

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC., LG ELECTRONICS U.S.A., INC.,

Petitioner

IPR2024-00353
U.S. Patent No. 9,055,254

**PETITION FOR *INTER PARTES* REVIEW
UNDER 35 U.S.C. § 312 AND 37 C.F.R. § 42.104**

TABLE OF CONTENTS

I.	INTRODUCTION	7
II.	GROUND FOR STANDING.....	7
III.	NOTE.....	7
IV.	SUMMARY OF THE '254 PATENT	7
	A. Overview of the '254 Patent.....	7
	B. Prosecution History	10
V.	LEVEL OF ORDINARY SKILL IN THE ART.....	10
VI.	CLAIM CONSTRUCTION	11
	A. “one or more”	11
	B. “silo”.....	12
VII.	RELIEF REQUESTED AND REASONS FOR REQUESTED RELIEF	13
VIII.	IDENTIFICATION OF HOW CHALLENGED CLAIMS ARE UNPATENTABLE.....	13
	A. Challenged Claims and Statutory Grounds for Challenge	13
	B. Ground 1: Claims 1-4, 8-10, and 13-17 are obvious under 35 U.S.C. § 103(a) over Kim, Bae, and WD-Manual.	14
	1. Summary of Kim.....	14
	2. Summary of WD-Manual	15
	3. Summary of Bae.....	16
	4. Reasons to Combine	17
	a) Analogous Art.....	17

b)	Kim with WD-Manual	18
c)	Kim and/or Kim-WD-Manual with Bae	21
5.	Claim 1	25
6.	Claim 2	104
7.	Claim 3	106
8.	Claim 4	109
9.	Claim 8	111
10.	Claim 9	115
11.	Claim 10	116
12.	Claim 13	116
13.	Claim 14	116
14.	Claim 15	118
15.	Claim 16	118
16.	Claim 17	119
C.	Ground 2: Claims 6, 12 and 19 are obvious under 35 U.S.C. § 103(a) over Kim, Bae and WD-Manual, further in view of Coburn.	119
1.	Summary of Coburn	119
1.	Reasons to Combine Kim, WD-Manual, and Bae with Coburn	120
2.	Claim 6	123
3.	Claim 12	130

4.	Claim 19	130
IX.	DISCRETIONARY DENIAL WOULD BE INAPPROPRIATE.....	131
A.	Discretionary denial under <i>Fintiv</i> factors is not appropriate.....	131
B.	Discretionary denial under 35 U.S.C. § 325(d) is not appropriate ..	131
X.	CONCLUSION.....	132
XI.	MANDATORY NOTICES	133
A.	Real Party-in-Interest	133
B.	Related Matters.....	133
C.	Lead and Back-up Counsel and Service Information	133

PETITIONER’S EXHIBIT LIST

Ex.1001	U.S. Patent No. 9,055,254 to Selim
Ex.1002	Prosecution History of U.S. 9,055,254
Ex.1003	Declaration of Dr. Andrew Lippman under 37 C.F.R. § 1.68
Ex.1004	<i>Curriculum Vitae</i> of Dr. Lippman
Ex.1005	U.S. Patent Publication No. 2012/0054794 to Kim et al. (“Kim”)
Ex.1006	WD-Manual WD TV Live Hub User Manual (“WD-Manual”) (copy of Exhibit 1012, Exhibit B, https://web.archive.org/web/20101203204251/http://www.wdc.com/wdproducts/library/UM/ENG/4779-705046.pdf)
Ex.1007	KR Publication No. 2010-0134423 to Geun Sang Bae (“Bae”)
Ex.1008	Certified translation of KR Publication No. 2010-0134423 to Geun Sang Bae (Ex.1007)
Ex.1009	U.S. Patent Publication No. 2010/0079681 to Coburn et al. (“Coburn”)
Ex.1010	U.S. Patent 8,146,128 to Tanaka (“Tanaka”)
Ex.1011	Excerpts from Newton’s Telecom Dictionary, 26 th Edition
Ex.1012	Affidavit of Nathaniel E Frank-White of the Internet Archive (including Exhibit A and Exhibit B, 4779-705046.pdf)
Ex.1013	U.S. Patent Publication No. 2011/0219419 to Reisman (“Reisman”)
Ex.1014	Internet Archive capture of Apple.com
Ex.1015	Infringement Contentions
Ex.1016	U.S. Patent Publication No. 2013/0155172 (“Mock”)
Ex.1017	U.S. Patent Publication No. 2006/0192753 to Fukuhara (“Fukuhara”)

Ex.1018	Excerpts from Webster’s College Dictionary
Ex.1019	U.S. Patent No. 9,071,418 to Rajapakse (“Rajapakse”)
Ex.1020	WD TV Live Hub press release (copy of Ex.1012, Exhibit A, pp. 17-18)
Ex.1021	WD TV Live Hub product support page (copy of Ex.1012, Exhibit A, pp. 14-15)
Ex.1022	WD TV Live Hub documentation availability (copy of Ex.1012, Exhibit A, p. 19)
Ex.1023	WD TV Live Hub product review (copy of Ex.1012, Exhibit A, pp. 5-9)
Ex.1024	WD TV Live Hub available for purchase (copy of Ex.1012, Exhibit A, pp. 11-12)

I. INTRODUCTION

LG Electronics, Inc., LG Electronics U.S.A., Inc. (“Petitioner”) respectfully requests the Board cancel as unpatentable claims 1-4, 6, 8-10, 12-17, and 19 (“Challenged Claims”) of U.S. Patent No. 9,055,254 to Selim (“the ’254 patent,” Ex.1001).

II. GROUNDS FOR STANDING

Petitioner certifies that the ’254 patent is eligible for IPR and that Petitioner is not barred or estopped from requesting IPR challenging the Challenged Claims. 37 C.F.R. § 42.104(a).

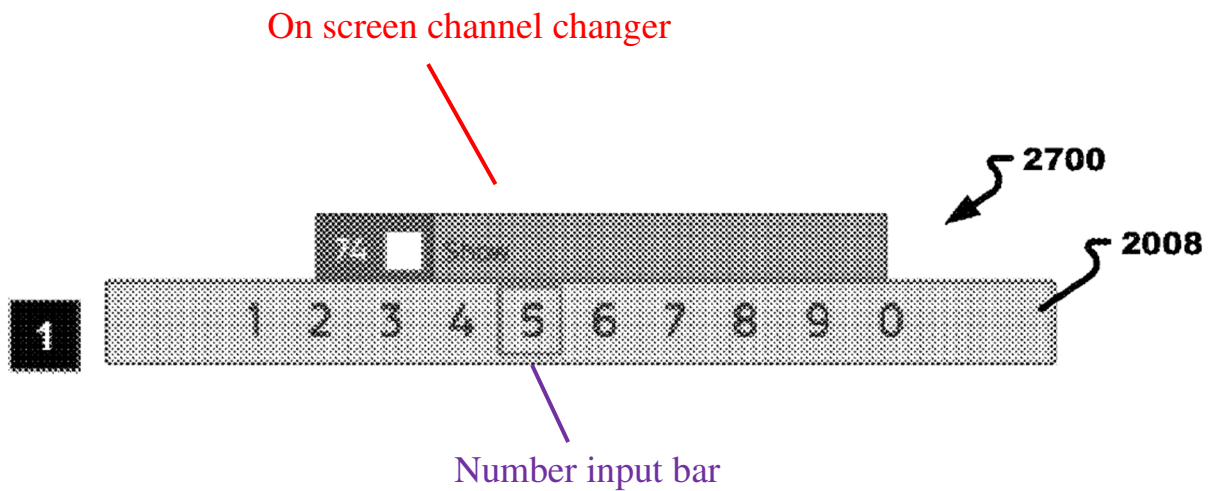
III. NOTE

Petitioner cites to exhibits’ original page numbers. Unless otherwise noted, all emphasis in quoted material has been added.

IV. SUMMARY OF THE ’254 PATENT

A. OVERVIEW OF THE ’254 PATENT

The ’254 patent is directed to a television with an “on screen channel changer” and a remote control. The on screen channel changer displays a number input bar for entering a channel. Ex.1001, 32:58-60, 33:1-8, Fig. 27.



Ex.1001, Fig. 27 (partial and annotated); Ex.1003, ¶27.

As the user selects the digits, the on screen channel changer updates to include an electronic program guide (“EPG”). Ex.1001, 36:33-34, 36:38-39, 36:50-52. The user’s inputs cause the television to display the selected channel. Ex.1001, 36:61-64.

The remote control of the ’254 patent has a “media center button 736..., an application center button 740..., a global panel button 744, [and] an application panel button 748.” Ex.1001, 23:3-8.

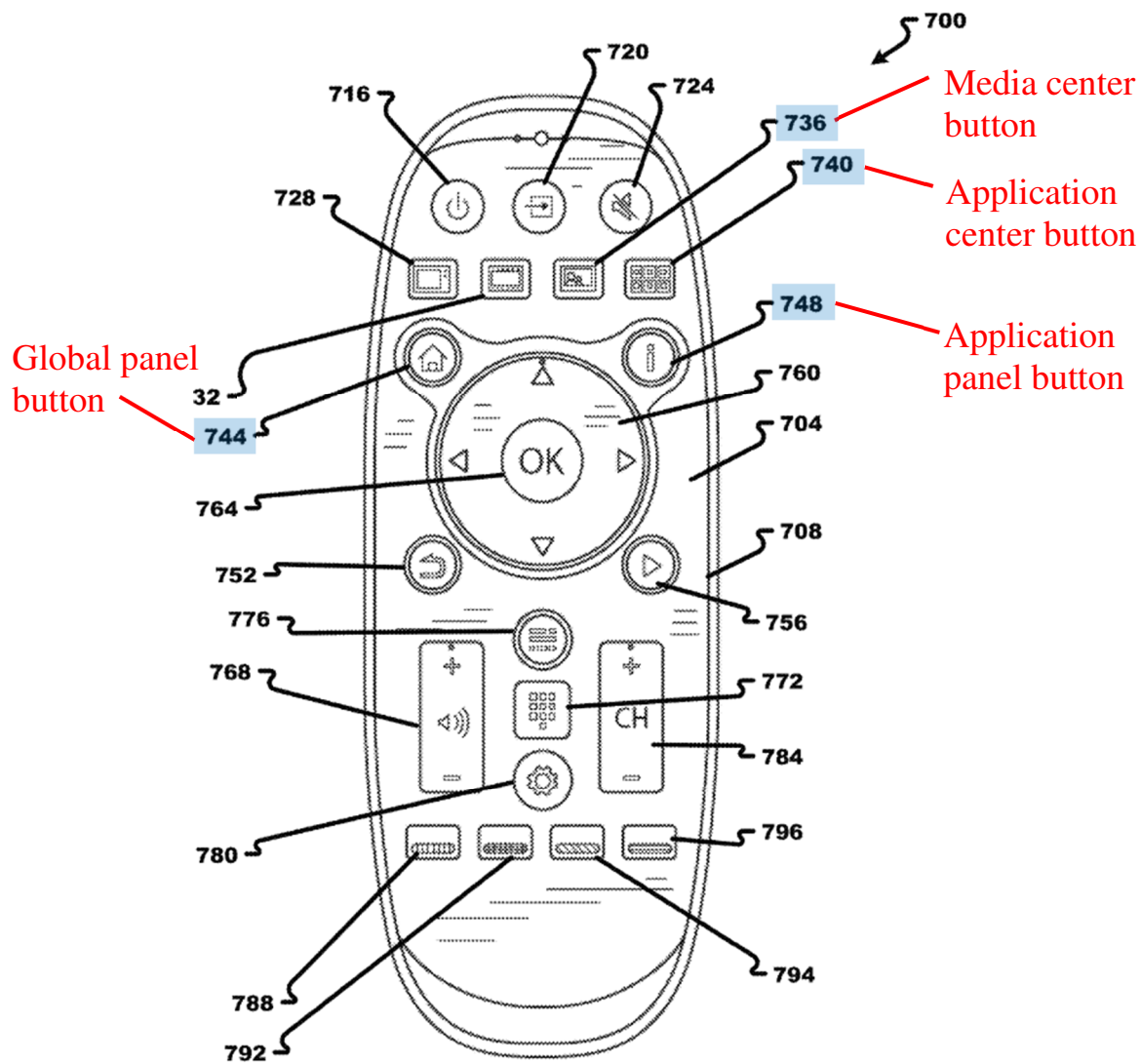


Fig. 7

'254 patent, Fig. 7 (annotated); Ex.1003, ¶29.

Pressing the “media center button” causes the television to display “information regarding music, videos, photographs, collections or groupings of music, videos, and/or photographs, and internal and external computational devices.” Ex.1001, 24:5-16.

Pressing the “application center button” causes the television to display “information regarding pre-installed and downloaded applications.” Ex.1001, 24:17-26.

Pressing the “application panel button” causes the television to display “an information panel regarding a selected (pre-installed or previously downloaded) application icon.” Ex.1001, 24:56-25:10.

Pressing the “global panel button” causes the television to display “panels” that provide access to “silos, notifications, a web browser, system settings, and/or information associated therewith.” Ex.1001, 24:27-31.

B. PROSECUTION HISTORY

The '254 patent was filed on August 16, 2013. It claims priority to several provisional applications, the earliest of which was filed on August 17, 2012. Ex.1002, pg. 3241-3422.

The Examiner’s Notice of Allowance indicated that the allowable subject matter was “the concept of a remote control comprising a media center button, an application center button, an application panel button, and a global panel button.” Ex.1002, p. 284.

V. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) in the field of the '254 patent, as of its earliest possible filing date of August 17, 2012, would have been

someone knowledgeable about and familiar with the television display technology that is pertinent to the '254 patent. A POSITA would have had a bachelor's degree in Electrical Engineering, Software Engineering, or Computer Engineering, or equivalent training, and approximately two years of experience working in the field of television systems and networking, human-computer interaction, or related technologies. Ex.1003, ¶19. Lack of work experience can be remedied by additional education, and vice versa. Ex.1003, ¶19.

VI. CLAIM CONSTRUCTION

Claim terms in IPR are construed according to their “ordinary and customary meaning” to those of skill in the art. 37 C.F.R. § 42.100(b). *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Petitioner submits that, for purposes of the grounds presented herein, no term requires express construction. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). The '254 patent provides explicit definitions for various terms and phrases, including various claim terms of the Challenged Claims. The prior art analysis described herein takes into account and is consistent with these definitions. Ex.1003, ¶38. Two examples of claim term definitions are described below:

A. “ONE OR MORE”

Claims 1, 3, 8, 9, 13, 14, and 16 recite “one or more.” The '254 patent

provides an explicit definition for “one or more”:

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

Ex.1001, 3:27-34.

Accordingly, a claim limitation that recites a list of “*one or more*” items is met by teaching any item in that list alone or together with any other items in that same list. Ex.1003, ¶¶39-41.

B. “SILO”

Claims 1, 8, and 14 recite the term “silo.” The ’254 patent provides an explicit definition for “silo”:

The term “silo,” as used herein, can be a logical representation of an input, source, or application.... The silo, as a logical representation, can have an associated definition or property, such as a setting, feature, or other characteristic.

Ex.1001, 5:56-6:3.

Accordingly, a “silo” can be a logical representation of an input, source, or application. Ex.1003, ¶¶42-43.

VII. RELIEF REQUESTED AND REASONS FOR REQUESTED RELIEF

Petitioner asks the Board institute trial for *inter partes* review and cancel the Challenged Claims. The Challenged Claims are those claims asserted against Petitioner in co-pending litigation.

VIII. IDENTIFICATION OF HOW CHALLENGED CLAIMS ARE UNPATENTABLE

A. CHALLENGED CLAIMS AND STATUTORY GROUNDS FOR CHALLENGE

Grounds	Claims	Basis
#1	1-4, 8-10, 13-17	35 U.S.C. § 103 over Kim, WD-Manual, and Bae
#2	6, 12, 19	35 U.S.C. § 103 over Kim, WD-Manual, Bae, and Coburn

U.S. Patent Publication No. 2012/0054794 to Kim et al. (“Kim”), was filed March 9, 2011 and published March 1, 2012. Kim claims priority to U.S. Provisional Application No. 61/379,369, filed September 1, 2010 and Korean Patent Application No. 10-2010-0086151, filed September 2, 2010. Kim is at least prior art under (pre-AIA) 35 U.S.C. § 102(a) and/or (e).

Korean Publication No. 2010-0134423 to Geun Sang Bae (“Bae”), was filed June 15, 2009 and published December 23, 2010. Bae is at least prior art under (pre-AIA) 35 U.S.C. § 102(a), (b), and/or (e).

WD TV Live Hub User Manual (“WD-Manual”), Ex. 1006, was publicly

available at least as of December 2010, as evidenced by the Internet Archive affidavit. Ex.1012, pg. 2 (Exhibit B). The WD TV Live Hub (including the WD-Manual) was available for purchase by the public at least as of October 2010. Ex.1020; Ex.1024. WD-Manual was available in over 22 languages at least as of December 2010. Ex.1022. The WD TV Live Hub (including the WD-Manual) was available to interested members of the public. *See, e.g.*, Ex.1023. WD-Manual is at least prior art under (pre-AIA) 35 U.S.C. § 102(a) and/or (b).

U.S. Patent Publication No. 2010/0079681 to Coburn et al. (“Coburn”) was filed September 30, 2008 and published April 1, 2010. Coburn is at least prior art under (pre-AIA) 35 U.S.C. § 102(a), (b), and/or (e).

B. GROUND 1: CLAIMS 1-4, 8-10, AND 13-17 ARE OBVIOUS UNDER 35 U.S.C. § 103(A) OVER KIM, BAE, AND WD-MANUAL.

1. SUMMARY OF KIM

Kim describes controlling content on a “TV...or another multifunctional display device.” Ex.1005, [0038], [0031], [0053], [0060]. Kim’s television is controlled using a “remote controller.” Ex.1005, [0086], [0087], Fig. 6.

Kim’s remote control enables various functions including: (i) displaying a home screen with access to information and content (Ex.1005, [0094], [0192], Fig. 19); (ii) displaying user interface objects having information pertaining to media content and devices (Ex.1005, [0192], [0196], [0205], [0209], [0210], [0085],

[0123], Fig. 19); (iii) displaying user-undeletable applications and downloaded software applications (Ex.1005, [0163]); and (iv) selecting a specific application to view information about the application (Ex.1005, [0247], Fig. 28).

2. SUMMARY OF WD-MANUAL

WD-Manual describes a set top box (called the “WD TV Live Hub Media Center”) that provides access to media content displayed on a television using a remote control. Ex.1006, pgs. 5-6, 11-12, 25-26. WD-Manual describes the remote control’s features, such as dedicated/customizable buttons for accessing content and devices. Ex.1006, pgs. 5-6, 25-26.

Remote Control



CAUTION: Do not expose the batteries or the remote control with batteries installed to excessive heat (direct sunlight, fire, etc.).

1. Infrared transmitter
2. POWER
3. Subtitle
4. PREV (track), STOP, NEXT (track)
5. Back (last screen)
6. Navigation buttons, OK
7. Previous Page
8. MUTE
9. Alpha-numeric keys
10. SEARCH
11. HOME
12. Audio
13. REV, PAUSE/PLAY, FF
14. Options
15. Next Page
16. Setup
17. Shortcut/function keys
18. EJECT (safe removal of attached storage)



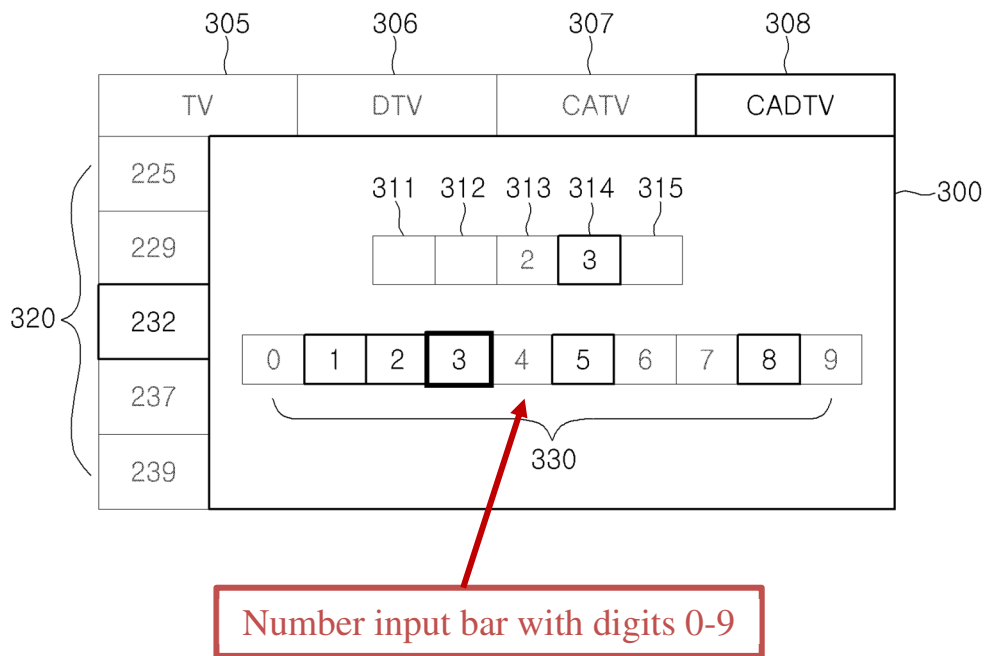
Arrow keys,
shortcut/function
keys, navigation
keys, etc.

Ex.1006, pg. 11 (partial and annotated); Ex.1003, ¶52.

3. SUMMARY OF BAE

Bae provides a “method that allows users to easily search for and select a plurality of broadcasting channels.” Ex.1007-8, [0006].

Bae explains that “numbers 0 to 9 are displayed” in a window on the television. Ex.1007-8, [0023], [0024].



Ex.1007-8, Fig. 3 (annotated); Ex.1003, ¶55.

“[U]sing the left and right keys” on a remote control, the user selects a number on the input bar. Ex.1007-8, [0023]. When the user confirms the desired channel number, “the switch to the corresponding channel is performed.” Ex.1007-8, [0026].

4. REASONS TO COMBINE

A) ANALOGOUS ART

A POSITA considering the purported problem of the ’254 patent would have looked to Kim, WD-Manual, and Bae. Ex.1003, ¶56.

The ’254 patent purports to provide “intuitive user interfaces...with seamless user interaction capability” for televisions via “buttons...associated with

a remote control” and an “on screen channel changer” that includes a number input bar with numbers that can be selected by a remote control. ’254 patent, 1:65-66, 11:48-64, 32:51- 33:8; Ex.1003, ¶57

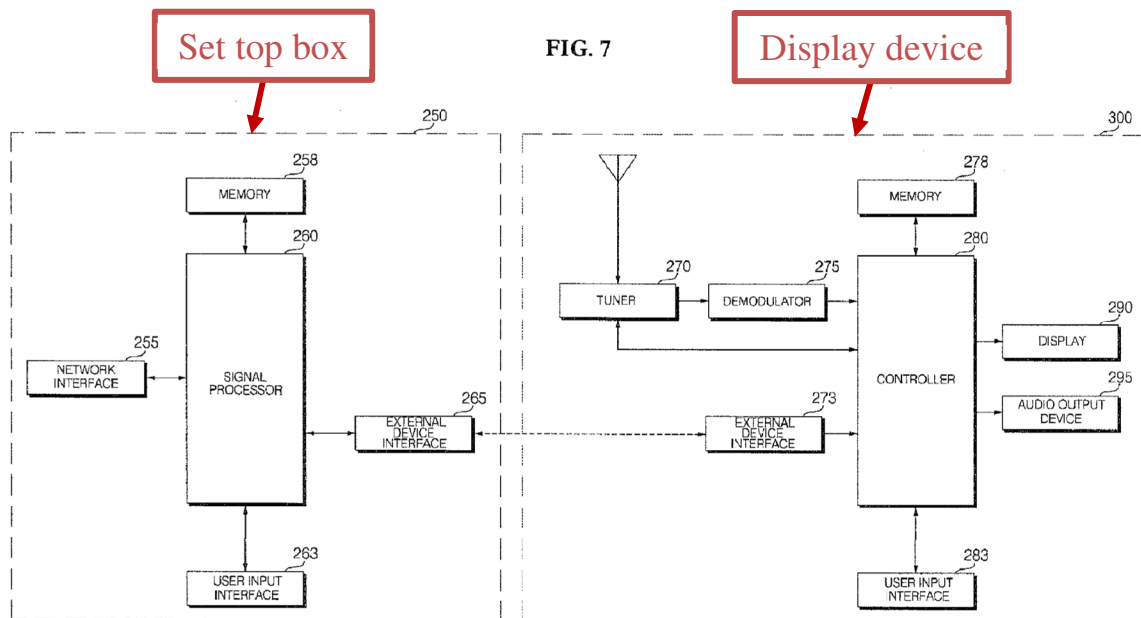
Each of Kim, WD-Manual, and Bae is from the same field of endeavor as the ’254 patent, or at the very least, reasonably pertinent to the problem faced by the ’254 patent inventor. Ex.1003, ¶¶58-60. Kim states that its system and method may “increase user convenience and overall effectiveness of the user interface (UI) by providing a more intuitive graphical interface.” Ex.1005, [00282]. WD-Manual describes using a remote control’s buttons to interact with a television’s graphical interface to provide easy access to media. Ex.1006, pgs. 25-26; *see also id.* at 5-8, 11. Bae provides a channel number selection window with a number input bar to allow a user to change the channel. Ex.1007-8, [0023], [0024].

Accordingly, a POSITA would understand that each of Kim, WD-Manual, and Bae is analogous to the ’254 patent. Ex.1003, ¶¶56-61.

B) KIM WITH WD-MANUAL

First, a POSITA would have combined the teachings of WD-Manual with the teachings of Kim because both WD-Manual and Kim disclose using a remote control to access and display media content via a television and because they are intended to work together. Ex.1003, ¶63. Specifically, Kim describes that the functionality of image display apparatus 100 (e.g., “smart TV”) can be optionally

separated into a set-top box and display device. Ex.1005, [0038], [0117]-[0118] (“FIGS. 7 and 8 are block diagrams showing the image display apparatus configured separately as a set-top box and a display device.”), Figs. 7-8.



Ex.1005, Fig. 7 (annotated); Ex.1003, ¶65 .

Further, Kim explains that implementation of the image display apparatus is “freely” modifiable and that its components “may be combined or omitted, “new components may be added,” and “two or more components are incorporated into one component or one component may be configured as separate components, as needed.” Ex.1005, [0115], [0283]. Ex.1003, ¶66. Accordingly, a POSITA reading Kim would understand that the television configuration for Kim’s image display apparatus could include functionality that would be found in a separate set-top box. Ex.1003, ¶67.

WD-Manual describes known functionality of a set-top box, controllable via remote control, to access multimedia functionality on display devices. Ex.1006, pgs. 5-6. Given the express teachings in Kim, a POSITA would have found it obvious to combine the known functionality of WD-Manual's set-top box within the television configuration of Kim's image display apparatus. Ex.1003, ¶68.

Kim further describes a ready-to-be-modified remote control that could "include various input tools other than those set forth herein, such as a scroll key, a jog wheel, or another appropriate user input device." Ex.1005, [0175]. WD-Manual provides examples of input tool features, including different dedicated and customizable remote control buttons, for controlling a television's multimedia functionality via a set-top box. Ex.1006, pgs. 11, 25-26, 138-39.

Second, a POSITA would have found the Kim-WD-Manual combination predictable and had a reasonable expectation of success because Kim and WD-Manual both describe accessing multimedia content via a television. Ex.1003, ¶70. Kim discloses providing access to broadcast television, a tv guide, media, external devices, phones, an app store, and internet content providers. Ex.1005, [0192]-[202]. WD-Manual discloses providing access to movies, television, media, and internet content. Ex.1006, pg. 5; Ex.1003, ¶70.

Further, Kim contemplates incorporating set-top box functionality into its television, with WD-Manual providing examples of known set-top box

functionality. Ex.1006, pg. 5. Additionally, Kim teaches the fundamentals of a user interface that can be controlled via remote control to access media content. *See, e.g.*, Ex.1005, Fig. 19, [0192]-[0217]. WD-Manual teaches known features of a remote control to allow a user to “customize” and “personalize” the “media experience.” Ex.1006, pg. 7.

Accordingly, combining WD-Manual with Kim would be combining known functionality provided by WD-Manual’s set top box and remote control features with Kim’s image display apparatus according to known methods to yield the predictable result of an image display apparatus that incorporates functionality that could otherwise be separately implemented in a set-top box. Ex.1003, ¶¶69-73.

Additionally, such a combination would have been the application of a known technique (WD-Manual’s set-top box functionality as controlled by remote control features) to a known device (Kim’s television), which, as Kim itself noted, was ready for improvement, to yield the predictable result of a television that incorporates multimedia functionality that could otherwise be separately implemented in a set-top box. Ex.1003, ¶74.

C) KIM AND/OR KIM-WD-MANUAL WITH BAE

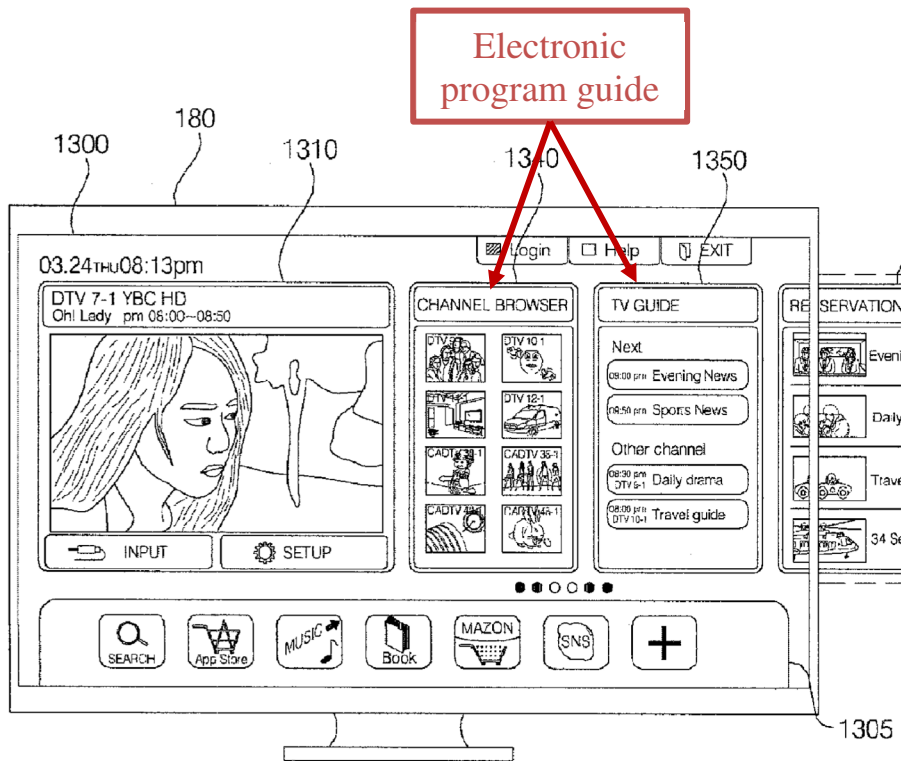
A POSITA would have combined the teachings of Bae with the teachings of Kim because Kim discloses a television that enables a user to change channels and Bae discloses a technique for displaying an on screen channel changer to change

channels. Ex.1003, ¶75.

