

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LG ELECTRONICS, INC., LG ELECTRONICS U.S.A., INC., AND
VIZIO, INC.,
Petitioners

v.

MULTIMEDIA TECHNOLOGIES PTE. LTD.,
Patent Owner

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

**PETITIONERS' REPLY
TO PATENT OWNER'S RESPONSE**

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PETITIONERS' 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)
Ex.1025	Notice of Sotera Stipulation of Defendants LG Electronics Inc. and LG Electronics USA, Inc.; <i>Multimedia Technologies PTE. LTD. v. LG Electronics Inc. and LG Electronics USA, Inc.</i> ; 2:22-CV-00494; U.S. District Court for the Eastern District of Texas Marshall Division
Ex.1026 (NEW)	Rajeev Surati, Ph.D., Deposition Transcript

I. INTRODUCTION

Multimedia's Patent Owner Response ("PO Response" or "Resp.," Paper 18) relies on mischaracterizations of the prior art and the Petition.¹ None of the facts developed since institution change the Board's original findings. For reasons discussed in the Petition ("Pet.," Paper 1) and as confirmed below, the Board should find all Challenged Claims unpatentable.

II. CLAIM CONSTRUCTION

In the related litigation, the district court construed "*pre-installed and downloaded software applications*" as "pre-installed software applications (that cannot be removed by the user or manually updated) and downloaded software applications." Ex.2020 (Markman Order, dated 6/30/2024). Petitioners' analysis is consistent with this construction.

¹ Multimedia's assertion regarding wordcount lacks any evidence. Resp., 1.

Petitioners' Certificate of Word Count relies on Microsoft Word and properly complies with 37 C.F.R. § 42.24(d).

III. WD-MANUAL IS A PRINTED PUBLICATION UNDER 35 U.S.C. § 311(B) AND THEREFORE PRIOR ART.

A. “WD-Manual is at least prior art under (pre-AIA) 35 U.S.C. § 102(a) and/or (b)” is a statement that WD-Manual is a printed publication.

The Petition explained that WD-Manual, which is a PDF of an instruction manual for the WD Live Hub Product, “is at least prior art under (pre-AIA) 35 U.S.C. § 102(a) and/or (b).” Pet. 13-14. Multimedia argues that the Petition does not use the words “printed publication,” while suggesting that WD-Manual falls into other prior art categories under (pre-AIA) § 102(a) and (b). Resp., 15. None of those categories, however, are relevant under 35 U.S.C. § 312, which is the basis upon which Petitioners filed this petition. *See* Pet., Cover Page. The only relevant category for purposes of the Petition is “printed publications.”

B. WD-Manual was publicly available and accessible before the '254 patent's priority date.

The Petition established that WD-Manual was publicly available and accessible before the '254 patent's priority date. First, the Petition explained that WD-Manual “was publicly available at least as of December 2010,” citing to an affidavit from the Internet Archive. Pet., 13-14; Ex.1012-Ex.A, 2. The Internet

Archive affidavit shows that a URL to download WD-Manual was accessible as of December 3, 2010.² Ex.1012-Ex.A, 2.

Second, the Petition cited to an October 2010 press release, which indicated that the WD TV Live Hub system, for which WD-Manual provides instructions, was “available for purchase by the public at least as of October 2010.” Pet. 13-14; Ex.1020, 1; *see also* Ex.1012-Ex.A, 16-18 (authenticating Ex.1020); Ex.1024 (showing that the WD TV Live Hub could be purchased in 2011). The press release, which by its nature is publicly “disseminated,” explains that the WD TV Live Hub would be “initially available exclusively at Best Buy online and at all 1,093 Best Buy stores nationwide.” Ex.1020, 1; *see also id.* (stating “Western Digital” makes “the popular WD TV media player family”). Further, the press release provides a hyperlink to the WD TV Live Hub’s product page and states that the “full set of features and list of file compatibility is available on WD’s website”—“www.wdc.com.” Ex.1020, 1-2. The URL for WD-Manual is “http://www.wdc.com/wdproducts/library/UM/ENG/4779-705046.pdf,” which

² The Internet Archive affidavit explains that the “20101203” portion of the URL “https://web.archive.org/web/20101203204251/http://www.wdc.com/wdproducts/library/UM/ENG/4779-705046.pdf” provides the “[Year in yyyy][Month in mm][Day in dd].” Ex.1012-Ex.A, 1-2.

directly coincides with the “www.wdc.com” website referenced in the press release. Accordingly, the evidence shows that WD-Manual was available and accessible via the www.wdc.com website. Ex.1012-Ex.A, 1. Any person interested in learning more about the WD TV Live Hub would have been able to browse the www.wdc.com website to find its corresponding WD-Manual. Indeed, WD-Manual was available from the www.wdc.com website in over 22 languages at least as of December 2010. Ex.1022; Pet., 14.

Further demonstrating accessibility, the Petition cited to a WD TV Live Hub product review posted to www.photographybay.com, which according to Multimedia's expert “is a well-known provider of video/AV hardware products.” Ex.1023; Pet. 14; Ex.1026, 22:7-10. Multimedia's contention that “there's no manual in the box” when the WD TV Live Hub product is purchased misses the point. Resp., 22 (citing Ex.1023, 3). This document evidences that the reviewer, representative of an interested person, (i) found the PDF manual, (ii) accessed the PDF manual, and (iii) provided a URL link to the PDF manual to enable other interested persons to find the manual. Ex.1023, 3 (“**looking at the PDF manual**” and “[i]f you are looking for the manual – **here's a link to it.**”). Additionally, the product review used tags to make the review findable by tagging the article: “Tagged as: file storage, hdsr, Photos, storage, video, WD Photos, WD TV Live Hub, Western Digital.” Ex.1023, 4.

The Petition sufficiently established the WD-Manual as a printed publication that was publicly available and publicly accessible before the '254 Patent's priority date. Multimedia's arguments to the contrary are meritless.

