shneiderman's well-known "Eight Golden Rules of Interface Design," which explains that "consistent color, layout, capitalization, fonts, and so on should be employed throughout." EX1016, p. 74; EX1003, ¶164.

A POSITA would have known that one of the simplest ways to ensure consistency of such settings is to have them configured centrally, for example, through a content or service provider. This way, if there is any reason to change them, they can be changed consistently for all users. EX1003, ¶165.

**VIII. GROUND 3: CLAIMS 2, 6, 10, AND 16 ARE OBVIOUS OVER
PHILLIPS-WALLIS COMBINATIONS IN VIEW OF UCHIDA**

The Phillips-Wallis combinations in view of Uchida disclose the limitations of claims 2, 6, 10, and 16. EX1003, ¶166.

Claim 2 recites displaying “either the first operation panel or the second operation panel in a substantially same panel rendering area as alternative operation panels.” EX1001, claim 1; EX1003, ¶167. In other words, both the linear and interactive panels are displayed in substantially the same area of the display. EX1003, ¶171. Claims 6 and 16 recite maintaining “a rendering area size of the reproduced digital contents,” even when the first operation panel or the second operation panel are displayed. EX1001, claims 6 and 16; EX1003, ¶167. Uchida discloses these limitations. EX1003, ¶167.

A. Claim 2:

Claim 2 is obvious over the Phillips-Wallis combinations identified in Grounds 1 and 2 in view of Uchida. EX1003, ¶168. As shown in Figs. 10A-10C, below, Uchida’s display 108 is divided into a dedicated content display area (red boxes) and a dedicated control panel display area (blue boxes) within which Fig. 10A and 10C show interactive control panels (CP, CP2) and Fig. 10B shows a linear control panel (CP1). EX1015, 21:36-22:7, 21:54-67; Figs. 10A-10C; EX1003, ¶168.

FIG. 10A

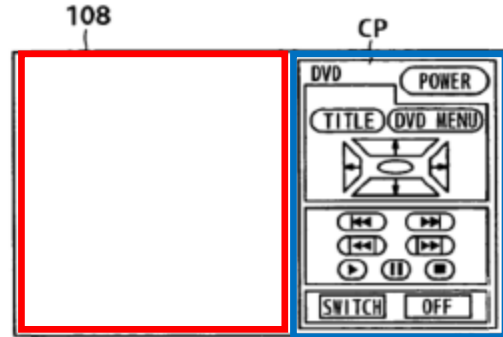


FIG. 10B

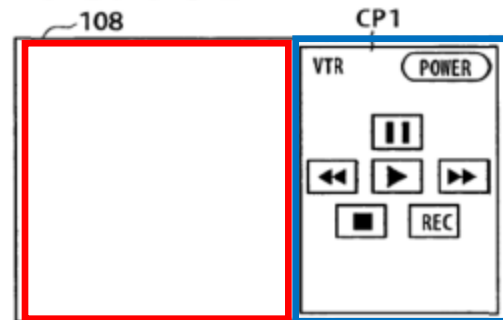
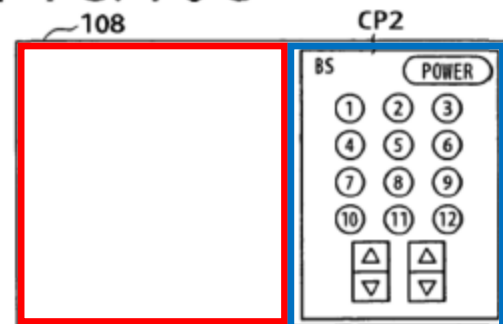


FIG. 10C



EX1015, Figs. 10A-10C; EX1003, ¶168. As is evident from these figures, either the first operation panel or the second operation panel are displayed “in a substantially same panel rendering area as alternative operation panels.” EX1003, ¶168.

B. Claim 6:

Claim 6 is obvious over the Phillips-Wallis combinations identified in Grounds 1 and 2 in view of Uchida. See §VIII.A.; EX1003, ¶169. As shown above

in Figures 10A-10C of Uchida, §VIII.A., the content display area in the red boxes (*rendering area size of the reproduced digital contents*) is maintained, regardless of whether an interactive control panel (as in Figs. 10A and 10C) or a linear control panel (as in Fig. 10B) is displayed (*even when the first operation panel or the second operation panel is displayed*). EX1003, ¶169.

C. Claim 10

1. [10pre]

See claim 2 (§VIII.A.).

2. [10a]

Phillips discloses this limitation. For example, as described in connection with limitation [1a], Phillips discloses network communication circuitry configured to receive digital contents from an outside server. See §VI.A.2.; EX1003, ¶171. Moreover, in connection with Fig. 3, below, Phillips discloses in “[a]nother illustrative arrangement, ... user television equipment 20 includes a recording device 66 such as a digital video recorder (e.g., a personal video recorder (PVR)) that uses a hard disk or other storage (*a storage*) for recording video (*store the digital contents received from the outside server via the network communication circuitry*) or may be a digital video disc recorder, compact disc recorder, videocassette recorder, or other suitable recording device.” EX1010, 10:40-48; EX1003, ¶172.

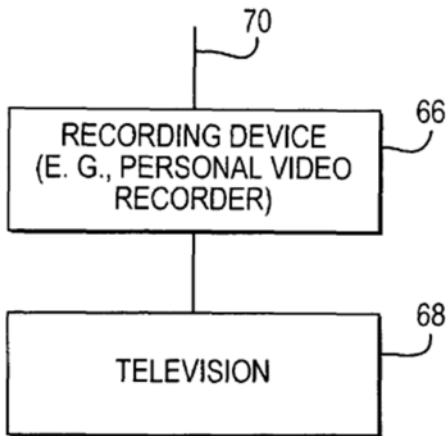


FIG. 3

EX1010, Fig. 3; EX1003, ¶172.

3. [10b]

Phillips discloses this limitation. See §VI.A.2.; EX1003, ¶173. Moreover, in connection with Fig. 3 (below), Phillips discloses “[e]quipment 20 of Fig. 3 may also include a television 68” which is connected to the recording device 66 (*storage*) and that ... previously recorded [*stored*] video is ... played back on television 68 [*reproduce the digital contents*].” EX1006, 10:47-48, 11:21-23; EX1003, ¶173.

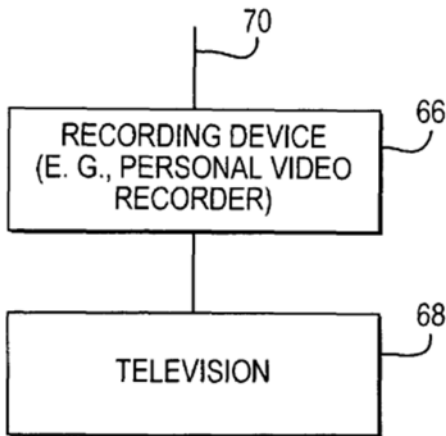


FIG. 3

EX1010, Fig. 3; EX1003, ¶173.

D. Claim 16:

Claim 16 is obvious over the Phillips-Wallis combinations identified in Grounds 1 and 2 in view of Uchida. See §VIII.A.; EX1003, ¶174. As shown above in Figures 10A-10C of Uchida, §VIII.A., the content display area in the red boxes (*rendering area size of the reproduced digital contents*) is maintained, regardless of whether an interactive control panel (as in Figs. 10A and 10C) or a linear control panel (as in Fig. 10B) is displayed (*even when at least one of the linear operation buttons or at least one of the interactive operation buttons are displayed*). EX1003, ¶174.

E. Motivation to Combine

As described above for Grounds 1 and 2, a POSITA would have been motivated to combine Phillips with Wallis and Logan. See §VII.A. Similarly, a POSITA would have been motivated to combine the teachings of Uchida with that of the Phillips-Wallis combinations of Grounds 1 and 2 because all four references share the same field of interactive televisions systems that provide enhanced user experiences through specially formatted screen displays and presentation of user controls. EX1003, ¶175. These same characteristics also make them analogous art to the '091 patent. EX1013, Abstract; EX1003, ¶175.