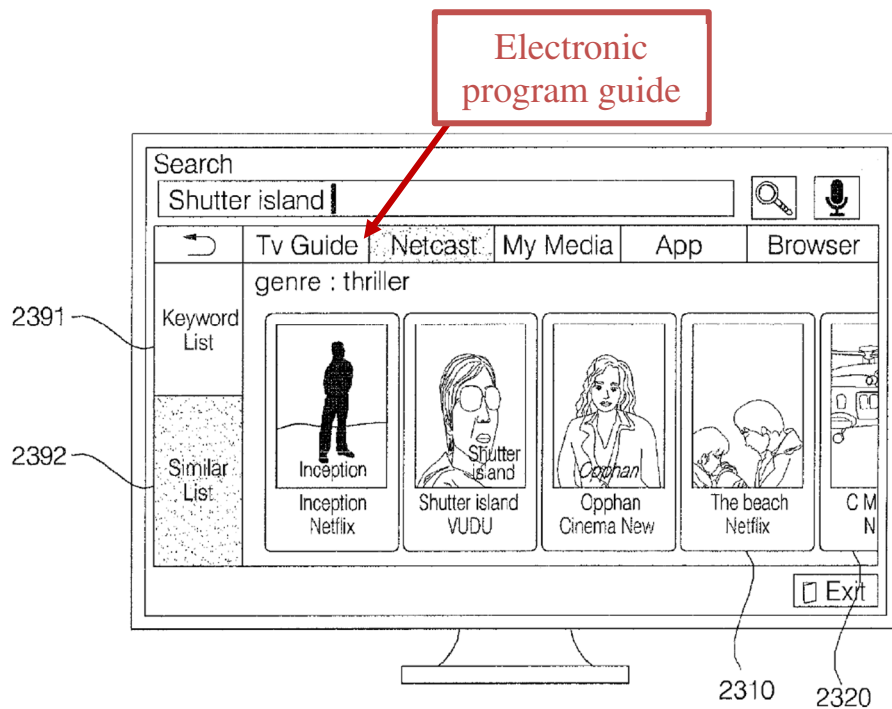
A POSITA would have been motivated to combine the teachings of Bae with Kim (as modified per WD-Manual) to produce numerous predictable and beneficial results. Ex.1003, ¶76.

Kim describes a remote control that transmits “a channel switch command...to the image display apparatus.” Ex.1005, [0174]. Kim also describes receiving an “input signal regarding channel selection” from the user. Ex.1005, [0060], [0086], [0090], [0127].

Kim teaches an on screen channel changer that allows a user to search for and switch to a desired program or channel via a remote control, such as “a CHANNEL BROWSER card object 1340 which may provide a thumbnail list of broadcast channels [and] a TV GUIDE card object 1350 which may provide a program list.” Ex.1005, [0196].



Ex.1005, Fig. 22, partial (annotated); Ex.1003, ¶78.



Ex.1005, Fig. 38 (annotated); Ex.1003, ¶78.

Kim, however, does not otherwise expand on how the user can enter channel switch commands through its on screen channel changer to select a desired channel via the remote control, leaving the implementation details up to a POSITA.

Ex.1003, ¶79.

Bae discloses a known channel selection technique for displaying “the numbers 0 to 9...in the channel number selection window” where “the user can input the corresponding number using the left and right keys” of a remote control. Ex.1007-8, [0023]. Ex.1003, ¶80.

A POSITA would have been motivated to combine Bae’s number input bar with Kim’s on screen channel changer. Ex.1003, ¶81. Using Bae’s technique enables a user to identify a specific channel number without searching or scrolling through an EPG. Ex.1007-8, [0023]. Bae’s technique also enables certain functionality contemplated in Kim. For example, Kim’s remote control can have input tools “other than” a keypad. Ex.1005, [0175]. If a user uses a remote control without a keypad, applying Bae’s channel selection technique nevertheless allows the user to identify a specific channel. Ex.1003, ¶81.

Thus, applying Bae’s known number input bar technique to Kim’s known television and remote control system, which was ready for improvement, would have yielded the predictable result of having an on screen channel changer that

allows channel searching but also includes a number input bar so that a user can switch channels on Kim's television by identifying a specific channel number and without regard to the remote control inputs, including one without a keypad.

Ex.1003, ¶82. This result would have been predictable because Bae's number input bar was specifically being used for selecting and changing channels.

Ex.1003, ¶82.

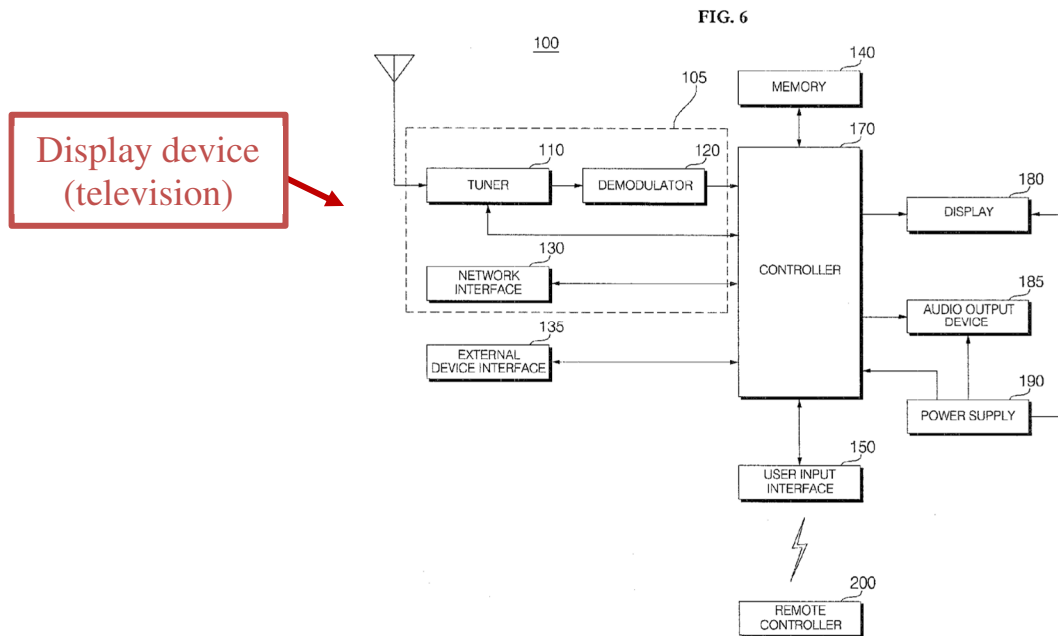
A POSITA would have had a reasonable expectation of success with the Kim-Bae combination because it predictably uses Bae's number input bar for its intended purpose of allowing a user to easily change channels on a television via a user interface, which is the desired functionality in Kim. Ex.1003, ¶83.

5. CLAIM 1

[1.0]. A method, comprising:

Kim teaches a “display device and a **method** of controlling the same.”

Ex.1005, Abstract.



Ex.1005, Fig. 6 (annotated); Ex.1003, ¶85.

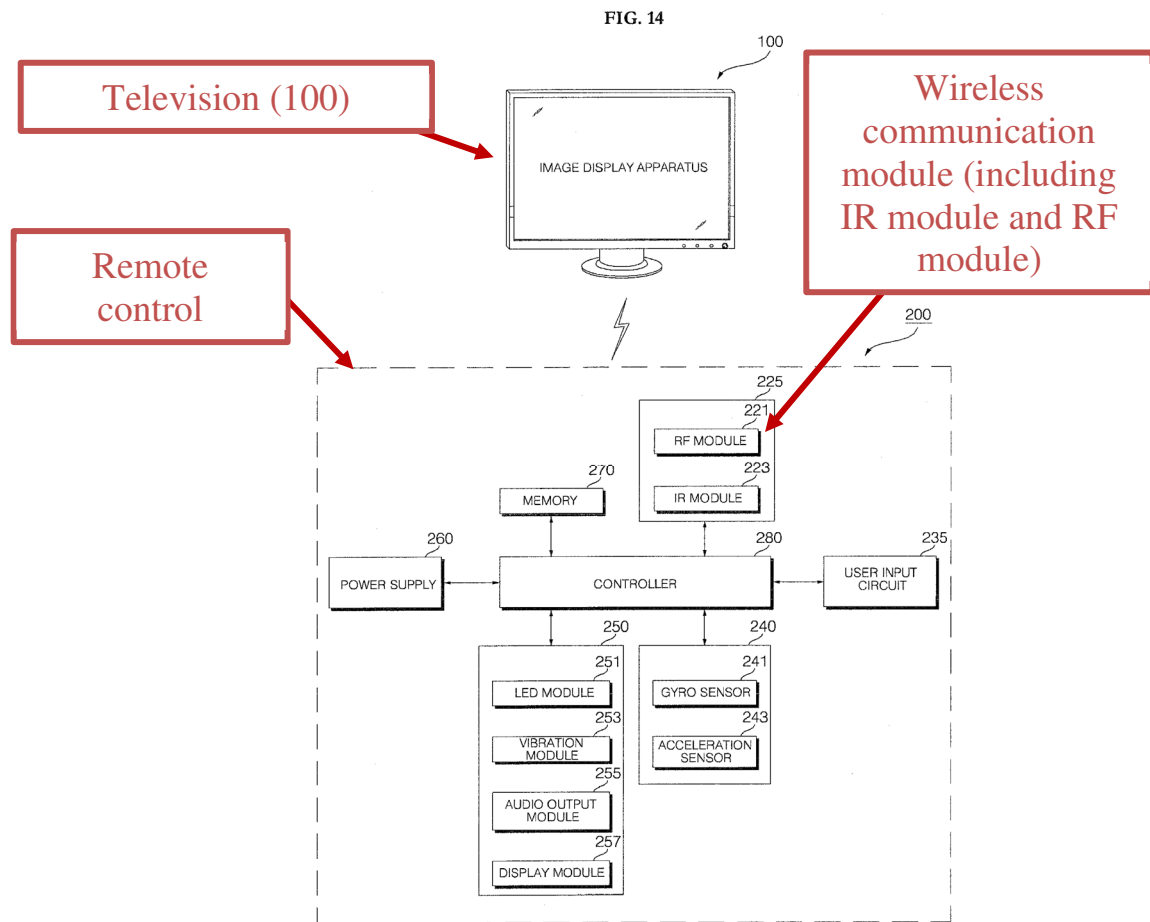
Bae discloses a “**method** in a video display device.” Ex.1007-8, [0009].

WD-Manual “provides **step-by-step instructions**” for using a “media center” with a “remote control.” Ex.1006, pgs. 4, 25-26.

Accordingly, to the extent the preamble is limiting, Kim, WD-Manual, and Bae, alone or in any combination, render obvious a “*method*.” Ex.1003, ¶¶84-89.

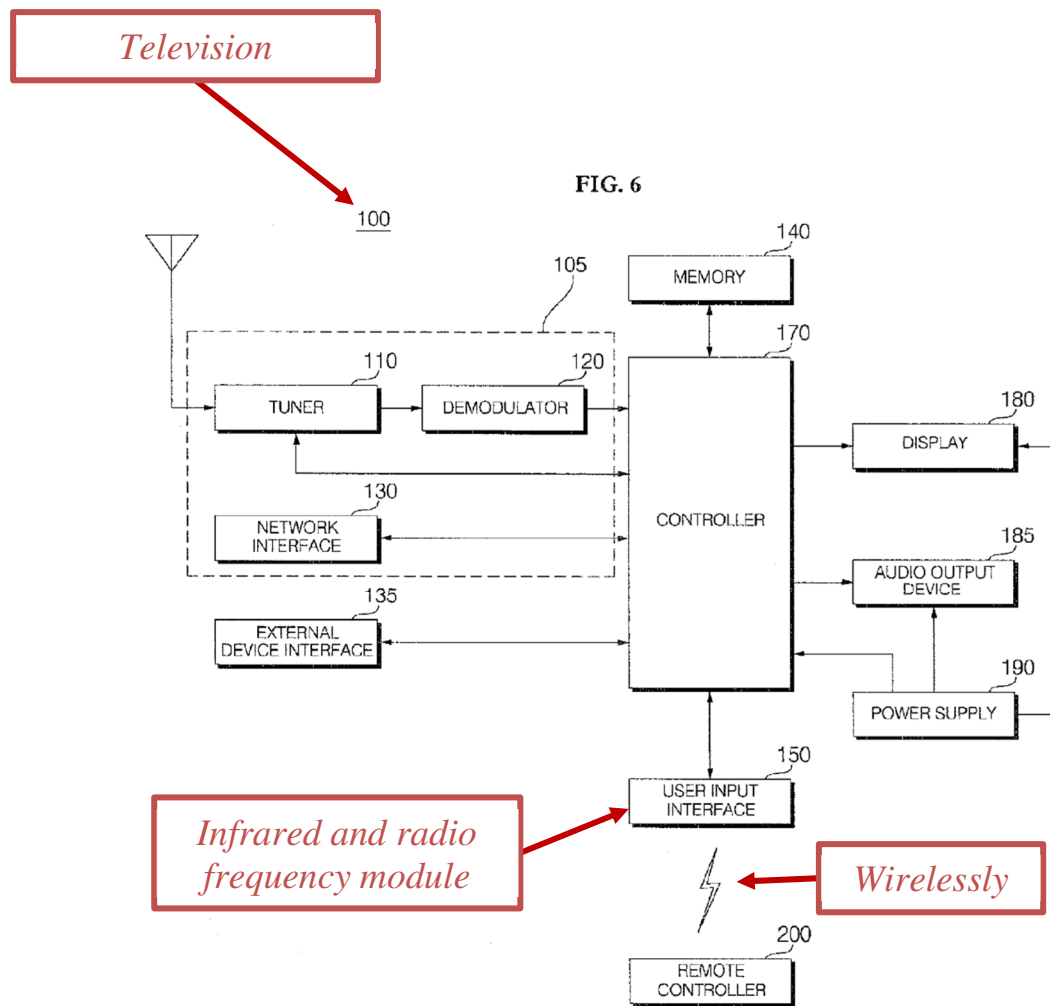
[1.1] receiving, wirelessly by at least one of an infrared and radio frequency module of a television and from a remote control, a request to change a programming channel;

Kim discloses a “TV...or another appropriate multifunctional display device.” Ex.1005, [0038]. A “remote controller” uses “an RF module” for transmitting “RF signals” to the television and “an IR module” for transmitting “IR signals” to the television. Ex.1005, [0172], [0173], Fig. 14; *see also id.* at [0012].



Ex.1005, Fig. 14 (annotated); Ex.1003, ¶91.

The television receives the signals via a “user input interface,” which is a module that can “receive various user input signals...from a remote controller” using “RF [radio frequency] communication and IR [infrared] communication.” Ex.1005, [0086], Fig. 6; *see also id.* at [0087]. Accordingly, this user input interface which communicates via infrared and radio frequency teaches *an infrared and radio frequency module of a television.*



Ex.1005, Fig. 6 (annotated); Ex.1003, ¶95.

Kim also teaches that its television receives “a channel switch command” from the remote control. Ex.1005, [0174]. Similarly, Bae teaches a television that receives “channel change commands...from the user.” Ex.1007-8, [0011], [0017]. Thus, Kim and Bae each teach a request to change a programming channel.

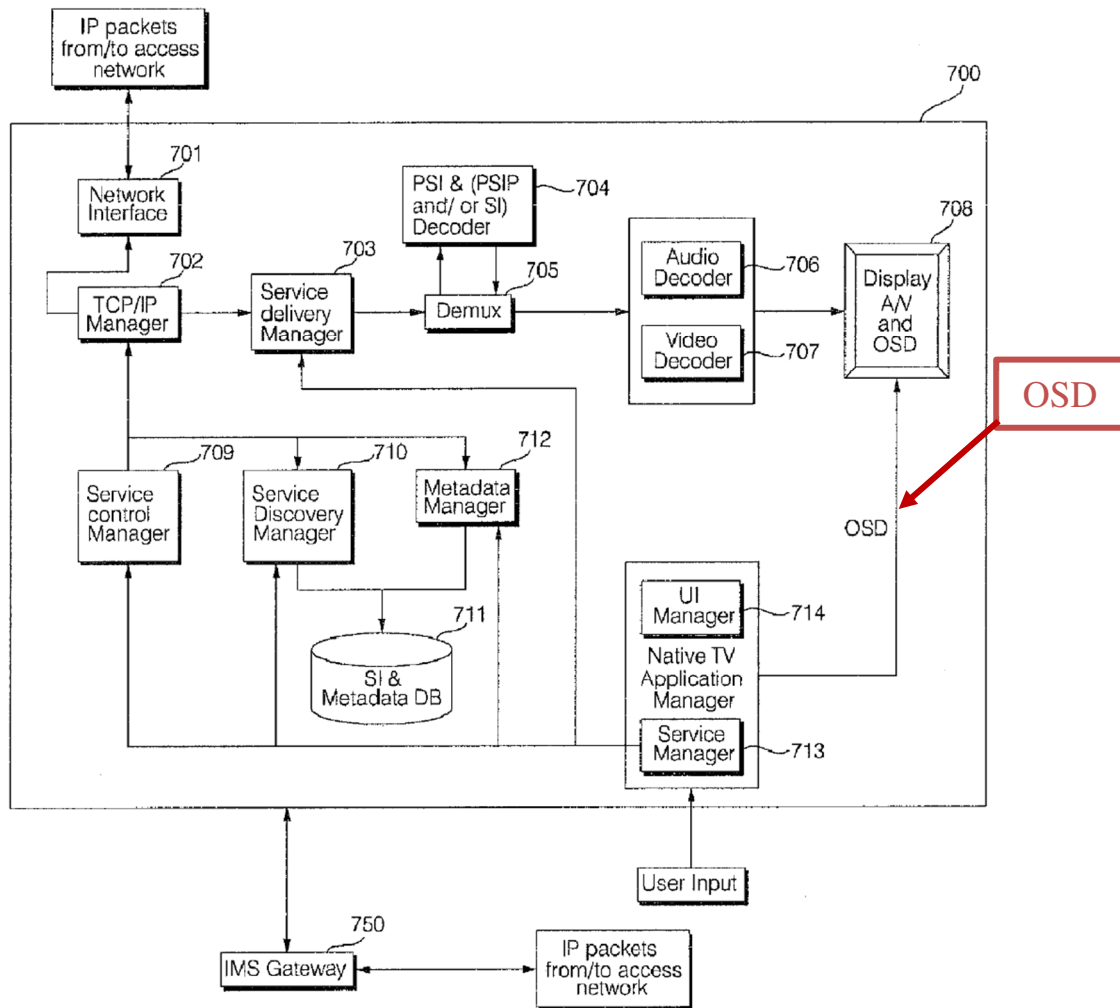
Accordingly, Kim’s teaching of a television that has a module that

wirelessly receives a channel switch command from a remote control using radio frequency or infrared communication, further in view of Bae's teaching of receiving a channel change command from a user, renders obvious this limitation. Ex.1003, ¶¶90-98.

[1.2] displaying, by a microprocessor executable application framework and on a television screen, an on screen channel changer, the displayed on screen channel changer comprising electronic program guide ("EPG") information and a number input bar comprising digits, wherein the digits range from 0 to 9;

"displaying...an on screen channel changer"

First, Kim discloses displaying "a Graphical User Interface (GUI) in the form of an **OSD** [On Screen Display]," that is controlled by the "OSD generator 340" of the "controller 170." Ex.1005, [0060], [0133], [0137]; *see also id.* at [0090], Fig. 6. The OSD generator 340 "generate[s] signals by which a variety of information is displayed," including, for example, a "UI." Ex.1005, [0133], [0137], [0193].



Ex.1005, Fig. 5 (annotated); Ex.1003, ¶99.

Second, Kim discloses a “card object generator [that] may be an OSD generator 340 or a functional part included in the controller,” explaining that the card object generator generates and displays card objects within a “card object area” of Kim’s home screen. Ex.1005, [0095], [0193], [0213].

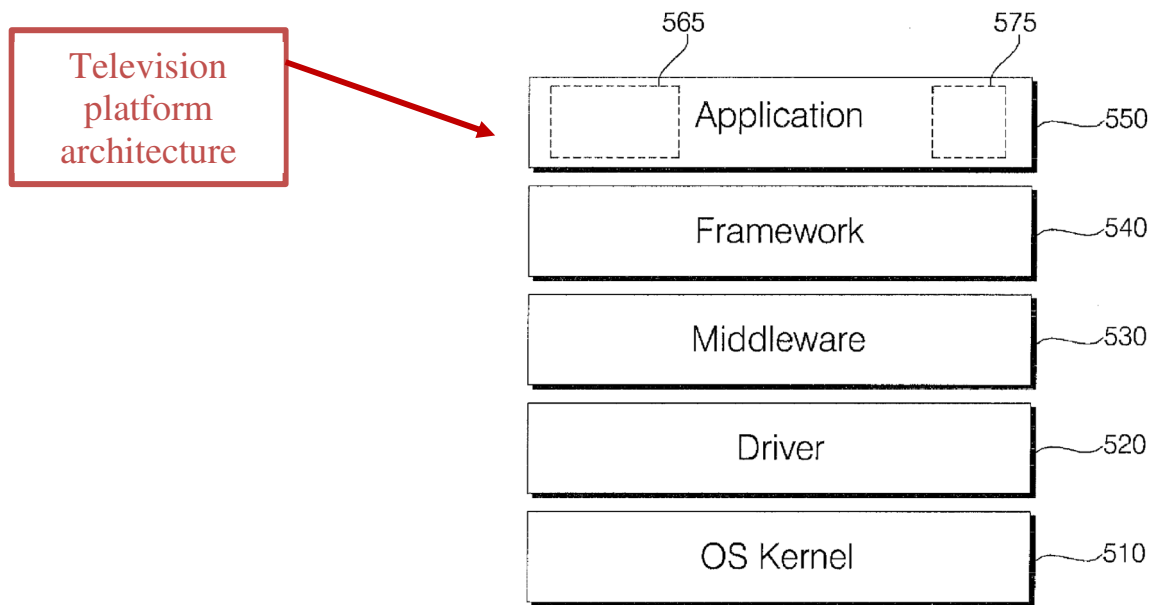
This card object area displays a “CHANNEL BROWSER” card object having “a thumbnail list of broadcast channels 1345.” Ex.1005, [0205]; *see also*

id. at [0094], [0104], [0105]; Ex.1003, ¶102. “Upon selection of a thumbnail image from the thumbnail list 1345, a broadcast program from the selected channel may be displayed on the display.” Ex.1005, [0206], [0196]. The card object area also displays a “TV GUIDE” card object having a “program list,” where selecting a program from the program list causes “a broadcast image of the selected program” to be displayed. Ex.1005, [0207], [0196]; Ex.1003, ¶103.

Thus, Kim’s card object area that displays either or both of a CHANNEL BROWSER card object and TV GUIDE card object teaches an on screen channel changer. Ex.1003, ¶¶99-104.

“by a microprocessor executable application framework and on a television screen”

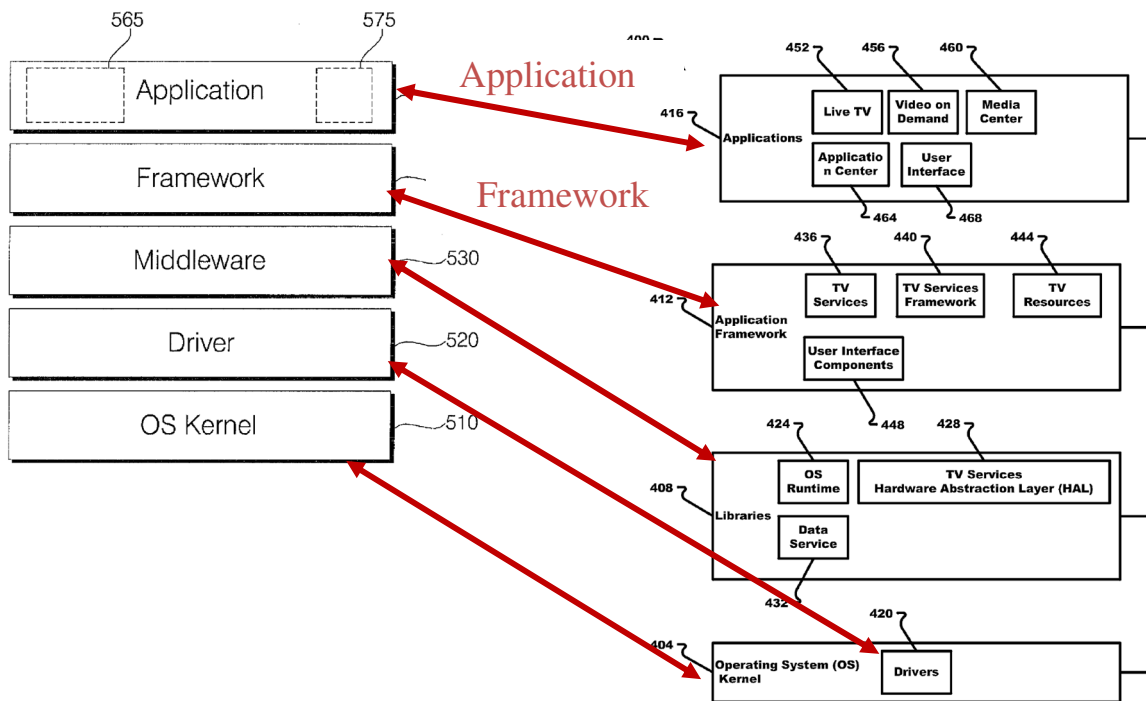
First, Kim describes an *application framework* because it teaches a software “platform architecture” implemented in the television having certain layers (application, framework, middleware, driver and OS kernel). Ex.1005, [0144], Fig. 12; Ex.1003, ¶105.



Ex.1005, Fig. 12 (annotated); Ex.1003, ¶105.

“[F]ramework 440” provides “programs on which applications of the application layer 455 are based” and “supporting programs and programs for interconnecting different software components.” Ex.1005, [0156]. Framework 440 aligns with the description of the ’254 patent’s application framework. ’254 patent, 18:58-65 (“application framework 412 can include a general abstraction for providing functionality” for applications and “can include one or more different services, or other applications...to provide general functions across two or more applications.”); Ex.1003, ¶¶106-108.

Further, Kim’s platform layers align with the layers of the ’254 patent’s platform. Ex.1001, 18:7-13. Ex.1003, ¶108.



Ex.1005, Fig. 12 vs. '254 patent, Fig. 4 (annotated); Ex.1003, ¶108.

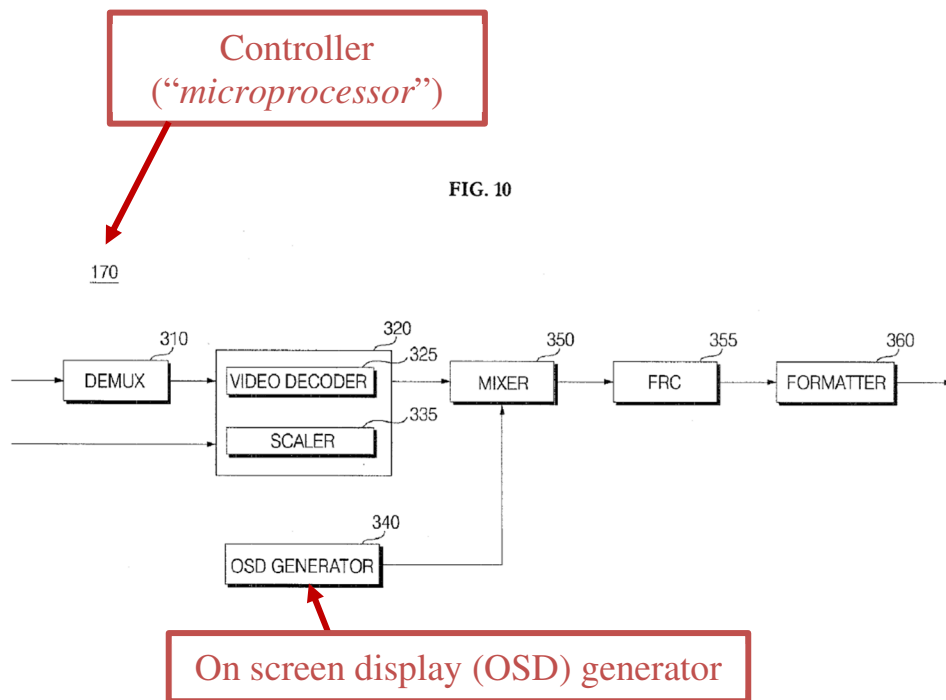
Second, although Kim describes “framework 440” as part of one platform and “framework 540” as part of a different “integrated platform,” Kim explains that its description for “framework 540” applies to “framework 440.” Ex.1005, [0160] (“The driver 520 and the framework 540 correspond to the driver 420 and the framework 440 of FIG. [11], respectively.”¹). Thus, like “framework 540,” “framework 440” may be included within an “integrated platform” architecture

¹ A POSITA would recognize that the reference to Figure 5 in Kim, [0160] is a typographical error because driver 420 and framework 440 are shown in and described with reference to Figure 11 (not Figure 5). Ex.1003, ¶109.