IV. GROUND 1: CLAIMS 1-4, 8-10, AND 13-17 ARE OBVIOUS UNDER 35 U.S.C. § 103(A)

The Petition explained how the combination of Kim, Bae, and WD-Manual renders obvious claims 1-4, 8-10, and 13-17. Multimedia only disputes limitations [1.2], [1.5.2], and [1.5.3] and does not address the remaining limitations. *See generally* Resp., 24-70.

A. The combination of Kim, Bae, and WD-Manual renders obvious limitation [1.2].

Multimedia's arguments for limitation [1.2] focus on the combination of Kim's "on screen channel changer" with Bae's "number input bar." *See* Resp., 39. Multimedia argues Kim's TV GUIDE card object and CHANNEL BROWSER card object cannot be modified in view of Bae. Resp., 39. But, the Petition does not seek to modify either card object. Instead, the Petition contemplates modifying Kim's "*card object area*" in view of Bae. Pet. 29-31.

1. The Petition explained that Kim's "card object area" teaches the claimed "on screen channel changer."

The Petition explained how Kim's "*card object area*" corresponds to an "*on screen channel changer*." Pet. 29-31 ("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.1005, [0196]. In Kim, a “card object generator generates and displays card objects within a ‘card object area’ of Kim’s home screen.” Pet., 30; Ex.1005, [0193]. The card object area may include different types of card objects for changing the channel, including the CHANNEL BROWSER and TV GUIDE card objects. Ex.1005, [0196], [0221, [0224]. Thus, Kim’s “card object area” is an “*on screen channel changer*” because it displays one or more card objects on the television screen that can be used to change the channel. *See, e.g.*, Ex.1005, [0205]-[0206].

2. Combining Bae’s number input bar with Kim’s on screen channel changer renders obvious an “on screen channel changer comprising ... a number input bar comprising digits, wherein the digits range from 0 to 9.”

The Petition explained how a POSITA would implement the Kim-Bae combination. Kim teaches a known method for displaying an on screen channel changer (“card object area”) that allows a user to select a channel thumbnail/program listing. *See, e.g.*, Ex.1005, [0206], [0269]. Bae describes a known technique for displaying a number input bar from 0 to 9 in a window displayed on a television. *See, e.g.*, Ex.1007-8, [0023]. Adding a number input bar, as Bae teaches, to Kim’s television would have had the predictable result of

displaying a number input bar that allows the user to directly enter a specific channel number to change channels. Ex.1003, ¶¶82, 123; Pet., 24-25.

Adding a number input bar, per Bae, to Kim's card object area complements Kim. For example, Kim discusses using a remote control to provide a channel switch command where the remote control may have input tools "*other than*" a keypad. Ex,1005, [0174]-[0175], FIG. 34; Pet., 24. Adding Bae's number input bar to Kim provides the benefit of adding a technique of directly changing to a specific channel, particularly for a remote control that uses input tools other than a keypad, as contemplated by Kim. Ex.1003, ¶¶79-82.³ Multimedia's expert agrees:

6	Q	And by using the graphical number input keypad,	11:25:08
7		you allow the user to enter a specific channel number	11:25:20
8		and get that channel directly?	11:25:25
9	A	<u>It can be.</u>	11:25:30
10	Q	And in some instances that would be helpful,	11:25:34
11		correct?	11:25:37
12		MR. SCHREINER: Objection. Form.	11:25:38
13		THE WITNESS: <u>It could be helpful.</u>	11:26:10

³ Multimedia incorrectly asserts that Petitioner's analysis of Kim establishes Kim is non-enabling. "Enablement" relates to the disclosure in a specification with respect to the claims of the patent. Neither Petitioner nor Dr. Lippman made any statement about Kim with respect to enablement.

Ex.1026, 63:6-13.

The Petition explained that a POSITA would have had a reasonable expectation of success in the combination. Kim teaches using an application framework with “an OSD generator” to display card objects. Ex.1005, [0095], [0193]; Pet., 29-30, 34-36. Kim explains that the OSD generator 340—which may be the card object generator—“may generate signals by which a variety of information is displayed,” including “menu screens, widgets, icons, etc.” Ex.1005, [0137]. While Kim describes that the card object area includes “a plurality of card objects classified according to content sources,” Kim leaves open-ended what these card objects may be, stating only that the “card objects may include at least one” of various example card objects. Ex.1005, [0094]-[0095]; Ex.1003, ¶¶123. And Multimedia's expert confirms that POSITAs knew how to implement a home screen to display various information:

4	Q	Okay. So is it fair to say that a POSITA would	10:38:10
5		have known how to implement a home screen graphical user	10:38:25
6		interface as of August 17, 2012?	10:38:28
7	A	<u>Yeah, generally speaking, sure.</u>	10:38:32
8	Q	A graphical user interface home screen was known	10:38:38
9		to have various types of information on it, correct?	10:38:46
10		MR. SCHREINER: Objection. Form.	10:38:51
11		THE WITNESS: <u>I think that's fair.</u>	10:38:53

Ex.1026, 38:4-11.

Therefore, a POSITA would have had a reasonable expectation of success in adding a number input bar, per Bae, within Kim's card object area because (i) Kim teaches a television using a card object generator to generate "menu screens, widgets, icons, etc.," (ii) Bae teaches a number input bar for display on a television and (iii) POSITAs had the requisite knowledge to implement television GUIs to display information. Ex.1003, ¶¶116-123. The predictable result of combining Bae's teachings with Kim thus uses Bae's number input bar for its intended purpose of allowing a user to change to a specific channel via Kim's on screen channel changer user interface. Ex.1003, ¶¶82-83.

3. **Multimedia's arguments are contradicted by the evidence.**

a) Multimedia relies on the premise that Petitioners are pointing to an individual card object as Kim's on screen channel changer.