Like Phillips, Wallis and Logan, Uchida also discloses a display 108 divided into a dedicated content display area and a dedicated control panel display area. EX1015, 21:36-22:7, 21:54-67; Figs. 10A-10C; EX1003, ¶176.

A POSITA therefore would have been motivated to combine Uchida with the Phillips-Wallis combinations and modify the displays such that the operation panels are always located in the same panel rendering area of the display (claim 2) and such that the rendering area size of the reproduced digital content is maintained even when at least one or the other of the operation panels is displayed. EX1003, ¶177. Doing so would enhance the user experience by providing consistency in the graphic interface such that regardless of which operation panel is displayed (e.g., linear or interactive) it is displayed in the same area and the rendering area size of the digital

content is maintained. EX1003, ¶178. Doing so would have been a simple software modification and well within the capabilities of a POSITA. EX1003, ¶178.

A POSITA would have found this addition to Phillips to be a straightforward substitution of elements well known in the art and would have had a reasonable expectation of success in achieving the benefits disclosed in all three references by making the modification. EX1003, ¶179. Further, the addition of Uchida simply enhances the user experience and does not alter the fact that Phillips’s control circuitry controls the alternative display of either of a linear content operation panel or an interactive content operation panel depending upon the presently displayed/selected screen.

Moreover, a POSITA would have been motivated to combine Uchida with the Phillips-Wallis combinations for at least the same reasons it would have been obvious to combine Phillips, Wallis and Logan, as described in §VII.A. above. For example, it was well known to a POSITA that GUIs often have numerous settings that control details of the display (*e.g.*, layouts, fonts, colors, timing, and more). EX1003, ¶180. It was also known that it could be a challenge to maintain consistency of GUIs, especially when running the same or similar program on multiple devices. Striving for consistency is the first of Ben Shneiderman’s well-known “Eight Golden Rules of Interface Design,” which explains that “consistent color, layout,

capitalization, fonts, and so on should be employed throughout.” EX1016, p. 74; EX1003, ¶180.

A POSITA would have known that one of the simplest ways to ensure consistency of such settings is to have them configured centrally, for example, through a content or service provider. This way, if there is any reason to change them, they can be changed consistently for all users. EX1003, ¶181.

Uchida’s display methodology where a screen’s usable space is split between a content display area and an operation panel display area was also generally known in the art. For example, in the context of portable handheld devices, U.S. Patent No. 7,667,123 to Phillips (“Phillips123”) explains that a “predetermined portion of the touch-sensitive display” will contain the devices operation panel and “programmable control buttons,” which may be “reprogrammed” to show different buttons depending on the content displayed. EX1017, 6:14-32, 7:4-26, Figures 4 and 5. As shown in the transition between Figures 4 and 5, Phillips123 explains that the Figure 4 operation panel containing “open,” “new,” and “edit” buttons has been reprogrammed in Figure 5 to instead include linear content controls such as fast-forward and rewind for controlling the streaming media. EX1017, 6:14-32, 7:4-26, Figures 4, 5; EX1003, ¶¶182-183.

A POSITA would have been motivated to incorporate Uchida’s split display with the Phillips-Wallis combinations⁵ to achieve the specific benefits described by Uchida—namely, ensuring that the displayed content is not obstructed by an operation panel displayed on the screen. In fact, Phillips even explains that rather than overlaying its operation panels on the displayed content, “the video for the current channel may be reduced in size and the flip information ... may be displayed at a location on the periphery of the reduced-sized video (e.g., at the bottom, side, or top of the reduced-sized video).” EX1010, 16:45-50. Thus, not only is a split screen display (and the benefits thereof) expressly disclosed by Uchida, but Phillips already contemplated and disclosed the exact implementation proposed by Petitioner’s Uchida combination. EX1003, ¶184.

Moreover, utilizing Uchida’s split screen display would, as a matter of graphical user interface design, and as explained by Dr. Bederson, provide for many

⁵ Petitioner’s unpatentability arguments in view of Phillips-Wallis combinations do not rely on the references’ linear content operation panels or interactive content operation panels being displayed in any particular location on the screen. Moreover, nothing in the Phillips-Wallis combinations demands that the references’ operation panels be displayed in any particular area and, thus, Uchida’s split screen display may be incorporated into the Phillips-Wallis combinations. EX1003, ¶184.

of the same benefits as achieved by using what is known as “tiled window mergers.”

A split screen display avoids any potential need for the user to have to reposition an overlapping panel and, thus, user time is saved, as well as user acceptance/compliance. EX1003, ¶185.

Uchida’s split screen display would have easily, and with a reasonable expectation of success, been integrated into the Phillips-based grounds. As explained by Dr. Bederson, one of ordinary skill in the art would have had to simply set the position and size of Phillips’s content display area and the operation panel display area based on the non-overlapping position and size taught by Uchida. EX1003, ¶186. Accordingly, one of ordinary skill in the art would find the combination of Uchida with the Phillips-Wallis combinations of Grounds 1 and 2 to be predictable and obvious. EX1003, ¶186.

The proposed Uchida combination trivially modifies the location of Phillips’s content display area and operation panel display area, and does not change any other operating principals of Phillips-Wallis combinations. EX1003, ¶187.

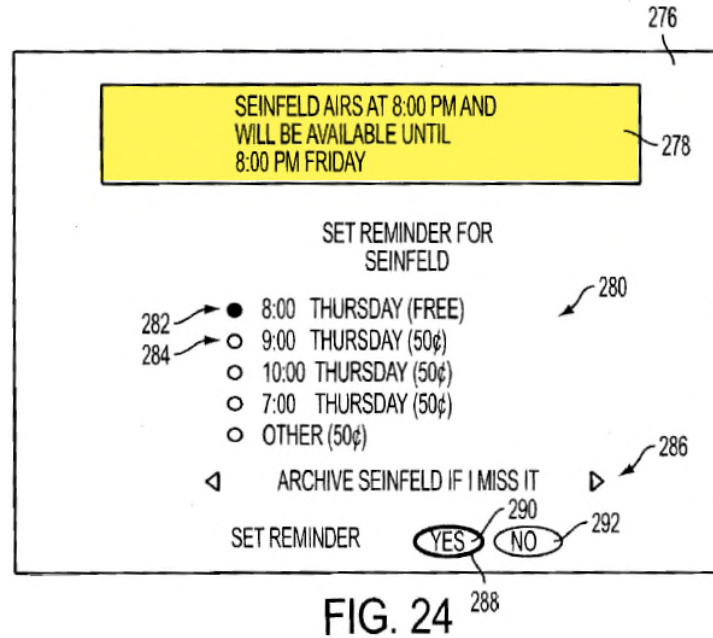
IX. GROUND 4: CLAIMS 8, 9, 18, AND 19 ARE OBVIOUS IN VIEW OF GROUND 1 AND FURTHER IN VIEW OF ELLIS

Claims 8 and 18 require that the “time related information” recited in independent claims 1 and 14 is an “appreciation term.” Claims 9 and 19 further require that the “appreciation term is related to a predetermined date.” An appreciation term is described in the ’091 patent as a limited amount of time during

which the user may be interested in interacting with the digital content (*e.g.*, for a weather report, or a news report), after which time the user is no longer able to interact with the digital contents. EX1001, 5:41-58.