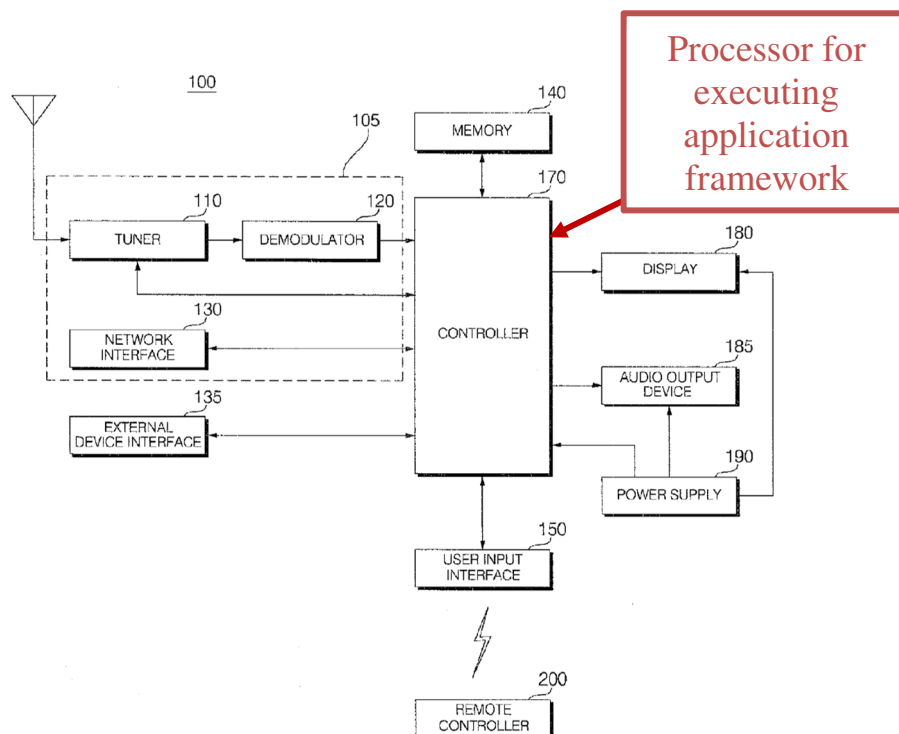
that includes an integrated “application layer 550.” Ex.1005, [0160]. Kim also discloses that the application layer 550 can include “a menu-related application, a TV guide application, a reservation application, etc.” Ex.1005, [0162].

Third, Kim discloses that the applications and application framework are executable by a microprocessor because the platforms (e.g., Figs. 11-12) “may be stored or loaded in the memory 140, the controller 170, or any other processor.” Ex.1005, [0166]. Kim describes that the controller “provide[s] overall control to the image display apparatus 100.” Ex.1005, [0089].

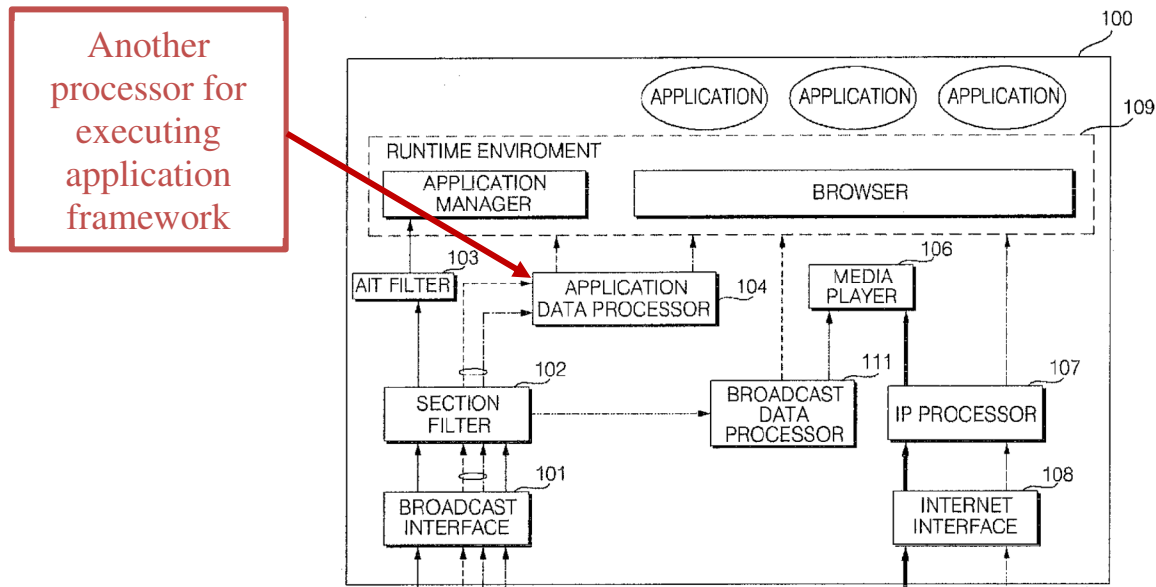
Controller 170 may be implemented using different combinations of processors, such as a “DEMUX,” “video processor,” “OSD generator,” an “audio processor,” and a “data processor.” Ex.1005, [0133], [0143] (the controller’s components “may be combined, omitted, or additional components may be added”).



Ex.1005, Fig. 10 (annotated); Ex.1003, ¶113.



Ex.1005, Fig. 6 (annotated); Ex.1003, ¶113.



Ex.1005, Fig. 2 (annotated); Ex.1003, ¶113.

Further, controller 170 “may control the display 180 to display images,” such as images received “from the tuner,” “through the external device interface,” or “through the network interface 130,” as well as images “stored in the memory 140.” Ex.1005, [0092]; Ex.1003, ¶114. Kim describes that “controller 170 may control the image display apparatus 100 according to a user command,” including “a specific channel selection command received through the user input interface 150.” Ex.1005, [0090].

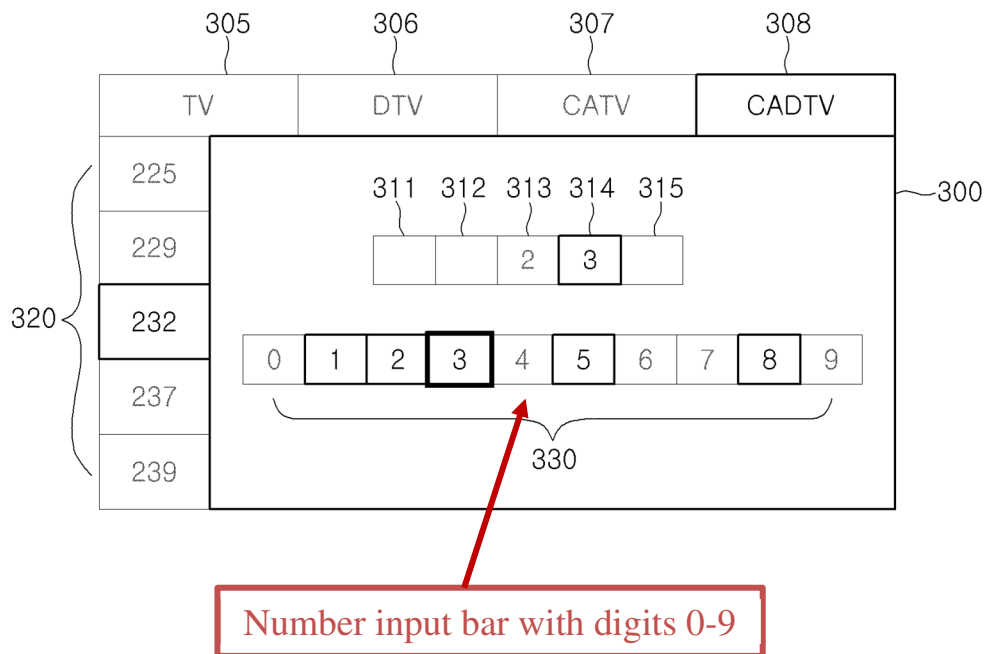
Accordingly, a POSITA would readily understand that controller 170 is a microprocessor that executes the framework because it (i) provides overall control of the television, (ii) executes the applications and application framework, (iii) receives signals corresponding to user-provided commands, and (iv) generates

content to be displayed on the television. Ex.1003, ¶¶105-115.

“the displayed on screen channel changer comprising electronic program guide
(‘EPG’) information and a number input bar”

“EPG information”: As discussed above, Kim’s CHANNEL BROWSER card object has “a thumbnail list of broadcast channels 1345” (Ex.1005, [0205]) and TV GUIDE card object has a “program list” (Ex.1005, [0207]). Further, these card objects are generated by the OSD generator using “Electronic Program Guide (EPG)-based broadcasting information.” Ex.1005, [0133], [0137], [0193].

“Number input bar”: Bae describes a known technique for displaying a number input bar in on screen channel changer of a television. Ex.1007-8, [0018], [0023]. Bae displays “the numbers 0 to 9...in the channel number selection window” to enable a user to change the channel. Ex.1007-8, [0023]; Ex.1003, ¶¶121-122.



Ex.1007-8, Fig. 3 (annotated); Ex.1003, ¶121.

As discussed above, Kim teaches a known method for displaying an on screen channel changer that allows a user to select a channel thumbnail/program listing and/or enter a search keyword. Adding Bae's number input bar to Kim's on screen channel changer would have predictably resulted in an on screen channel changer that additionally includes a number input bar allowing the user to directly enter a specific channel number. Ex.1003, ¶123.

Thus, Kim's teaching of displaying an on screen channel changer, using an application framework executed by a processor to display, on a television, where the on screen channel changer includes EPG information for browsing channels/programs and searching for programs, in combination with Bae's technique of displaying a number input bar that displays digits 0-9 within an on

screen channel changer renders obvious this limitation. Ex.1003, ¶¶99-124.

[1.3] receiving, by the application framework and from the remote control, a channel selection based on digits selected by a user using the remote control and the number input bar of the on screen channel changer, wherein the user selects the digits using non-numeric keys of the remote control; and

As discussed with element [1.1], Kim discloses receiving user inputs, including channel switch commands, from a remote control.

As discussed with element [1.2], Kim discloses a microprocessor executable application framework that controls content displayed on the television based on user inputs from a remote control.

As discussed with element [1.2], Kim and Bae render obvious displaying an on-screen channel changer that includes a number input bar.

Kim also discloses that its remote control has “arrow keys and an OK key.” Ex.1005, [0187]. Bae further discloses that the user selects digits from the number input bar “using the **left and right keys**.” Ex.1007-8, [0023]. Bae’s “left and right keys” are non-numeric keys.

Thus, Kim’s teaching of a microprocessor executable application framework that displays an on screen channel changer and receives channel switch commands from a remote control, in combination with Bae’s technique of displaying a number input bar to enable a user to select digits (0-9) using the left and right keys on a remote control, renders obvious this limitation. Ex.1003, ¶¶125-130.

[1.4] changing, by the application framework, to the selected channel,

As discussed with element [1.1], Kim discloses receiving channel switch commands from a remote control.

As discussed with element [1.2], Kim discloses a microprocessor executable application framework that controls content displayed on the television based on user inputs from a remote control.

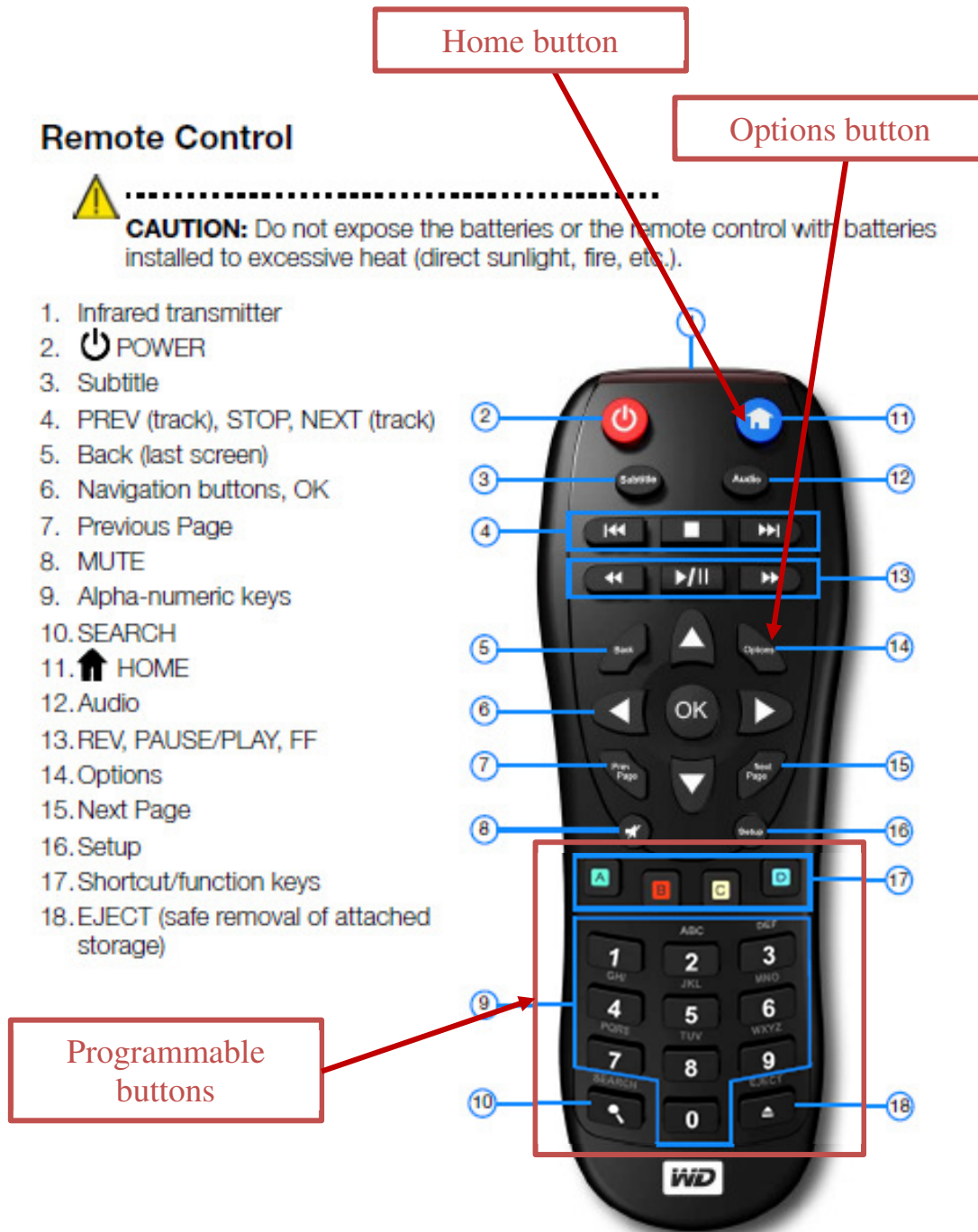
Bae further discloses performing “the switch to the corresponding channel” after the user inputs digits via the number input bar. Ex.1007-8, [0026]; Fig. 2.

Thus, Kim’s teaching of a microprocessor executable application framework that displays an on screen channel changer and receives channel switch commands from a remote control, in combination with Bae’s technique of switching to the user-selected channel, renders obvious this limitation. Ex.1003, ¶¶131-134.

[1.5] wherein the remote control comprises:

As discussed with elements [1.1]-[1.4], Kim and Bae each teach controlling content displayed on a television based on user inputs from a remote control.

WD-Manual also teaches techniques for controlling content displayed on a television using a remote control:



Ex.1006, pg. 11 (annotated); Ex.1003, ¶136.

WD-Manual's remote control includes buttons that, when selected, cause

specific content or information to be displayed on the television. Ex.1006, pgs. 5, 25-26, 138. WD-Manual also describes assigning specific functionality to specific keys on its remote control (e.g., “[u]ser assignable shortcut/function keys”):

Alpha-numeric keys	- Pressing the any of these keys once inputs the corresponding number. - Pressing keys 2-9 multiple times inputs the corresponding alpha characters. - While listening to a song or music playlist, press and hold any of the 0-9 buttons to create a preset.
A, B, C, D	User assignable shortcut/function keys. See “Remote Settings” on page 139. Default settings are as follows (only valid when inside the Videos, Music, or Photos menus): Pressing  activates the  sort and filter menu. Pressing  activates the  select content source menu. Pressing  activates the  change view menu. Pressing  activates the  dashboard menu.

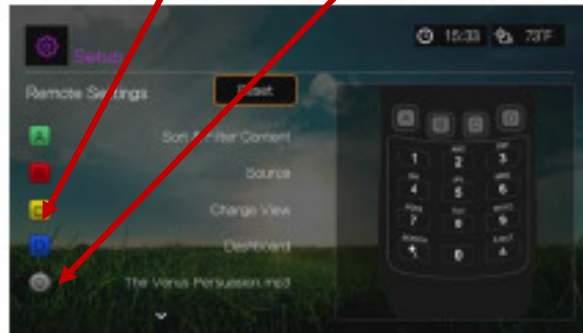
Ex.1006, pg. 26 (partial); Ex.1003, ¶137.

A, B, C, and D buttons programmable to display content
such as Music, Video, or Services

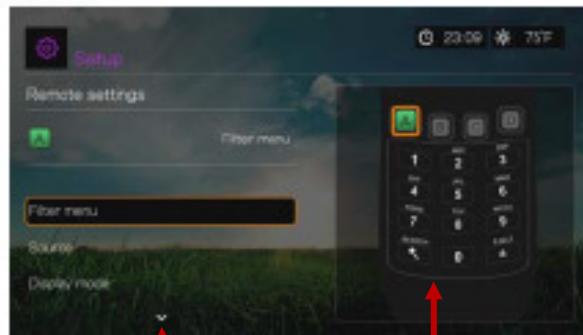
“0” programmed as a music
preset

Remote Settings

Select a function for the **A**, **B**, **C**, and **D** function buttons on the remote controller. The remote settings menu displays the functions currently assigned to each button.



To change functions, press ▲ / ▼ to select a function button, then press **OK**. Press ▲ / ▼ to select functions such as display mode, filter menu, Music, Video, Services, Setup, etc., then press **OK**.



To reset the function buttons to default settings, select **Reset**, then press **OK**.

“etc.” and down arrow icon indicate that other functionality
is available for the buttons

Ex.1006, pg. 138 (partial); Ex.1003, ¶137.

Additionally, WD-Manual describes other remote control features, including

(1) an Options button that, when selected for a particular service, causes

information about that service to be displayed, and (2) a “home” button that, when selected, causes a main menu to be displayed:

Options	During playback, displays additional playback options. From an online media content screen, press to display more service options.
---------	--

Pressing “Options” button
displays options about a service

Ex.1006, pg. 25 (partial and annotated); Ex.1003, ¶138.

Button	Function
HOME	Displays the main menu and the various options for playback of files and device setup.

Pressing “Home” button displays
main menu (home screen)

Ex.1006, pg. 25 (partial and annotated); Ex.1003, ¶138.

Accordingly, Kim’s remote control in view of the remote control features (e.g., buttons to access specific content and information) taught in WD-Manual renders obvious a “remote control.” Ex.1003, ¶¶135-139.

[1.5.1] a media center button that, when selected, provides, by the television screen, displayed information regarding one or more of groupings of music, groupings of videos, groupings of photographs, and internal and external computational devices, the computational devices comprising one or more of personal computers, laptops, tablet computers, wireless phones, and removable computer readable media;

Element [1.5.1] includes two separate lists that begin with “*one or more.*” Based on the explicit definition of “*one or more*” of items in a list, teaching any item in that list meets the limitation represented by the list. Here, however, the analysis below shows that Kim and WD-Manual render obvious every item in the two lists of element [1.5.1].

As discussed above with element [1.5], Kim, Bae, and WD-Manual each teach controlling content displayed on a television based on user inputs from a remote control and WD-Manual teaches remote control buttons that, when selected, cause specific content and information to be displayed.

Remote Control



CAUTION: Do not expose the batteries or the remote control with batteries installed to excessive heat (direct sunlight, fire, etc.).

1. Infrared transmitter
2. POWER
3. Subtitle
4. PREV (track), STOP, NEXT (track)
5. Back (last screen)
6. Navigation buttons, OK
7. Previous Page
8. MUTE
9. Alpha-numeric keys
10. SEARCH
11. HOME
12. Audio
13. REV, PAUSE/PLAY, FF
14. Options
15. Next Page
16. Setup
17. Shortcut/function keys
18. EJECT (safe removal of attached storage)



Any one of A, B, C, or D buttons can be assigned to display specific types of media content

Ex.1006, pg. 11 (annotated); Ex.1003, ¶142.

- **“groupings of music”**

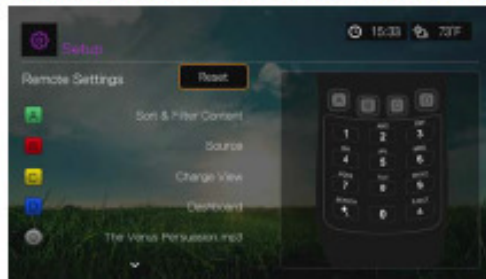
WD-Manual teaches a specific button that, when selected, causes “information regarding groupings of music” to be displayed on the television.

For example, WD-Manual teaches assigning a specific button to display a

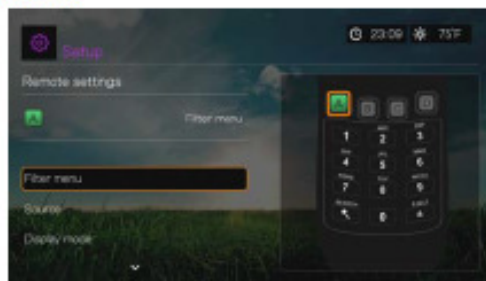
“Music” screen. Ex.1006, pgs. 138, 24.

Remote Settings

Select a function for the **A**, **B**, **C**, and **D** function buttons on the remote controller. The remote settings menu displays the functions currently assigned to each button.



To change functions, press **▲**/**▼** to select a function button, then press **OK**. Press **▲**/**▼** to select functions such as display mode, filter menu, Music, Video, Services, Setup, etc., then press **OK**.



Music can be
assigned to a
button

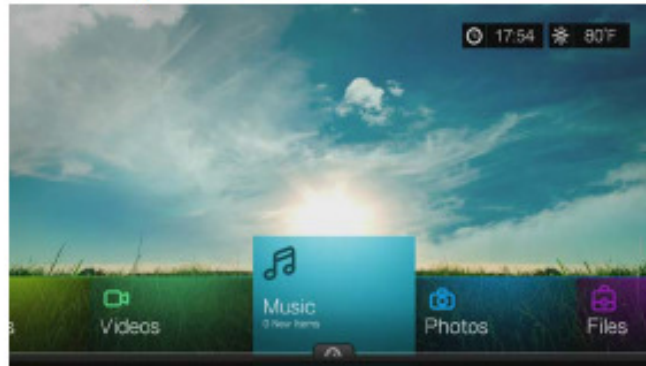
To reset the function buttons to default settings, select **Reset**, then press **OK**.

Ex.1006, pg. 138 (partial and annotated); Ex.1003, ¶143.

WD-Manual’s Music screen displays multiple groupings of music, such as “Chrome Tracks,” “Essential Beats Vol. 1”, and others:

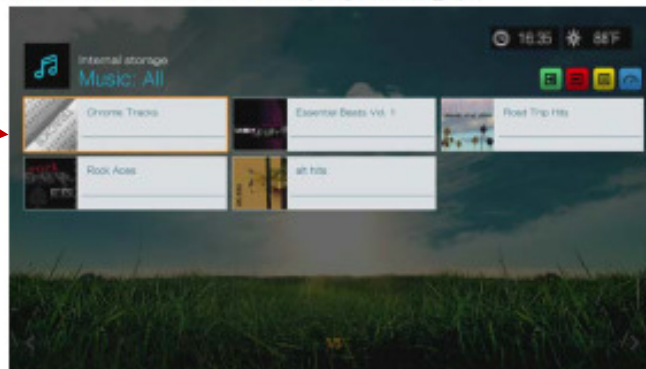
Music Playback

1. Navigate to the Home | Music menu, then press **OK**.



2. The screen displays available music files and folders in the media center's local drive by default. The display will either be in grid view (default) or list view, depending on your Browser Display setting (see "Music Settings" on page 134 for more information on Browser Display settings).

Music
screen
displays
“groupings
of music”



If Media Library is enabled, you can choose to navigate using sorting (Alphabetical, Date, Ratings, Recently Viewed) and filter options (All, All Tracks,

Ex.1006, pg. 48 (partial and annotated); Ex.1003, ¶144.

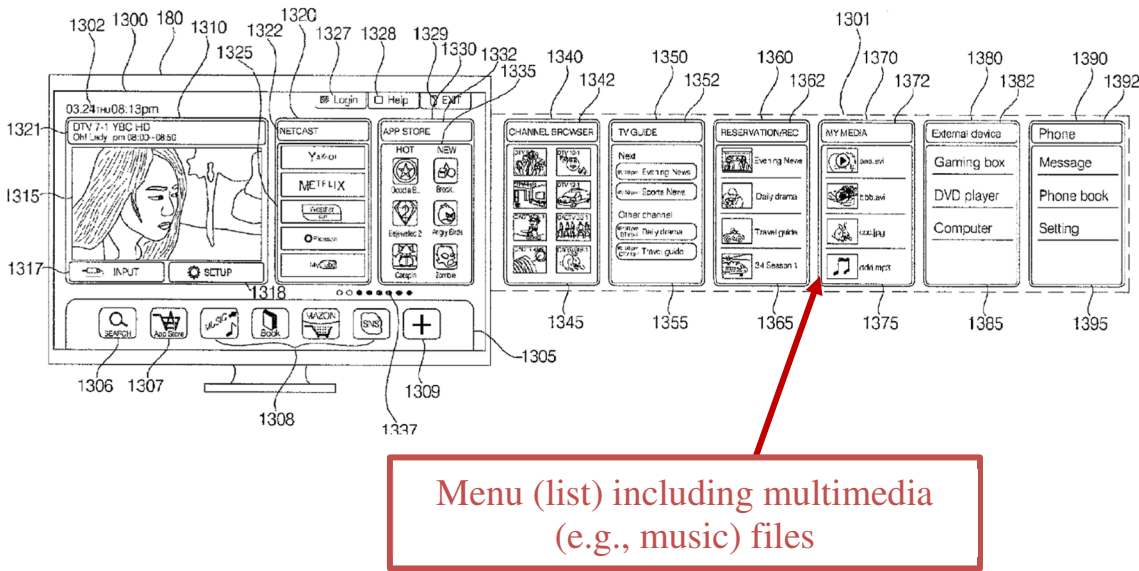
Further, WD-Manual teaches that the Music screen displays groupings of music, such as “album names,” “file folders” and “music playlists”:

Media Type	Category	Description
Music	All Tracks	Displays a list of all audio files arranged in alphabetical order.
	Artist	Content is categorized based on the artist name.
	Genre	Content is categorized based on genre.
	Album	Content is categorized based on album names.
	Date	Content is organized by date modified.
	Folders	Contents are displayed in audio file folders.
	Recent	Displays a list of audio folders/files that have been accessed recently.
	Playlist	Displays a list of music playlists.

Groupings
of music

Ex.1006, pg. 31 (partial and annotated); Ex.1003, ¶145.

Kim discloses using a remote control to access music via a “card object” that presents a “list of multimedia files,” which may include “audio.” Ex.1005, [0209].



Menu (list) including multimedia
(e.g., music) files

Ex.1005, Fig. 19 (annotated); Ex.1003, ¶148.

Accordingly, a POSITA would have found it obvious that Kim's remote control could have a button assigned to, when selected, cause the display of information about groupings of music, as taught in WD-Manual. Ex.1003, ¶149.

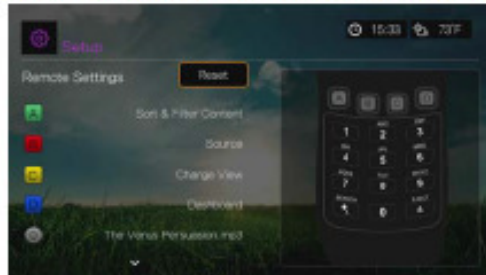
- **“groupings of videos”**

WD-Manual teaches a specific button that, when selected, causes “*information regarding...groupings of video*” to be displayed on the television.

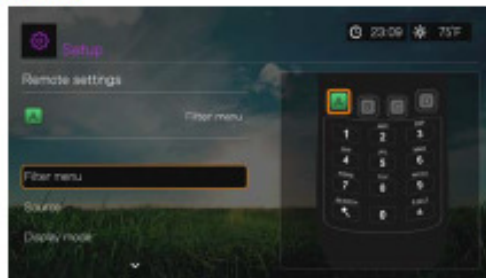
For example, WD-Manual teaches assigning a specific button to display a “Video” screen. Ex.1006, pgs. 138, 24.

Remote Settings

Select a function for the **A**, **B**, **C**, and **D** function buttons on the remote controller. The remote settings menu displays the functions currently assigned to each button.



To change functions, press **▲**/**▼** to select a function button, then press **OK**. Press **▲**/**▼** to select functions such as display mode, filter menu, Music, Video, Services, Setup, etc., then press **OK**.



Video can be
assigned to a
button

To reset the function buttons to default settings, select **Reset**, then press **OK**.

Ex.1006, pg. 138 (partial and annotated); Ex.1003, ¶150.

WD-Manual's Video screen displays groupings of videos, such as "video folders," "video file folders," and "video playlists":

Media Type	Category	Description
Video	All Video	Displays a list of all video files arranged in alphabetical order.
	Date	Content is organized by date modified.
	Folders	Contents are displayed in video file folders.
	Recent	Displays a list of video folders/files that have been played recently.
	Playlist	Displays a list of video playlists.



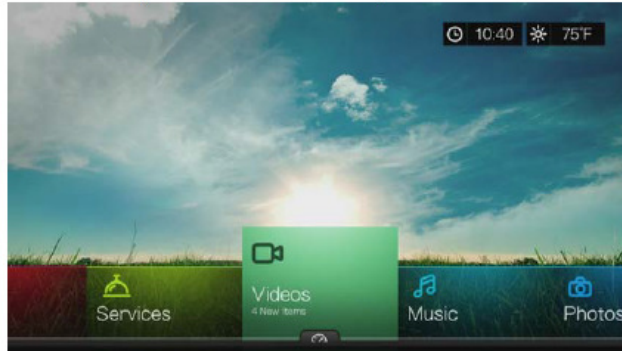
Groupings
of videos

Ex.1006, pg. 32 (partial and annotated); Ex.1003, ¶151.

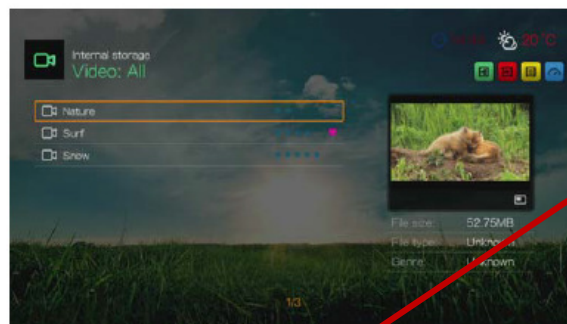
Video Playback

To play back video:

1. Navigate to the Home | Videos menu, then press **OK**.



2. The screen display available video files and video folders in the media center's local drive by default. The display will either be in preview view (default), grid view, list view, or gallery view, depending on your Browser Display setting (see "Video Settings" on page 133 for more information on Browser Display settings). Preview mode displays file size, and file type and genre (if available) for the selected video.