Multimedia incorrectly argues that the Petition identifies the individual Channel Browser card object or the TV Guide card object as the "*on-screen channel changer*." See Resp., 39. As noted above, however, the Petition contemplates modifying Kim's "card object area." Pet., 29-31. The Petition states that "[a]dding 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." Pet., 38. That is, Kim's card object area would be

modified in view of Bae to include a new, *additionally* displayed object (e.g., a number input bar). Multimedia's arguments, which ignore the Petition, fail.

b) Dr. Lippman testified that Kim's on screen channel changer is the card object area.

Multimedia's arguments also mischaracterize Dr. Lippman's testimony. Resp., 40-42. In deposition, Dr. Lippman confirmed that "Kim's channel browser 1340 [is] *part of a user interface*." Ex.2010, 130:21-23. Dr. Lippman confirmed that it is not an individual card object that is modified. Ex.2010, 131:10-132:12 ("I wouldn't claim that you would modify [channel browser card object]1340. I claim that you would use the teachings of Kim's system and Bae's channel changer."). Dr. Lippman did not equate the claimed "*on screen channel changer*" with either the CHANNEL BROWSER card object or the TV GUIDE object. Rather, Dr. Lippman repeatedly explained that those two card objects are components of Kim's card object area ("*on screen channel changer*"). Ex.2010, 135:15-136:11 (referring to the "channel browser object 1340" as "a component of the on screen channel changer").

Further, Multimedia's assertion that Dr. Lippman did not explain how the combination of Bae and Kim works is incorrect. Dr. Lippman explained that applying Bae's technique to Kim's television would have yielded an "on screen channel changer that allows channel searching (e.g., via a channel search field) 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. Dr.

Lippman further explained that Kim's system includes "a processor to display thumbnail images corresponding to TV channels for channel browsing ... [and] to display a program list." Ex.2010, 150:13-17. Correspondingly, Multimedia's expert testified that (i) POSITAs knew how to implement Kim's home screen card object area, (ii) "it was known to have an on-screen numeric keypad," and (iii) Bae is an example of such a keypad:

14	Q	But it was known in the art to utilize the	11:23:21
15		graphical number input, right?	11:23:23
16	MR. SCHREINER:	Objection. Form. Scope.	11:23:26
17	THE WITNESS:	So I think <u>it was known to have a</u>	11:23:34
18		<u>on-screen numeric keypad, and there are some examples in</u>	11:23:40
19		<u>Coburn and Bae that show such an example where you can</u>	11:23:50
20		<u>use an on-screen keypad to select a channel.</u>	11:23:55

Ex.1026, 38:8-39:2, 62:14-18.

Thus, combining Bae's technique of displaying a number input bar to change the channel would have required no more than Kim's processor additionally displaying Bae's number input bar in Kim's card object area.

c) Multimedia's arguments support why a POSITA would have combined Kim and Bae

Multimedia argues that it was well-known how to use a remote control device to change channels. Resp., 45. Indeed, Multimedia's assertion that "[a] POSITA would be readily able to implement a remote control that issues channel switch commands to change channels based on Kim and the POSITA's background knowledge in the art" is precisely why a POSITA would look to Bae to modify Kim. Resp., 44.

Kim encourages a POSITA to consider a remote control with inputs other than numeric keys. Ex.1005, [0175]. And Multimedia's expert confirms that an alternative to utilizing a remote with a number keypad is to utilize the graphical number keypad and that entering a channel number directly could be "helpful" and "more efficient":

2	Q	Yeah. So is it fair to say that an alternative	11:24:51
3		to utilizing a remote with a number keypad is to utilize	11:24:56
4		the graphical number keypad?	11:25:00
5	A	<u>It can be.</u>	11:25:06
6	Q	And by using the graphical number input keypad,	11:25:08
7		you allow the user to enter a specific channel number	11:25:20
8		and get that channel directly?	11:25:25
9	A	<u>It can be.</u>	11:25:30
10	Q	And in some instances that would be helpful,	11:25:34
11		correct?	11:25:37
12		MR. SCHREINER: Objection. Form.	11:25:38
13		THE WITNESS: <u>It could be helpful.</u>	11:26:10

Ex.1026, 63:2-5.

4	THE WITNESS: So <u>directly entering a number can</u>	11:22:41
5	<u>be a more efficient way,</u> depending upon the context, to	11:22:49
6	select a particular channel that you desire to be shown.	11:22:54

Ex.1026, 61:25-62:6.

Thus, a POSITA would be motivated to combine different channel selection techniques, including using a graphical number input bar, as Bae teaches, to input a specific channel number using Kim's remote control without numeric keys. *See* Ex.1003, ¶81.

4. Modifying Kim's individual card objects also renders obvious limitation [1.2].

As noted above, Multimedia does not address modifying Kim's card object area, as described in the Petition. Instead, Multimedia's arguments are limited only to modifying an individual card object of Kim. These arguments also fail.

Kim's individual channel-changing card objects—the CHANNEL BROWSER and TV GUIDE card objects—are ripe for modification to incorporate Bae's teaching. First, Kim teaches the process and manner for using a "card object generator" to "generate[] and display[] the card object," and that this card object generator generates "menu screens, widgets, icons, etc." on Kim's display. Ex.1005, [0137], [0193]; Pet. 30. Second, Kim teaches displaying a list of channels in its card object area, but that "other configurations may be possible." Ex.1005, [0206]. Third, Kim describes that the "size, shape, color, style, etc." of a card may be configured. Ex.1005, [0194]. Correspondingly, Bae teaches a configuration for changing channels in which a number input bar is displayed in a window. Ex.1007-8, [0023]. Accordingly, Kim's teachings of (i) card objects used to change channels, (ii) card objects displayed in "other configurations," and (iii) a card object generator that generates the size, shape and style of a card object to display menu screens, widgets, and icons, in view of Bae's teaching of displaying a number input bar in a window render obvious a card object that includes a number

input bar for changing channels. For example, Bae's number input bar can be a "widget" generated by the card object generator. Thus, the prior art renders obvious limitation [1.2]. Ex.1003, ¶¶99-124.