A. Claim 8:

Claim 8 is obvious over the Phillips-Wallis combination (Ground 1) in view of Ellis. EX1003, ¶190. Ellis discloses an interactive television system on which a program may be available on the system for a predetermined limited amount of time (*time related information corresponding to one digital content of the digital contents*). EX1014, ¶¶0012, 164-165; EX1003, ¶190. Specifically, a program may be available to viewers until a predetermined date and time after the original broadcast date. In the example shown in Fig. 24, below, an episode of “Seinfeld will be available only until 8:00PM Friday, after which it will expire.” EX1014, ¶0165; EX1003, ¶190. Thus, any time prior to 8:00PM Friday (*appreciation term*), the interactive buttons are displayed along with the digital content, such as the title and its available time-frame (in yellow highlighted portion) (*a time during which the reproduced digital contents and at least one of the interactive operation buttons are displayed*). EX1014, ¶165; EX1003, ¶190.



EX1014, Fig. 24; EX1003, ¶190. The viewer can interact with the digital content using the interactive buttons displayed on display screen 276 until the program expires. EX1014, ¶¶164-165, EX1003, ¶190.

Moreover, Ellis discloses that the expiration dates or retention times “may be supplied by the content owners associated with programming sources 12, by the operator of facility 14, or by any other suitable entity.” EX1014, ¶237; EX1003, ¶191. As such, the expiration date (*appreciation term corresponding to one digital content of the digital contents*) is received by Ellis’s interactive television program system from an outside server consistent with claims 1 and 14 of the ’091 patent. EX1003, ¶191.

B. Claim 9:

Claim 9 is obvious over the Phillips-Wallis combination (Ground 1) in view of Ellis. EX1003, ¶192. As discussed above with respect to claim 8, programs on Ellis's system may be available until a predetermined date and time after the original broadcast date (*time related information is an appreciation term related to a predetermined date*), as shown in Figure 24, which is received by Ellis's system from an outside server. See §IX.A; EX1014, Figure 24 (element 278); EX1003, ¶192. The viewer can interact with the digital content using the interactive buttons displayed on display screen 276 until the program expiration date. EX1014, ¶¶164-165, EX1003, ¶192.

C. Claim 18:

See claim 8 (§IX.A.).

D. Claim 19:

See claim 9 (§IX.B.).

E. Motivation to Combine

A POSITA would have been motivated to combine the teachings of the Philips-Wallis combination of Ground 1 with Ellis because the references share the same field of interactive televisions systems that provide enhanced user experiences through specially formatted screen displays and presentation of user controls. These same characteristics also make them analogous art to the '091 patent. EX1014, Abstract; EX1003, ¶195. Indeed, Ellis and Phillips share identical portions of their

respective specifications and figures. *Compare* EX1010, 6:31-20:30 with EX1014, ¶¶0048-129; *also compare* EX1010, Figs 2-23b with EX1014, Figs. 2-23b (identical disclosure). EX1003, ¶196. Within that identical disclosure, Phillips and Ellis both disclose the flip tuning and browse features discussed herein, which represent a time during which digital contents and interactive operation buttons are displayed. *See* EX1010, 16:22-17:32; EX1014, ¶¶105-114; EX1003, ¶196. Ellis further discloses that “programs that are of less interest or that are particularly time-sensitive (e.g., nightly news reports) may be maintained on the network-based or local personal video recorder for less time than programs that are of more interest or are less time-sensitive (e.g., a popular situation comedy),” which facilitates efficient use of network or local storage. EX1014, ¶0012; EX1003, ¶197.

A POSITA would therefore have considered the flip tuning and browse features of Phillips and been motivated to modify that system to support expiration dates of programs disclosed by Ellis. EX1003, ¶198. Since Phillips already has the ability to keep track of how long an element has been on the screen, it is clear it has the mechanism for tracking time. So, tracking time to additionally manage program expiration dates would have been something a POSITA would understand to have been a modest technical modification to Phillips. From a design perspective, a POSITA would understand that Phillips discloses the concept of modifying the user experience over time to reflect various conditions – such as not covering a screen

with a channel flipper that has not been used in a while. Similarly, looking to Ellis to not include shows that have not been accessed in a while would be a natural extension that is consistent with Phillips's existing design approach. Additionally, Phillips supports an e-commerce system with the ability to buy video-on-demand programs. So, looking to Ellis to improve its e-commerce offerings by managing when programs are available would be a natural extension for a POSITA. EX1003, ¶198.

A POSITA would have found this modification to be a simple substitution of elements well known in the art and would have had a reasonable expectation of success in achieving Ellis's benefits by making the modification. Further, the addition of Ellis simply expands the functionality of the Phillips-Wallis combinations, as proposed above, and does not alter the fact that Phillips's control circuitry controls the alternative display of either of a linear content operation panel or an interactive content operation panel depending upon the presently displayed/selected screen. EX1003, ¶199.

Moreover, a POSITA would have been motivated to combine Ellis with the Phillips-Wallis combination for at least the same reasons it would have been obvious to combine Phillips and Wallis, as described in Section VI.M above. For example, it was well known to a POSITA that GUIs often have numerous settings that control details of the display (*e.g.*, layouts, fonts, colors, timing, and more). EX1003, ¶200.

It was also known that it could be a challenge to maintain consistency of GUIs, especially when running the same or similar program on multiple devices. Striving for consistency is the first of Ben Shneiderman’s well-known “Eight Golden Rules of Interface Design,” which explains that “consistent color, layout, capitalization, fonts, and so on should be employed throughout.” EX1016, p. 74; EX1003, ¶200.

A POSITA would have known that one of the simplest ways to ensure consistency of such settings is to have them configured centrally, for example, through a content or service provider. This way, if there is any reason to change them, they can be changed consistently for all users. EX1003, ¶201. Thus, at the very least, it would have been obvious to a POSITA that the time related information disclosed in Phillips would have been received from an outside server. EX1003, ¶201.

X. GROUND 5: CLAIMS 8, 9, 18, AND 19 ARE OBVIOUS IN VIEW OF GROUND 2 AND FURTHER IN VIEW OF ELLIS

A. Claim 8:

Claim 8 is obvious in view of Ground 2 and further in view of Ellis for the same reasons described in §IX.A. EX1003, ¶203.

B. Claim 9:

Claim 9 is obvious in view of Ground 2 and further in view of Ellis for the same reasons described in §IX.B. EX1003, ¶204.

C. Claim 18:

Claim 18 is obvious in view of Ground 2 and further in view of Ellis for the same reasons described in §IX.A. EX1003, ¶205.

D. Claim 19:

Claim 19 is obvious in view of Ground 2 and further in view of Ellis for the same reasons described in §IX.B. EX1003, ¶206.

E. Motivation to Combine

A POSITA would have been motivated to combine the teachings of the Philips-Wallis-Logan combination of Ground 2 with Ellis for the same reasons described in §IX.E. EX1003, ¶207.

XI. GROUND 6: CLAIMS 1-3, 6-9 AND 14-19 ARE OBVIOUS OVER ELLIS’430 IN VIEW OF WALLIS

A. Claim 1

1. [1pre]

To the extent the preamble is limiting, Ellis’430 discloses it. EX1003, ¶208. Referring to Figure 1, below, Ellis’430 discloses “user equipment 122 may include, for example, a television set, a PVR, and a set-top box. EX1021, ¶167; EX1003, ¶208.

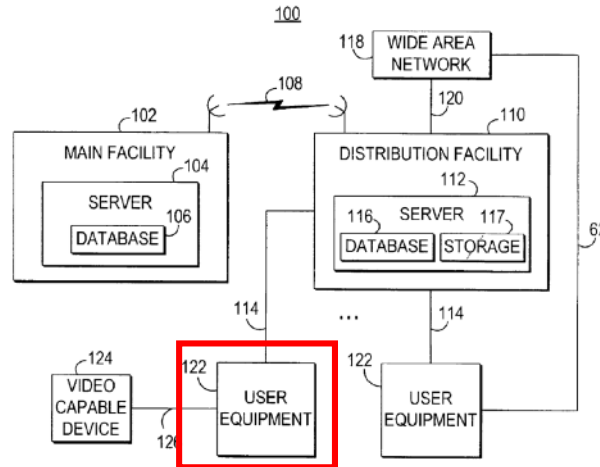


FIG. 1

EX1021, Fig. 1.

