UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

IPR2024-00351
U.S. Patent No. 9,510,040

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

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PETITIONER'S EXHIBIT LIST

Ex.1001	U.S. Patent No. 9,510,040 to Selim et al.
Ex.1002	Prosecution History of U.S. 9,510,040
Ex.1003	Declaration of Dr. Andrew Lippman under 37 C.F.R. § 1.68
Ex.1004	*Curriculum Vitae* of Dr. Lippman
Ex.1005	U.S. Patent Pub. No. 2012/0054794 to Kim et al. ("Kim")
Ex.1006	U.S. Patent No. 9,008,190 to Lee et al. ("Lee-1")
Ex.1007	U.S. Patent Pub. No. 2013/0057764 to Choi et al. ("Choi")
Ex.1008	Infringement Contentions, Appx E_US 9510040
Ex.1009	PCMAG Encyclopedia
Ex.1010	U.S. Patent No. 9,398,339 to Lee et al. ("Lee-2"),
Ex.1011	U.S. Patent Pub. No. 2013/0176415
Ex.1012	Microcomputer
Ex.1013	Chapter 1, Overview of Microprocessors

I. INTRODUCTION

Pursuant to 35 U.S.C. §§ 311, 314(a), and 37 C.F.R. § 42.100, LG Electronics, Inc., LG Electronics U.S.A., Inc. ("Petitioner") respectfully requests that the Board review and cancel as unpatentable under (pre-AIA) 35 U.S.C. §103(a) claims 1-6, 11-16, and 21-22 (the "Challenged Claims") of U.S. Patent No. 9,510,040 ("'040 patent," Ex.1001).

II. GROUNDS FOR STANDING

Petitioner certifies that the '040 patent is eligible for IPR and that Petitioner is not barred or estopped from requesting IPR. 37 C.F.R. § 42.104(a).

III. NOTE

Petitioner cites to exhibits' original page numbers. Emphasis in quoted material has been added.

IV. SUMMARY OF THE '040 PATENT

A. Overview of the '040 Patent

The '040 patent is directed to "methods and systems of displaying content on a television." Ex.1001, Abstract. The '040 patent discloses a global panel with a listing of content sources and descriptive text (e.g., 1504A-1504F), as shown below at Figure 15C. Ex.1001, 30:32-64.

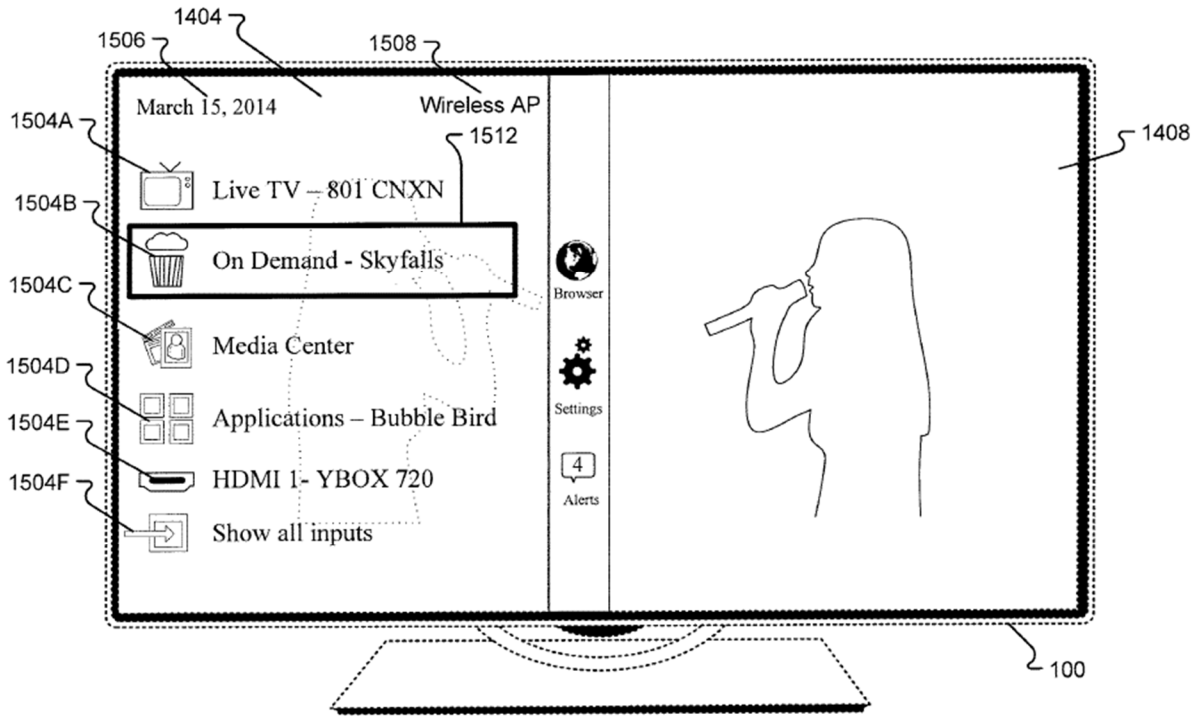


Fig. 15C

Ex.1001, Fig. 15C.

B. Prosecution History

In response to the Examiner rejecting the claims over various references, the Applicant then amended all three independent claims, exemplified by the amended to independent claim 23 shown below:

23. (Currently Amended) A method of displaying content on a television, comprising:

receiving an indication associated with a selection by a user;

determining, based on the received indication, a global panel to display via the television;

retrieving from memory, a first content information for display in the global panel; and

displaying, via the television, the retrieved content information in the global panel,

wherein the global panel includes a list of ~~two or more~~ sources of content for the intelligent television, and wherein at least one of the ~~two or more~~ sources is highlighted as being associated with the first content information, wherein the ~~two or more~~ sources include ~~two or more of~~ a live television source, a video on demand source, a media center source, an applications source, and an electrical input associated with the television.

The Applicant then argued that the prior art fails to disclose more than two content sources. Ex. 1002, 120-136. The Examiner allowed the claims based on this distinction. Ex. 1002, 84-86. However, for the reasons explained below, a global panel including all five sources of content, as well as the other claim limitations of the ’040 patent, were well-known in the art. Ex.1003, ¶¶30-33.

V. LEVEL OF ORDINARY SKILL IN THE ART

A Person of Ordinary Skill in The Art (“POSITA”) in August of 2012 would have been someone knowledgeable and familiar with the interactive media guide arts that are pertinent to the ’040 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. Lack of professional experience can be remedied by additional education, and vice versa. Ex.1003, ¶¶18-20.

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 the purposes of this proceeding and the grounds presented herein, no claim term requires express construction. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). Petitioner further notes that some claim terms are provided with explicit definitions in the specification (Ex.1001, 3:49-10:3&), and example is outlined below.

A. "*at least one*"

Claims 1, 6, 11, 21, 22 each recite the phrase "*at least one*." The phrasing of "at least one of A, B, and C" and "at least one of A, B, or C" includes "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, 3:49-56; Ex.1003, ¶¶34-39.

VII. RELIEF REQUESTED AND THE REASONS FOR THE REQUESTED RELIEF

Petitioner asks that the Board institute a trial for IPR and cancel the Challenged Claims in view of the analysis below. Petitioner challenges the claims

of the ’040 patent because they are asserted in co-pending litigation.

VIII. IDENTIFICATION OF HOW THE CLAIMS ARE UNPATENTABLE

A. Challenged Claims and Statutory Grounds for Challenge[1]

Grounds	Claims	Basis
#1	1-5, 11-15, and 21	35 U.S.C. § 103 over Kim, Lee-1, and Choi
#2	2-3, 6, 12-13, 16, and 22	35 U.S.C. § 103 over Kim, Lee-1, Choi, and Lee-2

U.S. Patent Publication No. 2012/0054794 to Kim et al. (Ex.1005, “Kim”), which was filed on March 9, 2011, claims priority to Provisional No. 61/379,369, filed on September 1, 2010, and published on March 1, 2012. U.S. Patent No. 9,008,190 to Lee et al. (Ex.1006, “Lee-1”) was filed on January 4, 2010 and issued on April 14, 2015. U.S. Patent Publication No. 9,008,190 to Choi et al. (Ex.1007, “Choi”) was filed on June 28, 2012, and was published on March 7, 2013. U.S. Patent No. 9,398,339 to Lee et al. (Ex.1010, “Lee-2”) was filed on December 16,

[1] For the combination presented herein, Petitioner relies on the teachings, and not on a physical incorporation of elements. *See In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012); *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985); Ex.1003, ¶¶54, 62, 280.

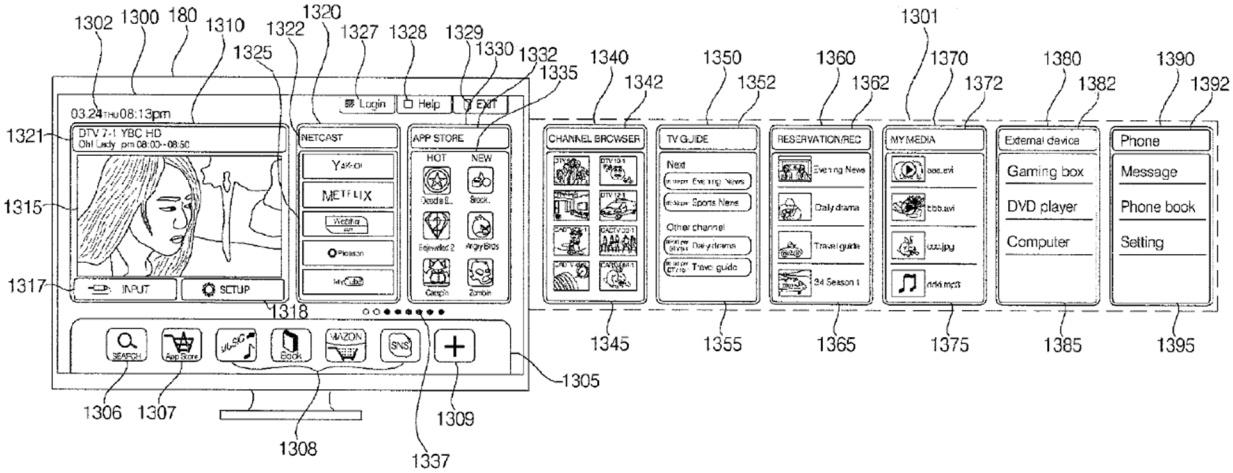
2010, claims priority to Provisional Nos. 61/379,363, 61/379,367, and 61/379,372, filed on September 1, and issued on July 19, 2016. Kim, Lee-1, Lee-2, and Choi are all prior art under (pre-AIA) 35 U.S.C. § 102(a) and/or (e).