B. The combination of Kim, Bae, and WD-Manual render obvious limitation [1.5.2].

WD-Manual teaches selecting a specific button on a remote control to cause the display of an application screen that includes information about software applications, while Kim teaches that it was known to use a remote control to display a screen showing information regarding pre-installed and downloaded software applications. Combining WD-Manual's teaching with Kim's teaching renders obvious limitation [1.5.2].⁴

1. WD-Manual and Kim together—not independently—render obvious limitation [1.5.2].

"an application center button that, when selected, provides, by the television screen, displayed information"

First, WD-Manual teaches assigning a remote control button to cause information about applications to be displayed. For example, any of the A-D buttons can be assigned to cause the display of the "Services" menu. Ex.1006, 138,

⁴ Contrary to Multimedia's assertion, the Petition does not use Kim "as a back-up argument for limitation 1.5.2." Resp., 53.

76-77; Pet., 69-70. Accordingly, WD-Manual's remote control button that is assigned to cause the display of the available "services" (e.g., Netflix, YouTube, etc.) renders obvious the recited "*application center button.*" Ex.1006, 76-77; Pet., 70-71.

"displayed information regarding pre-installed and downloaded software applications"⁵

Second, Kim teaches that, when a remote control button is selected, a screen displays "information regarding pre-installed and downloaded software applications." Ex.1005, [0099] ("controller 170 may control display of applications or a list of applications that are available in the image display apparatus or downloadable from an external network."); Pet., 71-72. Kim teaches that the displayed applications include "user-installable or user-deletable applications" and "user-undeletable applications." Ex.1005, [0158]. These applications are stored in Kim's application layer. Ex.1005, [0157]; Ex.1026, 57:7-15.

⁵ As noted in Section II, the district court defined "pre-installed software applications" as applications "that cannot be removed by the user or manually updated."

The “user-installable or user-deletable applications” are applications that “may be downloaded from ... a network.” Ex.1005, [0158]. Therefore, Kim’s “user-installable or user-deletable applications” disclose “*downloaded software applications.*”

Kim contrasts “user-installable or user-deletable” applications (which are “installed by the user,” “deleted,” and “downloaded from ... a network”) from “user-undeletable applications.” Ex.1005, [0158]. The “user-undeletable applications” are (i) “stored” in the television, (ii) not downloaded by the user, (ii) not installed by the user, (iii) “undeletable,” and (iv) “cannot be modified.” Ex.1005, [0158]; Pet., 73; *see also* Ex.1005, [0163]. Multimedia’s expert also testified that it was known for manufacturers to install applications in “firmware” “on the factory line.” Ex.1026, 78:20-25. Therefore, a POSITA would understand that Kim’s “user-undeletable applications” that are (i) not installed by the user, (ii) undeletable, and (iii) not modifiable teaches pre-installed software applications that cannot be removed by the user or manually updated. *See* Ex.1026, 86:13-87:23; Ex.1003, ¶194.

Accordingly, Kim’s teaching of using a remote control to display user-undeletable applications and user-installable applications in view of WD-Manual’s teaching of using a specific application center button on a remote control to cause information about applications to be displayed renders obvious limitation [1.5.2].

2. Kim in view of WD-Manual render obvious limitation [1.5.2.1].

As explained above, the Petition relies on Kim's teaching of pre-installed and downloaded software applications for limitation [1.5.2] and that Kim renders obvious that "downloaded software applications" can include a "web browser" or "settings control" application. Pet., 74-75. Since limitation [1.5.2.1] requires only "*one or more of*" a web browser, settings control, and content search algorithm, the teachings of Kim render obvious limitation [1.5.2.1].

The Petition further shows that Kim's teaching of a content search algorithm ("Metflix" and "MyTube" which a POSITA would understand to be referencing Netflix and YouTube, respectively), in view of WD-Manual's teaching that POSITAs knew content search algorithms (such as iTunes and Winamp) were downloadable, renders obvious that "downloaded software applications" can include a "content search algorithm," as recited in limitation [1.5.2.1]. Pet. 75-77.

3. *Multimedia's arguments do not address the prior art.*

a) *Multimedia's arguments about WD-Manual's teaching of services are misplaced.*

Multimedia argues that WD-Manual does not teach an “application center button” because WD-Manual’s “services” screen does not display software applications. *See* Resp., 50-52.⁶

First, Multimedia mischaracterizes the Petition. The Petition does not rely on WD-Manual for teaching services that are either pre-installed or downloaded software applications. As discussed above, Kim provides this teaching. *See* Pet., 71-74.

Second, Multimedia contradicts the evidence. A POSITA would readily understand that WD-Manual’s “services” (e.g., Facebook, Netflix, Pandora and YouTube) are software applications because WD-Manual explains that these “services” are “fully integrated with their web-based counterparts when accessed via the media center.” Ex.1006, 76. Moreover, as testified by Multimedia’s expert,

⁶ At the district court, Multimedia argues a single “home” button on a remote control that “accesses the home menu” meets the recited “an application center button” and “a media center button” and “application panel button” and “global panel button.” Ex.1015, p. 8.

the “typical use case” would be YouTube-specific software on the set-top box or smart TV that obtains content from the YouTube service provider:

5	Q	So if I have a YouTube-specific software on my	10:55:50
6		set-top box or smart TV, that specific software obtains	10:55:59
7		content from the YouTube service provider through the	10:56:06
8		Internet, correct?	10:56:12
9		MR. SCHREINER: Objection. Scope. Form.	10:56:14
10		THE WITNESS: I mean it can do that, but again,	10:56:23
11		I didn't render an opinion on how it does it. I just	10:56:29
12		know that <u>that's a typical use case.</u>	10:56:33

Ex.1026, 49:5-13. And that’s what WD-Manual discloses.