2. [1a]

Ellis'430 discloses, or renders obvious, this limitation. EX1003, ¶209.

Referring to Figure 1, below, Ellis'430 discloses “[d]istribution facility 110 [outside server] may distribute program guide information [related information] (or content) [digital contents] to user equipment 122 via communication paths 114.”

EX1021, ¶161; EX1003, ¶210.

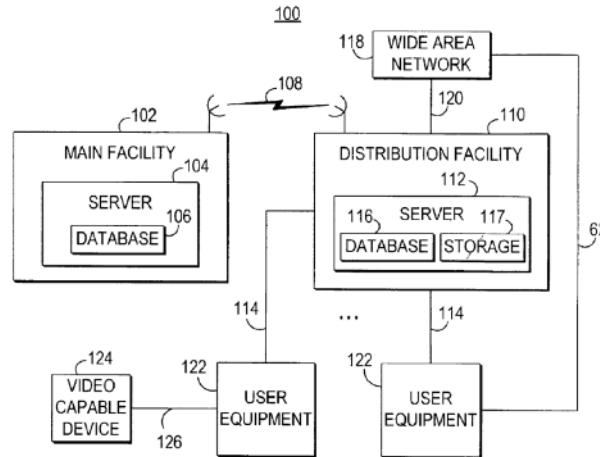
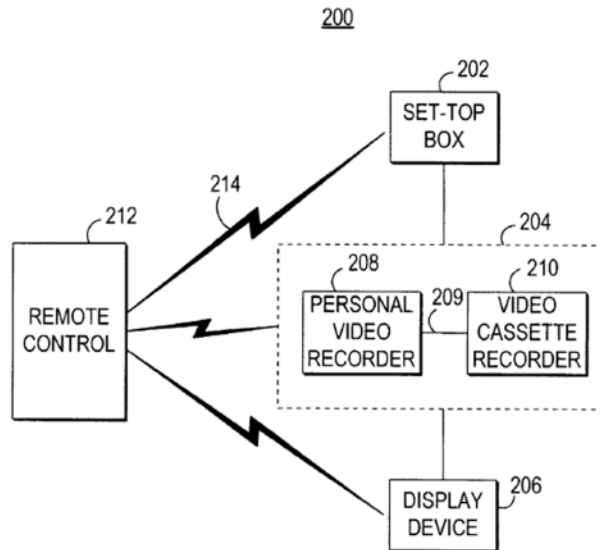


FIG. 1

EX1021, Fig. 1; EX1003, ¶210.

Referring to Figure 2A, below, Ellis’430 also discloses “[u]ser computer equipment may ... include a computer based receiver having integrated set-top box circuitry,” and that “set-top box 202 may receive signals transmitted by distribution facility 110 (FIG. 1) (*e.g.*, audio, video, or interactive television application data” (*network communication circuitry configured to receive digital contents*). EX1021, ¶¶168, 170; EX1003, ¶211.



EX1021, Fig. 2A; EX1003, ¶211. To the extent PO argues Ellis’430 does not expressly disclose “network communication circuitry,” based on the above disclosure, it would have been obvious to a POSITA that the receiver having integrated set-top box circuitry to receive signals is network communication circuitry. EX1003, ¶211.

Lastly, as described below (§§XI.A.7 and XI.A.8), Ellis’430 discloses that time related information is received from an outside server. *See* §XI.A.7; EX1003, ¶212. And Wallis discloses panel information is received from an outside server. EX1011, ¶¶35-41; *see* §XI.A.8; EX1003, ¶212.

3. [1b]

Ellis’430 discloses, or renders obvious, this limitation. EX1003, ¶213.

Ellis’430 discloses using “set-top box 202 as [a] receiver or tuner,” and that “[u]ser equipment 122 ... may include a computer based receiver having integrated

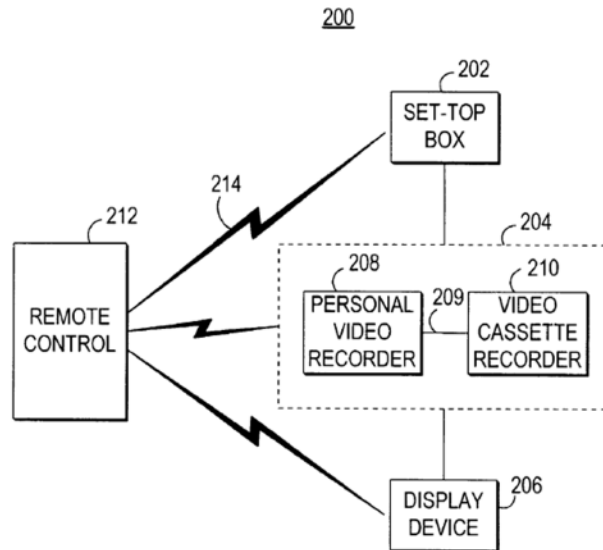
set-top box circuitry.” EX1021, ¶¶168, 170; EX1003, ¶214. Ellis’430 also discloses “a PVR [personal video recorder] may use an MPEG encoder to digitize broadcast television and then store the digitized broadcast television for later retrieval on a hard disk drive.” EX1021, ¶4; EX1003, ¶214.

Ellis’430 further discloses “[s]ystems today use digital video compression methods such as MPEG-2,” where an “incoming audio/video program can be digitized, compressed, and stored as the signal is received.” EX1021, ¶474; EX1003, ¶215.

Although Ellis’430 does not expressly disclose a decoder, it would have been obvious to a POSITA that a system with a receiver or tuner and that employed “encoding” and “compression” of received digital contents must also include *a decoder configured to decode the digital contents received via the network communication device* because any signal that is encoded for storage must be decoded before it can be viewed. EX1003, ¶216.

4. [1c]

Ellis’430 discloses this limitation. EX1003, ¶217. Referring to Figure 2A, below, Ellis’430 discloses “[s]et-top box 202 may send audio/video signals and signals ... to display device 206 [e.g., a television, etc.] for presentation to the user.” (*a display*).” EX1021, ¶173; EX1003, ¶217.



EX1021, Fig. 2A, EX1003, ¶217.

5. [1d]

Ellis’430 discloses, or renders obvious, this limitation. EX1003, ¶218.

Referring to Fig. 2C below, Ellis’430 discloses “set-top box 9922 for communicating with server 9908,” and “[s]et-top box 9922 may send audio/video signal and signals that are representative of graphics through recording equipment 9924 to display device 9926 for presentation to the user.” EX1021, ¶¶181, 183; EX1003, ¶219. Thus, set-top box 9922 includes tuning and digital video circuitry (*controller*) which controls playback (*configured to control reproduction*) of recordings and audio/video signals (*of the digital contents*) and display them on the display (*display of the reproduced digital contents on the display*). EX1003, ¶219.

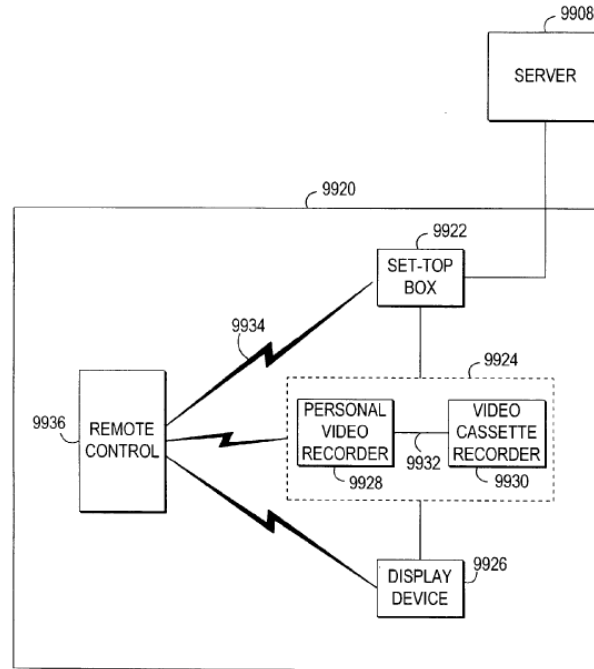


FIG. 2C

EX1021, FIG. 2C.