B. Ground 1: Claims 1-5, 11-15, and 21 are obvious under 35 U.S.C. § 103(a) over Kim in view of Lee-1 and Choi.

1. Summary of Kim

Kim discloses a method of controlling an "image display apparatus 100," such as "a smart TV," to display content to a user. Ex.1005, [0037]-[0038], Abstract. Kim's smart TV 100 home screen displays card objects arranged according to content sources. Ex.1005, [0060], [0137], [0192]-[0217], Fig. 19; Ex.1003, ¶¶42-47.

FIG. 19



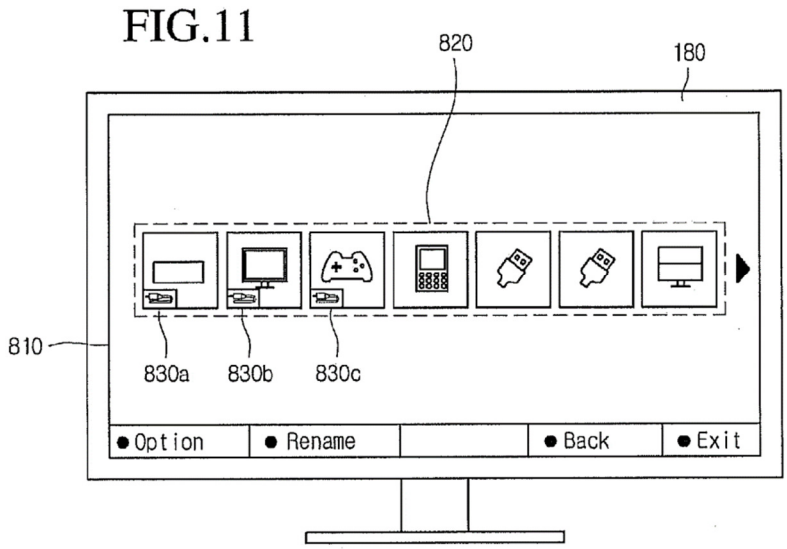
Ex.1005, Fig. 19.

2. Summary of Lee-1

Kim cites to and incorporates by reference Lee-1's "[e]xamples of thumbnails and methods_of using the same." Ex.1005, [0106]. Regarding methods of using thumbnails, Lee-1 discloses that a "displayed thumbnail image may be a…previously stored image." Ex.1006, 12:65-67; Ex.1003, ¶***.

3. Summary of Choi

Choi discloses that devices externally connected to an input port of the television may be represented by icons with specific symbols 830a, 830b and 830c to distinguish devices connected to an input port, as shown below at Figure 11. Ex.1007, [0250]; Ex.1003, ¶¶50-52.



Ex.1007, Fig. 11.

4. Reasons to Combine Kim and Lee-1

A POSITA when considering Kim would have also considered and applied

Lee-1's incorporated by reference thumbnail teachings to successfully implement Kim's system and method thereof, which uses thumbnails. Ex.1005, [0106]. It would have been obvious to a POSITA, to apply the thumbnail teachings of Lee-1 because they provide implementation details directly applicable to successfully implementing Kim's system and method. This reason is sufficient to explain why a POSITA would have sought and combined the identified disclosures of Lee-1 and Kim. Nevertheless, additional reasons for combining the relevant teachings are provided in the claim analysis below. Ex.1003, ¶¶53-54.

5. Reasons to Combine Choi and Kim

A POSITA would have also considered Choi's analogous methods and systems of displaying content on a television, including addressing the problem of connecting external devices to an input port of the television. Ex.1005, [0038]; Ex.1007, [0002]-[0004], [0077], [0099], [0196], [0205]-[0211]; Ex.1003, ¶55.

A POSITA would have combined the teachings of Choi with Kim to obtain beneficial and predictable results. Ex.1003, ¶56.

Kim discloses that its home screen includes an EXTERNAL DEVICE card object 1380 with a list of external devices (e.g., "Gaming box," "DVD player," "Computer") that may be connected to the image display apparatus 100 via an input port such as HDMI port, USB port, etc. Ex.1005, [0077], [0196], [0205]-[0210], Fig. 19. Choi complements Kim's disclosure by teaching that external

devices may be represented by icons with "specific symbols" to distinguish devices connected to an input port such as HDMI port, USB port, etc. Ex.1007, [0099], [0250]; Ex.1003, ¶57.

It would have been obvious to a POSITA to implement Kim's EXTERNAL DEVICE card object 1380, which provides a list of external devices which may be connected to the image display apparatus 100, to include icons representing external devices and specific symbols representing an input port connection. This would inform the user as to which external device is connected to an input port of the display apparatus 100 and which external device is not connected. The information would also be beneficial because it would allow the user, in certain instances, to determine if there is a problem with a connected external device. For example, in an instance where an external device has a specific symbol indicating an input port connection, but the external device is not providing an input signal, the user would understand that the port connection is not the problem. On the other hand, if the external device has no specific symbol, then the user would understand that it needs to be plugged in. Ex.1003, ¶58

The combination of Choi with Kim is merely combining prior art limitations (an external device icon with a specific symbol, per Choi, with Kim's EXTERNAL DEVICE card object 1380, which provides a list of external devices) according to known methods (Choi describes exemplary methods and it was known how to

generate thumbnails), as evidenced by Kim) to yield predictable results (allow the user to be informed which external device is presently connected to the image display apparatus 100 via an input port such as HDMI port, USB port, etc.). Ex.1003, ¶59.

Additionally, the combination is nothing more than applying a known technique (e.g., using an external device icon with a specific symbol to indicate that an external device is connected to an input port, per Choi) to improve the similar system of Kim (e.g., inform the user of Kim that an external device listed in the EXTERNAL DEVICE card object 1380 is connected to an input port, e.g., HDMI port, USB port, etc.). Ex.1003, ¶60.

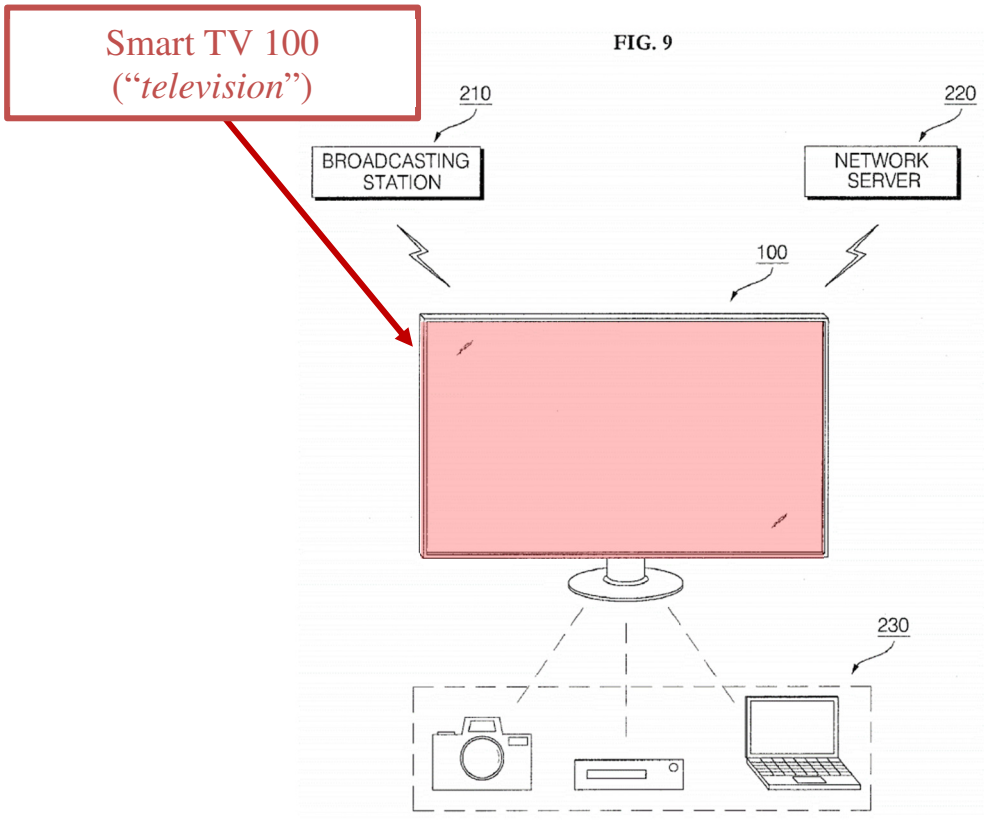
The results would have been predictable and there would have been a reasonable expectation of success in the combination given that both Choi and Kim illustrate similar televisions, and both provide external devices connected via an input port, e.g., HDMI port, USB port, etc. A POSITA would have been able to successfully implement a Kim with thumbnail icons that have specific symbols representing input ports, per Choi, as a matter of routine software programming. Ex.1003, ¶61.