For example, WD-Manual describes a customizable “YouTube Player,” and provides screenshots of the YouTube Player in operation on the WD TV Live Hub. Ex.1006, 124-126; *see also* 120-121. Clearly, WD-Manual teaches that its “services” are software applications running on the device. Multimedia’s expert also testified that he understood WD-Manual to teach “software that’s installed on” the WD TV Live Hub device:

12	Q	And to be clear, the Western Digital Media	13:51:41
13		Center can obtain files from different sources, correct?	13:51:44
14	A	Sure. And then they get put into the drive.	13:51:53
15	Q	And then they are played via the media player,	13:51:58
16		which is software installed on the Western Digital Media	13:52:01
17		Center, correct?	13:52:05
18	A	It's -- yeah, <u>it's a software that's installed</u>	13:52:08
19		<u>on that system, sure.</u>	13:52:11

Ex.1026, 101:12-19. Multimedia's expert also testified that he understood WD-Manual to at least have a preinstalled web browser application. Ex.1026, 106:16-20. Accordingly, a POSITA would understand that WD-Manual teaches a button that causes a screen containing software applications to be displayed.

Ultimately, though, Multimedia's arguments do not address the proposed combination. The Petition relies on Kim for teaching displaying information regarding pre-installed and downloaded applications and combines Kim's teaching of a remote control to access the information with WD-Manual's teaching of a specific button to access information about services. Multimedia cannot establish nonobviousness by attacking the teachings individually where the Petition is based on the combination. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

b) Multimedia's arguments about Kim's embodiments mischaracterize the Petition.

Multimedia incorrectly contends that the Petition uses Kim's Figures 16 and 34 in an obviousness combination of multiple embodiments. To the contrary, the Petition relies on Kim's functionality of "control[ling a] display of applications or a list of applications that are available in the image display apparatus or downloadable from an external network" when an "application view menu item is selected." Ex.1005, [0099]; Pet., 71-72. Thus, Kim teaches displaying "applications that are available in the image display" (e.g., preinstalled) or "downloadable from an external network" (e.g., downloaded).

Figure 16 and/or 34 illustrate different *examples* of Kim's functionality to control the display of applications. Ex.1005, [0099], [0158]; Pet., 71-73. With Figure 16, Kim explains that "when an application list view menu is selected by manipulating the remote controller 200, a list of applications 660 stored in the image display apparatus may be displayed on the display 180. Ex.1005, [0184]; Pet., 72. With Figure 34, Kim explains that "[t]he input to switch to a full screen view of the applications may be generated in various manners," and "[a] full screen 2100 which includes a plurality of application items may be displayed on the display 180." Ex.1005, [0257]-[0258]; *see also* Pet., 72. Further, Kim teaches that

its applications are in the application layer, part of the “platform for the image display apparatus.” Ex.1005, [0157]-[0158], [0160].

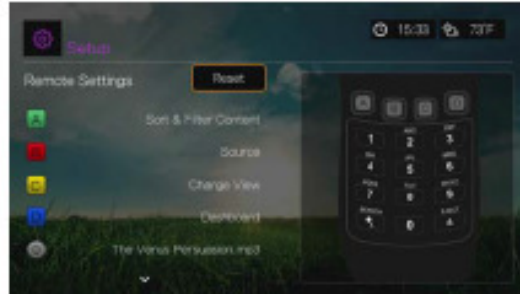
Combining Kim's teaching of using a remote control to display information about pre-installed and downloaded software applications with WD-Manual's teaching of a specific remote control button to, when selected, display information about services renders obvious limitation [1.5.2].

c) WD-Manual expressly teaches displaying the “Services” menu using buttons A-D.

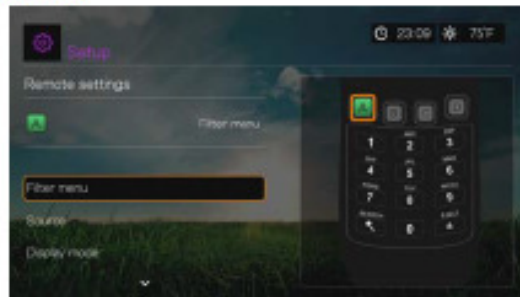
Multimedia concedes that WD-Manual “describes that the shortcut function keys can be reprogrammed for other functions (WD-Manual, 138),” but then argues there are no reasons to “modify[] the remote control in WD-Manual by reprogramming a shortcut function key to invoke the Services menu.” Resp., 60. The Petition, however, did not rely on modifying WD-Manual's remote control, because WD-Manual ***expressly*** teaches reprogramming one of buttons A-D to invoke the “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, 138 (partial and annotated); Pet., 69; Ex.1003, ¶186.