Further, as described above, Ellis’430 renders obvious a decoder for decoding digital contents (*digital contents decoded by the decoder*). See §XI.A.3; EX1003, ¶220.

6. [1e]

Ellis’430 discloses this limitation. EX1003, ¶221.

Figure 16, below, shows a video and an “browse or flip overlay 260” displayed at the bottom of the screen including a change channel option 262, which “may provide the user with the ability to scroll through channels.” (*second operation panel including at least one of interactive operation buttons, together with the reproduced digital contents*). EX1021, ¶234. Moreover, “[i]n response to a change

of a channel, title 264 may change to be the title of the current program on the new channel,” which, as explained above, is received from the distribution facility 110 (*receiving user-instructions of interactive functions to the outside server*). See §XI.A.2; EX1021, ¶234; EX1003, ¶222.

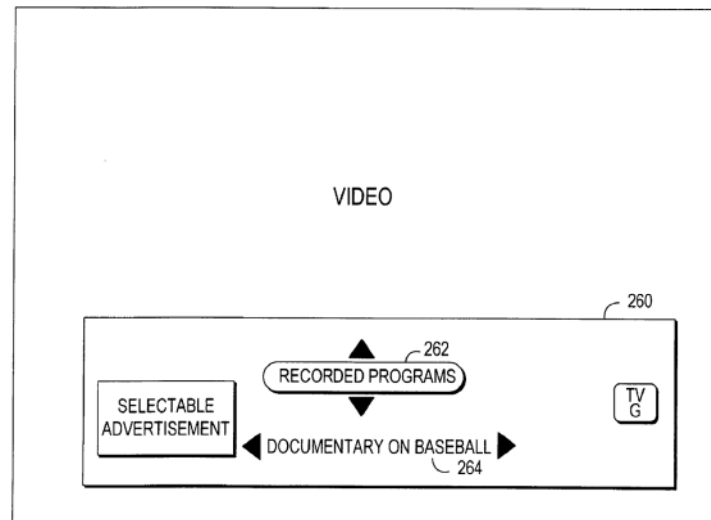


FIG. 16

EX1021, Fig. 16.

Alternatively, as shown below in Figure 39, Ellis’430 discloses video content displayed with a linear operation content panel 2404, including a “rewind option 2408, play option 2410, fast-forward option 2412, pause option 2414, [and] stop option 2416.” (*a first operation panel including at least one of linear operation buttons, receiving user-instructions regarding linear reproduction functions of the reproduced digital contents*). EX1021, ¶322; EX1003, ¶223.

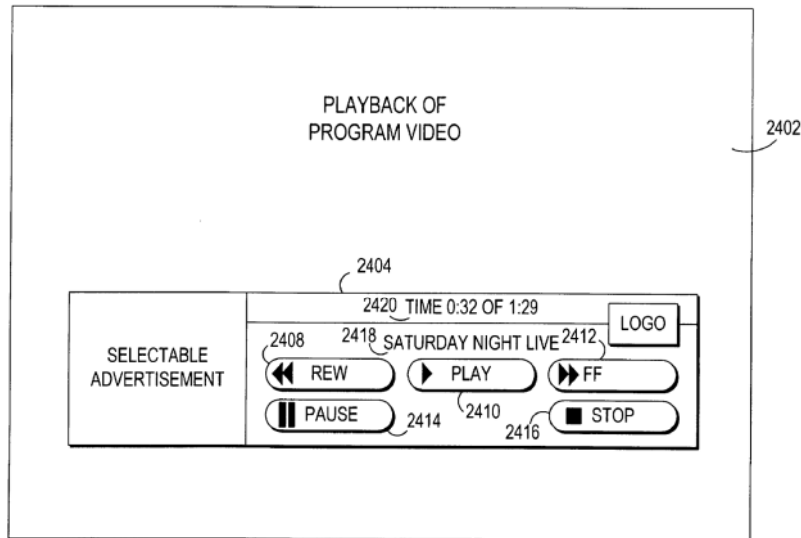


FIG. 39

EX1021, Fig. 39; EX1003, ¶223. Thus, Ellis'430 discloses one or the other of the interactive and linear operation panels are displayed (*alternatively display*).

If PO asserts the interactive and linear operation panels are never displayed simultaneously, Ellis'430 discloses “[i]f during the playback of video 2402 [see Fig. 39, above showing linear buttons], a user attempts to change the channel, an overlay with a message may appear,” indicating “that the user should press a remote control stop button to cancel the playback of the video so that the user can change the channel.” EX1021, ¶324; EX1003, ¶224. Figure 40, below, shows the message 952 displayed over video 950 and an interactive “‘OK’ option 954 for selecting to remove overlay 952.” EX1021, ¶324; EX1003, ¶224.

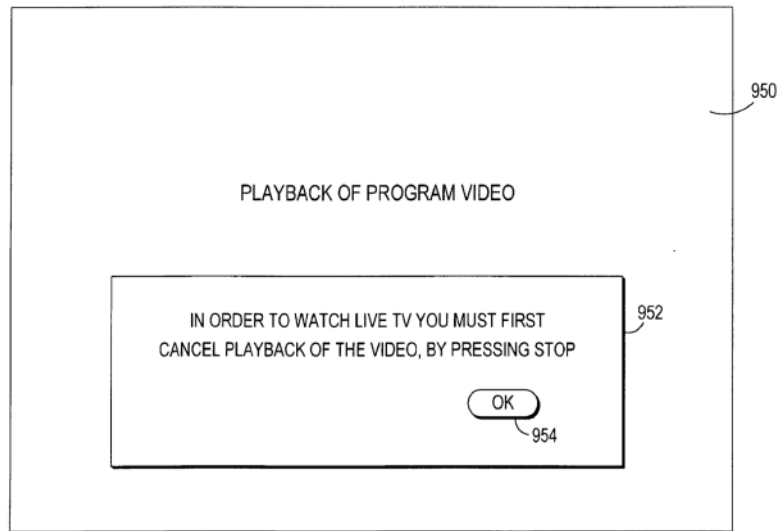


FIG. 40

EX1021, Fig. 40.

Thus, either a linear operation panel (*e.g.*, 2404 in Fig. 39) is displayed, or an interactive operation panel (*e.g.*, 952 in Fig. 40 or 260 in Fig. 16) is displayed, but both panels are never displayed simultaneously (*alternatively display*). EX1003, ¶225.

7. [1f]

Ellis'430 discloses, or render obvious, this limitation. EX1003, ¶226.

Referring to Fig. 1, below, Ellis'430 discloses “program guide information or content transmitted by main facility 102 to distribution facility 110 may include television program listings data (such as program times ...).” EX1021, ¶159; EX1003, ¶227.

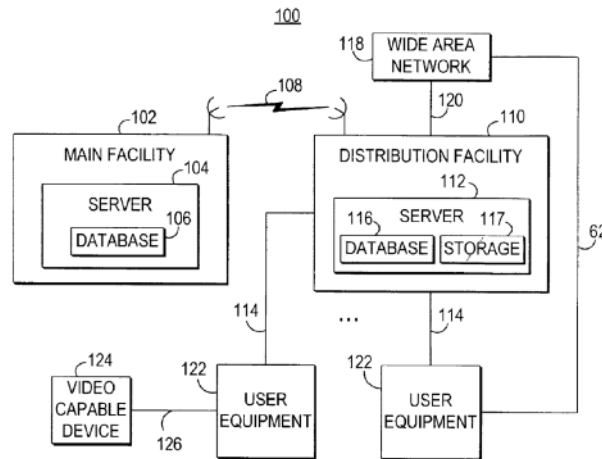


FIG. 1

EX1021, Fig. 1; EX1003, ¶227.