6. Claim 1

[1.0] ***A method of displaying content on a television, comprising:***

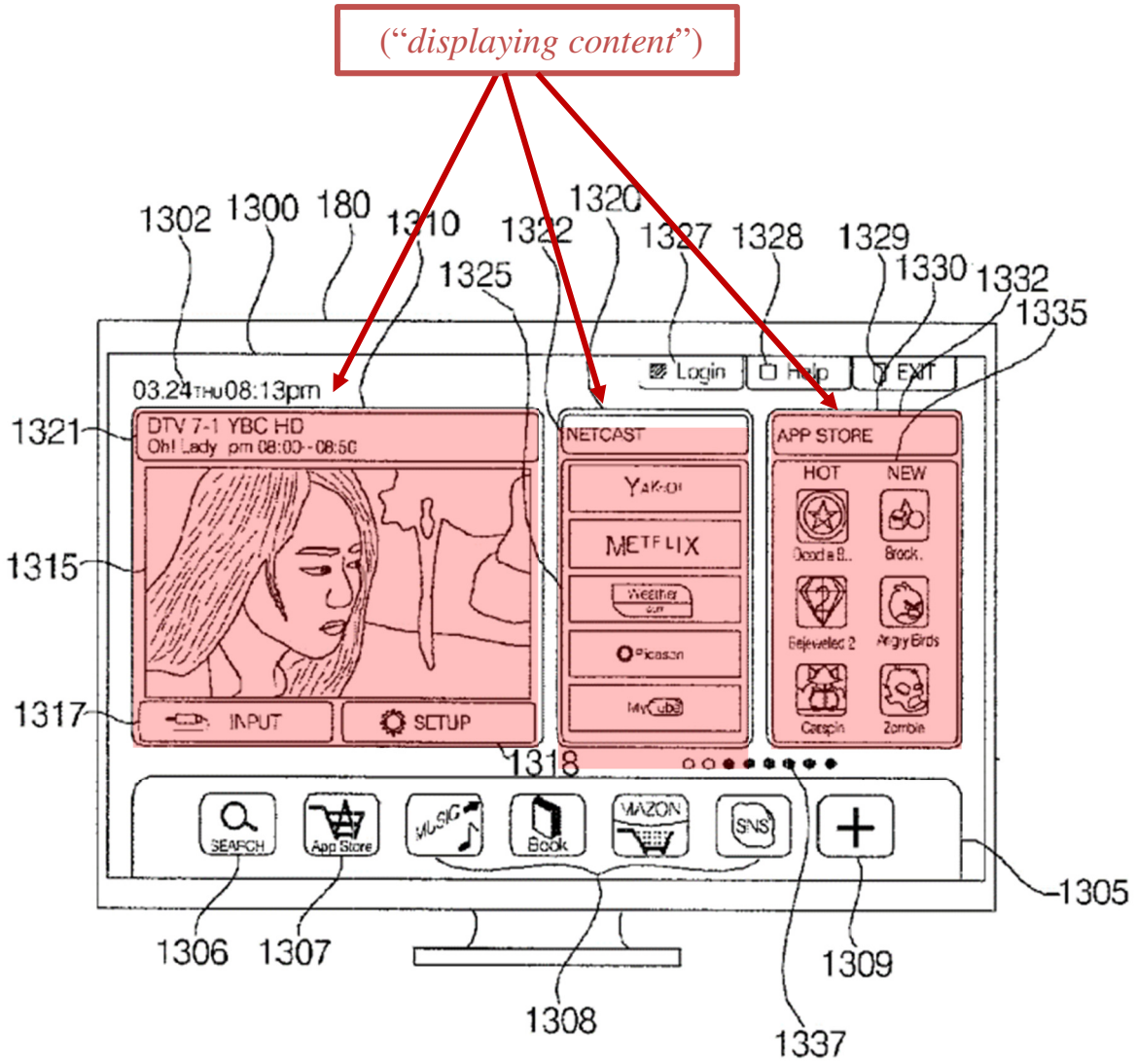
First, Kim discloses an "**<u>image display apparatus [that] may be</u>**

<u>configured as…a smart TV</u>" and a "**<u>method of controlling the same</u>**" to "display various types of content including still or video images as well as multimedia content." Ex.1005, [0282]-[0284]; *see also* Ex.1005, [00285]-[0289]; Ex.1003, ¶63.. Kim's image display apparatus 100 (e.g., a smart TV) is illustrated at Figure 9, reproduced below:



Ex.1005, Fig. 9 (annotated).

Furthermore, Kim's Figure 19 illustrates that the smart TV 100 displays various exemplary content, including a broadcast image (1315), Netcast content (1320), and APP Store content (1330). Ex.1005, [0193]-[0202]:



Ex.1005, Fig. 19 (partial, annotated).

Additional content that Kim's display apparatus 100 (smart TV) displays will be discussed in the analysis below. Ex.1005, Figs. 19-21. Thus, Kim renders obvious the preamble. Ex.1003, ¶¶64-65.

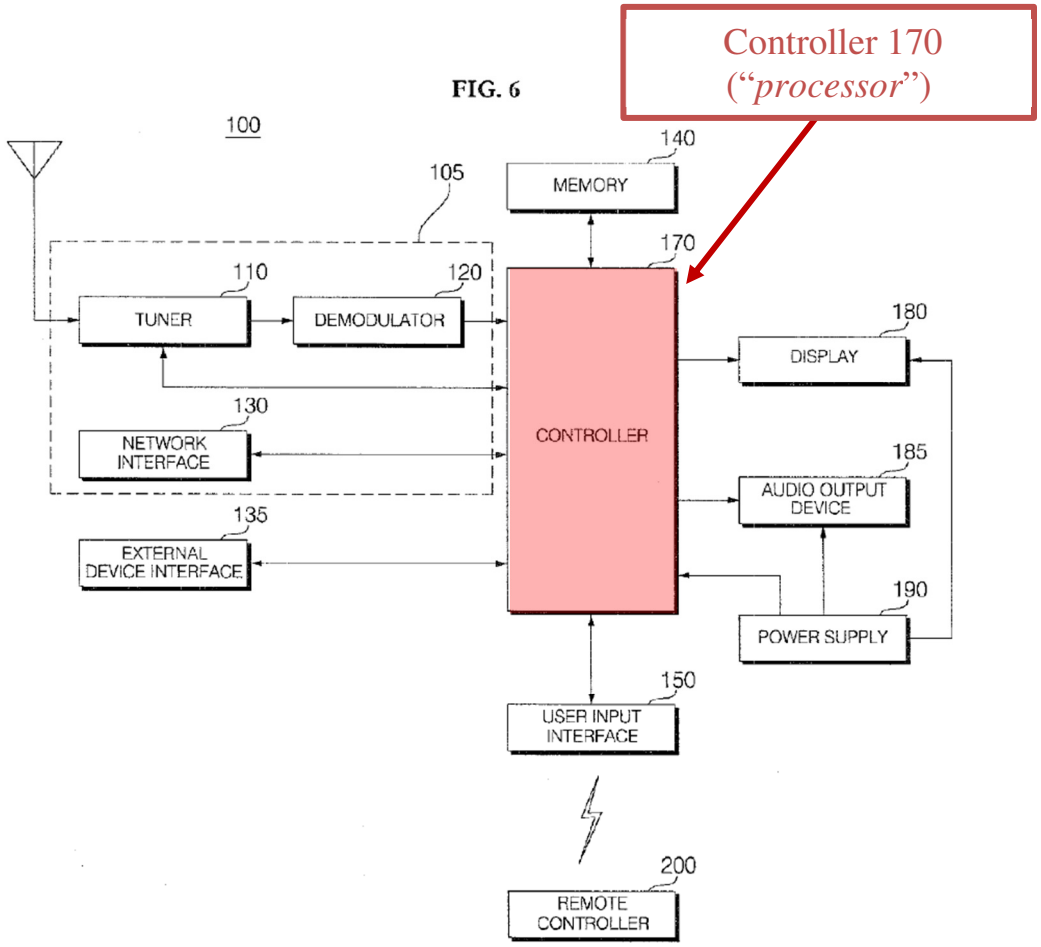
[1.1] ***receiving, by a processor, an indication associated with a selection by a user;***

First, Kim teaches "*a processor*" by disclosing a "**controller 170**" to

"provide overall control to the image display apparatus 100." Ex.1005, [0089]. The controller 170 includes "**a video processor…an audio processor and a data processor**" and may also include an "additional **application processor**." Ex.1005, [0085], [0133], [0166]. Kim's controller 170 utilizes a software platform with operating system ("OS") to perform display apparatus operations. Ex.1005, [0145], [0166], Figs. 11, 12. A POSITA would have understood that the controller 170 corresponds to multiple processors (e.g., video processor, audio processor, data processor, application processor) that execute OS-based software, among other software, to implement the operations of the image display apparatus 100 (smart TV). Ex.1003, ¶¶66.

Kim's controller 170 (including one or more processor, e.g., a video processor, an audio processor, a data processor, and an application processor) corresponds to a "*processor*," as claimed. Kim's disclosure is consistent with the '040 patent, which states that a processor "may include multiple virtual processors ... [or] multiple physical processors." Ex.1001, 17:5-9; Ex.1003, ¶¶67-71.