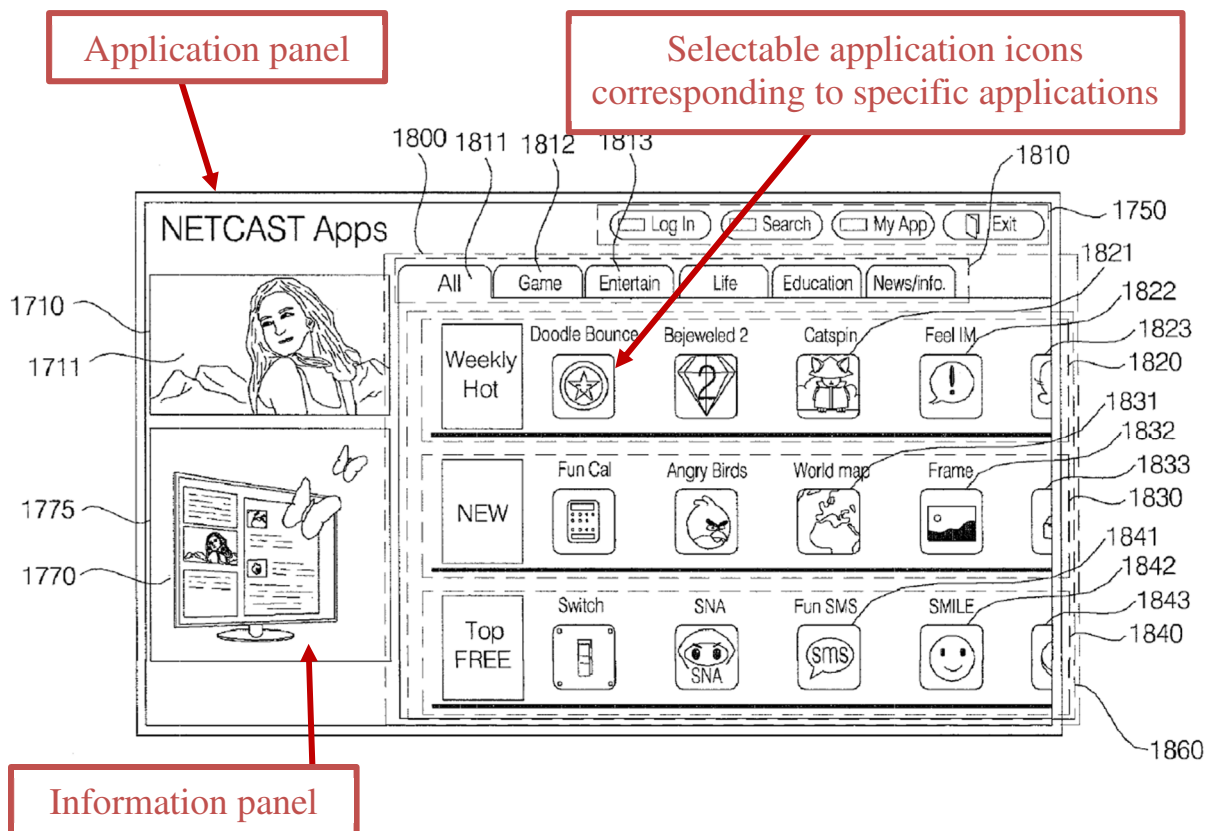
Multimedia's expert agrees that WD-Manual teaches programming any of buttons A-D to go to the Services screen. Ex.1026, 97:4-13. Because WD-Manual expressly teaches assigning one of its buttons to the Services screen, Multimedia's arguments fail.

C. The combination of Kim, Bae, and WD-Manual render obvious limitation [1.5.3].

1. Kim and WD-Manual respectively teach “an application panel button.”

a) Kim’s OK button teaches an “application panel button.”

As discussed above, Kim teaches a user interface that displays pre-installed and downloaded applications. Ex.1003, ¶¶233-236; Pet., 86-88. As one example, Kim provides Fig. 25, which displays application icons, an application panel, and an information panel.



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

Kim describes that Fig. 25 displays “newly added applications,” Ex.1005, [0236], and a POSITA would recognize that Fig. 25 can display both preinstalled and downloaded applications. Ex.1003, ¶¶234-235. Multimedia's expert acknowledged that Fig. 25 displays installed applications:

4	Q	That's what I think. Okay. But at least in	13:17:53
5	Figure 25, the Weekly Hot, all of them are installed,		13:17:57
6	illustrated in Figure 25, and then the New row, of the		13:18:03
7	New applications, Fun Calc, Angry Birds and World Map		13:18:07
8	are installed, correct?		13:18:11
9	A	<u>Yeah. Yeah.</u>	13:18:12

Ex.1026, 85:4-9, 83:7-84:17.

Further, Kim teaches that a user selects an application icon “by moving a cursor around the display 180 using dedicated keys (e.g., arrow keys and an OK key) on the remote controller.” Ex.1005, [0187]; Pet., 89.⁷ Kim teaches that if a “user selects an icon” from a list of icons representing applications, “an image displayed on the third area 1770 may be replaced with information about the application corresponding to the selected icon.” Ex.1005, [0247]; Pet., 86.

⁷ The '254 Patent equates an OK button with being a select button. Ex.1001, 22:56-23:67; Pet. 89.

Thus, Kim's "OK" button that, when pressed, displays an application panel with an information window that includes information about a selected application (pre-installed or previously downloaded) renders obvious limitation [1.5.3].

b) WD-Manual's Options button to display service options.

WD-Manual teaches that pressing the "Options" button displays "more service options."

Options	During playback, displays additional playback options. From an online media content screen, press to display more service options.
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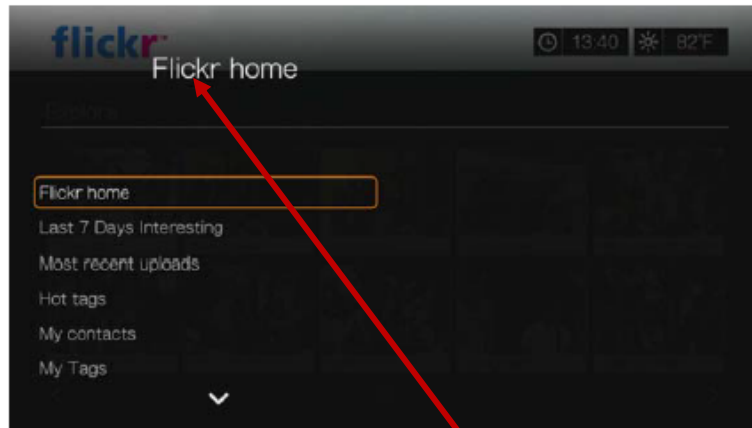
Pressing "Options" button displays information panel with additional options for service executing on television

Ex.1006, 25 (partial and annotated).

WD-Manual provides an example where the user presses the Options button and an application panel with an information panel is displayed:

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

Accordingly, WD-Manual teaches an Options button that, when selected, displays an application panel with an information panel regarding a selected service. Ex.1003, ¶¶216-232.