Moreover, as shown below in Figure 16, Ellis’430 discloses a “browse or flip” operation panel which “may provide the user with the ability to scroll through channels,” and which may be “available when a user is watching a live television program that is playing from a buffer for that program,” where “a live television program refers to a program that is being viewed at the same time it is being broadcast.” EX1021, ¶¶234, 236; EX1003, ¶228.

Thus, Ellis’430 discloses displaying digital contents (*e.g.*, a live television broadcast) and at least one interactive button (*e.g.*, the browse/flip operation panel) when a live television broadcast airs based on the program time information (*a time during which the reproduced digital contents and at least one of the interactive buttons are displayed*).

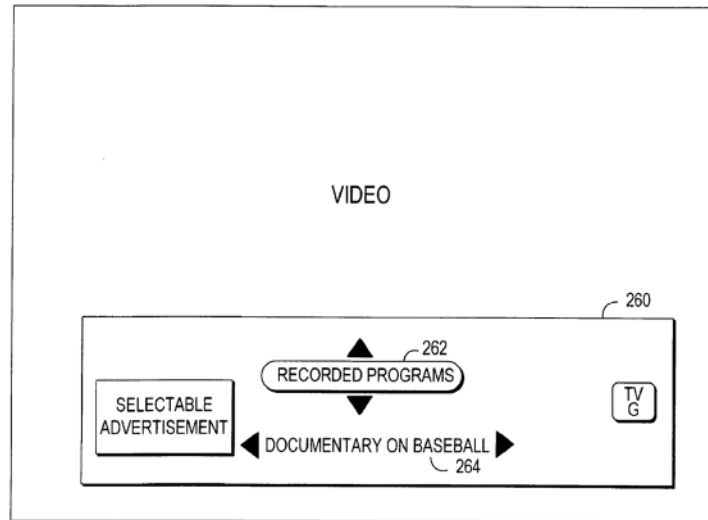


FIG. 16

EX1021, Fig. 16; EX1003, ¶229.

Ellis’430 also discloses that the time related information is received from an outside server, as required by limitation 1.a. Ellis’430 discloses “[d]istribution facility 110 may distribute program guide information (or content) [including program times] to user equipment 22 via communication paths 114” and that “[d]istribution facility 110 may include server 112 for distributing program guide information.” EX1021, ¶161; EX1003, ¶230.

Ellis’430 also discloses “[s]et-top box 202 may receive signals transmitted by distribution facility 110 (FIG. 1) (e.g., audio, video, or **interactive television application data**).” EX1021, ¶170 (emphasis added); EX1003, ¶231. Ellis’430 also discloses that “the browse or flip overlay ... may be provided by the interactive television application.” EX1021, ¶170; EX1003, ¶231. Thus, the browse or flip

overlay, which are part of the interactive television application, are received from distribution facility 110. EX1003, ¶231.

Thus, both the time during which the live broadcast airs (program times), and the browse/flip mode displayed as an overlay on the live television display are received from distribution facility 110 (*an outside server*). EX1003, ¶232.

8. [1g]

Ellis'430 does not disclose this limitation, but Wallis does. See §VI.A.8; EX1003, ¶233.

9. [1h]

Ellis'430 discloses this limitation. See §XI.A.5; EX1003, ¶234.

10. [1i]

Ellis'430 discloses this limitation. EX1003, ¶235. As described above, a “browse or flip” operation panel is invoked which “may provide the user with the ability to scroll through channels,” (*display at least one of the interactive buttons*) when a live television broadcast airs based on the program time information (*during the time represented by the time related information*). See §XI.A.7; EX1003, ¶235.

11. [1j]

If PO asserts this limitation refers to at least one time other than the time represented by the time related information, Ellis'430 in view of Wallis discloses this limitation. EX1003, ¶236. Ellis'430 discloses at least one time other than the time when the user is viewing a scheduled live broadcast (*other than the time*

represented by the time related information), a linear operation panel overlay 2404 is displayed during playback of a program video, as shown below in Fig. 39:

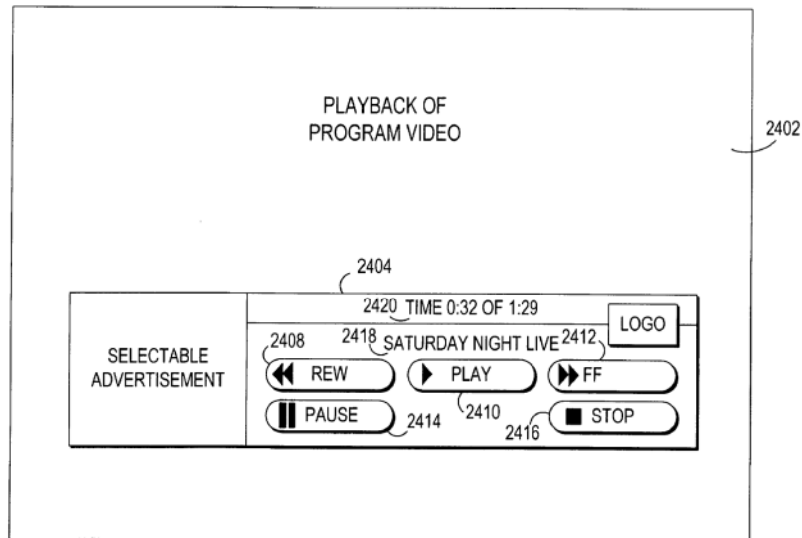


FIG. 39

EX1021, Fig. 39; EX1003, ¶236.

Ellis'430 does not disclose displaying at least one of the linear operation buttons based on the panel related information, but as explained above, Wallis does (*display at least one of the linear operation buttons or at least one of the interactive buttons based on the panel related information*). See §§VI.A.8, VI.A.11; EX1003, ¶237.

B. Claim 2:

The Ellis'430-Wallis combination renders obvious this claim. EX1003, ¶238. As shown below in Figures 16 and 39, respectively, both the interactive operation panel 260 and the linear operation panel 2404 are displayed in a substantially same panel rendering area.

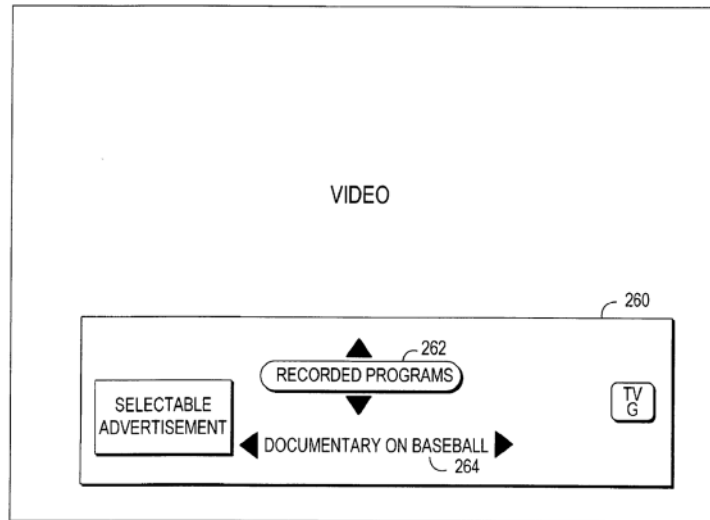


FIG. 16

EX1021, Fig. 16; EX1003, ¶238.