Kim's controller 170 ("*processor*") is illustrated at Figure 6, reproduced below:



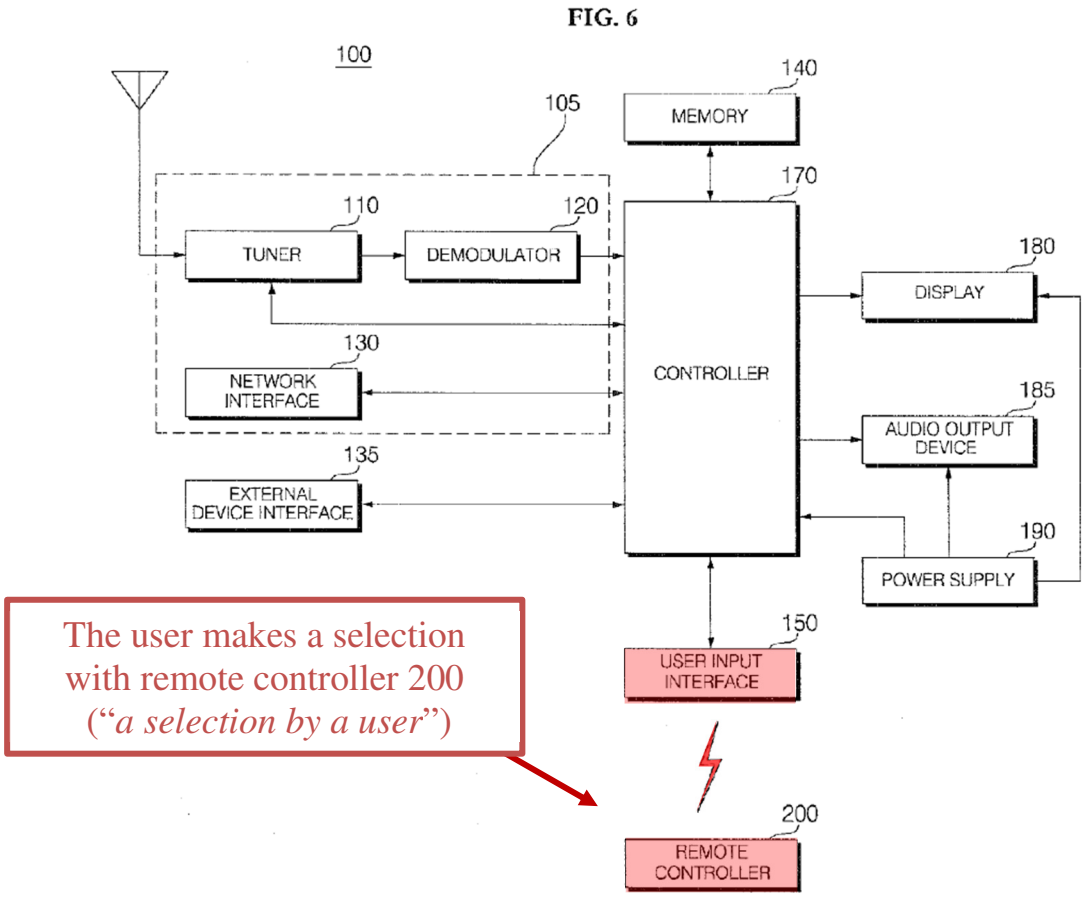
Ex.1005, Fig. 6 (annotated).

The Petition will primarily refer to controller 170 as the "*processor*." However, a POSITA would have understood that Kim's teaching that "**<u>the controller 170, or any other processor</u>**" (Ex.1005, [0166]) may perform functions for controlling the image display apparatus, contemplates that a single processor may be used instead. In such an implementation, the controller 170 would be replaced by the "other processor" (e.g., a single processor) that performs the controlling functions. In such an alternative implementation, the other processor

would correspond to claimed "*processor*." Ex.1003, ¶72.

Second, Kim teaches "*a selection by a user*" by disclosing that a user provides an input selection (e.g., home screen selection) via "various types of input devices," including "remote controller 200." Ex.1005, [0187]; *see also* Ex.1005, [0167]-[0171]-[0175], Fig. 14. For example, Kim discloses that a "home screen may be a default screen which may be displayed when a local key on the display apparatus 100 or **a home key on the remote controller 200 is selected**." Ex.1005, [0192]; *see also* Ex.1005, [0094] (…**a go-to-home screen input**...."). "The remote controller 200 may transmit a user input to the user input interface 150." Ex.1005, [0086]; Ex.1003, ¶73.

Kim at Figure 6 illustrates that the user makes a selection (e.g., home screen selection) with a remote controller 200 that is sent to a user input interface 150:



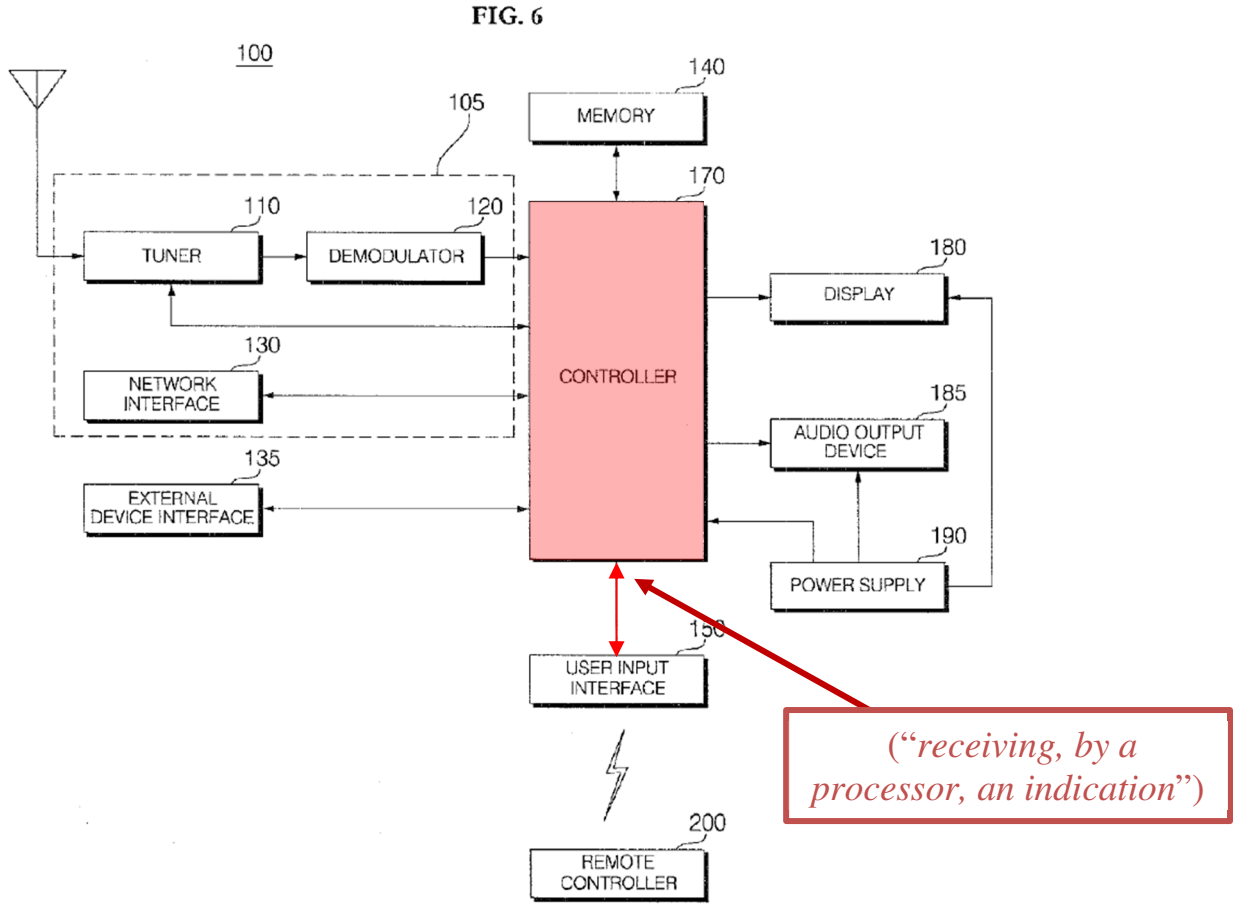
Ex.1005, Fig. 6 (annotated).

Kim's disclosure of a user making a selection (e.g., home screen selection) via an input device (e.g., remote controller 200) corresponds to "*a selection by a user.*" Ex.1003, ¶¶74-75.

Third, Kim discloses "*receiving, by a processor, an indication associated*" with the user selection. For example, Kim discloses that user input interface 150, which receives the user selection signal (e.g., "input signals or control signals") from the remote controller 200, "**transmits a signal received from the user to the controller 170**." Ex.1005, [0086]; *see also* Ex.1005, [0087] ("[T]he user input

interface 150 may provide the controller 170 with user input signals."); Ex.1005, [0173], Fig. 14; *see also* Ex.1005, [0109]-[0110], [0112]-[0113], [0173]. Additionally, Kim discloses that "upon **receipt of a go-to-home screen input, the controller 170** may control display of the home screen on the display 180." Ex.1005, [0094]; *see also* Ex.1005, [0090]; Ex.1003, ¶¶76-77.

Kim's Figure 6 illustrates that controller 170 arrow receives a signal associated with a user selection via the remote controller 200:



Ex.1005, Fig. 6 (annotated).

Thus, Kim discloses that controller 170 (or "other processor") receives a signal (e.g., home screen selection signal) associated with a user selection from an input device (e.g., user pressing the home key on remote controller 200), which renders obvious this limitation. Ex.1003, ¶79.