Groupings of
videos

If Media Library is enabled, you can choose to navigate using sorting (Alphabetical, Date, Ratings, Recently Viewed) and filter options (All Video, Genre, Playlists, Folder, Favorites) See "Supported Categories for Media Library Compilation" on page 31 for details.

Ex.1006, pg. 36-37 (partial and annotated); Ex.1003, ¶151.

Further, WD-Manual teaches the Video screen displays groupings of video content using "filter options (All, All Tracks, Genre, Album, Playlists, Favorites)."

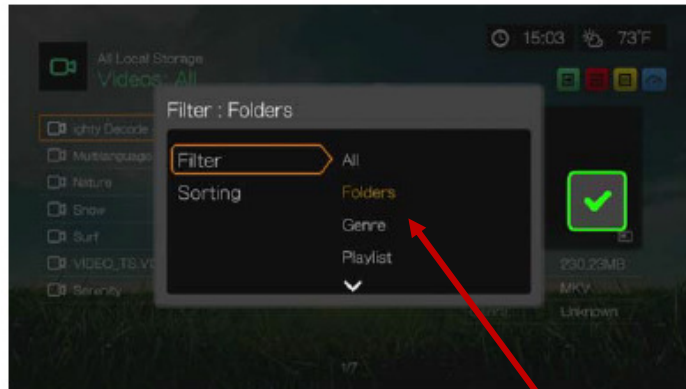
Ex.1006, pgs. 36-37.

Filter

1. Press **A** or navigate to the sort and filter content icon , and press **OK**.
2. Press **►**, then **▲**/**▼** to select Filter by All, Folders, Genre, Playlist, and Favorites. Press **OK** to display videos by the criteria selected.



.....
Note: If you have your media files organized by folder, it may be easier and quicker to find your files by using the Filter option to only show folders.



3. With the green check mark  selected, press **OK** again.

Groupings of
videos

Ex.1006, pg. 37 (partial and annotated); Ex.1003, ¶152.

Kim discloses using a remote control to access videos, such as “card object 1370.” Card object 1370 presents a “list of multimedia files,” which may include “moving pictures.” Ex.1005, [0209]; *see also id.* at [0205].

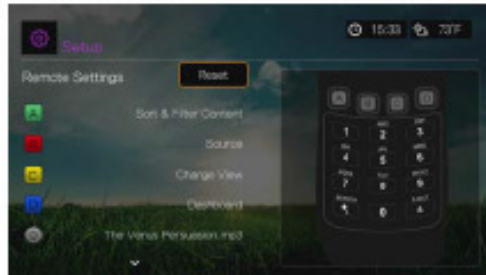
List of multimedia files includes videos

Accordingly, a POSITA would have found it obvious that Kim's remote control could have a button assigned to, when selected, cause the display of information about groupings of videos, as taught in WD-Manual. Ex.1003, ¶157.

WD-Manual teaches a specific button that, when selected, causes “*information regarding...groupings of photographs*” to be displayed on the television.

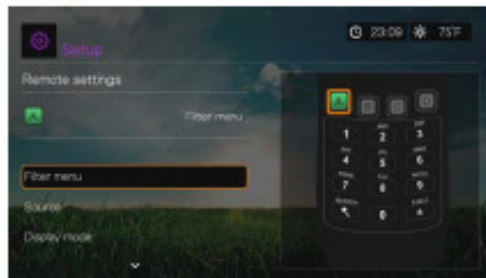
Remote Settings

Select a function for the **A**, **B**, **C**, and **D** function buttons on the remote controller. The remote settings menu displays the functions currently assigned to each button.



To change functions, press **▲**/**▼** to select a function button, then press **OK**. Press **▲**/**▼** to select functions such as display mode, filter menu, Music, Video, Services, Setup, etc., then press **OK**.

Photos screen
can be
assigned to a
button



To reset the function buttons to default settings, select **Reset**, then press **OK**.

Ex.1006, pg. 138 (partial and annotated); Ex.1003, ¶158.

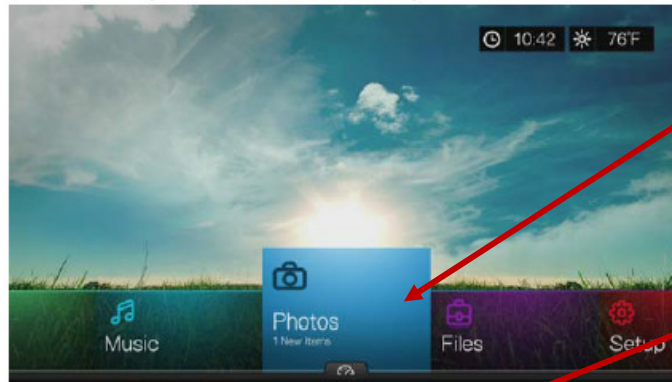
WD-Manual's Photo screen displays information regarding "available [photo/photograph]² files and folders," where each "folder" is a different grouping of photographs:

² Page 55 of WD-Manual recites "available music files and folders," but a POSITA would recognize the reference to music as a typographical error based on context.

Ex.1003, ¶159.

Photo Display

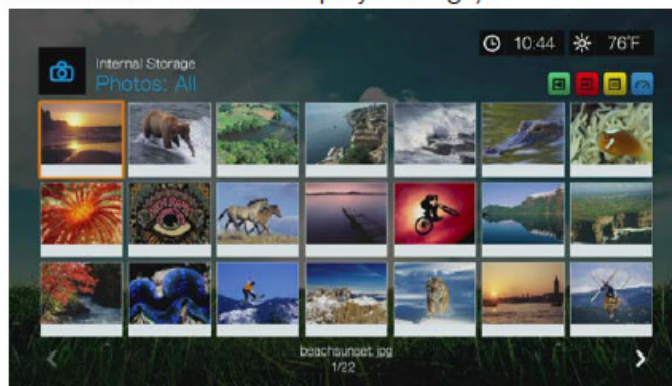
1. Navigate to the Home | Photos menu, then press **OK**.



Photos menu in
same menu bar as
Music, Video,
Services, etc.

Photograph
folders

2. The screen displays available music files and folders in the media center's local drive by default. The display will either be in grid view (default) or list view, depending on your Browser Display setting (see "Photo Settings" on page 136 for more information on Browser Display settings).



Groupings
of
photographs

3. If Media Library is enabled, you can choose to navigate using sorting (Alphabetical, Date, Ratings, Recently Viewed) and filter options (All Pictures, Date, Folders, Recent). See "Supported Categories for Media Library Compilation" on page 31 for details.

Ex.1006, pg. 55-56 (partial and annotated); Ex.1003, ¶159.

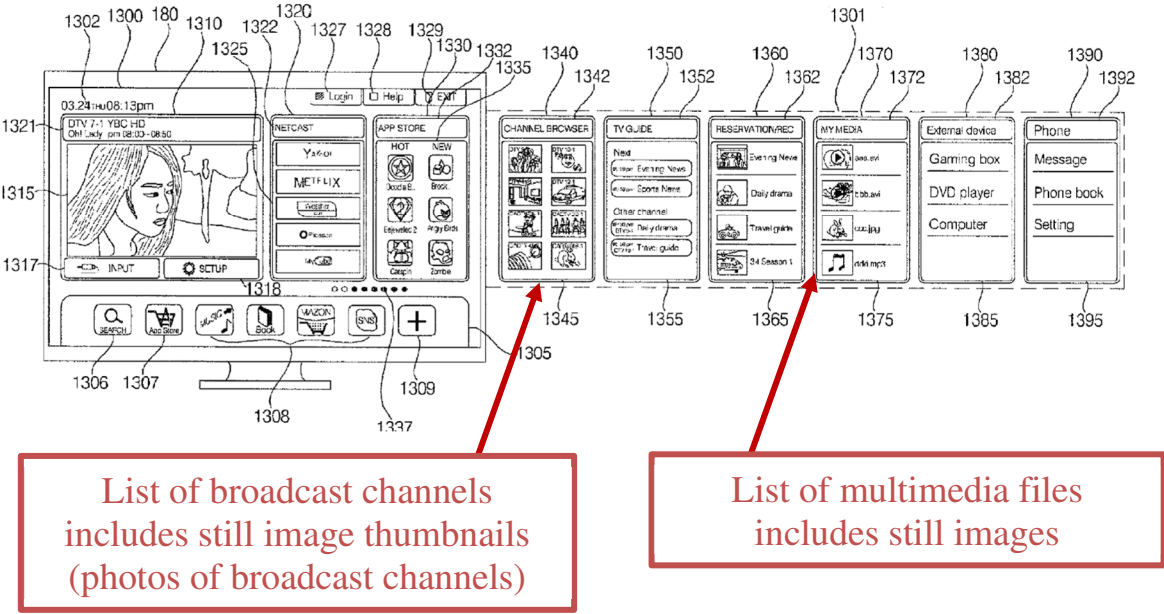
Further, WD-Manual teaches the Photo screen displays groupings of photos, such as "image file folders":

Photo	All Pictures	Displays a list of all image files arranged in alphabetical order.
	Date	Content is organized by date modified.
	Folders	Contents are displayed in image file folders.
	Recent	Displays a list of image folders/files that have been accessed recently.

Groupings of photographs

Ex.1006, pg. 32 (partial and annotated); Ex.1003, ¶160.

Kim discloses using a remote control to access photographs, such as “card object 1370.” Card object 1370 presents a “list of multimedia files,” which may include “still images.” Ex.1005, [0205], [0209].



Ex.1005, Fig. 19 (annotated); Ex.1003, ¶161.

Accordingly, a POSITA would have found it obvious that Kim’s remote control could have a button assigned to, when selected, cause the display of

information about groupings of photographs, as taught in WD-Manual. Ex.1003, ¶158-162.

- **“internal and external computational devices”**

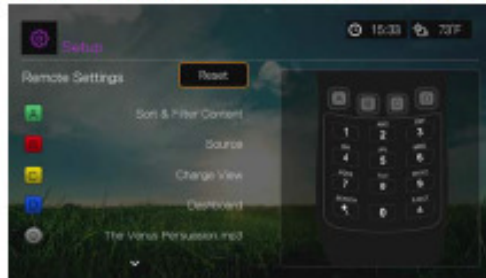
Kim and WD-Manual teach a specific button that, when selected, causes “information regarding...internal and external computational devices, the computational devices comprising one or more of personal computers, laptops, tablet computers, wireless phones, and removable computer readable media” to be displayed on the television.

- “internal computational devices” that are “removable computer readable media”

WD-Manual teaches assigning displaying a “Files” screen to a specific button. Ex.1006, pg. 138, 28 (“Files”), 62 (“Files menu”).

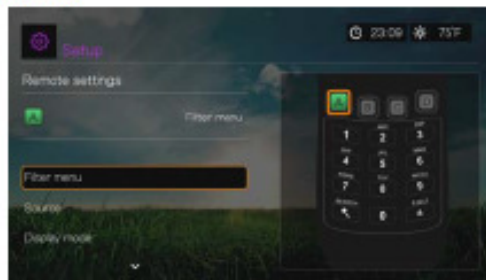
Remote Settings

Select a function for the **A**, **B**, **C**, and **D** function buttons on the remote controller. The remote settings menu displays the functions currently assigned to each button.



To change functions, press ▲/▼ to select a function button, then press **OK**. Press ▲/▼ to select functions such as display mode, filter menu, Music, Video, Services, Setup, etc., then press **OK**.

Button can be assigned to other menus (e.g., Files screen)



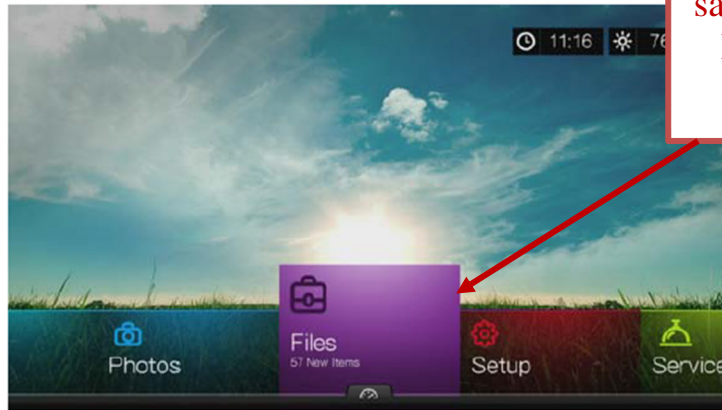
To return function buttons to default settings, select **Reset**, then press **OK**.

Ex.1006, pg. 138 (partial and annotated); Ex.1003, ¶164.

WD-Manual's Files screen displays information regarding "all available media files and folders in the...local drive by default." Ex.1006, pg. 62. The local drive renders obvious an *internal computational device*.

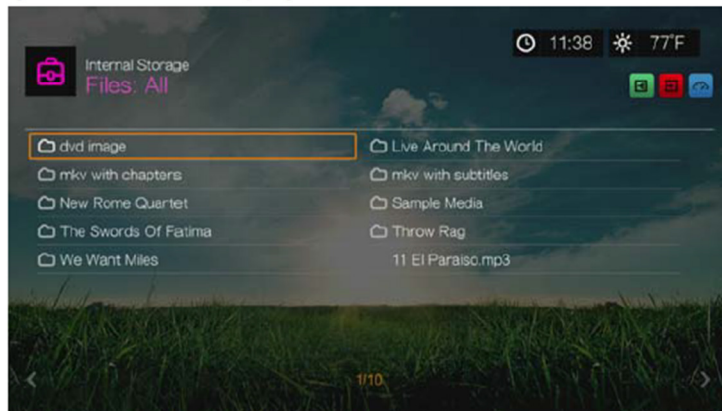
Files Display

1. Navigate to the Home | Files menu, then press **OK**.



Files menu in
same menu bar as
Music, Video,
Photos, etc.

2. The screen displays all available media files and folders in the media center's local drive by default. The display is in list view.



Default view shows
files in local drive

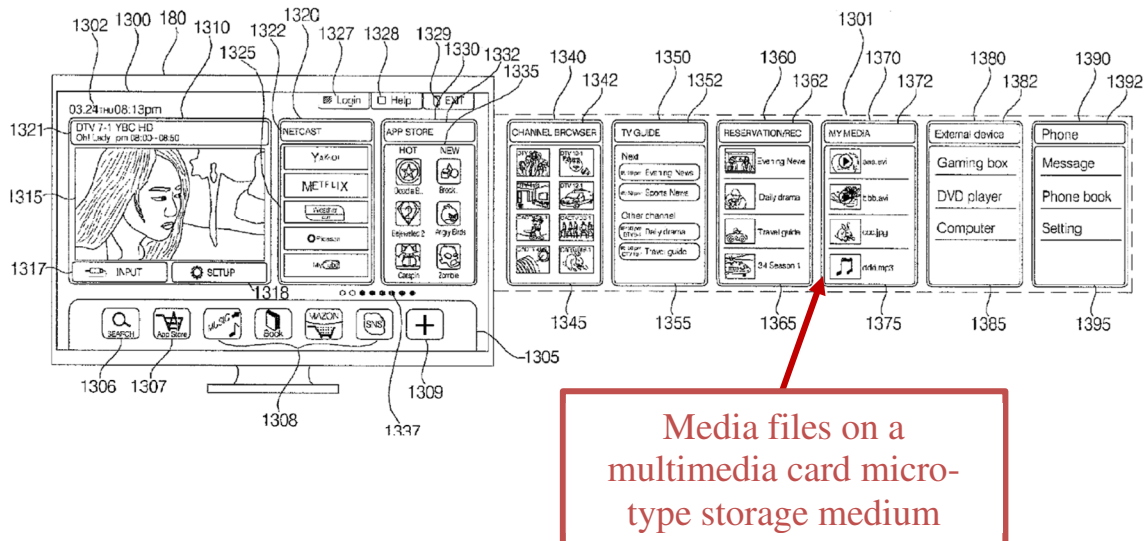
Ex.1006, pg. 62 (partial and annotated); Ex.1003, ¶166.

Kim discloses using a remote control to access and display “card object 1370” that includes a list of “multimedia files available on the image display apparatus 100 or a device connected to the image display apparatus 100.”

Ex.1005, [0209]. Kim further explains that “video files, still image files, music

files, text files, or application files” may be stored on “at least one of...a card-type memory (e.g. a Secure Digital (SD) or eXtreme Digital (XD) memory).” Ex.1005, [0085].

A POSITA would understand that a “card-type memory” (e.g., SD card) is a type of removable computer readable media that, when installed/inserted in a device (e.g., television), becomes an internal computational device. Ex.1003, ¶168.



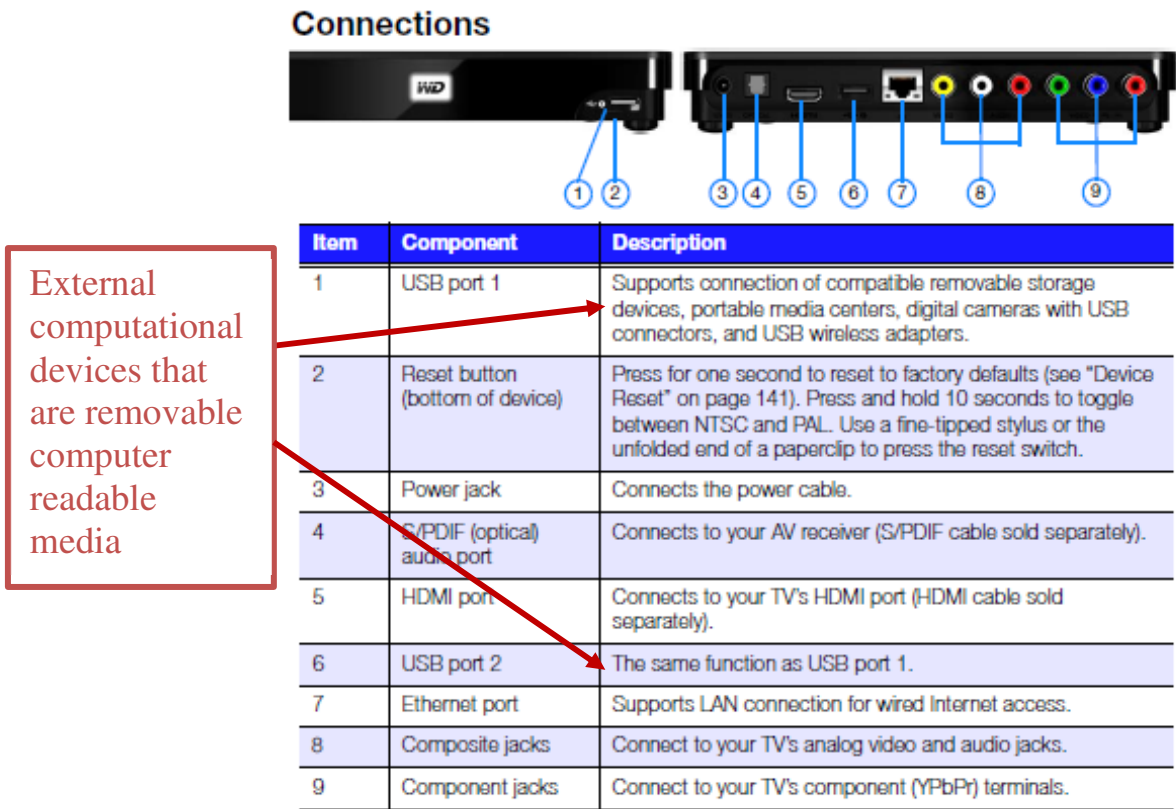
Ex.1005, Fig. 19 (annotated); Ex.1003, ¶168.

Accordingly, where Kim already teaches accessing and displaying files stored on at least one SD card, a POSITA would have found it obvious that Kim’s remote control could have a button assigned to, when selected, cause the display of information about the contents stored in Kim’s memory (e.g., one or more SD-cards), as taught in WD-Manual. Ex.1003, ¶164-169.

- “*external computational devices*” that are “*removable computer readable media*”

As described above, WD-Manual teaches that a button can be assigned to display a Music, Videos, Photos, or Files screen, each screen including various media content. WD-Manual further explains that “[m]edia contents will be displayed either as file/file folders in the media center, **network attached storage [NAS]**, or a **USB drive directory**.” Ex.1006, pg. 28, 70.

A POSITA would understand that network attached storage contains various removable computer readable media. *See, e.g.*, Ex.1013, [0083] (describing a NAS as containing removable storage media); Ex.1003, ¶171. Further, a POSITA would understand that WD-Manual’s “USB drive directory” reflects the content of external computational devices connected to WD-Manual’s USB ports. Ex.1003, ¶171.



Ex.1006, pg. 9 (annotated); Ex.1003, ¶171.

A POSITA would understand that these external computational devices connected to WD-Manual’s USB ports—“removable storage devices, portable media centers, digital camera with USB connectors, and USB wireless adapters”—are removable computer readable media. Ex.1006, pg. 9, Ex.1003, ¶172.

Kim teaches displaying “a list of external devices,” which may be connected to the television via an “I/O interface” such as “a Universal Serial Bus (USB) port. Ex.1005, [0076]-[0080], [0196].

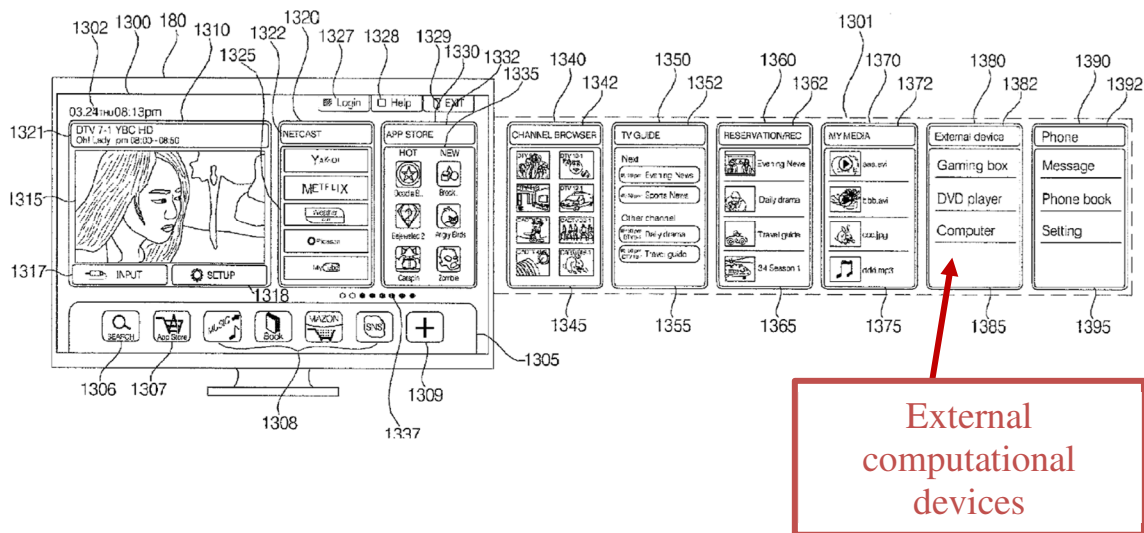
Accordingly, where Kim already teaches connecting external devices to its

television via USB, a POSITA would have found it obvious that Kim's remote control could have a button assigned to, when selected, cause the display of media content on external computational devices that are removable computer readable media (such as a USB drive), as taught in WD-Manual. Ex.1003, ¶¶170-173.

- *“external computational devices” that are “personal computers,” “laptops” and “tablet computers”*

As described above, WD-Manual teaches that a button can be assigned to display a Music, Videos, Photos, or Files screen, each screen including various media files and media file folders. WD-Manual further describes accessing media content from a “shared computer.” Ex.1006, pg. 70.

Kim discloses using a remote control to access and display a “card object” that includes a “list of connected external devices,” which may include “a computer.” Ex.1005, [0210]. Kim teaches one such computer is “a laptop computer.” Ex.1005, [0123].



Ex.1005, Fig. 19 (annotated); Ex.1003, ¶175.

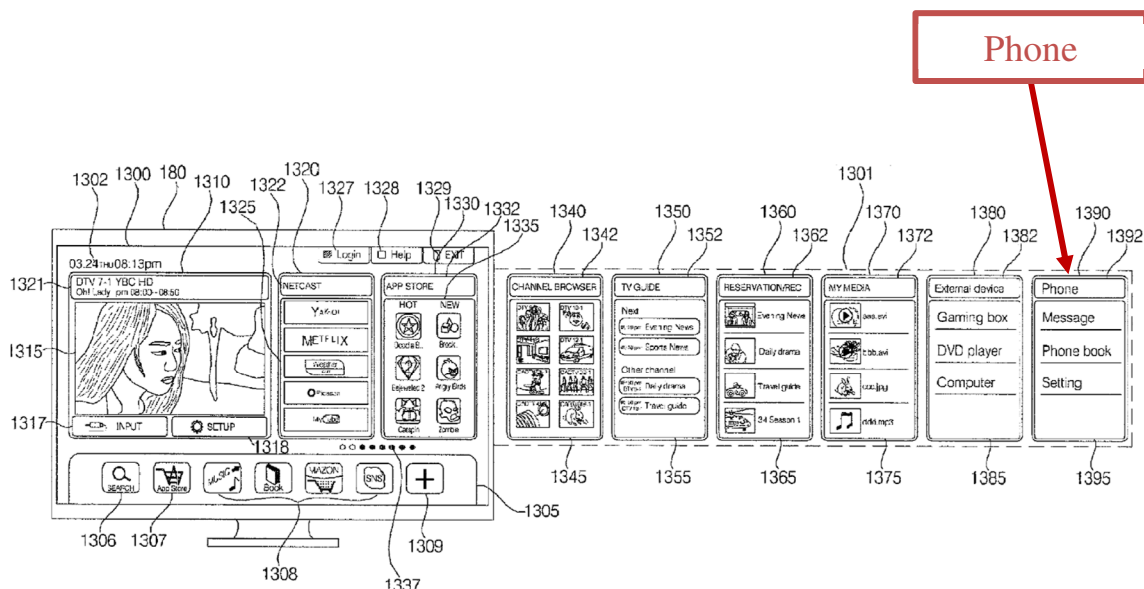
A POSITA would have found it obvious that Kim’s “list of connected external devices” and WD-Manual’s “shared computer” could include multiple computers, including different devices well-known as computers, such as personal computers, laptops computers, and tablet computers. *See* Ex.1011 pg. 672 (defining “laptop computer” as a computer), pg. 879 (defining “personal computer” as a computer), and pg. 1121 (defining “tablet PC” as a form of laptop); Ex.1003, ¶176.

Accordingly, where Kim teaches displaying information regarding computers, a POSITA would have found it obvious that Kim’s remote control could have a button assigned to, when selected, cause the display information regarding personal, laptop, and/or tablet computers (e.g., the content stored on such devices), as taught in WD-Manual. Ex.1003, ¶¶174-177.

- “external computational device” such as “wireless phones”

As described above, WD-Manual teaches a button can be assigned to display information regarding external devices.

Kim discloses using a remote control to access and display a Phone card object 1390 that includes call information for a “portable phone,” which a POSITA would have recognized and understood as a wireless phone. Ex.1005, [0211]-[0212]; Ex.1003, ¶¶179-180.



Ex.1005, Fig. 19 (annotated); Ex.1003, ¶179.

Accordingly, where Kim teaches displaying information regarding external devices such as phones, a POSITA would have found it obvious that Kim’s remote control could have a button assigned to, when selected, cause the display of information regarding wireless phones (e.g., identification of calls), as taught in WD-Manual. Ex.1003, ¶¶178-181.

Remote Control



CAUTION: Do not expose the batteries or the remote control with batteries installed to excessive heat (direct sunlight, fire, etc.).



Ex.1006, pg. 11 (annotated); Ex.1003, ¶182.

Thus, for each reason stated above, Kim’s method of using a remote control to access identifying information and media content on devices in view of WD-Manual’s teaching of assigning buttons to display specific media and/or device information renders obvious this limitation. Ex.1003, ¶¶140-184.

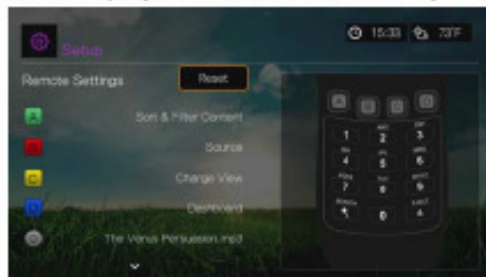
[1.5.2] an application center button that, when selected, provides, by the television screen, displayed information regarding pre-installed and downloaded software applications,

As discussed in element [1.5], Kim, Bae, and WD-Manual each teach displaying content on a television based on user inputs from a remote control and WD-Manual teaches remote control buttons that can be assigned to, when selected, cause specific types of content and information to be displayed.

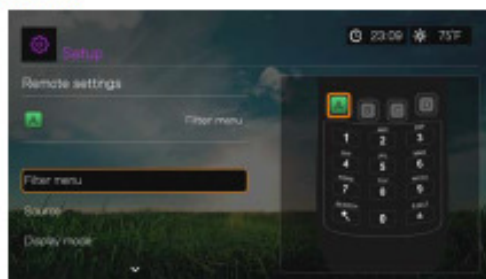
WD-Manual further teaches assigning a specific button to display information about “Services.” Ex.1006, pgs. 138, 28, 76-77 (“Services menu”).

Remote Settings

Select a function for the **A**, **B**, **C**, and **D** function buttons on the remote controller. The remote settings menu displays the functions currently assigned to each button.



To change functions, press **▲** / **▼** to select a function button, then press **OK**. Press **▲** / **▼** to select functions such as display mode, filter menu, Music, Video, Services, Setup, etc., then press **OK**.