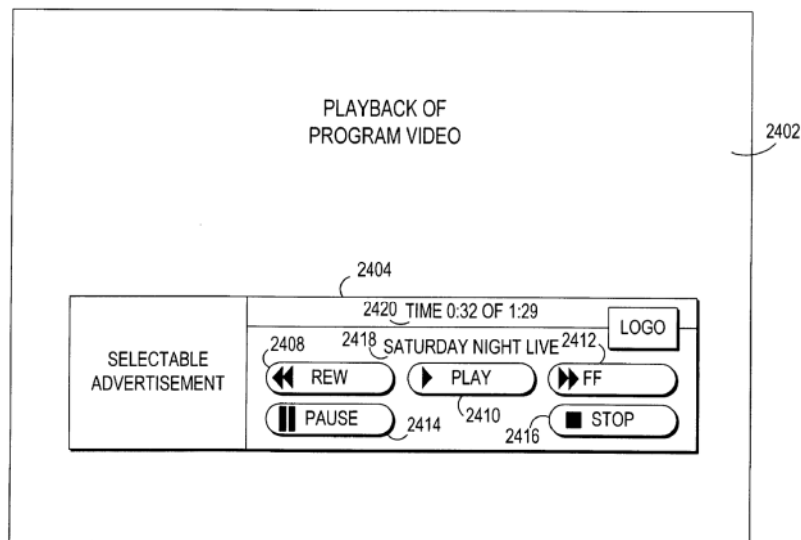


FIG. 39

EX1021, Fig. 39; EX1003, ¶238.

C. Claim 3:

The Ellis'430-Wallis combination renders obvious this claim. *See* §XI.B (showing the interactive operation panel 260 and the linear operation panel 2404 displayed in a lower part of the display); EX1003, ¶239.

D. Claim 6:

The Ellis'430-Wallis combination renders obvious this claim. *See* §XI.B. (showing a rendering area size of the reproduced digital contents is maintained even when the interactive operation panel 260 or the linear operation panel 2404 is displayed); EX1003, ¶240.

E. Claim 7:

The Ellis'430-Wallis combination renders obvious this claim. EX1003, ¶241. Figure 16 of Ellis'430, below, depicts an interactive operation panel with buttons 262 and left/right arrows. Button 262 changes the current channel. EX1021, ¶234; EX1003, ¶241. Left/right arrows display titles for earlier/later programs on the current channel. EX1021, ¶235; EX1003, ¶241.

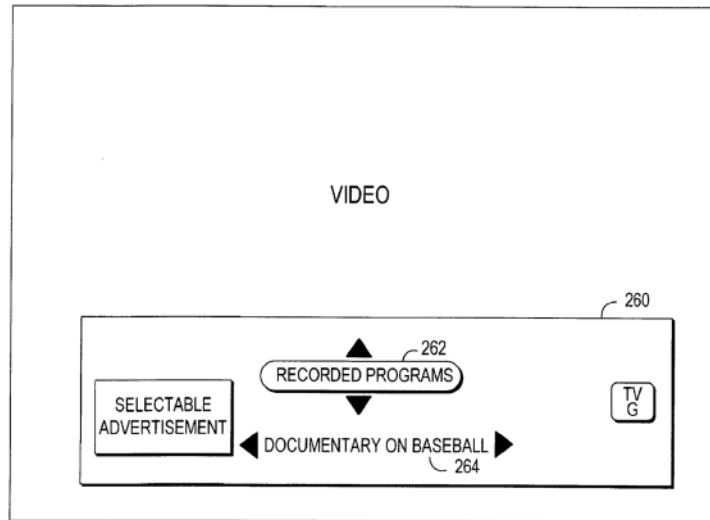


FIG. 16

EX1021, Fig. 16; EX1003, ¶241.

In contrast, Figure 39, below, shows linear operation panel with buttons for play 2410, rewind 2408, fast-forward 2412, pause 2414, and stop 2416. EX1021, ¶¶321-322; EX1003, ¶242.

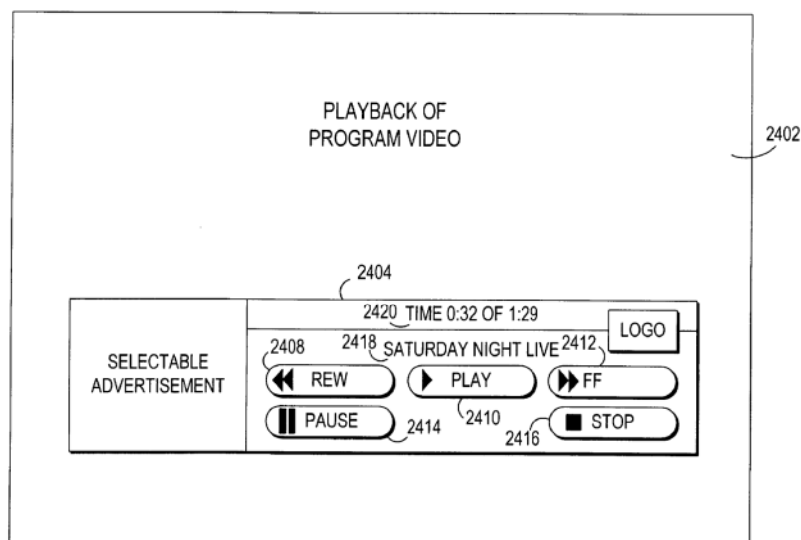


FIG. 39

EX1021, Fig. 39; EX1003, ¶242.

F. Claim 8:

The Ellis'430-Wallis combination renders obvious this claim. EX1003, ¶243. As described above, Ellis'430 discloses time related information. See §XI.A.7; EX1003, ¶243.

Further, as shown below in Figure 8, the day/time a particular program will air live on TV (e.g., Tuesday, 8-8:30P) is displayed (*appreciation term corresponding to one digital content of the digital contents*). In this example, the appreciation term begins Tuesday, 8P and ends Tuesday, 8:30P. EX1021, Fig. 8; EX1003, ¶244.

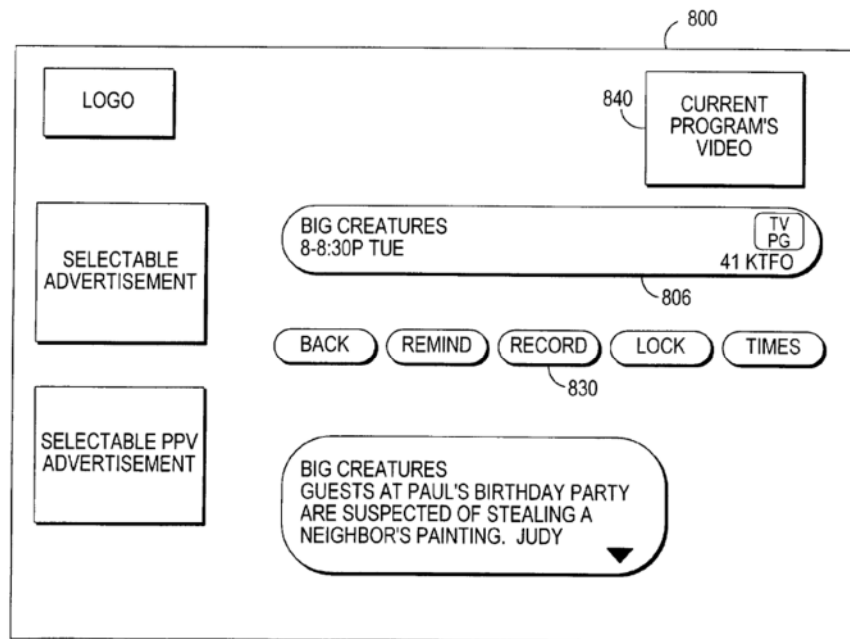


FIG. 8

EX1021, Fig. 8; EX1003, ¶244.

Lastly, if PO argues the appreciation term relates to recorded digital contents, as shown below in Fig. 51, Ellis’430 discloses a “recording expiration option,” *e.g.*, “Delete After One Week 3410” EX1021, ¶¶351; EX1003, ¶245.