[1.2] ***determining, by the processor, based on the received indication, a global panel to display via the television;***

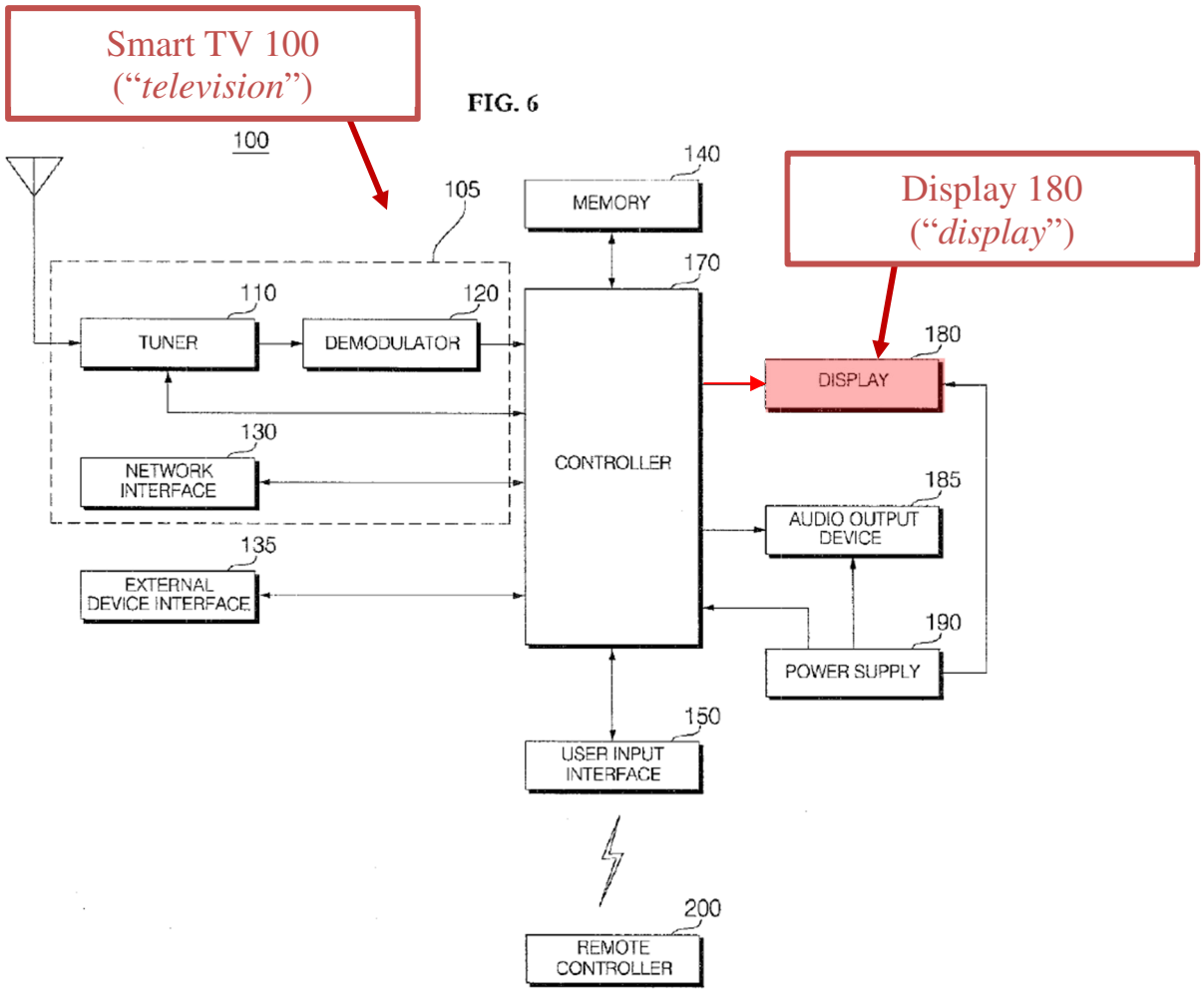
First, as discussed at [1.0], Kim discloses a smart TV 100 ("*the television*"). As discussed at [1.1], Kim discloses that controller 170 ("*the processor*") receives a signal (e.g., home screen selection signal) ("*received indication*") associated with a user selection. Ex.1003, ¶80.

Second, Kim discloses "*determining, by the processor, based on the received indication, a global panel to display via the television.*" Specifically, Kim discloses that "**upon receipt of a go-to-home screen input, the controller 170 may control display of the home screen on the display 180"** of the smart TV 100." Kim's home screen "**may include a plurality of card objects classified according to content sources**." Ex.1005, [0094]; *see also* Ex.1005, [0192]; Ex.1003, ¶81.

Kim's home screen, for example, "may include at least one card object representing a thumbnail list of broadcast channels, a card object representing a broadcast program guide, a card object representing a program reservation list or a

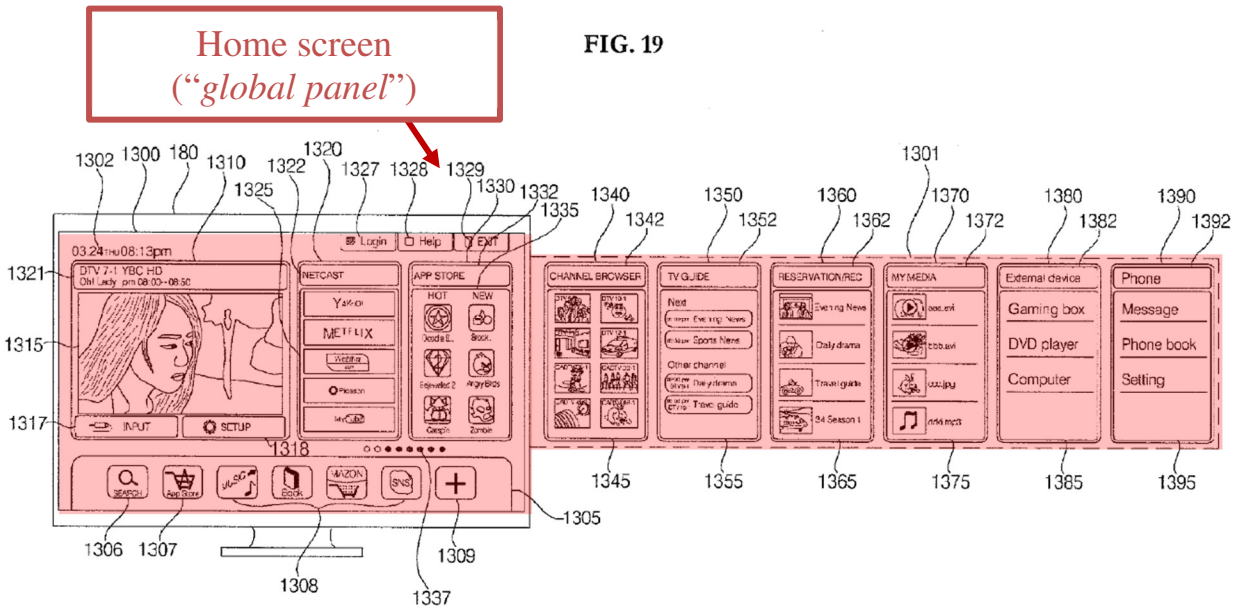
program recording list, or a card object representing a media list of a device connected to the image display apparatus 100. The card objects may further include at least one of a card object representing a list of connected external devices or a card object representing a call-associated list. The home screen may further include an application menu with at least one application that can be executed." Ex.1005, [0094]; Ex.1003, ¶¶81-82.

Kim's Figure 6 illustrates that controller 170 sends a signal (illustrated as an arrow) to display a home screen on display 170 of the smart TV 100:



Ex.1005, Fig. 6 (annotated).

Kim's Figure 19, reproduced below, illustrates that the display provides a home screen 1300 and hidden area 1301 (that may be scrolled to be viewable on the display), which collectively will be referred to as the "home screen" and which corresponds to the claimed "*global panel*":



Ex.1005, Fig. 19 (annotated).

It would have been obvious to a POSITA for controller 170 (which "provide[s] overall control") to "*determine*," based on the received signal (e.g., home screen selection signal), a corresponding home screen to transmit to display 180 so that it can be seen by the user on the smart TV 100. Ex.1005, [0089]; *see also* Ex.1005, [0094], [0096], [0193], [0196], Figs. 19-23; *infra*, [1.4]; Ex.1003, ¶¶82-834.

The '040 patent's "*global panel*" is similarly referred to as a "**home panel**." Ex.1001, 29:58-59. Additionally, the '040 patent provides that "[i]f there is too much information…to display at one time in the global panel, **the global panel may have a scrollbar or other means for the user to view the overflow information** (e.g., information that will not fit on the screen)." Ex.1001, 32:60-65;

Ex.1003, ¶85.

Thus, Kim discloses determining by the controller 170, based on the received signal (e.g., go-to-home screen selection signal), a home screen to display via the smart TV 100, which renders obvious this limitation. Ex.1003, ¶86.

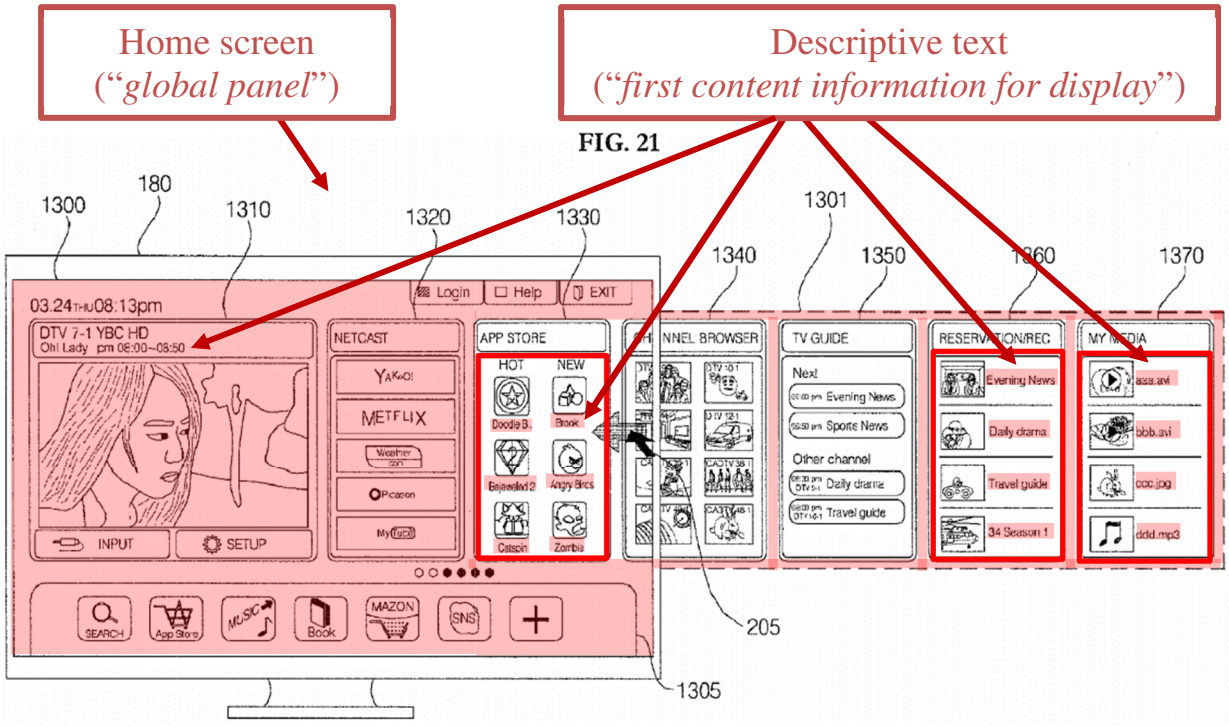
[1.3] ***retrieving, by the processor, from memory, a first content information for display in the global panel; and***