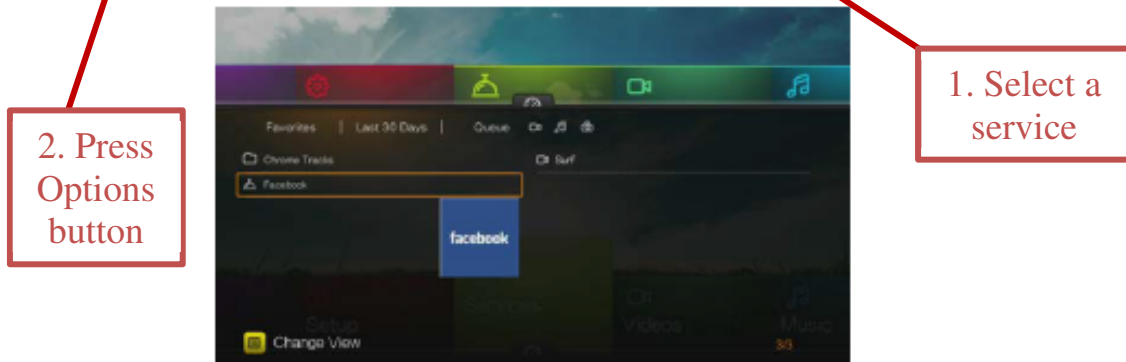
c) WD-Manual's Options button to display "favorite" information.

WD-Manual separately teaches that after highlighting an icon for a service, the user can "press Options" to view an application panel that includes an information panel about the selected service (e.g., whether the service is a "favorite") and can then "[p]ress OK" to add the selected service as a Favorite. Ex.1006, 77.

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  or navigate to  in certain screens then press **OK**).

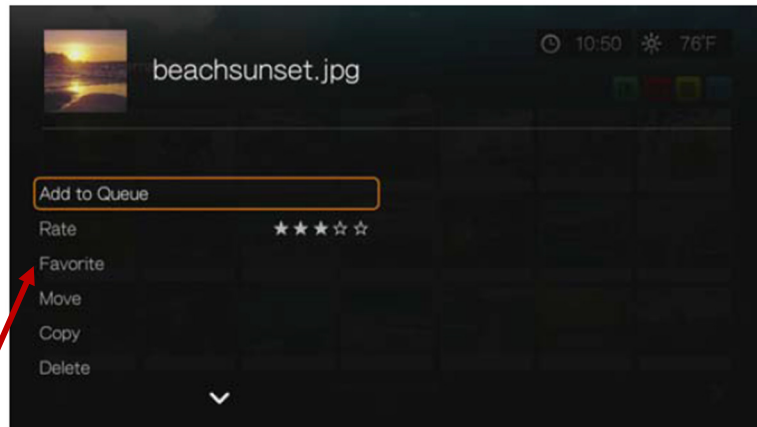
1. In the Services screen, press ◀/▶ to select a service you want to favorite, then press **Options**.
2. Press **OK** to list the service in the dashboard under Favorites



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

Accordingly, WD-Manual teaches (i) using arrow keys to select a service, then (ii) pressing the Options button, and then (iii) pressing the OK button to identify the service as a “Favorite.” WD-Manual provides an example of an application panel and information panel for making a selected item a Favorite:

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, 57 (annotated); Ex.1003, ¶219.

Here, WD-Manual displays a screen for making a Favorite. While the example in the screen is for a photo, the screen exemplifies what is displayed when making a Favorite, e.g., when pressing the “Options” button for a selected service. Ex.1003, ¶¶218-219.

2. *Multimedia’s arguments are contradicted by the evidence.*

Multimedia argues that the icons of applications in Kim’s Fig. 25 do not represent pre-installed or previously downloaded applications. Resp., 67-69.

First, Kim teaches numerous ways of displaying information about pre-installed and downloaded applications. Ex.1005, [0185]; *see also id.* [0184]. And as discussed above in Section IV.C.1.a., Fig. 25 is an exemplary graphical user

interface for enabling a user to select icons representing applications and displaying a corresponding application panel and information panel. Kim also teaches that the content displayed in Figure 25 is configurable to display “newly added applications.” Ex.1005, [0236]; Ex.1003, ¶¶234-235. And, Multimedia’s expert confirms that Fig. 25 displays installed applications:

4	Q	That's what I think. Okay. But at least in	13:17:53
5		Figure 25, the Weekly Hot, all of them are installed,	13:17:57
6		illustrated in Figure 25, and then the New row, of the	13:18:03
7		New applications, Fun Calc, Angry Birds and World Map	13:18:07
8		are installed, correct?	13:18:11
9	A	<u>Yeah. Yeah.</u>	13:18:12

Ex.1026, 85:4-9, 83:7-84:17.

Multimedia’s expert also testified that those applications could be downloaded or preinstalled:

22		installed beforehand. That's all I can say for sure. I	13:19:29
23		mean <u>all that I can say is that I know it's on the</u>	13:19:33
24		<u>machine, it could have been downloaded, or it could have</u>	13:19:36
25		<u>been preinstalled.</u> But there's -- it's definitely	13:19:39

Ex.1026, 85:14-25.

Accordingly, Multimedia’s assertion that Figure 25 does not display previously downloaded or pre-installed applications is baseless.