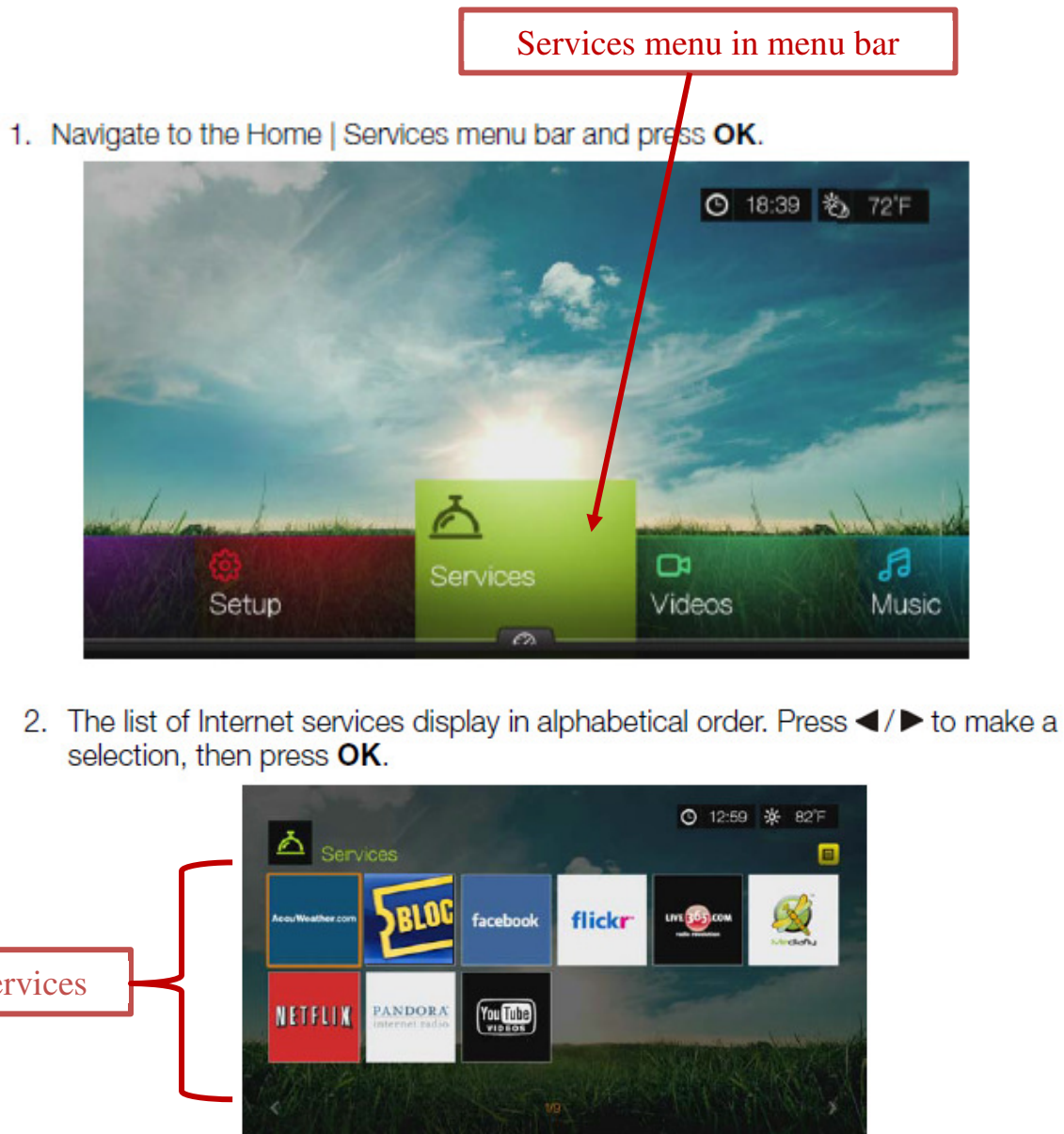


Services
screen can be
assigned to a
button

To reset the function buttons to default settings, select **Reset**, then press **OK**.

Ex.1006, pg. 138 (partial and annotated); Ex.1003, ¶186.

The Services menu displays the available services:



Ex.1006, pg. 76-77 (partial and annotated); Ex.1003, ¶187.

A POSITA would recognize that “Services” (e.g., Netflix, Facebook, Flickr, Pandora, etc.) are software applications. Thus, WD-Manual teaches a button

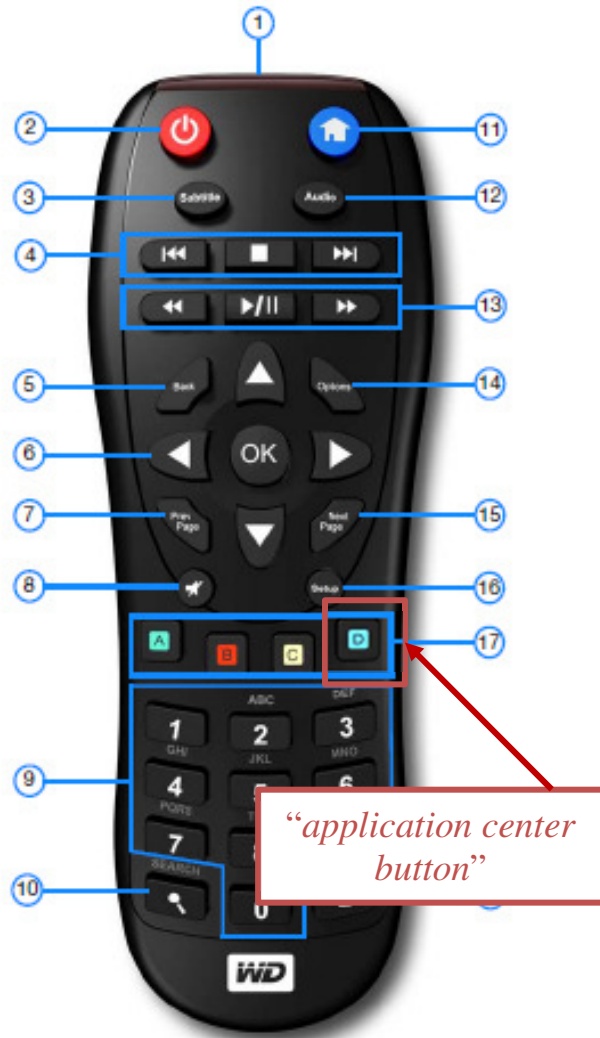
programmed to be an “*application center button.*” Ex.1003, ¶188.

Remote Control



CAUTION: Do not expose the batteries or the remote control with batteries installed to excessive heat (direct sunlight, fire, etc.).

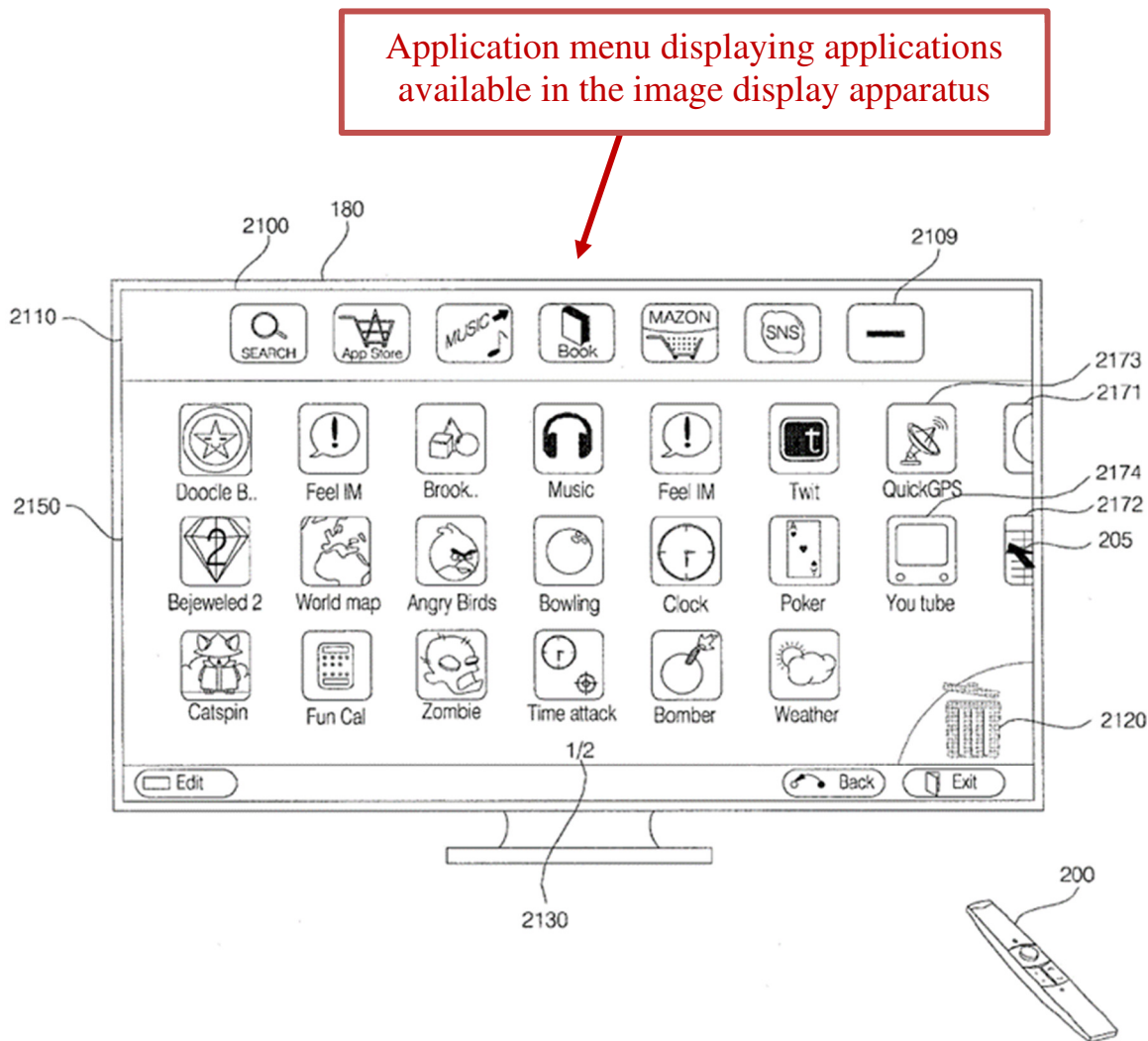
1. Infrared transmitter
2. POWER
3. Subtitle
4. PREV (track), STOP, NEXT (track)
5. Back (last screen)
6. Navigation buttons, OK
7. Previous Page
8. MUTE
9. Alpha-numeric keys
10. SEARCH
11. HOME
12. Audio
13. REV, PAUSE/PLAY, FF
14. Options
15. Next Page
16. Setup
17. Shortcut/function keys
18. EJECT (safe removal of attached storage)



Ex.1006, pg. 11 (annotated); Ex.1003, ¶188.

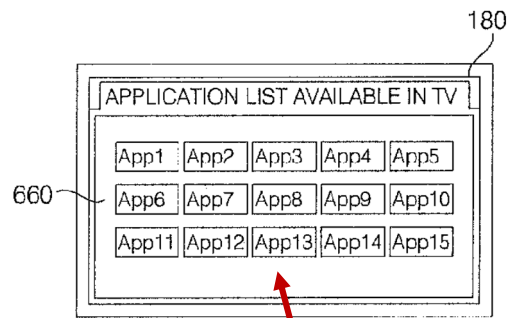
Kim discloses at least two examples for using a remote control to display an application panel that provides access to software applications. In a first example,

Kim's "controller 170 may control display of applications or a list of applications that are available in the image display apparatus." Ex.1005, [0099].



Ex.1005, Fig. 34 (annotated); Ex.1003, ¶189.

In Kim's second example, "a list of applications 660 stored in the image display apparatus may be displayed." Ex.1005, [0184], [0185].



Applications in the television

Ex.1005, Fig. 16(a) (annotated); Ex.1003, ¶190.

Kim further teaches that applications available in the image display apparatus (and displayed as shown in Figs. 16 and 34) are the software applications in application layer 550, discussed in [1.2]. Kim explains that these software applications are “user-undeletable applications” and “user-deletable applications.” User-undeletable applications are stored in the image display apparatus and “cannot be modified,” while user-deletable applications are “downloaded” and stored in the image display apparatus. Ex.1005, [0163], [0158], [0100]. The ’254 patent similarly distinguishes pre-installed applications as being “[u]nlike downloaded applications, [where] pre-installed applications cannot be removed by the user or manually updated.” Ex.1001, 24:17-22.

Accordingly, a POSITA would understand that Kim’s user-undeletable applications are *pre-installed applications* because they are (i) undeletable, (ii) stored in the television, and (iii) not modifiable, and that Kim’s downloaded, user-

deletable applications are *downloaded* applications. Ex.1003, ¶¶191-194.

Thus, Kim’s method of displaying pre-installed and downloaded software applications using a remote control in view of WD-Manual’s teaching of a button assigned to, when selected, cause a display of an application screen including information about software applications render obvious this limitation. Ex.1003, ¶¶185-196.

[1.5.2.1] wherein the downloaded software applications comprise one or more of a web browser, settings control, and content search algorithms;

Based on the explicit definition of “*one or more*” of items in a list, teaching any item in that list meets the limitation represented by the list. Here, however, the analysis below shows that the Kim and WD-Manual render obvious every item.

As discussed in [1.5.2], Kim teaches that its application layer includes various software applications installed on its television, including “*downloaded software applications.*”

“Web Browser” and “Settings Control”

As discussed with [1.5.2], Kim generally teaches that its applications may be downloaded (user-installable) or pre-installed (user-undeletable). Kim describes examples of different types of applications, including an application for “Web browsing” and a settings control application (e.g., a “setup object...to **set various settings** of the image display apparatus” such as “video settings,” “audio settings,” “screen settings,” “network settings,” and other “appropriate setting[s]”). Ex.1005,

[0159], [0157] (“browser” part of “core application suite”). Ex.1005, [0200].

A POSITA would therefore recognize that Kim’s web browser and settings control applications may be either downloaded over a network or preinstalled in firmware. Ex.1003, ¶¶199-204.

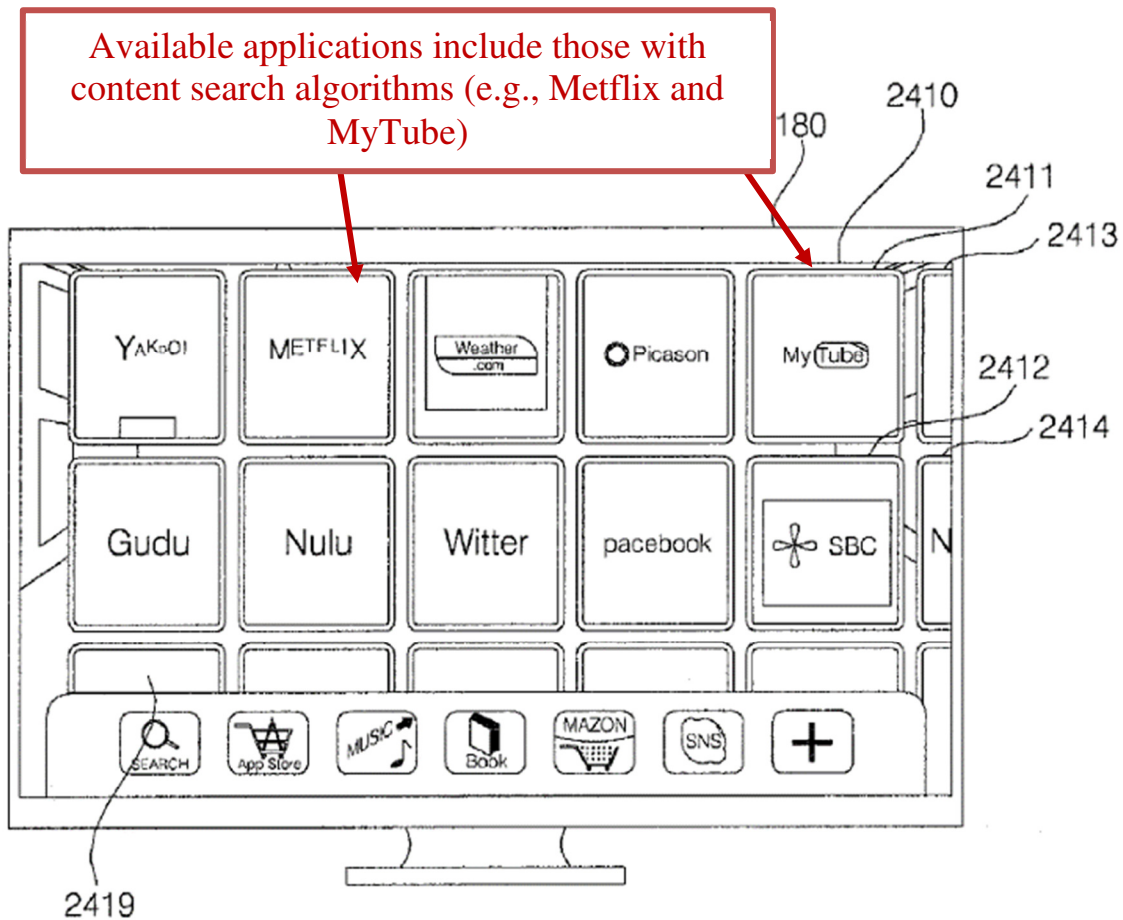
With respect to preinstalled applications in firmware, Kim explains that information received over the network is used to “update files of the firmware.” Ex.1005, [0082]. A POSITA would recognize and understand that once a preinstalled application in firmware is updated over the network, the application becomes a “*downloaded software application*.” See, e.g., Ex.1010, 2:22-25 (describing known “method for downloading the firmware (software embedded in a device)”); Ex.1003, ¶¶205-206.

Accordingly, Kim’s method of downloading applications and downloading updates to preinstalled applications in firmware where Kim’s applications include web browsing and settings control applications renders obvious “*downloaded software applications*” including a “a web browser” or “settings control.” Ex.1003, ¶¶199-207.

“Content Search Algorithms”

First, Kim discloses displaying applications such as “Metflix” and “MyTube,” which a POSITA would understand to be referencing applications such as Netflix and YouTube, respectively, each of which includes a content search

algorithm for searching media content. Ex.1003, ¶209.



Ex.1005, Fig. 44 (annotated); Ex.1003, ¶208.

Patent Owner similarly treats Netflix as meeting this limitation. Ex.1015, 13-14 (referencing “content search algorithms, such as the ‘Netflix’ app”).

Second, WD-Manual discloses that downloaded applications can search for content (e.g., to “find media files and create playlists”), thereby teaching “*content search algorithms*”:

How do I find media files and create playlists?

Several media center applications are currently available, such as Winamp and iTunes, that let you play, arrange, and edit media files. These media centers also let you create playlists and edit the metadata information for media files. You can search the Internet with your browser to locate where these applications are available for download.



Applications can be downloaded to
search for media content

Ex.1006, pg. 150 (annotated); Ex.1003, ¶210.

A POSITA would have recognized and understood that iTunes is a content search algorithm used to search for music. Ex.1014; Ex.1003, ¶211.

Thus, Kim's displaying information about downloaded software applications, which include (i) a web browser application, (ii) downloaded software updates for a settings control application in firmware, and (iii) a content search application, in view of WD-Manual's teaching of downloaded applications that allow searching for content, renders obvious this limitation. Ex.1003, ¶¶197-212.

[1.5.3] an application panel button that, when selected, displays, by the television screen, an application panel, wherein the application panel comprises an information panel regarding a selected (pre-installed or previously downloaded) application icon; and

As discussed in element [1.5], Kim, Bae, and WD-Manual each teach controlling content displayed on a television based on user inputs from a remote control and WD-Manual teaches remote control buttons that can be assigned to,

when selected, cause specific types of content and information to be displayed.

As discussed above with elements [1.2], [1.5.2], and [1.5.2.1], Kim and WD-Manual teach accessing pre-installed or previously downloaded software applications. WD-Manual refers to applications as “services.”

- **WD-Manual’s “Options” button**

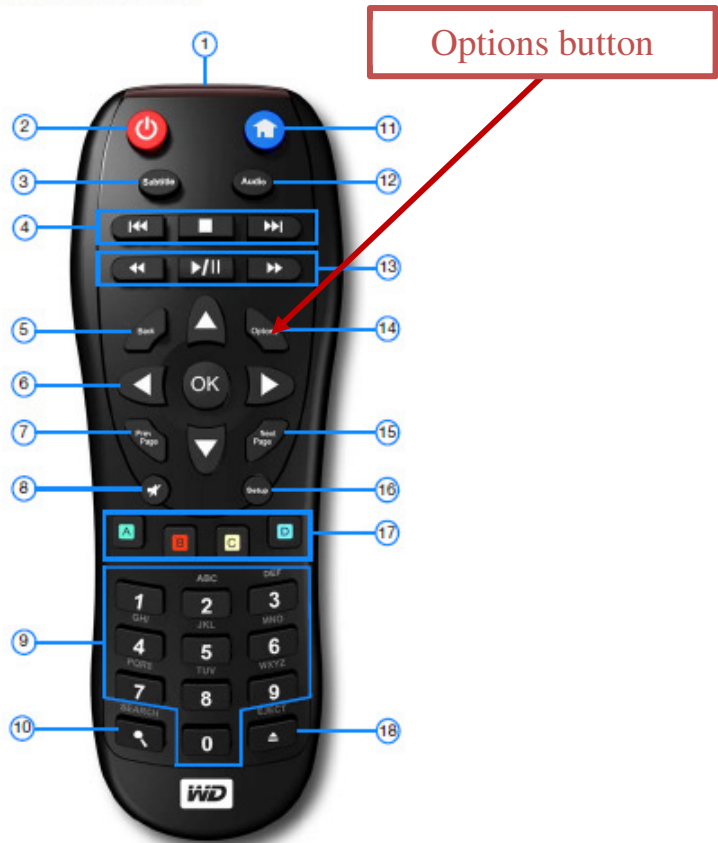
First, WD-Manual renders obvious element [1.5.3] because it teaches an “Options” button that displays an application panel that includes an information panel regarding a selected application (which as discussed above, may be a pre-installed or previously download application):

Remote Control



CAUTION: Do not expose the batteries or the remote control with batteries installed to excessive heat (direct sunlight, fire, etc.).

1. Infrared transmitter
2. POWER
3. Subtitle
4. PREV (track), STOP, NEXT (track)
5. Back (last screen)
6. Navigation buttons, OK
7. Previous Page
8. MUTE
9. Alpha-numeric keys
10. SEARCH
11. HOME
12. Audio
13. REV, PAUSE/PLAY, FF
14. Options
15. Next Page
16. Setup
17. Shortcut/function keys
18. EJECT (safe removal of attached storage)

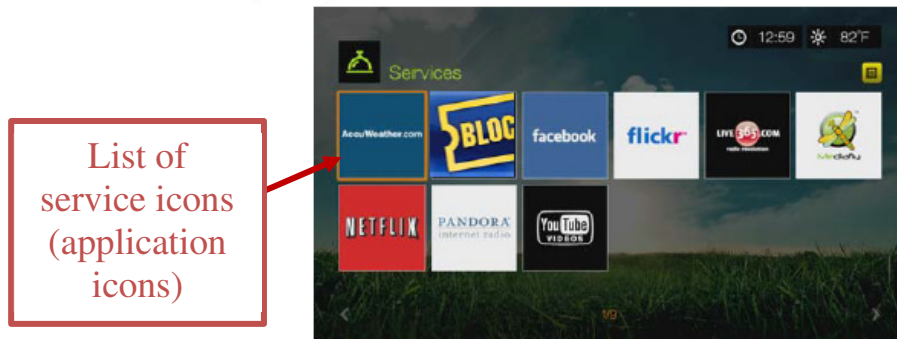


Ex.1006, pg. 11 (annotated); Ex.1003, ¶216.

WD-Manual displays a list of icons representing available services

(applications):

2. The list of Internet services display in alphabetical order. Press ◀/▶ to make a selection, then press **OK**.



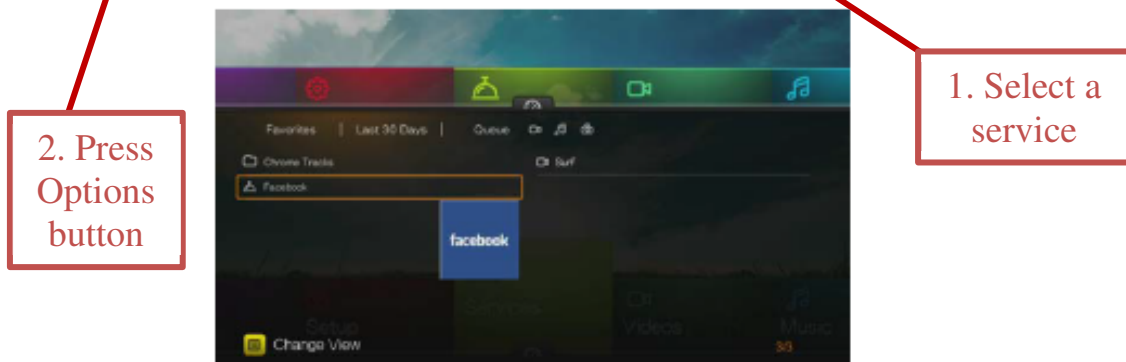
Ex.1006, pg. 77 (partial and annotated); Ex.1003, ¶217.

WD-Manual describes (1) using arrow keys to select a desired service
(*application*) based on its corresponding icon and then (2) pressing the “Options”
button:

Adding a Service to Favorites

You can add a Service to your Favorites so that it's quickly available via the dashboard when you are in the Home screen or other screens (when you press **D** or navigate to  in certain screens then press **OK**).

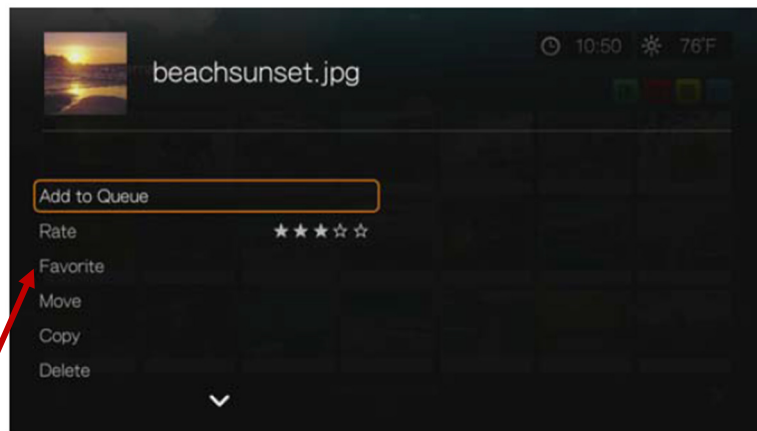
1. In the Services screen, press ◀/▶ to select a service you want to favorite, then press **Options**.
2. Press **OK** to list the service in the dashboard under Favorites



Ex.1006, pg. 77 (partial and annotated); Ex.1003, ¶218.

By pressing the Options button, an application panel comprising an information panel regarding the selected service icon is displayed:

Application panel with multiple information panels is displayed



Information panel includes option to add the selected service as a favorite (*regarding a selected application icon*)

Ex.1006, pg. 57 (annotated); Ex.1003, ¶219.

Second, WD-Manual teaches that numerous services are “integrated” into the media center. Ex.1006, pg. 66, 68. A POSITA would understand that integrated services are “*pre-installed*” applications. Ex.1003, ¶220.

After establishing a network connection, you can:

- Use the different Internet services integrated into your media center to access streaming media. Go to the next chapter for more information on these services.



Services are integrated into the media center (“pre-installed”)

Ex.1006, pg. 66 (partial and annotated); Ex.1003, ¶220.

WD-Manual also teaches that additional services (applications) can be downloaded for playing, arranging, and editing media files:

How do I find media files and create playlists?

Several media center applications are currently available, such as Winamp and iTunes, that let you play, arrange, and edit media files. These media centers also let you create playlists and edit the metadata information for media files. You can search the Internet with your browser to locate where these applications are available for download.



Additional applications can be downloaded by the user

Ex.1006, pg. 150 (partial and annotated); Ex.1003, ¶221.

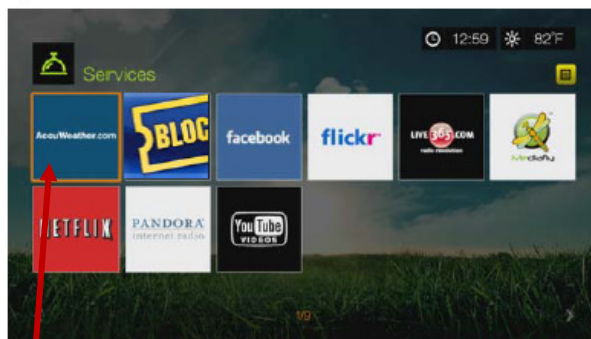
A POSITA would have found it obvious that services that are downloaded by the user would be added to the list of services displayed on WD-Manual’s page 77. Ex.1003, ¶222.

Accordingly, WD-Manual teaches an “Options” button that, when selected, causes the display of an information panel regarding a selected icon that represents a pre-installed or previously downloaded service (*application*). Ex. 1003, ¶¶216-

224.

To the extent “selected application icon” requires more than highlighting or placing a cursor on an icon, a POSITA would understand that an application icon can be a “selected application icon” in various ways. Ex.1003, ¶225. For example, WD-Manual discloses that an icon corresponding to a service can be selected by launching the service using the “OK” button³:

2. The list of Internet services display in alphabetical order. Press ◀/▶ to make a selection, then press **OK**.



Pressing “OK” launches highlighted application

Ex.1006, pg. 77 (partial and annotated); Ex.1003, ¶226.

³ The '254 patent equates an “OK” button with being a “select” button. Ex.1001, 22:56-23:67 (“The remote control 700 can include...an OK (or select) button 764”); Ex.1003, ¶227.

Home Screen Navigation

Use the following keys to navigate through the menu screens.

Button	Function
◀▶ Left/Right arrows	Move from one option to the next
▼ Down arrow	View the dashboard
OK	Launches your selection

Pressing “OK” button selects icon and launches corresponding service

Ex.1006, pg. 29 (partial and annotated); Ex.1003, ¶226.

WD-Manual also discloses that its “Options” button, when pressed after the service has launched, has the specific function of causing an information panel with options to be displayed.

Options	During playback, displays additional playback options. From an online media content screen, press to display more service options.
---------	--

Pressing “Options” button displays information panel with additional options for service executing on television

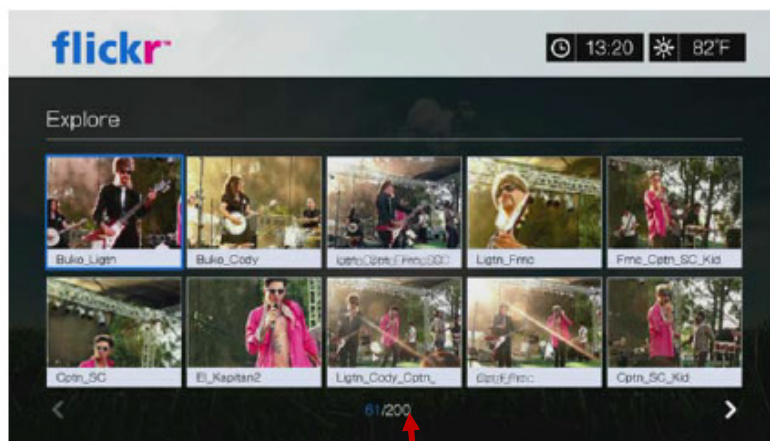
Ex.1006, pg. 25 (partial and annotated); Ex.1003, ¶228.