First, as discussed in connection with limitations [1.1]-[1.2], Kim discloses that controller 170 ("*the processor*") determines a home screen ("*the global panel*") to display on the television. Ex.1003, ¶87.

Second, Kim discloses the two different types of content information for display in objects on the home screen: **(1)** descriptive text (e.g., such as application names, video genre, video title, and audio/visual indicator), and **(2)** thumbnails. Ex.1003, ¶88.

<u>(1) descriptive text: "*a first content information*"</u>

Kim at Figure 21, reproduced below, illustrates that the home screen objects 1330, 1360, and 1370 have descriptive text informing the user of available content. Ex.1005, [0137], [0208]. One or more of the descriptive texts in a card object corresponds to "*first content information*":



Ex.1005, Fig. 21 (partial, annotated).

For example, card object 1330 descriptive text "Angry Birds" and "Bejeweled 2" corresponds to a "title" or "name" of application available to the user. Kim's disclosure is within the scope of the '040 patent. Ex.1001, 25:41-49, 27:23-30; *see also* Ex.1001, Fig. 15C ("Bubble Bird" for Application 1504D); Ex.1003, ¶¶89-91.

As another example, card object 1360 descriptive text descriptive text "Evening News," "Daily Drama," and "34 Season 1" correspond to content information in the '040 patent, such as "title" "genre" or "name" of content. Ex.1001, 25:41-49, 27:23-30; Ex.1003, ¶92.

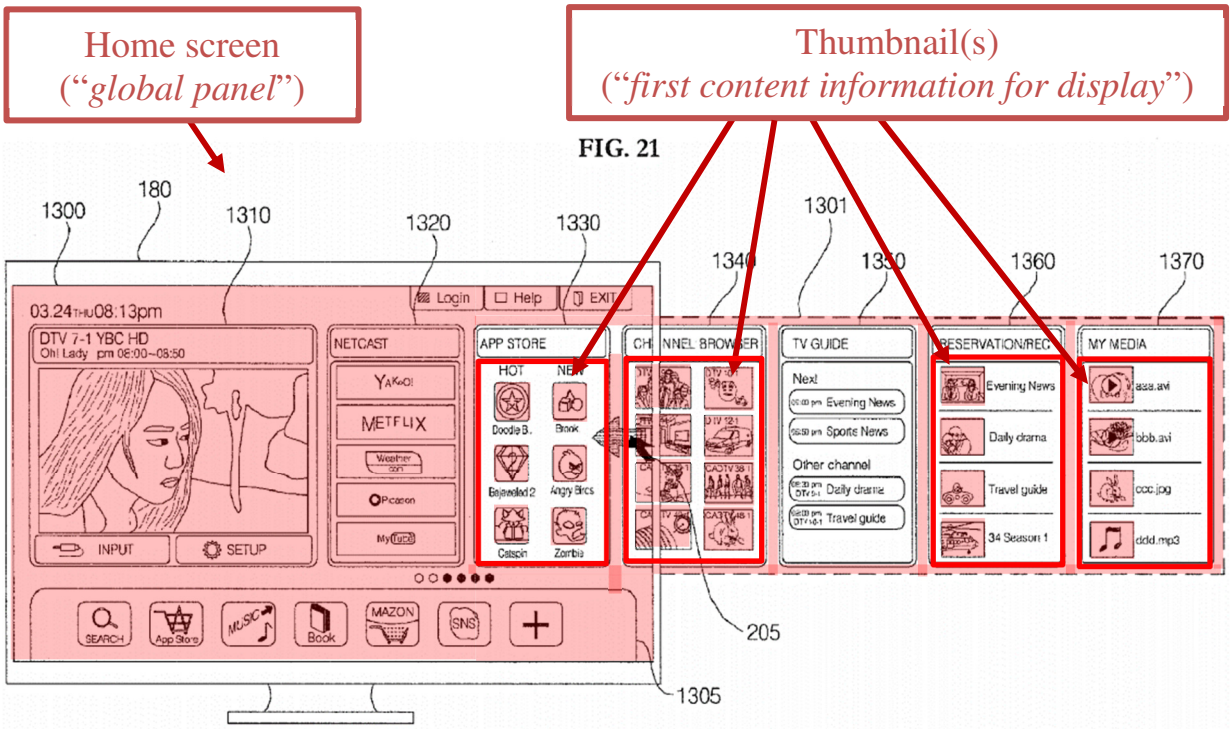
Additionally, the card object 1370 descriptive text of "aaa.avi" "ddd.mp3"

represent the title or name (e.g., "aaa" or "ddd") and the audio/visual format (e.g., audio mp3 format), which corresponds to content information in the '040 patent, such as "title" "name" or "audio/visual indicator" of content. Ex.1001, 25:41-49, 27:23-30; Ex.1003, ¶93.

Accordingly, Kim's descriptive text in one or more the above noted card objects corresponds to the claimed "*first content information*." Ex.1003, ¶94.

(2) thumbnails: "*a first content information"*

Kim's home screen card objects also include "**thumbnails**" (e.g., "icons," "images," "moving pictures") that are "**related to the corresponding content**" or are "**representation of the corresponding content**." Ex.1005, [0186], Fig. 19; *see also* Ex.1005, [0184]-[0185], [0208]-[0209], Figs. 19-21; *see also* Ex.1005, [0137]. Kim at Figures 19 to 21, of which Figure 21 is reproduced below, illustrates that each of the APP STORE card object 1330, the RESERVATION/REC card object 1360, and the MY MEDIA card object 1370, include thumbnails informing the user of available content:



Ex.1005, Fig. 21 (partial, annotated).

In the above figure, the APP STORE card object 1330 displays various thumbnails, each of which informs the user of applications available. Ex.1005, [0084], [0208]. For example, the thumbnail image informs the user that the application "Angry Birds" is available. Kim's example of content information is within the scope of the '040 patent, which discloses content information "Bubble Bird" for Application 1504D. Ex.1001, Fig. 15C; Ex.1003, ¶¶95-97.

Similarly, as another example, the thumbnail images in the CHANNEL BROWSER card object 1340 informs the user of available pre-stored favorites channels that may be selected for display. Ex.1005, [0206]. Ex.1003, ¶98.

As another example, the thumbnail image in the RESERVATION/REC card object 1360 informs the user that a program pertaining to helicopters is available. Ex.1003, ¶99.

As yet another example, the audio/video moving picture in the MY MEDIA card object 1370 informs the user that a video pertaining to "Love is." is available. Kim's audio/video moving pictures or images is within the scope of the '040 patent, which discloses that content information includes an "audio/visual indicator." Ex.1001, 25:41-49; Ex.1003, ¶100.

Accordingly, Kim's thumbnails in one or more the above noted card objects corresponds to the claimed "*first content information*." Ex.1003, ¶101.

Second, Kim discloses "*retrieving, by the processor, from memory*" the noted content information "*for display in the global panel*." For example, Kim's discloses that the "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)" and that "**the controller 170 may control display of the home screen on the display 180**." Ex.1005, [0085], [0094]; *see also* Ex.1005, [0084]-[0086], [0092]-[0094]; Ex.1003, ¶102.

As already noted, Kim's controller 170 "provide[s] overall control to the image display apparatus 100." Ex.1005, [0089]. It would have been obvious to a

POSITA, for controller 170 to "*retrieve*[]" the content stored in memory 140 so that it may be reproduced on the home screen on display 180. Ex.1005, [0085]. Also, it would have been obvious for the retrieved content to include the descriptive text that is reproduced in the card objects of the home screen, as displayed at Kim's Figures 19 to 23. Ex.1003, ¶103.

For example, it would have been obvious to a POSITA for the displayed application listing of card object 1330, e.g., "Bejeweled 2," "AngryBirds," etc., to correspond to the "list of applications" stored in memory 140. *See* Ex.1005, [0084]-[0085] ("The memory 140 may store applications or a list of applications…The image display apparatus 100 may reproduce content stored in the memory 140."). The same applies to all of the other descriptive text in each card object 1360 and 1370, which correspond to content in memory 140. Because Kim reproduces content stored in memory 140, and the descriptive text is reproduced on the display 180, it would have been obvious to a POSITA to retrieve the descriptive text from memory 140 so that it may be reproduced on the displayed card objects of the home screen. *See infra* [1.4]. This is consistent with Kim's disclosure that "**[t]he controller…may store** and manage (e.g., sort and arrange a display order of the card objects), **and display the card objects**." Ex.1005, [0213]; Ex.1003, ¶104.