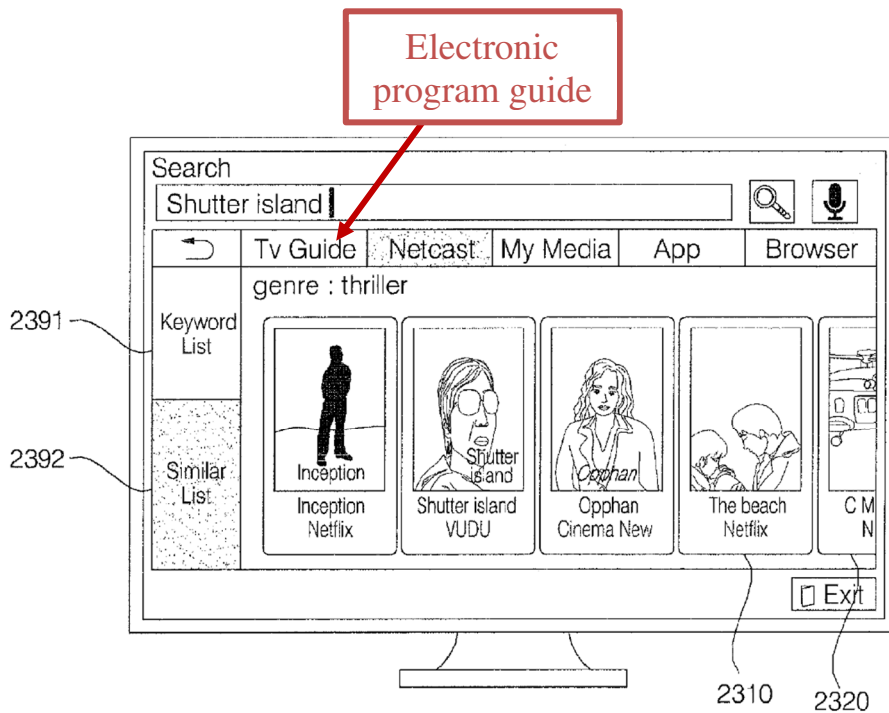
D. All Dependent Claims are Obvious over Kim, Bae, and WD-Manual.

Multimedia does not present any new arguments for dependent claims 2-4, 9, 10, 13, and 15-17. Resp., 56, 62, Therefore, for the same reasons discussed in the Petition and above, the claims are obvious.

V. GROUND 2: CLAIMS 6, 12, AND 19 ARE ALSO OBVIOUS OVER KIM, BAE, WD-MANUAL, AND COBURN.

1. Kim-Bae and Coburn render obvious limitation [6.1].

As discussed above in Section IV.A., the Kim-Bae combination teaches using Kim's application framework to generate an on screen channel changer ("card object area") that displays electronic program guide (EPG) information and changing channels by entering digits via Bae's number input bar. Further, Kim's application framework displays EPG information in different forms—e.g., TV Guide program information—and provides search functionality for keyword searching "display[ing] the search results." Ex.1005, [0207], [0267], [0269], Fig. 22, Fig. 38; *see* Pet., 23-24, 37. For example, as shown in Kim's Figure 38, entering a search keyword (e.g., "Shutter Island") causes the display of EPG content corresponding to the keyword within TV Guide.



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

Kim therefore teaches an application framework that provides search functionality to update the display screen to display EPG search results. Ex.1005, [0269]; Ex.1003, ¶363. Bae also teaches providing search functionality—Bae's number input bar—that updates, as the user sequentially enters each digit, the displayed channels that correspond to the currently-entered digits. Ex.1007-8, Abstract, [0007]; Ex.1003, ¶¶364-366. Accordingly, Kim's teaching of a card object area and an application framework that updates the EPG to correspond to a search result, in view of Bae's teaching of a channel searching technique that updates the displayed channels to correspond with the currently-entered digits in a

number input bar, render obvious updating the EPG as the user enters the digits for a desired channel.

Additionally, Coburn teaches a technique that dynamically changes channel imagery to match channel digits entered by the user. Coburn teaches that, “[a]s 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]; Pet. 124-125; Ex.1003, ¶¶355-356, 368-369.

A POSITA would have found it obvious to use Coburn's technique of displaying channels that match the digits input by the user in the Kim-Bae combination. Coburn's technique marries the known methodologies described in Kim (updating the EPG when the user performs a search) and Bae (updating the list of channels as the user enters each digit of a desired channel). Ex.1003, ¶¶354-355. The resulting Kim-Bae-Coburn combination provides an application framework that displays an on screen channel changer with a number input bar that receives individual digits entered by a user and processes those user-entered digits “in a predictive manner” to update the displayed imagery that presents “channels (or other objects) that correspond to the initially-entered data.” Ex.1003, ¶¶356; Ex.1009, [0046]; Pet., 121-122. Further, a POSITA would have had a reasonable expectation of success because each of Kim and Bae are ready for improvement.

Kim already teaches filtering the display of content to match a user's search, while Bae filters channel numbers available for selection based on the digits entered by the user. Ex.1003, ¶¶356-357; Pet. 122.

2. *Multimedia's arguments apply improper bodily incorporation.*

Multimedia argues that “the thumbnails in the Channel Browser object and/or program listings TV Guide object must be updated to meet the claim limitation.” Resp., 71. Multimedia is arguing an improper bodily incorporation analysis. “The test for obviousness is not whether the features of a secondary reference may be bodily incorporated ... Rather, the test is what the combined teachings of those references would have suggested.” *In re Keller*, 642 F.2d 413, 425 (C.C.P.A. 1981).

Here, Kim's image display apparatus is designed to display television content and includes a card object area with card objects to facilitate changing channels. Ex.1005, [0092], [0093], [0095]. Bae improves Kim by displaying a number input bar that, as the user sequentially enters each digit for a channel, updates the displayed list of channels to correspond to the currently-entered digits. Ex.1007-8, Abstract, [0007]. Coburn enhances those features by further teaching dynamically changing channel imagery to match channel digits entered by the user. Ex.1009, [0046].

The proposed combination relies on Kim's teaching of displaying EPG information within a card object area and updating the displayed EPG information to display the results of a search by the user. Then, Bae and Coburn teach that, when displaying EPG information and receiving user search inputs, the displayed EPG information can be filtered and updated as the user enters each search digit. The combined teachings establish filtering and updating the EPG information on Kim's display using the search techniques taught by Bae and Coburn. Ex.1003, ¶¶355-357.

VI. CONCLUSION

For the foregoing reasons, the Board should find all Challenged Claims unpatentable.

Respectfully submitted,

Dated: December 23, 2024
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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioners hereby certify, in accordance with and reliance on the word count provided by the word-processing system used to prepare this Reply, that the number of words in this paper is 5,312.

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CERTIFICATE OF SERVICE

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

Date of service December 23, 2024

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