WD-Manual further discloses that this information panel can identify the selected service (*application*), which aligns with the ’254 patent’s explanation that an information panel can simply identify the selected application. ’254 patent, 24:56-25:4 (“The information panel can one or more of identify the selected

application...”). For example, WD-Manual discloses that, after launching the Flickr application, a user can press the “Options” button to display an information panel that includes menu options and identifies the selected application:

Flickr Photostream

The Flickr photostream layout is the same as that of a Photos directory in thumbnail mode.

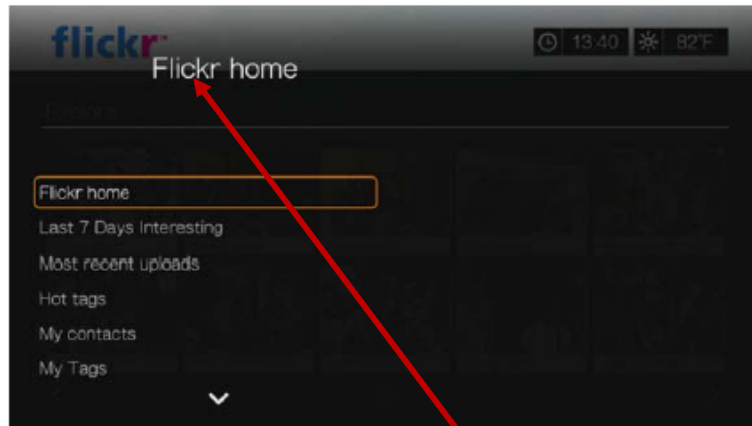


Flickr photostream layout

Ex.1006, pg. 91 (partial and annotated); Ex.1003, ¶229.

Press “Options” button while in selected service

- While in the photostream layout, press Options to jump back to the Flickr home page or choose any of the Flickr home page menu options.



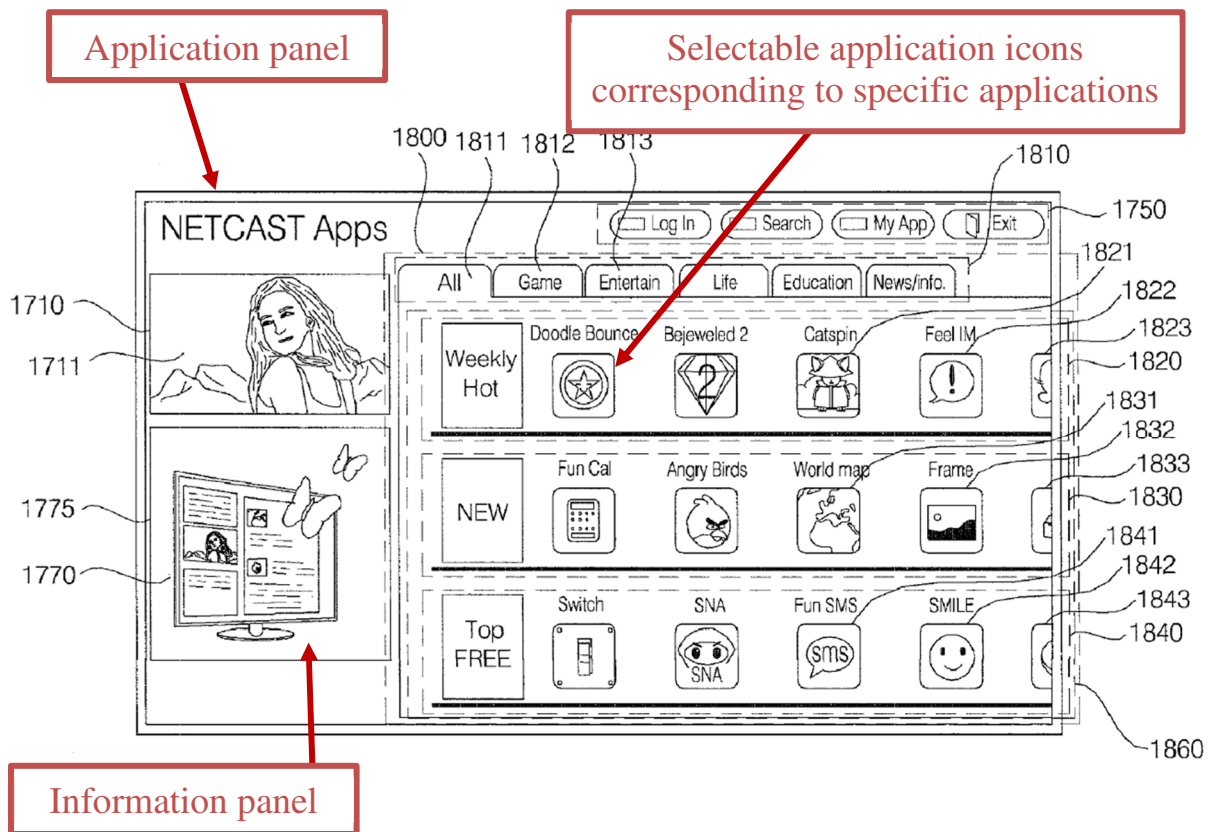
Information panel that “identifies the selected application”

Ex.1006, pg. 91 (partial and annotated); Ex.1003, ¶229.

Accordingly, WD-Manual teaches an Options button that, when selected, displays an information panel regarding a selected service (pre-installed or previously downloaded application). Ex.1003, ¶¶216-232.

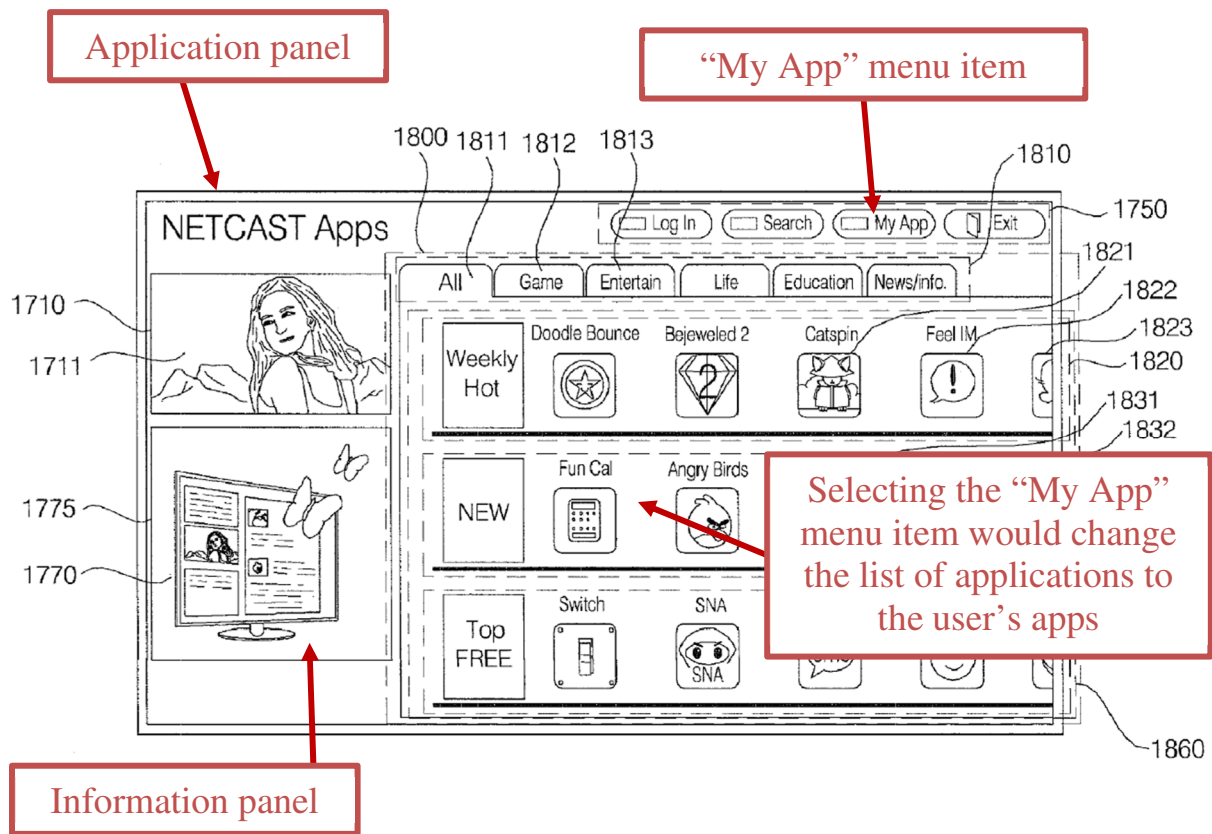
- **Kim’s “OK” Button**

Kim teaches, “when the user selects or focuses on a specific application,” displaying additional information in a different “area” on the screen. Ex.1005, [0247] (When “the user selects an icon, an image displayed on the third area 1770 may be replaced with information about the application corresponding to the selected icon”).



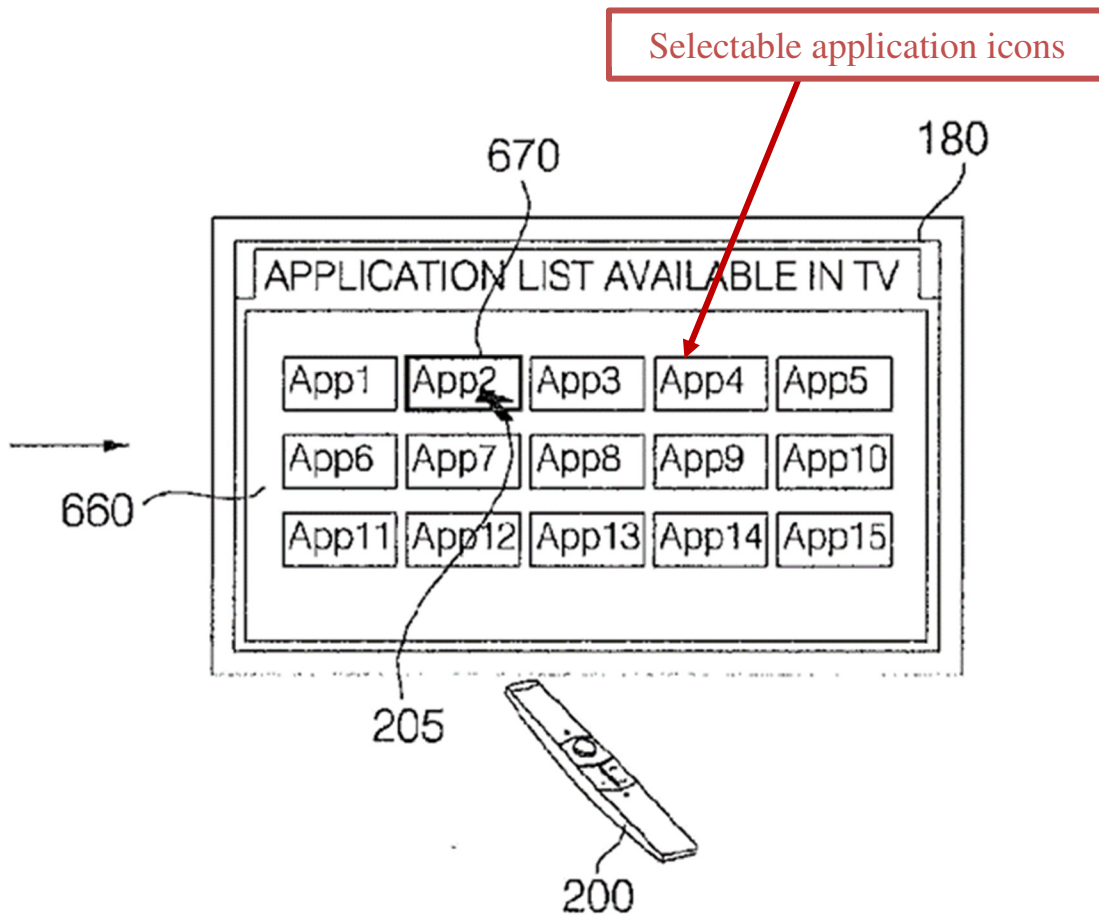
Ex.1005, Fig. 25 (annotated); Ex.1003, ¶233.

While Fig. 25 depicts displaying applications that are available in an app store, the user interface of Fig. 25 further includes a “My App” menu item. A POSITA would have found it obvious that selection of the “My App” menu item displays applications available in the television. Ex.1003, ¶¶234-235.



Ex.1005, Fig. 25 (annotated); Ex.1003, ¶234.

A POSITA would have found it obvious that selection of the “My App” menu item displays the applications available in the television because Kim already contemplates displaying applications available in the image display apparatus. Ex.1003, ¶235. For example, as discussed in element [1.5.2], application list 660 displays both user-undeletable (pre-installed) applications and user-deletable (previously downloaded) applications:



Ex.1005, Fig. 16b (partial and annotated); Ex.1003, ¶236.

Kim teaches using arrow keys and an OK key on the remote control to select applications. Ex.1005, [0187]. And as discussed above, the '254 patent equates an "OK" button with being a "select" button. Ex.1001, 22:56-23:67.

Accordingly, Kim's teaching of a user interface that enables a user to focus on an application and press a dedicated "OK" button on the remote control to cause information about the application to be displayed, where the application can be from a list of "My App" applications (pre-installed or previously downloaded),

renders obvious this limitation. Ex. 1003, ¶¶233-239.

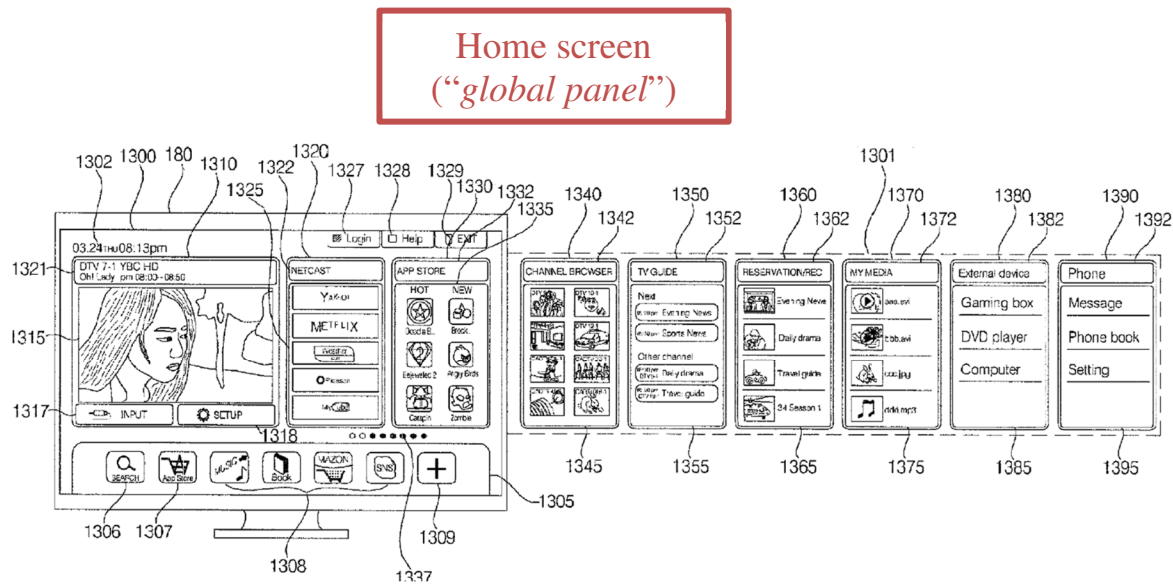
Thus, element [1.5.3] is rendered obvious two ways:

- WD-Manual’s “Options” button that, when pressed after either highlighting of an icon for or launching a selected service (pre-installed or previously downloaded), displays an information panel with information (e.g., identifying information and options); and
- Kim’s “OK” button that, when selected for an icon that has been focused on, displays an application panel with an information window that includes information about a selected application (pre-installed or previously downloaded).

Ex.1003, ¶¶213-240.

[1.5.4] a global panel button that, when selected, provides the user, via one or more panels or windows displayed by the television screen, with access to one or more of silos, notifications, a web browser system settings, and information associated therewith.

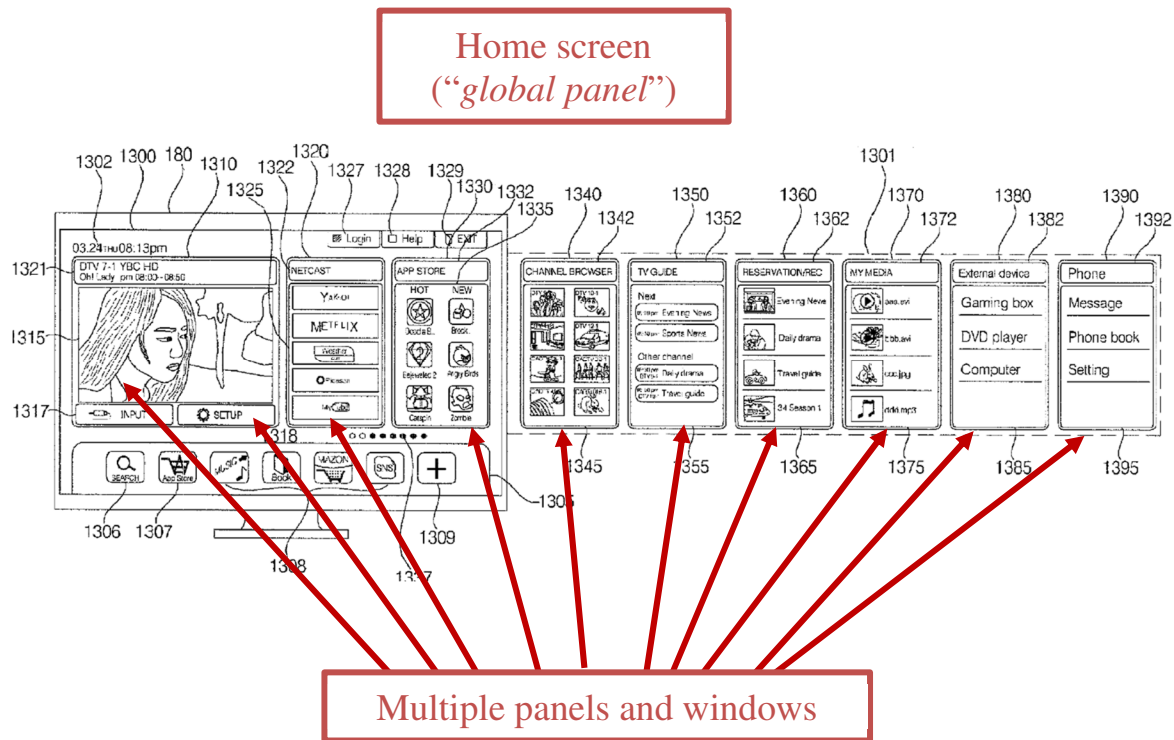
First, as previously discussed, Kim discloses a home key on the remote control to access the home screen. Ex.1005, [0192].



Ex.1005, Fig. 19 (annotated); Ex.1003, ¶241.

The '254 patent similarly refers to the "*global panel*" as a "home panel." '254 patent, 29:58-59. Additionally, like how Kim's "home screen" includes a "hidden" area, the '254 patent's "*global panel*" includes a hidden area that can be brought into view using a "scrollbar" so that the user can view the "information that will not fit on the screen." Ex.1001, 32:60-65.

Second, Kim discloses that the home screen (*global panel*) displays multiple panels and windows containing different information and content. Ex.1005, [0094] ("home screen may include a plurality of card objects classified according to content sources").



Ex.1005, Fig. 19 (annotated); Ex.1003, ¶243.

Third, WD-Manual teaches that pressing a “Home” button on its remote control causes the home screen to be displayed:

Remote Control



CAUTION: Do not expose the batteries or the remote control with batteries installed to excessive heat (direct sunlight, fire, etc.).

1. Infrared transmitter
2. POWER
3. Subtitle
4. PREV (track), STOP, NEXT (track)
5. Back (last screen)
6. Navigation buttons, OK
7. Previous Page
8. MUTE
9. Alpha-numeric keys
10. SEARCH
11. HOME
12. Audio
13. REV, PAUSE/PLAY, FF
14. Options
15. Next Page
16. Setup
17. Shortcut/function keys
18. EJECT (safe removal of attached storage)



Home button

Ex.1006, pg. 11 (annotated); Ex.1003, ¶244.

Using the Remote Control

The media center’s ergonomic remote control lets you navigate the Home screen, browse for media files, enable playback options, and customize the system settings. The infrared sensor detects signals from the remote.



.....

Important: Make sure there are no obstructions between the remote control and the infrared sensor on the media center.

Button	Function
HOME	Displays the main menu and the various options for playback of files and device setup.



Pressing Home button displays main menu

Ex.1006, pg. 25 (annotated); Ex.1003, ¶244.

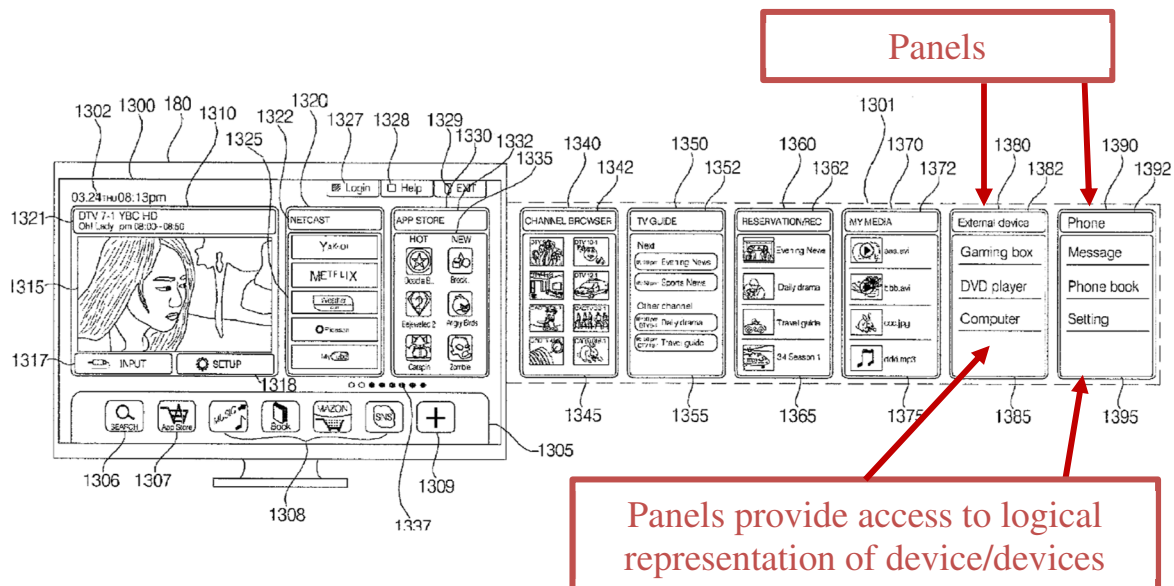
Accordingly, Kim’s home key on the remote control to access a home screen containing one or more panels and windows and WD-Manual’s Home button on a remote control to display the home screen containing one or more panels, each alone or in combination, teach “*a global panel button.*” Ex. 1003, ¶¶241-245.

Fourth, element [1.5.4] includes two lists of items that begin with “one or more.” Based on the explicit definition of “*one or more*” of items in a list, teaching any item in the list of element [1.5.4] meets the limitation represented by the list. Here, however, the analysis below shows that Kim and WD-Manual render obvious every item in each list.

- **“silos...and information associated therewith”**

As discussed above in Section VI.B (*Claim Construction*), a “*silo*” is a logical representation of an input, source, or application, each of which is addressed below.

“Input”: The ’254 patent describes a “*silo*” as a representation of an “input” (e.g., “input can be a device or devices...connected to the television”). ’254 patent, 5:57-63. Kim discloses using a remote control to display a home screen having panels that provide access to the representation of a device/devices (e.g., “gaming box,” “DVD player,” “computer,” and a “phone”) connected to the television and information associated with the device/devices (e.g., the type/name of device and call information). Ex.1005, [0210]-[0212].



Ex.1005, Fig. 19 (annotated); Ex.1003, ¶250.

WD-Manual also discloses a silo that represents an input. WD-Manual discloses using a remote control to display a home screen having a panel that provides access to a representation of a device (e.g., a NAS device) connected to the television and information associated with the device (e.g., multimedia files on the NAS):

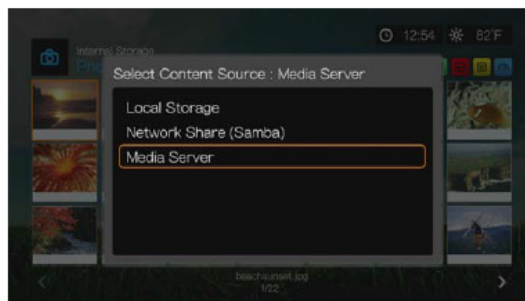
Accessing Media Content from the Network

Once the media center has an active network connection, you can access media content from a NAS device or shared computer located on the same network as your media center.

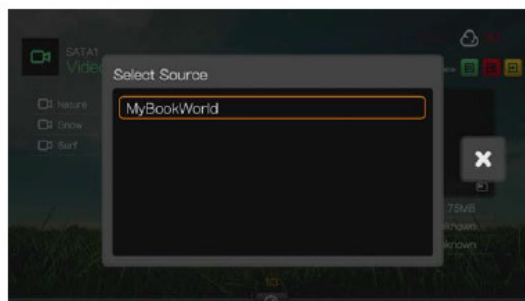
To access media content from a network share or media server:

1. Navigate to the Home screen, and select the menu for media content you wish to access. It can be Music, Videos, or Photos. Press **OK**.
2. Press  or / to select Source , then press **OK**.
3. Press / to select the network resource where the media content you wish to access is located, then press **OK**.

Media content on the
NAS device



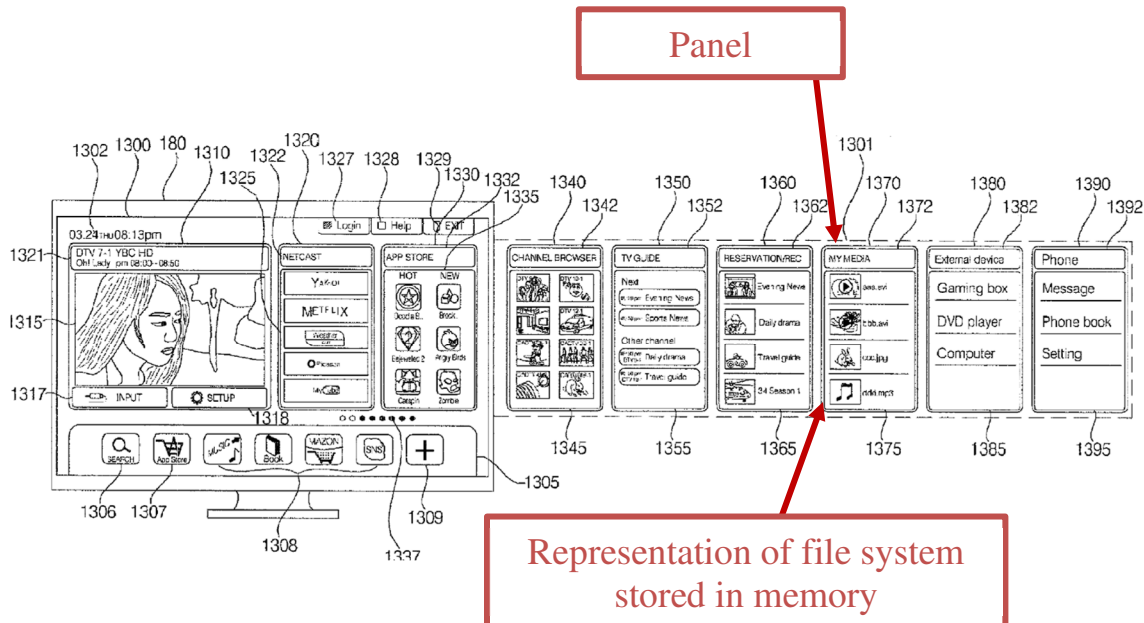
4. Select your source and press **OK** twice.



Ex.1006, pg. 70 (annotated); Ex.1003, ¶251.

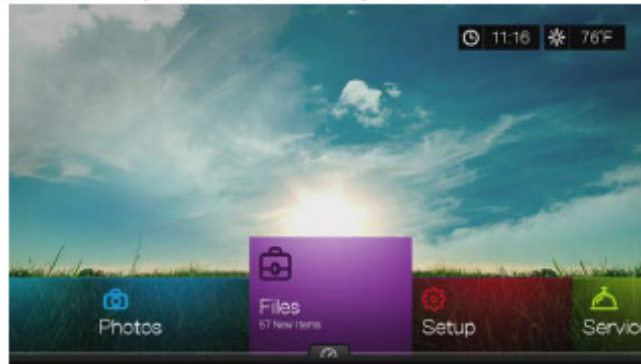
“Source”: The ’254 patent describes a “silo” as a representation of a

“source” (e.g., a data service that provides content, such as a file system). ’254 patent, 5:63-65. Kim discloses using a remote control to display a home screen having panels providing access to the representation of a file system and information associated with the file system (e.g., files in the file system). Ex.1005, [0085] (“image display apparatus 100 may reproduce content stored in the memory 140 (e.g. video files, still image files, music files, text files, or application files)”).

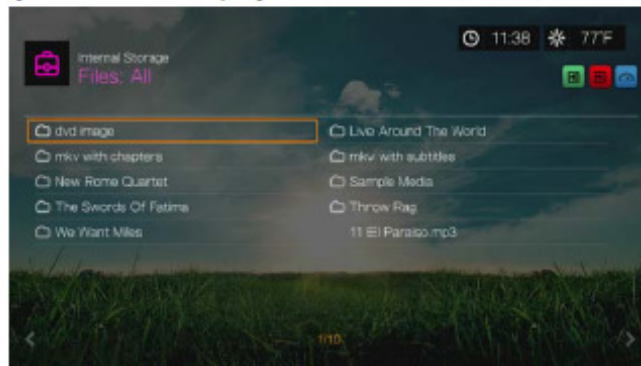


Files Display

1. Navigate to the Home | Files menu, then press **OK**.



2. The screen displays all available media files and folders in the media center's local drive by default. The display is in list view.