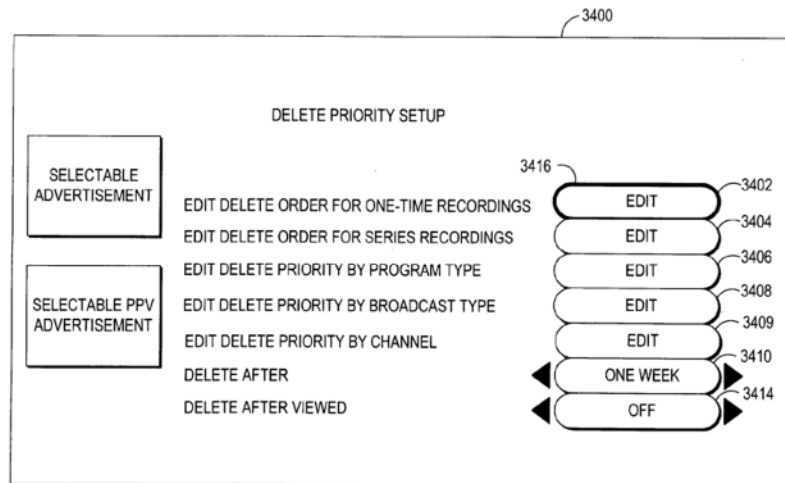


FIG. 51

EX1021, Fig. 51; EX1003, ¶245.

G. Claim 9:

The Ellis’430-Wallis combination renders obvious this claim. EX1003, ¶246. As described above, Ellis’430 discloses an appreciation term related to a particular day; Tuesday. *See* §XI.F; EX1003, ¶246. Thus, the appreciation term is related to a predetermined date. EX1003, ¶246.

H. Claim 14

1. [14pre]

See XI.A.1; EX1003, ¶247.

2. [14a]

See XI.A.2; EX1003, ¶248. Moreover, referring to Figure 1, below, Ellis'430 discloses “server 112 [at distribution facility 110] may be capable of providing ... video-on-demand.” EX1021, Fig. 8; EX1003, ¶248.

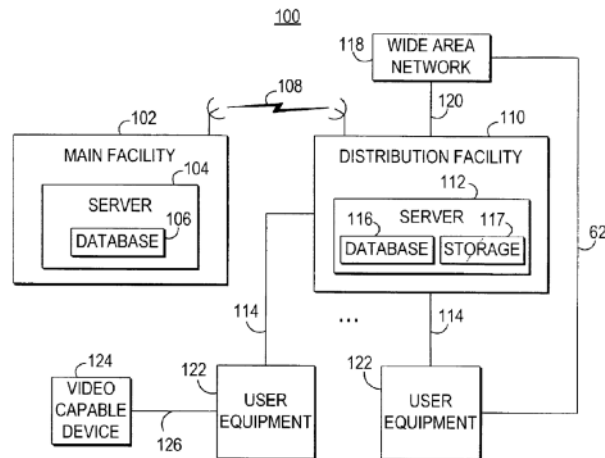


FIG. 1

EX1021, Fig. 1; EX1003, ¶248.

3. [14b]

See §XI.A.3; EX1003, ¶249.

4. [14c]

See §XI.A.4; EX1003, ¶250.

5. [14d]

See §XI.A.5; EX1003, ¶251.

6. [14e]

See §XI.A.6; EX1003, ¶252.

7. [14f]

See §XI.A.7; EX1003, ¶253.

8. [14g]

See §XI.A.8; EX1003, ¶254.

9. [14h]

See §XI.A.9; EX1003, ¶255.

10. [14i]

See §XI.A.10; EX1003, ¶256.

11. [14j]

See §XI.A.11; EX1003, ¶257.

I. Claim 15:

See §XI.C; EX1003, ¶258.

J. Claim 16:

See §XI.D; EX1003, ¶259.

K. Claim 17:

See §XI.E; EX1003, ¶260.

L. Claim 18:

See §XI.F; EX1003, ¶261.

M. Claim 19:

See §XI.G; EX1003, ¶262.

N. Motivation to Combine

A POSITA would have been motivated to combine Ellis'430 and Wallis at least because they are analogous art to the '091 patent as they are directed to the same field of endeavor, *i.e.*, interactive televisions systems that provide enhanced user experiences through specially formatted screen displays and presentation of user controls. EX1003, ¶263. Moreover, like the '091 patent, the object of the disclosures of Ellis'430 and Wallis is to make user interaction with digital contents received from an outside server or VoD more convenient and as intuitive as possible. *See e.g.*, EX1021, Abstract; EX1011, ¶0010; EX1003, ¶263.

A POSITA would have been specifically motivated to incorporate Wallis's metadata attribute table, as described above, *e.g.*, §XI.A.8, into Ellis'430's systems to control whether an interactive operation panel or a linear operation panel is displayed to the user and, within each type of operation panel, what specific buttons to in order to improve the panels by making them more customized to the content and thus more useful to users. For example, rather than having a set operation panel that populates when a given VoD screen is displayed, or a set operation panel that populates when video or music is playing, Ellis'430's system as modified by Wallis would allow for Ellis'430's operation panel display to dynamically populate a set of interactive content control buttons or linear content control buttons based on the attribute data associated with the digital content. EX1003, ¶264.

Programming Ellis'430's systems in this way would provide a more customized experience for the user, tailored to the particular content being displayed. Further, by associating the user interface with metadata delivered with the digital content (as in Wallis) rather than coding to a specific type of content, e.g., linear or interactive (as in Ellis'430), the software architecture would more naturally accommodate other, future, data types. That is, there is no need to rely on a programmer to create a new/discrete operation panel with, e.g., customized buttons for each new digital content screen received from an outside server. Instead, by implementing attribute data as disclosed in Wallis, the appropriate operation panel, with customized buttons based on the digital content, would be selected/populated simply by looking at the attribute values within Wallis's Figure 1, which is also received from an outside server along with the digital content. Each of these benefits would have motivated one of ordinary skill in the art to modify Ellis'430 in view of Wallis. EX1003, ¶265.

Wallis's attribute table could easily, and with a reasonable expectation of success, be integrated into Ellis'430. Deciding which operation panel to display is a simple and predictable outcome of a condition in an "if" programming statement. EX1003, ¶266. As explained by Dr. Bederson, changing Ellis'430's existing decision-making process (based on a user-interface screen) to a condition (based on Wallis's attribute table) would be a straightforward application of well-known

programming techniques, and would be well within the capabilities of a POSITA. Given the simple nature of this change—creating a condition of an “if” statement to be based on a data attribute—one of ordinary skill in the art would find the outcome predictable and obvious.

Moreover, the combination of Ellis’430 and Wallis simply expands Ellis’430’s functionality, as proposed above, and does not alter the fact that Ellis’430’s control circuitry controls the alternative display of either of a linear content operation panel or an interactive content operation panel depending upon the presently displayed/selected screen. EX1003, ¶267.

XII. MANDATORY NOTICES UNDER 37 C.F.R. §§42.8(B)(1)-(4)

A. Real Party-In-Interest

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. are the real parties-in-interest.

B. Related Matters

The ’091 patent is subject to the following actions:

- *Maxell, Ltd. v. Samsung Electronics Co., Ltd. et al*, No. 5-25-cv-00052 (E.D. Tex. Apr. 21, 2025)

C. Lead and Backup Counsel

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D. Service Information

Service information for lead and backup counsel is provided in the designation of lead and backup counsel above. Petitioner consents to electronic service to lead and back-up counsel and to: DLA-Maxell-2-IPRs@us.dlapiper.com

XIII. CONCLUSION

All Challenged Claims of the '091 patent should be found unpatentable for the reasons discussed in this Petition.

Respectfully submitted,

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Attorneys for Petitioners

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Petitioner certifies that this petition includes 13,984 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under §42.8, certificates of service, word count, claim listing, and exhibits.

Date: September 5, 2025

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CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §§42.6(e) and 42.105 that on September 5, 2025, a true and correct copy of the Petition for *Inter Partes* Review of U.S. Patent No. 11,812,091 was served by emailing a copy of same (by agreement) to the following attorneys for the Patent Owner:

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A courtesy copy was sent to the counsel below via electronic mail:
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