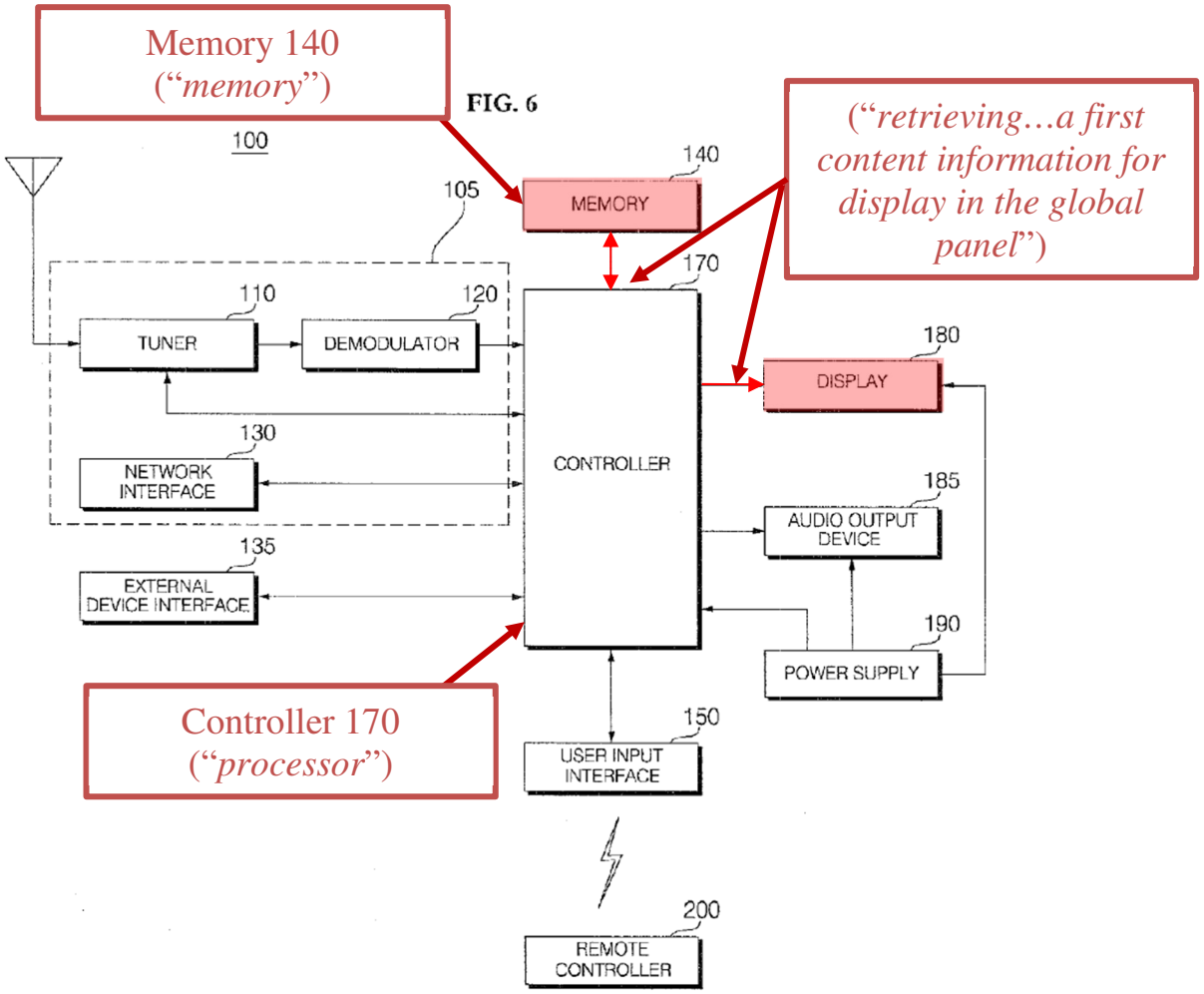
Further, regarding the above noted thumbnails, Kim discloses that "**[t]he**

<u>controller 170 may control the display 180</u> to display images. For instance, the controller 170 may control the display 180 to display … **an <u>image stored in the memory 140</u>**." Ex.1005, [0092]; *see also* Ex.1005, [0094], [0117]. Kim also states that "**<u>the thumbnail images may correspond to pre-stored user channels</u>** (e.g., favorite list)." Ex.1005, [0206]; Ex.1003, ¶105.

It would have been obvious to a POSITA for the "image[s] stored in the memory 140" to include thumbnails, which are types of images that are displayed on the home screen. Ex.1005, [0092], [0117]. It also would have been obvious to retrieve the thumbnails from memory 140 so that they are available to be reproduced (Ex.1005, [0065]) when the user presses the home key (Ex.1005, [0192]), thereby informing the user of available content (e.g., video files, still image files, music files, text files, favorite channels, or application files). This is consistent with Kim's disclosure that "**[t]he controller…may store** and manage (e.g., sort and arrange a display order of the card objects), **and display the card objects**." Ex.1005, [0213]; *see also* Ex.1005, [0293], claim 11, claim 13; Ex.1003, ¶106.

Figure 6 of Kim, reproduced below, illustrates (with bidirectional arrows) that the controller 170 retrieves ("*retrieving, by the processor*") content such as descriptive text and thumbnails ("*first content information*") stored in memory 140 ("*memory*") for display (arrow) on the home screen of display 180 ("*display in the*

global panel"). *See also infra*, [1.4] (disclosing that the retrieved content is displayed to the user when the home screen card objects are shifted or scrolled); Ex.1003, ¶107.



Ex.1005, Fig. 6 (annotated).

Additionally, Kim incorporates by reference Lee-1. Ex.1005, [0106]. Kim states that "[e]xamples of thumbnails and methods of using the same are disclosed in" Lee-1. Ex.1005, [0106]. Regarding methods of using thumbnails, Lee-1

discloses that the "**displayed thumbnail image may be a…previously stored image**." Ex.1006, 12:65-67. It would have been obvious to a POSITA, when implementing Kim's smart TV 100, to store thumbnails in its memory 140 and subsequently display the stored thumbnails to the user, as Lee-1 teaches. That is, it would have been obvious to a POSITA, in view of Lee-1, to store Kim's thumbnails in memory 140. Storing the thumbnails would avoid repeatedly generating the thumbnails (e.g., resizing images as thumbnails) each time the home screen is displayed, thereby reducing processing requirements. For example, the "Hot" or "New" thumbnails in the APP STORE card object 1330 may be updated at a predetermined time (e.g., "a day, a week, a month, a quarter, a halfyear, a year" Ex.1005, [0239]), and after the update the corresponding thumbnails would be stored in memory 140 for display to the user, without additional processing. This would allow the controller 170 to quickly retrieve the thumbnails, once stored in memory 140, so that the images are reproduced (with reduced processing delay) on the card objects of the home screen when the user presses the home key. Ex.1005, [0065], [0192]; Ex.1006, 12:65-67; *see also* Reasons to Combine Kim and Lee-1; Ex.1003, ¶108.

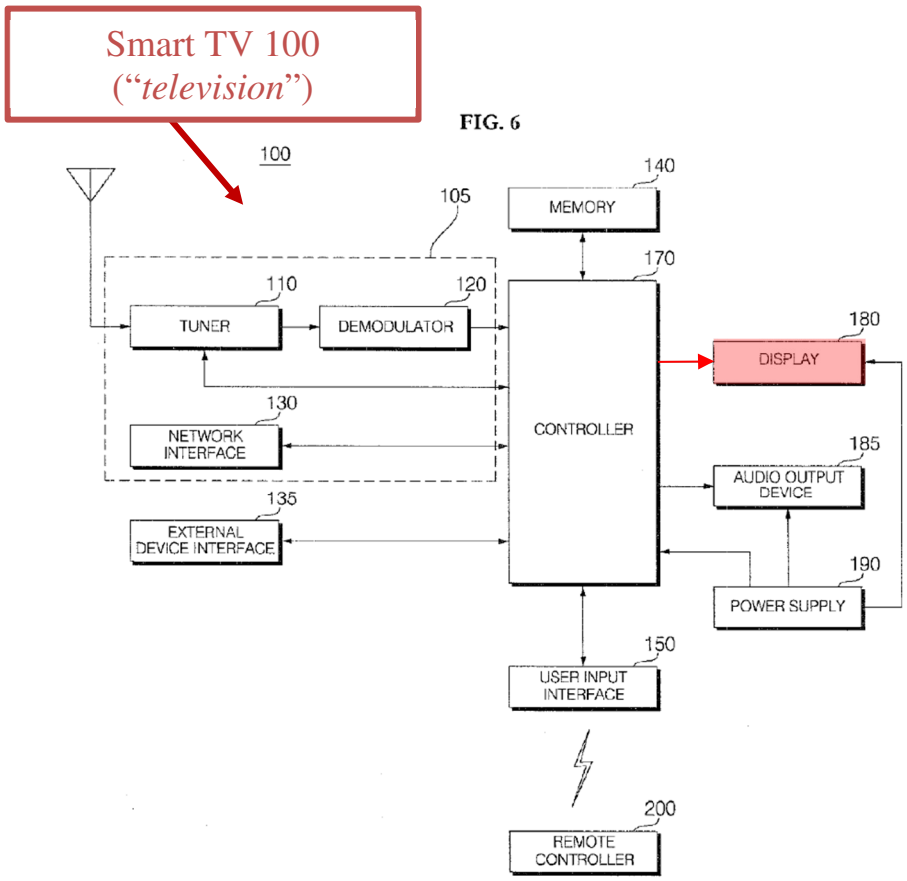
Accordingly, Kim in combination with Lee-1 discloses that the controller 170 retrieves from memory 140 thumbnails and descriptive text (associated with the APP STORE card object 1330, the RESERVATION/REC card object 1360,

and the MY MEDIA card object 1370) for display in the home screen. In the present example, any combination of the thumbnails and descriptive text associated with the APP STORE card object 1330 or the RESERVATION/REC card object 1360 corresponds to the "*first content information*." Ex.1003, ¶¶109-110.