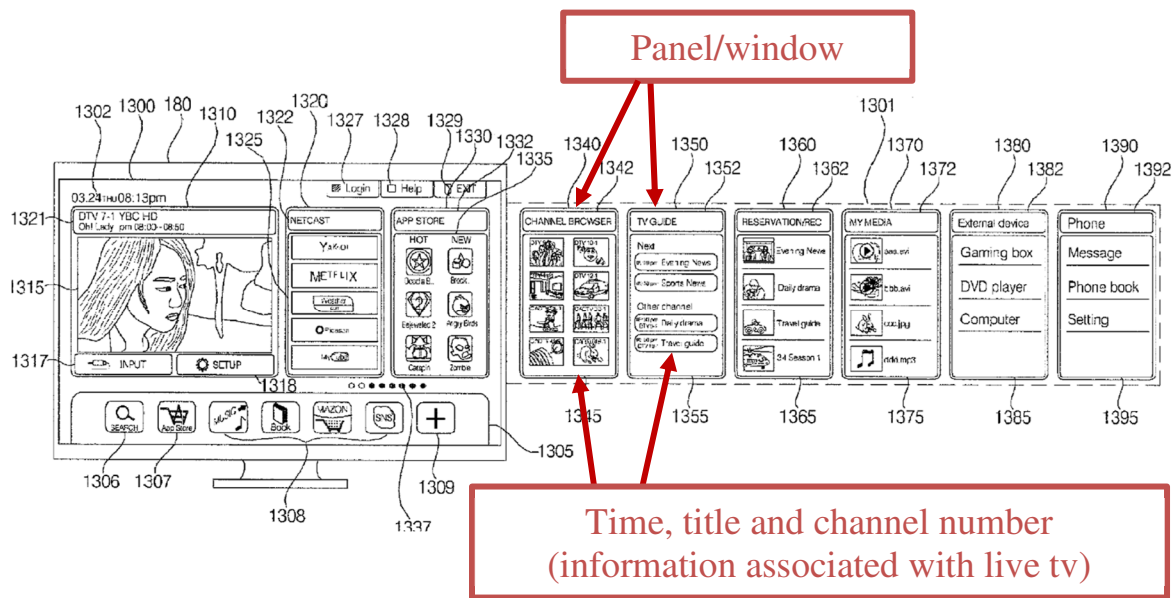


3. Locate a file you want to play.
 - To play a single file, select the file from the list or by navigating through the folder structure, then press **OK**.
 - Follow the instructions under “Watching Video” on page 36, “Playing Music” on page 48, or “Viewing Photos” on page 55.
 - To find files on a network share or media server, follow the instructions in “Accessing Media Content from the Network” on page 70.

Ex.1006, pg. 62; Ex.1003, ¶254.

“Application”: The ’254 patent describes a “*silo*” as a representation of an “application” (e.g., a software service, such as live tv or video on demand).

Ex.1001, 5:65-67. Kim discloses using a remote control to display a home screen having panels providing access to a representation of “live broadcasting, such as a conventional broadcasting service.” Ex.1005, [0063].

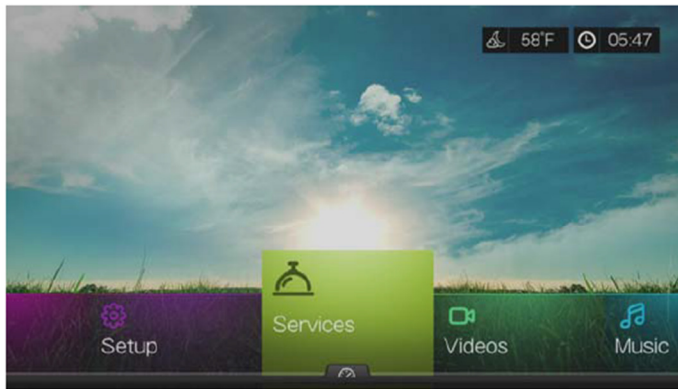


Ex.1005, Fig. 19 (annotated); Ex.1003, ¶256.

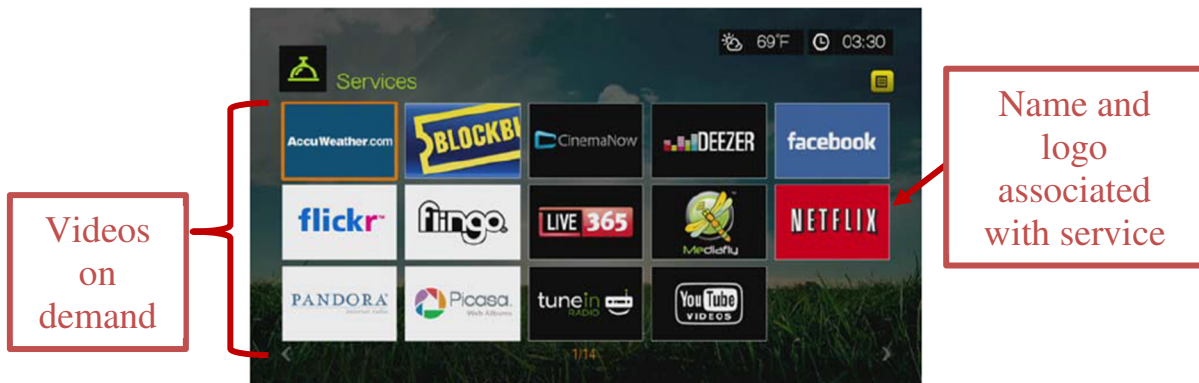
WD-Manual also discloses a silo representing an application. WD-Manual discloses using a remote control to display a home screen having panels providing access to a representation of video on demand service (e.g., Netflix) and information associated with this service (e.g., name and logo):

To access Internet Media:

1. Navigate to the Home | Services menu bar and press **OK**.



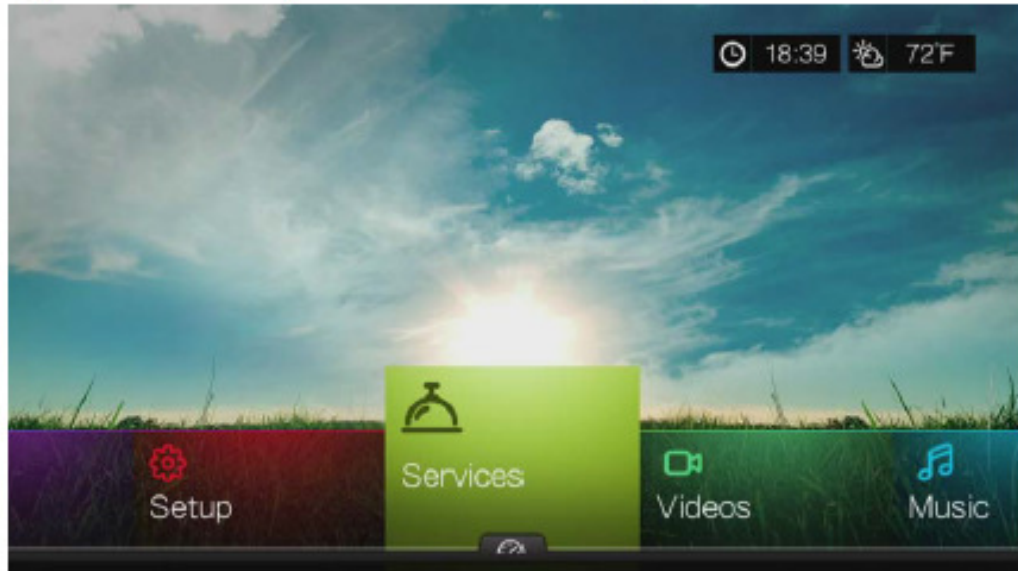
2. The list of Internet services display in alphabetical order. Press ◀/▶ to make a selection, then press **OK**.



Ex.1006, pg. 79 (annotated); Ex.1003, ¶257.

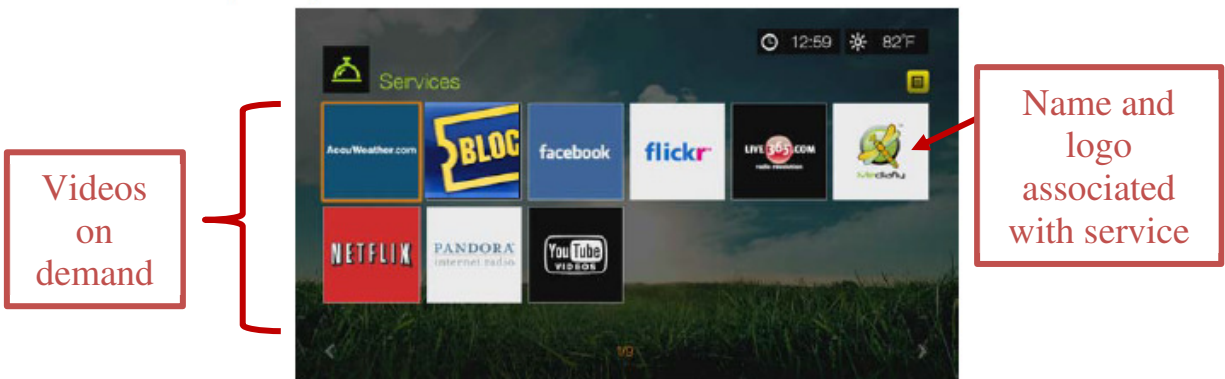
To access Internet Media:

1. Navigate to the Home | Services menu bar and press **OK**.



Ex.1006, pg. 76; Ex.1003, ¶257.

2. The list of Internet services display in alphabetical order. Press ◀/▶ to make a selection, then press **OK**.

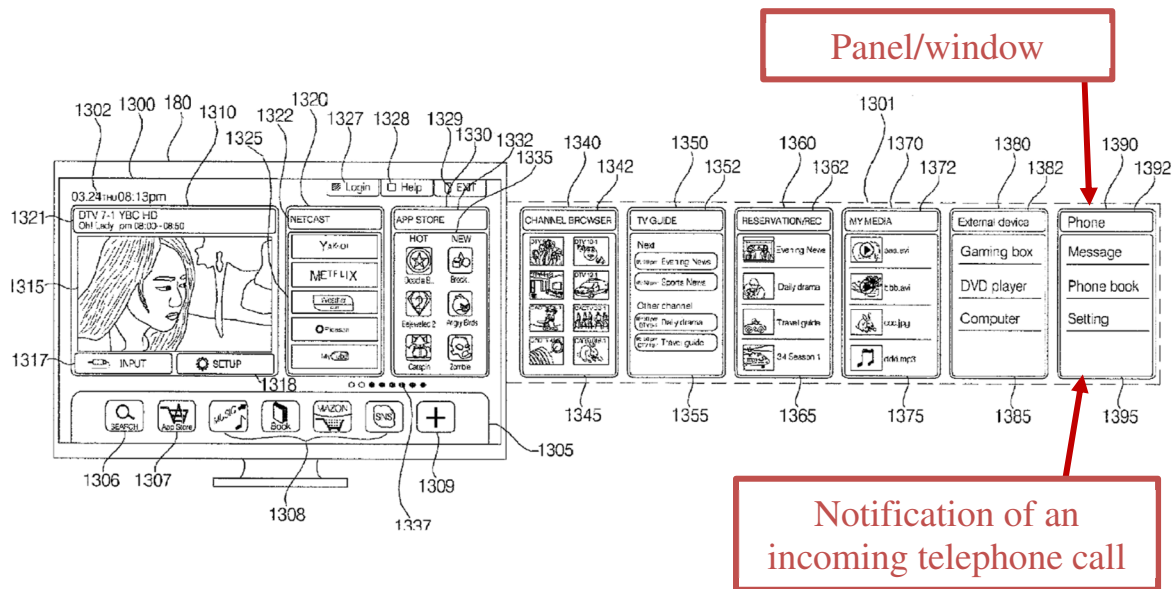


Ex.1006, pg. 77 (partial and annotated); Ex.1003, ¶257.

- *“notifications...and information associated therewith”*

Kim teaches that the home screen displays panels providing access to

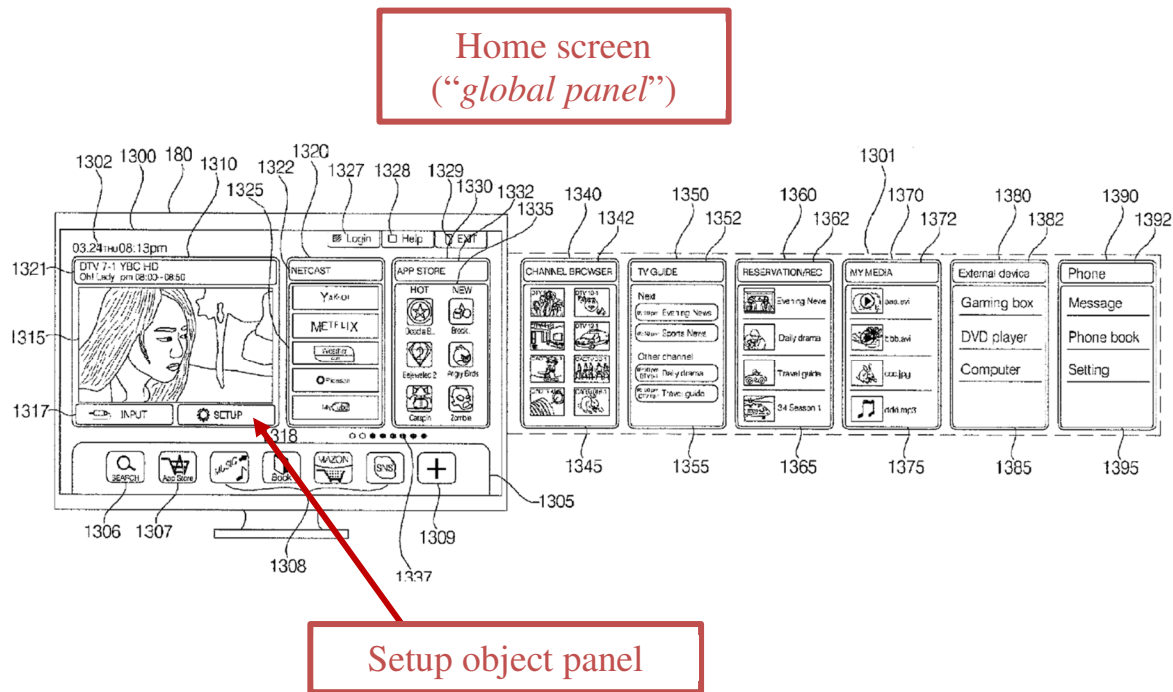
notifications and information associated with the notifications. For example, Kim teaches that “[u]pon receipt of an incoming call at the portable phone,” the card object “may display call-related information.” Ex.1005, [0211].



Ex.1005, Fig. 19 (annotated); Ex.1003, ¶258.

- **“web browser system settings...and information associated therewith”**

Kim teaches that the home screen displays a panel providing access to web browser system settings and information associated with the settings. Kim teaches that the home screen includes a panel for a setup object that is used to set any “appropriate setting” on the television. Ex.1005, [0200], Fig. 19.



Ex.1005, Fig. 19 (annotated); Ex.1003, ¶259.

Kim’s television “may be configured to provide various functions including e-mail, web browsing, [etc.],” and “to implement these functions, the image display apparatus may operate based on a standard general purpose Operating System (OS).” Ex.1005, [0282].

Accordingly, a POSITA would recognize that Kim’s home screen that displays a setup object, where one of the functions of the television includes web browsing, provides access to the web browser system settings and information associated with those settings. Ex.1003, ¶¶259-262.

Thus, Kim’s method of using a remote control with a home key that, when selected, displays the home screen having (i) panels that provide access to

representations of external devices, live tv, and content providers (each, a silo), (ii) a panel that provides access to incoming phone call-related information (notifications), and (iii) a panel that provides access to web browser system settings, further in view of WD-Manual's teaching of pressing a Home button on a remote control to display a home screen with panels that provide access to representations of a NAS device, file system, and videos on demand service, renders obvious this limitation. Ex.1003, ¶¶241-263.

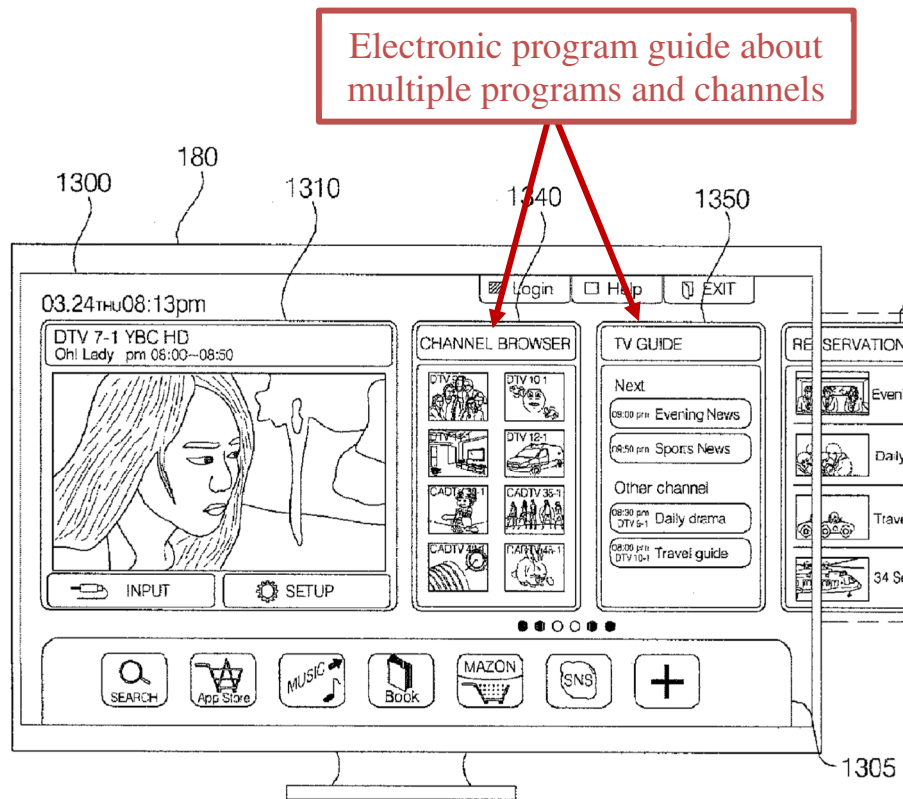
6. CLAIM 2

[2.0] The method of claim 1,

See claim 1.

[2.1] wherein the EPG information corresponds to multiple programs and/or channels, wherein the EPG information comprises, for each program, airtime, program name, program channel, and program description.

Kim discloses that its EPG information corresponds to multiple programs and channels:



Ex.1005, Fig. 22 (annotated); Ex.1003, ¶265.

Kim further describes that a “user may readily obtain information regarding the displayed broadcast image 1315 through the information object 1321” and that the “information object 1321...may include a channel number (DTV7-1), a channel name (YBC HD), the title of a broadcast program (“Oh! Lady”), and an airtime (8:00-8:50 PM) for the broadcast program,” as well as “related EPG information [that] may be displayed on the display 180” when the information object 1321 is selected. Ex.1005, [0199]. A POSITA would have found it obvious that such information could also be readily obtained for the channels and programs presented in card objects 1340 and 1350 to better inform the user when selecting a

channel or program for viewing. Ex.1003, ¶267.

Accordingly, the electronic program guide of Kim that includes information that corresponds to multiple programs and channels, where the information includes, for each program, the airtime, the title of the program, the channel number and name for the program, and related information, renders obvious this limitation. Ex.1003, ¶265-268.

7. CLAIM 3

[3.0] The method of claim 1,

See claim 1.

[3.1] wherein each of the digits are selected using one or more arrow keys and a select button and

As discussed in [1.3], the teachings of Kim and Bae render obvious selecting digits using one or more “arrow keys” or “left and right keys.”

Kim also discloses that its remote control has “an OK key.” Ex.1005, [087]. And as explained above with element [1.2], the '254 patent considers an “OK” button as a “select” button. Ex.1001, 22:56-23:67.

Thus, Kim’s teaching of arrow keys and an OK key on its remote control teaches the claimed “*arrow keys and a select button*,” respectively. A POSITA would have found it obvious that a user could use Kim’s arrow keys and OK key to navigate to and select the digits displayed on Bae’s input bar. Ex.1003, ¶275. In

this manner, Kim’s OK key would function as the claimed “*application panel button*” when being used with respect to a selected application icon and would function as the claimed “*select button*” when Bae’s input bar is displayed on the television.

Second, the combined teachings of Kim, Bae, and WD-Manual render obvious element [3.1] because WD-Manual discloses using navigation buttons (arrows keys) and an “OK” button to navigate the user interface of a display device:

Remote Control



CAUTION: Do not expose the batteries or the remote control with batteries installed to excessive heat (direct sunlight, fire, etc.).

1. Infrared transmitter
2. POWER
3. Subtitle
4. PREV (track), STOP, NEXT (track)
5. Back (last screen)
6. Navigation buttons, OK
7. Previous Page
8. MUTE
9. Alpha-numeric keys
10. SEARCH
11. HOME
12. Audio
13. REV, PAUSE/PLAY, FF
14. Options
15. Next Page
16. Setup
17. Shortcut/function keys
18. EJECT (safe removal of attached storage)



Arrow keys

Select
button

Ex.1006, pg. 11 (annotated); Ex.1003, ¶277.

Accordingly, Kim's teaching of controlling a television with the arrow keys and OK button of a remote control, in view of Bae's technique of selecting digits 0-9 from a displayed number input bar using left and right keys, further in view of WD-Manual's teaching of using a remote control's arrows keys and OK button renders obvious this limitation. Ex.1003, ¶¶270-279.

[3.2] wherein the information panel comprises one or more of identify the selected application, provide a description of the functionality of the selected

application, user ratings and/or degree of other user downloading of the selected application, an option to launch, remove, update, and add to favorites the selected application, and provide a listing of selectable links of other (not yet downloaded) recommended applications that provide similar functionality to the selected application.

Element [3.2] recites “*one or more*,” and, based on the explicit definition, this limitation is met by teaching at least one item in this list. The prior art teaches at least “identify the selected application” and “provide a description of the functionality of the selected application.”

As discussed with element [1.5.3], Kim discloses that the information panel displays an image that identifies the application and “information about the application corresponding to the selected icon.” Ex.1005, [0247]. Further, WD-Manual discloses that the information panel displays information about the service when the “Options” button is pressed. Ex.1006, pg. 77, 57.

Therefore, the combination of Kim and WD-Manual renders obvious this limitation. Ex.1003, ¶280-289.

8. CLAIM 4

[4.0] The method of claim 1,

See [1.0].

[4.1] wherein the remote control does not have a key corresponding to each of the digits.

First, Kim renders obvious element [4.1] because it teaches a remote control

that includes input mechanisms other than keys corresponding to the digits 0-9.

Kim discloses a remote control with a user input circuit (“user input device 235”) that may include various input mechanisms such as “a keypad.” Ex.1005, [0175]. A POSITA would understand that such a “keypad” has keys corresponding to digits 0-9. Ex.1003, ¶¶293-294. However, Kim teaches that its input mechanisms, including the keypad, are optional. For example, the input device may include “a keypad, a plurality of buttons, a touchpad and/or a touch screen...[and] may also include **various input tools other than those set forth herein**, such as a scroll key, a jog wheel, or **another appropriate user input device**.” Ex.1005, [0175]; *see also id.* at [0187], [0188], [0190].

Accordingly, a POSITA would recognize that Kim teaches examples in which the remote control does not have a keypad (i.e., does not include keys corresponding to digits 0-9), such as the example in which the user input device is a jog wheel. Ex.1003, ¶¶293-295. In such examples, the remote control of Kim would not have keys corresponding to digits 0-9. Ex.1003, ¶295.

Further, a POSITA would have found it obvious that the “character keys” of Kim’s remote controls would encompass non-numeric characters such as the letters A-Z. Ex.1003, ¶296. Thus, Kim in view of WD-Manual renders obvious element [4.1] because a POSITA would have found it obvious that Kim’s remote control including a “plurality of buttons” and/or “character keys” could include

shortcut/function keys in the form of letter keys, such as the A, B, C, and D buttons taught in WD-Manual. *See* Ex.1006, pgs. 26, 138; Ex.1003, ¶298. Moreover, POSITAs were implementing remote controls without numeric keys. *See, e.g.,* Ex.1016, Fig. 3, [0051] (“remote control devices may typically avoid having dedicated alphanumeric inputs,” but such devices could still have “more than 8 or 10 inputs.”); Ex.1003, ¶¶299-300.

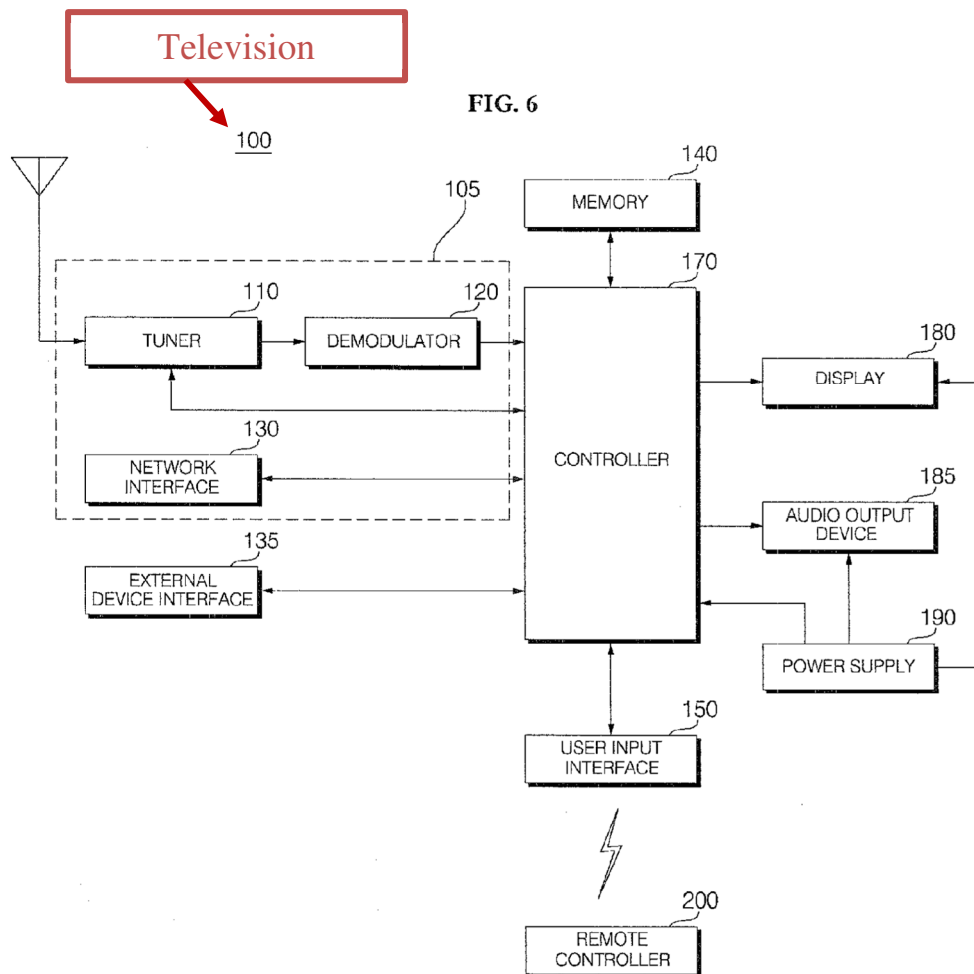
Accordingly, a POSITA would recognize that a remote control could avoid having numeric buttons corresponding to digits 0-9 (as taught by Kim) while still including additional inputs (e.g., assignable buttons, as taught by WD-Manual). Ex.1003, ¶¶296-300.

Thus, Kim’s remote control examples that do not have a key corresponding to digits 0-9 renders obvious this limitation. Separately, Kim’s remote control with a “plurality of buttons” and/or “character keys” in light of WD-Manual’s teaching of using only a few keys out of the possible range of alphanumeric keys together render obvious this limitation. Ex.1003, ¶¶291-302.

9. CLAIM 8

[8.0] A television, comprising,

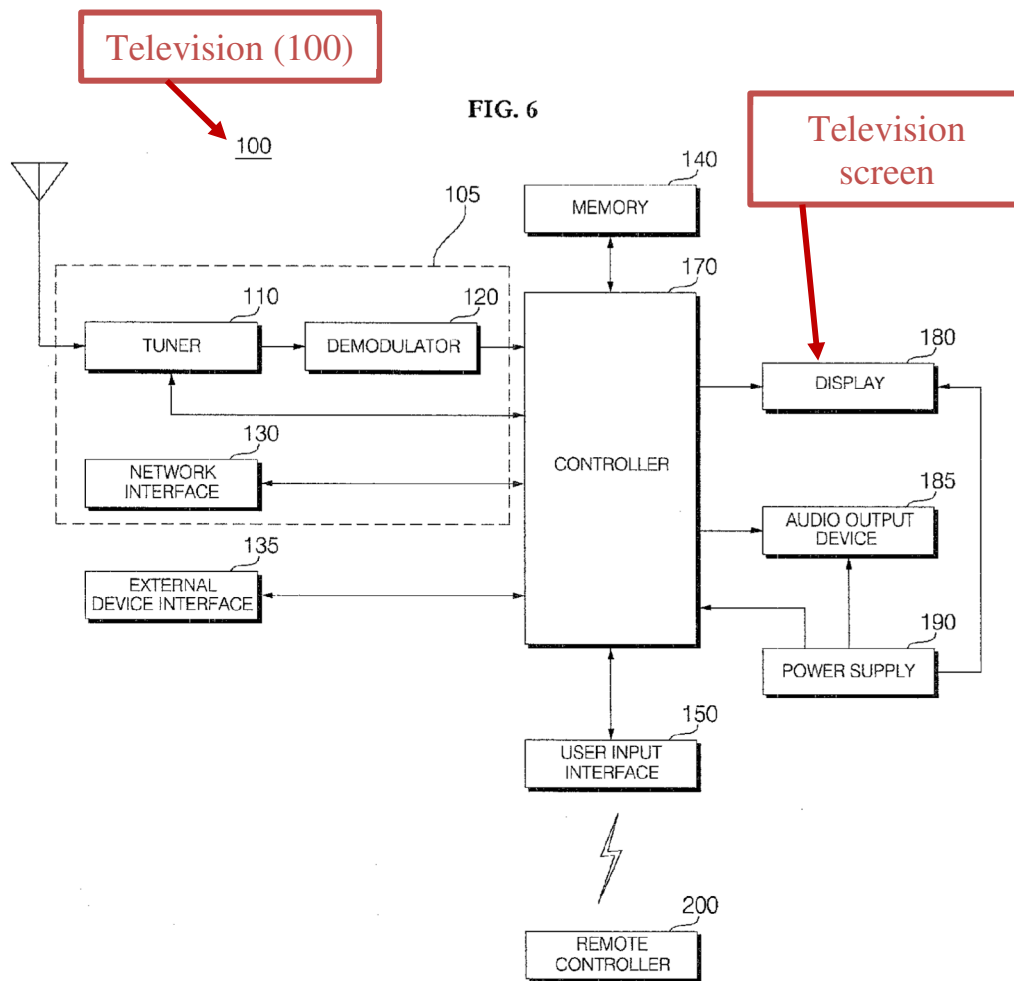
To the extent that the preamble is limiting, the combination of Kim, WD-Manual, and Bae renders obvious “[a] television.” *See* [1.0]; Ex.1003, ¶303-305



Ex.1005, Fig. 6 (annotated); Ex.1003, ¶304.

[8.1] a television screen;

Kim discloses a television having a “display 180” for displaying “still image or moving picture.” Ex.1005, [0092], Fig. 6.



Ex.1005, Fig. 6 (annotated); Ex.1003, ¶306.

Accordingly, Kim's display 180 renders obvious a "television screen."

Ex.1003, ¶¶306-307.

[8.2] at least one of an infrared and radio frequency module configured to receive wirelessly requests from a remote control of a user, the requests comprising a selected channel or program from a displayed listing; and

See [1.1].

[8.3] a microprocessor executable application framework configured to:

See [1.2].

[8.4] receive a request to change a programming channel, display, on the television screen, an on screen channel changer, the on screen channel changer comprising electronic program guide (“EPG”) information and a number input bar comprising digits, wherein the digits range from 0 to 9,

See [1.2].

[8.5] receive, from the remote control and using the on screen channel changer, a channel selection of a user based on digits in the number input bar, wherein the user selects the digits from the number input bar using non-numeric keys on the remote control, and

See [1.3]

[8.6] change to the selected channel,

See [1.4]

[8.7] wherein the remote control comprises:

See [1.5]

[8.7.1] a media center button that, when selected, provides, by the television screen, displayed information regarding one or more of groupings of music, groupings of videos, groupings of photographs, internal computational devices, and external computational devices, the computational devices comprising one or more of personal computers, laptops, tablet computers, wireless phones, and removable computer readable media;

See [1.5.1]

[8.7.2] an application center button that, when selected, provides, by the television screen, displayed information regarding pre-installed and downloaded software applications, wherein the downloaded software applications comprise one or more of a web browser, settings control, and content search algorithms;

See [1.5.2]

[8.7.3] an application panel button that, when selected, displays, by the television screen, an application panel, wherein the application panel comprises an information panel regarding a selected application icon; and

See [1.5.3]

[8.7.4] a global panel button that, when selected, provides the user, via one or more panels or windows displayed by the television screen, with access to one or more of silos, notifications, a web browser, system settings, and information associated therewith.

See [1.8].

10. CLAIM 9

[9.0] The television of claim 8,

See claim 8.

[9.1] wherein each of the digits are selected using one or more arrow keys and a select button,

See [3.1].

[9.2] selected is associated with a pre-installed or previously downloaded application icon, and

See [1.5.2] and [1.5.3]

[9.3] wherein the information panel comprises one or more of identify the selected application, provide a description of the functionality of the selected application, user ratings and/or degree of other user downloading of the selected application, an option to launch, remove, update, and add to favorites the selected application, and provide a listing of selectable links of other (not yet downloaded) recommended applications that provide similar functionality to the selected application.

See [3.2].

11. CLAIM 10

[10.0] The method of claim 8,

See [8.0].

[10.1] wherein the remote control does not have a key corresponding to each of the digits.

See [4.1].

12. CLAIM 13

[13.0] The television of claim 8,

See claim 8.

[13.1] wherein the EPG information corresponds to multiple programs and/or channels, wherein the EPG information comprises, for each program, airtime, program name, program channel, and program description,

See [2.0].

[13.2] wherein the remote control comprises a media center button that, when selected, provides, by the television screen, displayed information regarding groupings of music, videos, and/or photographs, and/or internal and external computational devices, the computational devices comprising one or more of personal computers, laptops, tablet computers, wireless phones, and removable computer readable media.

See [1.5.1].

13. CLAIM 14

[14.0] A tangible and non-transient computer readable medium, comprising microprocessor executable instructions that, when executed, are configured to perform operations comprising:

To the extent that the preamble is limiting, see [1.2].

[14.1] instructions to receive, from a remote control of a user, a request to change a programming channel;

See [1.1] and [1.2].

[14.2] instructions to display, on a television screen, an on screen channel changer, the displayed on screen channel changer comprising electronic program guide (“EPG”) information and a number input bar comprising digits, wherein the digits range from 0 to 9;

See [1.2].

[14.3] instructions to receive, from the remote control, a channel selection based on digits selected by a user using the remote control and the number input bar of the on screen channel changer, wherein the user selects the digits using non-numeric keys of the remote control; and

See [1.3] and [1.2].

[14.4] instructions to change to the selected channel,

See [1.4] and [1.2].

[14.5] wherein the remote control comprises:

See [1.5].

[14.5.1] a media center button that, when selected, provides, by the television screen, displayed information regarding one or more of groupings of music, groupings of videos, groupings of photographs, internal computational devices, and external computational devices, the computational devices comprising one or more of personal computers, laptops, tablet computers, wireless phones, and removable computer readable media;

See [1.5.1].

[14.5.2] an application center button that, when selected, provides, by the television screen, displayed information regarding pre-installed and downloaded software applications;

See [1.5.2].

[14.5.3] an application panel button that, when selected, displays, by the television screen, an application panel; and

See [1.5.3].

[14.5.4] a global panel button that, when selected, provides the user, via one or more panels or windows displayed by the television screen, with access to one or more of silos, notifications, a web browser, system settings, and information associated therewith.

See [1.5.4].

14. CLAIM 15

[15.0] The computer readable medium of claim 14,

See claim 14.

[15.1] wherein the EPG information corresponds to multiple programs and/or channels, and wherein the EPG information comprises, for each program, airtime, program name, program channel, and program description.

See [2.0].

15. CLAIM 16

[16.0] The computer readable medium of claim 14,

See claim 14.

[16.1] wherein the downloaded software applications comprise one or more of a web browser, settings control, and content search algorithms,

See [1.5.2].

[16.2] wherein the application panel comprises an information panel regarding a selected (pre-installed or previously downloaded) application icon

See [1.5.3].

[16.3] and wherein the information panel comprises one or more of identify the selected application, provide a description of the functionality of the selected application, user ratings and/or degree of other user downloading of the selected application, an option to launch, remove, update, and add to favorites the selected application, and provide a listing of selectable links of other (not yet downloaded) recommended applications that provide similar functionality to the selected application.

See [3.2].

16. CLAIM 17

[17.0] The method of claim 14,

See [14.0].

[17.1] wherein the remote control does not have a key corresponding to each of the digits.

See [4.1].

C. GROUND 2: CLAIMS 6, 12 AND 19 ARE OBVIOUS UNDER 35 U.S.C. § 103(A) OVER KIM, BAE AND WD-MANUAL, FURTHER IN VIEW OF COBURN.

1. SUMMARY OF COBURN

Coburn relates to “user interfaces in television receiver devices.” Ex.1009, [0001]. Specifically, Coburn describes that the user may “input signals” from a “remote control ” to “select channels or programs.” Ex.1009, [0008], [0038]. Coburn explains that “[a]s the viewer enters the first few digits of the channel number,” the television display updates to “present channels” that “correspond to the initially-entered data.” Ex.1009, [0046]. Coburn also describes a user

controlling and moving a “cursor” using “input devices” (such as “joysticks”) to select “numeric, alpha-numeric or other symbol[s]” displayed on a television.

Ex.1009, [0016], [0017], [0025].

1. REASONS TO COMBINE KIM, WD-MANUAL, AND BAE WITH COBURN

It would have been obvious, beneficial, and predictable to implement Coburn’s techniques—for predictively updating displayed imagery based on the digits entered by a user—within the television and remote control system of the Kim-WD-Manual-Bae combination. Ex.1003, ¶350.

A POSITA looking to Kim, WD-Manual, and Bae when considering the same problem identified in the ’254 patent, would have also looked to Coburn, which is from the same field of endeavor as the ’254 patent, or at the very least, reasonably pertinent to the problem faced by the ’254 patent’s inventor. Ex.1003, ¶352. The ’254 patent purports to provide “intuitive user interfaces...with seamless user interaction capability” for televisions. Ex.1001, 1:65-66. Coburn seeks to provide a “more efficient and intuitive user interface[]” with “convenient access to numeric features (e.g., channel numbers).” Ex.1009, [0004], [0016]. Accordingly, a POSITA would understand that Coburn is analogous to the ’254 patent. Ex.1003, ¶352.

A POSITA would have been motivated to apply Coburn to the Kim-WD-

Manual-Bae combination. Ex.1003, ¶353. As previously discussed, the Kim-WD-Bae combination includes an on screen channel changer—as taught by Kim and Bae—having a number input bar for selecting and changing channels. *See* claim 1; *see also* Ex.1005, [0196], [0060], [0080], Fig. 22, Fig. 38; Ex.1007-8, [0022]-[0027], Fig. 3. For example, Bae discloses an interactive display that updates as the user selects each digit. Ex.1007-8, Abstract, [0007], [0023]. And Kim discloses updating electronic program guide information/content that is displayed based on a “search keyword” input by the user. Ex.1005, [0267]-[0269].

Similarly, Coburn describes known techniques for updating the television display “[a]s the viewer enters the first few digits of the channel number.” Ex.1009, [0046]. Coburn explains that “imagery 110 may be updated as appropriate to present channels (or other objects) that correspond to the initially-entered data.” Ex.1009, [0046].

Using Coburn’s technique for updating the display as a user enters the digits of a channel number would improve the Kim-Bae on screen channel changer (e.g., which includes virtual numeric characters displayed on the screen) because Coburn enables the user input to “be processed in a predictive manner.” Ex.1009 [0046]. Ex.1003, ¶356. Combining Coburn’s teachings with those of Kim and Bae would yield the predictable result of providing an easy and intuitive interface that allows a user to drill down to the media content (e.g., electronic program guide content) that

is available and selectable as the user enters each digit of the channel number.

Ex.1003, ¶356.

Additionally, a POSITA would have had a reasonable expectation of success in combining Coburn’s technique for updating imagery as a user enters the digits of a channel number with the Kim-Bae on screen channel changer because it would have been simply combining a known technique for filtering displayed content based on user input, where each of Kim and Bae already describes updating the displayed content in response to user input. Ex.1003, ¶357.

Additionally, the Kim-Bae on screen channel changer allows a user to use a remote control that does not have a numeric keypad to enter the digits of a channel number. Ex.1003, ¶358. Kim describes various ways of generating such input including by “manipulation of...pointer 206.” Ex.1005, [0223], [0187].

Implementing Coburn’s remote control technique of using a joystick to control a cursor within the television of the Kim-WD-Manual-Bae combination would (i) have yielded the predictable result of allowing Kim’s pointer to be controlled via joystick; (ii) have the added benefit of improving the usability of a remote control without a numeric keypad; and (iii) had a reasonable expectation of success because it would have been simply combining a known technique (e.g., moving a joystick to displace a cursor) with a known system that already accounts for different input device types for moving a cursor. Ex.1003, ¶¶350-360.

2. CLAIM 6

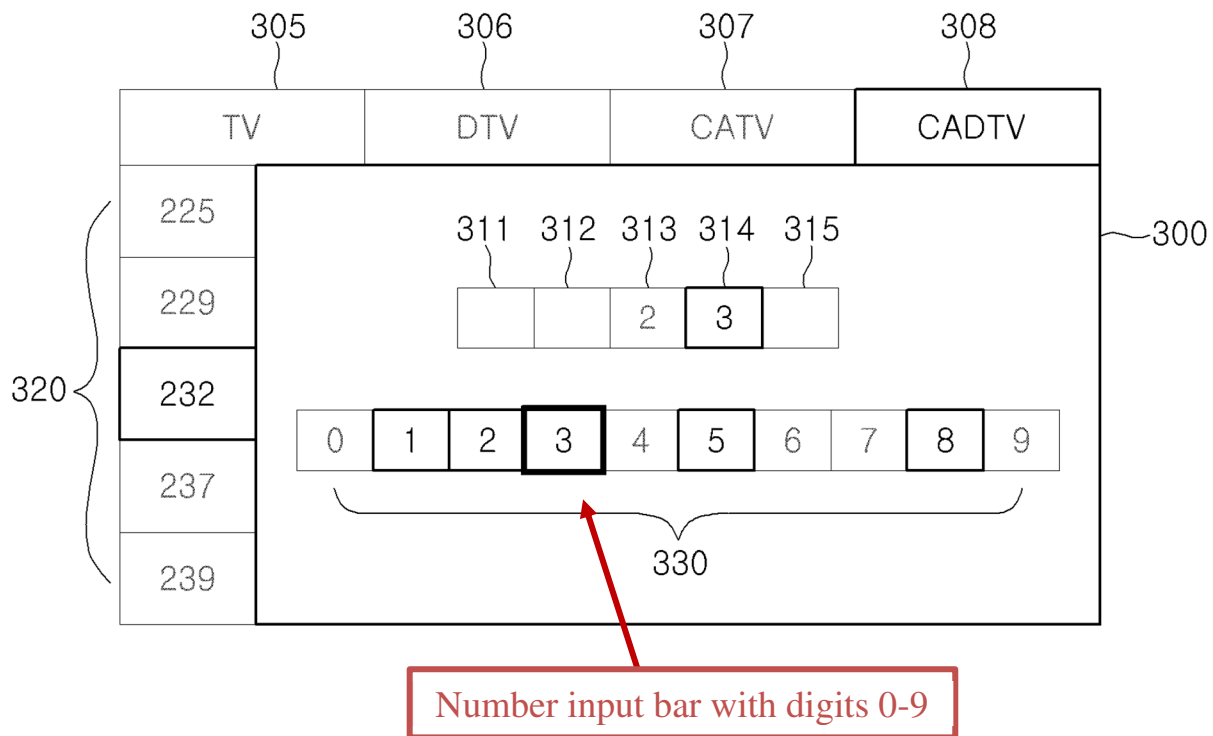
[6.0] The method of claim 1,

See claim 1.

[6.1] wherein, as the user selects each digit, the application framework updates the EPG information to include only those programs and/or channels selectable from the selected digits and

As discussed in [1.2], Kim discloses an application framework that supports programs. Kim also discloses that a “controller 170 may perform a search” based on a “keyword entered in the search window,” with the controller 170 “display[ing] the search results on the display.” Ex.1005, [0267], [0269]. Thus, Kim discloses an application framework that updates electronic program guide information based on user interaction.

As discussed in [1.2], Bae discloses displaying digits on a screen:

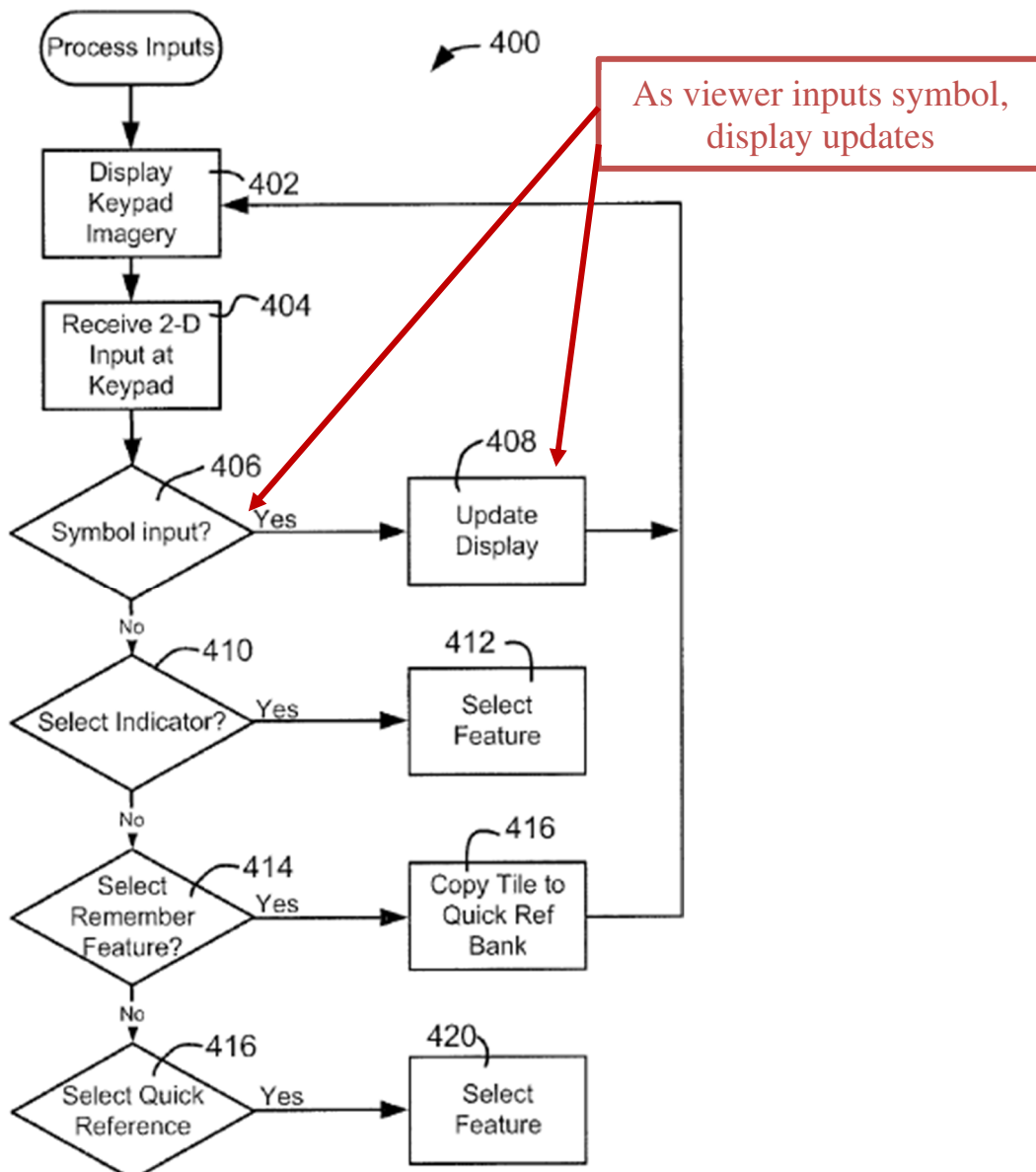


Ex.1007-8, Fig. 3 (annotated); Ex.1003, ¶364.

Bae also discloses an interactive display that updates as the user selects each digit. For example, Bae discloses “control[ling] the display unit to display selectable channel information...when inputting sequentially from the channel number of the most significant digit through the user interface unit.” Ex.1007-8, Abstract, [0007]. Thus, Bae discloses updating the selectable channel information as the user selects each sequential digit.

Coburn discloses predictively narrowing the channel identifiers displayed based on the user selecting channel numbers sequentially. Ex.1009. [0046]. “As the viewer enters the first few digits of the channel number, imagery 110 may be updated as appropriate to present channels (or other objects) that correspond to the

initially-entered data.” Ex.1009. [0046]. For example, if the user enters “1,” the content of the window is updated to show identifiers beginning with 1 (e.g., ‘1’, ‘10’, ‘100’ or the like). Ex.1009. [0046]. If the user subsequently enters a “9,” then based on both “1” and “9,” “window 126 may be updated to show...channels in the 190-199 range.” Ex.1009. [0046].



Ex.1009, Fig. 4 (annotated); Ex.1003, ¶369.

Accordingly, Kim's display device that has an application framework to display an electronic program guide to facilitate changing channels in which the electronic program guide is updated based on the user's search parameters, in

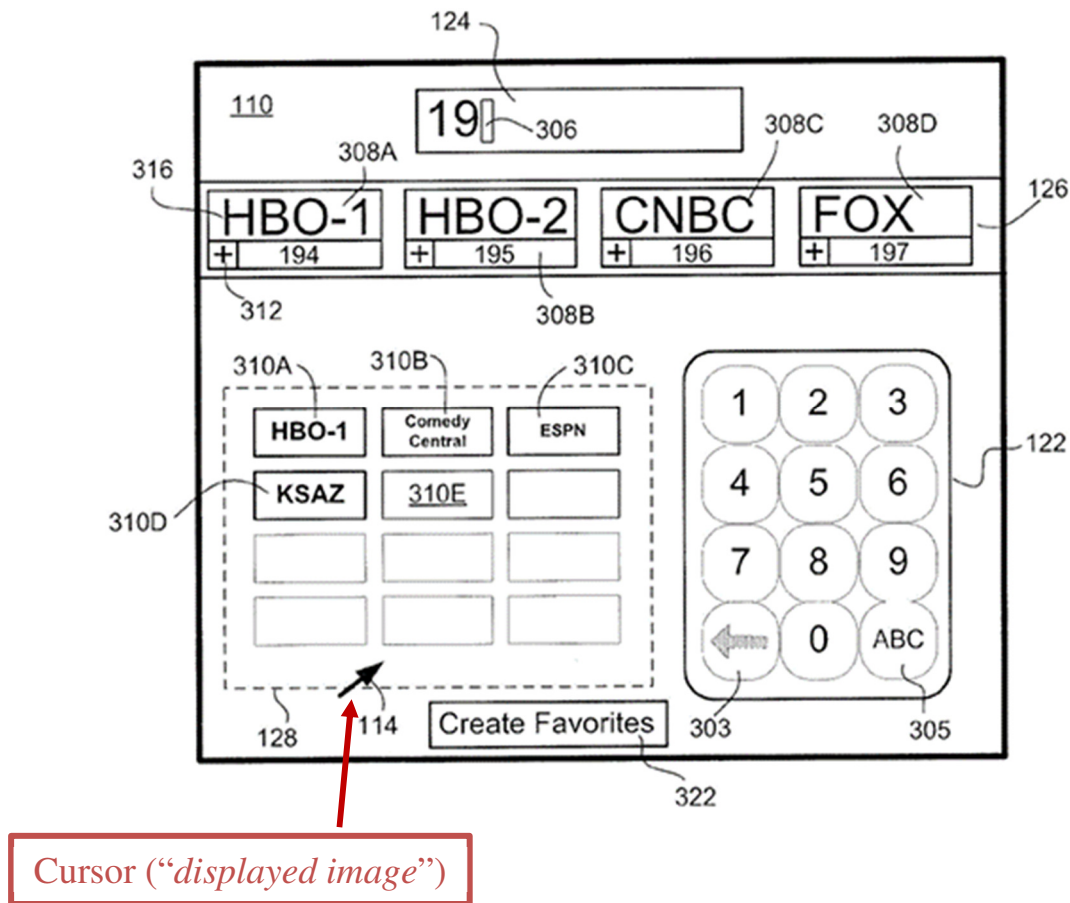
combination with Bae's technique of displaying a number input bar and updating the display as the user inputs each digit, further in view of Coburn's technique of displaying media content that matches the digits selected by the user, renders obvious this claim limitation. Ex.1003, ¶¶362-370.

[6.2] wherein the remote control further comprises a moveable joystick that, when manipulated by the user, causes a displayed image on the screen to be displaced a proportional amount.

As discussed above in element [1.1], Kim discloses a remote control having any "appropriate user input device." Ex.1005, [0175].

Coburn discloses that it was known to use a two-dimensional input device (e.g., joystick) to move a cursor on the television. Ex.1009, [0016], [0025].

Coburn also teaches that the cursor's movement is proportional to the movement of the two-dimensional input device. Coburn explains that a cursor is moved "in response to two-dimensional input signals 125, which are, in turn, generated in response to inputs applied to two-dimensional input device 124." Ex.1009, [0020], [0055], [0025] ("relative (e.g., ' ΔX , ΔY ') movement").



Ex.1009, Fig. 3 (annotated); Ex.1003, ¶372.

Coburn explains that the signals provided by two-dimensional input device 124 (e.g., a joystick) are “decoded” to “coordinate the viewer's actions with respect to input device 124 to movement of cursor 114.” Ex.1009, [0025].

Coburn’s teaching to “coordinate” the joystick’s movement with the movement of the cursor (*displayed image*) renders obvious that a user manipulating the joystick causes the cursor on the television to be moved by a proportional amount. Ex.1003, ¶376.

Further, POSITAs knew how to correlate joystick movement (e.g., xy coordinates, angle of inclination) with movement and positioning of a cursor on a television. *See* Ex.1017, [0028], [0033], [0047], [0048], Fig. 5; Ex.1003, ¶377.

Moreover, the plain and ordinary meaning of “proportional” is “having due proportion; corresponding” and “of, pertaining to, or based on proportion; relative.” Ex.1018, pg. 1083. Similarly, Coburn teaches that, when the joystick is moved, the cursor moves with “relative (e.g., ‘ $\Delta X, \Delta Y$ ’) movement.” Ex.1009, [0025]. Ex.1003, ¶378.

Lastly, the '254 patent describes a “moveable joystick” that “when manipulated, causes a displayed image on the Intelligent TV 100 screen to be displaced a proportional amount. In other words, the displayed image is displaced substantially simultaneously with displacement of the joystick 900.” Ex.1001, 25:63-26:2.

The specification neither contains any other references to “proportion” or “proportional,” nor describes distances, ratios or measurements in connection with the movement of the displayed image or joystick. At most, the specification describes a cause-and-effect correlation where displacing the joystick some distance causes displacement of the displayed image some distance. Ex.1001, 25:63-26:24.

Thus, Kim’s remote control that can include various input tools, in view of

Coburn's teaching of moving a cursor on the screen relative to movement of a two-dimensional input device (i.e., joystick), renders obvious this claim limitation.

Ex.1003, ¶¶371-383.

3. CLAIM 12

[12.0] *The television of claim 8,*

See claim 8.

[12.1] *wherein, as the user selects each digit, the application framework updates the EPG information to include only those programs and/or channels selectable from the selected digits and*

See [6.1].

[12.2] *wherein the remote control further comprises a moveable joystick that, when manipulated by the user, causes a displayed image on the screen to be displaced a proportional amount.*

See [6.2].

4. CLAIM 19

[19.0] *The computer readable medium of claim 14,*

See claim 14.

[19.1] *wherein, as the user selects each digit, the application framework updates the EPG information to include only those programs and/or channels selectable from the selected digits and*

See [6.1].

[19.2] *wherein the remote control further comprises a moveable joystick that, when manipulated by the user, causes a displayed image on the screen to be displaced a proportional amount.*

See [6.2].

IX. DISCRETIONARY DENIAL WOULD BE INAPPROPRIATE

A. DISCRETIONARY DENIAL UNDER *FINTIV* FACTORS IS NOT APPROPRIATE

The Fintiv factors favor institution. (1) No motion to stay has been filed. (2) The trial date is irrelevant in light of Petitioner's stipulation below. (3) The co-pending litigations are in relatively early stages. (4) Petitioner hereby stipulates that if instituted, Petitioner will not pursue in District Court the specific grounds asserted here, or on any other ground that was raised or could have been reasonably raised in this IPR. For this reason alone, the Board should not discretionarily deny institution in view of the parallel proceedings. See June 21, 2022 Director Memo, p. 3. (5) Petitioner's involvement in the parallel proceeding should not be a basis for denying institution. (6) The merits of this case are compelling for the reasons described above. Accordingly, discretionary denial is inappropriate here.

B. DISCRETIONARY DENIAL UNDER 35 U.S.C. § 325(D) IS NOT APPROPRIATE

Denial under § 325(d) is not warranted because the challenges presented in this petition are neither cumulative nor redundant to the prosecution of the '254 Patent.

X. CONCLUSION

Accordingly, Petitioner has established a reasonable likelihood that the Challenged Claims are unpatentable.

Respectfully submitted,

Dated: December 22, 2023
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, Texas 75201
Customer No. 27683

/David L. McCombs/
David L. McCombs
Lead Counsel for Petitioner
Registration No. 32,271

XI. MANDATORY NOTICES

A. REAL PARTY-IN-INTEREST

Pursuant to 37 C.F.R. § 42.8(b)(1), Petitioner certifies that the real party-in-interest is LG Electronics, Inc., LG Electronics U.S.A., Inc.

B. RELATED MATTERS

Pursuant to 37 C.F.R. § 42.8(b)(2), to the best knowledge of the Petitioner, the '254 patent is involved in the following cases:

Case Heading	Number	Court	Date
<i>Multimedia Technologies Pte. Ltd. v. LG Electronics Inc. et al.</i>	2:22-cv-00494	EDTX	December 23, 2022
<i>Multimedia Technologies Pte. Ltd. v. Vizio, Inc.</i>	2-23-cv-00124	EDTX	March 24, 2023

C. LEAD AND BACK-UP COUNSEL AND SERVICE INFORMATION

Lead Counsel

David L. McCombs
HAYNES AND BOONE, LLP
2801 N. Harwood St., Suite 2300
Dallas, TX 75201

Phone: (214) 651-5533
Fax: (214) 200-0853
david.mccombs.ipr@haynesboone.com
USPTO Reg. No. 32,271

Back-up Counsel

Gregory P. Huh
HAYNES AND BOONE, LLP
2801 N. Harwood St., Suite 2300
Dallas, TX 75201

Phone: (972) 739-6939
Fax: (214) 200-0853
gregory.huh.ipr@haynesboone.com
USPTO Reg. No. 70,480

Andrew S. Ehmke
HAYNES AND BOONE, LLP
2801 N. Harwood St., Suite 2300
Dallas, TX 75201

Phone: (214) 651-5116
Fax: (214) 200-0853
Andy.ehmke.ipr@haynesboone.com
USPTO Reg. No. 50,271

Please address all correspondence to lead and back-up counsel. Petitioner consents to service in this proceeding by email at the addresses above.

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioner hereby certifies, in accordance with and in reliance on the word count provided by the word-processing system used to prepare this Petition, that the number of words in this paper is 13,998.

Pursuant to 37 C.F.R. § 42.24(d), this word count excludes the table of contents, table of authorities, mandatory notices under § 42.8, certificate of service, certificate of word count, appendix of exhibits, and any claim listing.

Dated: December 22, 2023

/David L. McCombs/
David L. McCombs
Lead Counsel for Petitioner
Registration No. 32,271

CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. § 42.6(e) and 37 C.F.R. § 42.105, service was made on Patent Owner as detailed below.

Date of service December 22, 2023

Manner of service Federal Express

Documents served Petition for *Inter Partes* Review Under 35 U.S.C. § 312 and 37 C.F.R. § 42.104 of U.S. 9,055,254; Petitioner's Exhibit List; Exhibits Ex 1001 through Ex 1024; Petitioner's Power of Attorney.

Persons served Sheridan Ross P.C.
1560 Broadway
Suite 1200
Denver, CO 80202

/David L. McCombs/
David L. McCombs
Lead Counsel for Petitioner
Registration No. 32,271