[1.4] *displaying, via the television, the retrieved content information in the global panel,*

First, as discussed at [1.0], Kim discloses a smart TV 100 ("*television*") and as discussed at [1.2], Kim discloses a home screen ("*global panel*"). Further, as discussed at [1.3], Kim discloses that the controller 170 retrieves from memory 140 thumbnails and descriptive text ("*retrieved content information"*). Ex.1003, ¶111.

Second, consistent with the analysis at [1.3], Kim's controller 170 controls the display of the home screen (which includes the thumbnails and descriptive text) ("*retrieved content information*"). Ex.1005, [0065], [0094]. Figure 6 of Kim, shown below, illustrates that the controller 170 outputs retrieved content information (shown as an arrow) so that it is reproduced ("*displaying*") on the display 180 of the smart TV 100 ("*via the television*"):



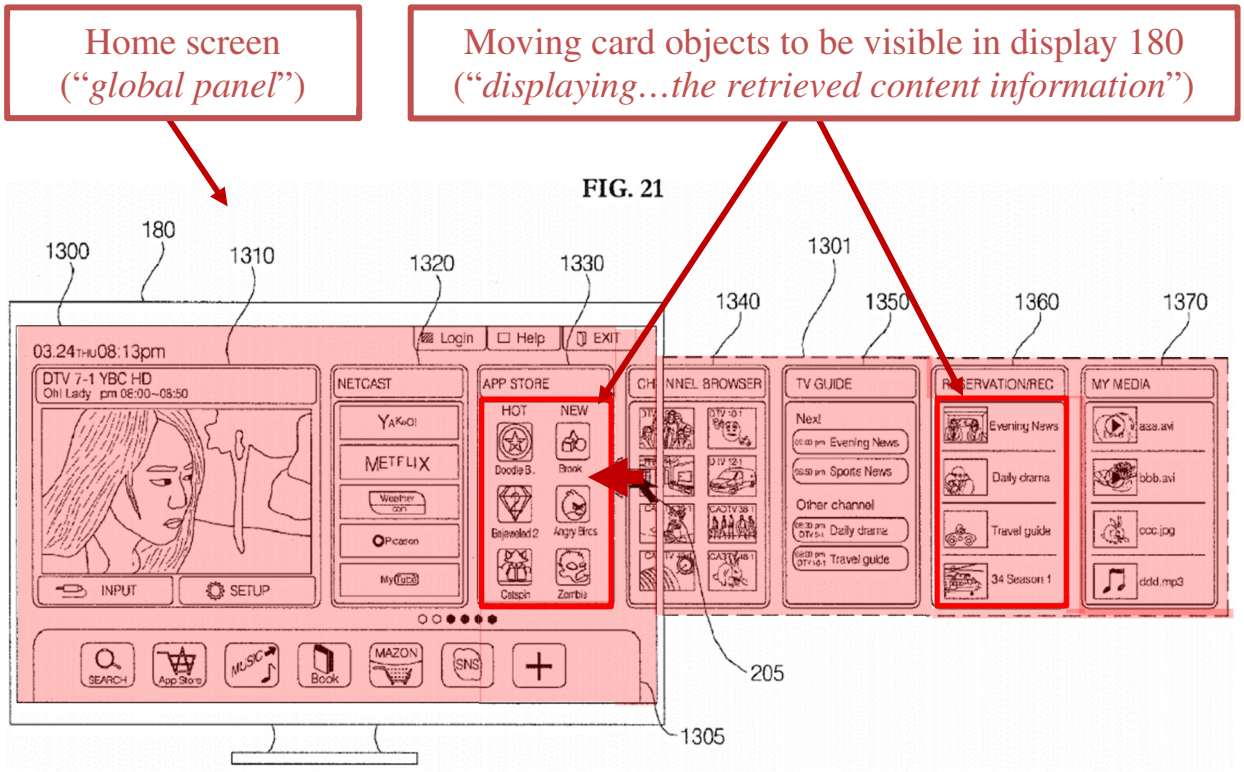
Ex.1005, Fig. 6 (annotated).

The retrieved content information is displayed "*in the global panel*." Kim explains that "**<u>the controller 170 may control movement of a [home screen] card object corresponding to the card object move input on the display 180, or if the card object is not displayed on the display 180, the controller 170 may control the display to show the card object on the display 180</u>**." Ex.1005, [0096]; *see also* Figs. 20-23 (illustrating shifting card objects); *see also* Ex.1005, [0196], [0213]. Additionally, Kim explains that the broadcast image 1315 may be resized (reduced) to display a home screen with more (e.g., four) card objects.

Ex.1005, [0198]. Ex.1003, ¶[***.

It would have been obvious to a POSITA to reduce the size of the broadcast image 1315 or scroll or shift the card objects such that the display 180 presents more or different card objects, such as card objects 1360 and 1370 when these specific card objects are desired to be accessed by the user. Ex.1003, ¶¶112-116.

Kim at Figure 21, reproduced below, illustrates that the thumbnails and descriptive text ("*retrieved content information*") in the home screen ("*in the global panel*") objects 1330 and 1360 would be displayed once shifted or scrolled. Ex.1005, [0137], [0208]; *see also* Ex.1005, Fig. 22; Ex.1003, ¶117.



Ex.1005, Fig. 21 (partial, annotated).

Thus, Kim discloses that the thumbnails and descriptive text in card objects (e.g., 1330 and 1360) on the home screen are either initially displayed via the smart TV 100 or are moved (e.g., shifted or scrolled) so that they are displayed via the smart TV 100. Ex.1003, ¶118.

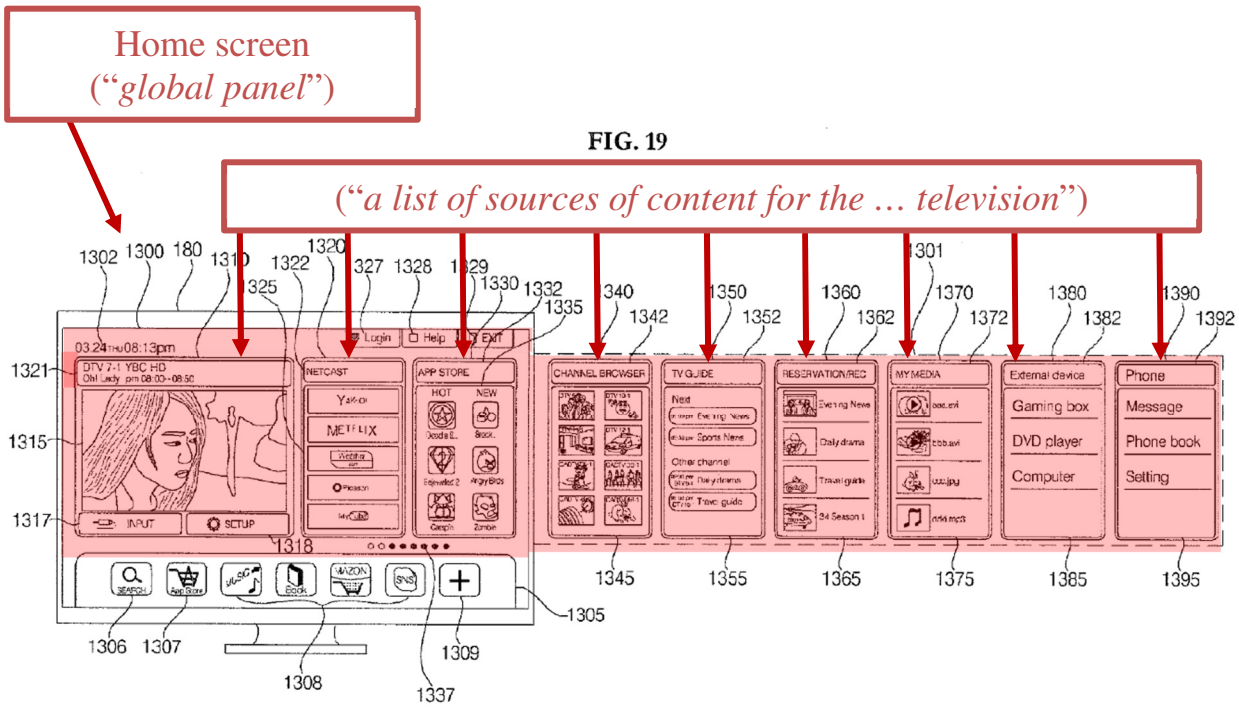
[1.5] ***wherein the global panel includes a list of sources of content for the intelligent television,***

First, as discussed at [1.0], Kim discloses a smart TV 100 ("*the television*"). *See also* Ex.1005, [0192], [0282]-[0283], Figs.1, 19. Kim's smart TV 100 is within the scope of the '040 patent's "*intelligent television*." Ex.1001, 7:14-17; Ex.1003, ¶119.

Second, as discussed at [1.2], Kim discloses a home screen ("*global panel*"). Kim discloses that the home screen "*includes a list of sources of content for the … television*" because **"[t]he home screen may include a plurality of card objects classified according to content sources**" for the smart TV 100. Ex.1005, [0094]; *see also* Ex.1005, [0193]; Ex.1003, ¶120.

As illustrated at Figure 19, reproduced below, the home screen BROADCAST card object 1310, NETCAST card object 1320, APP STORE card object 1330, CHANNEL BROWSER card object 1340, TV GUIDE card object 1350, RESERVATION/REC card object 1360, MY MEDIA card object 1370, EXTERNAL DEVICE card object 1380, and PHONE card object 1390, separately

and together, disclose a "list of sources of content" as claimed:



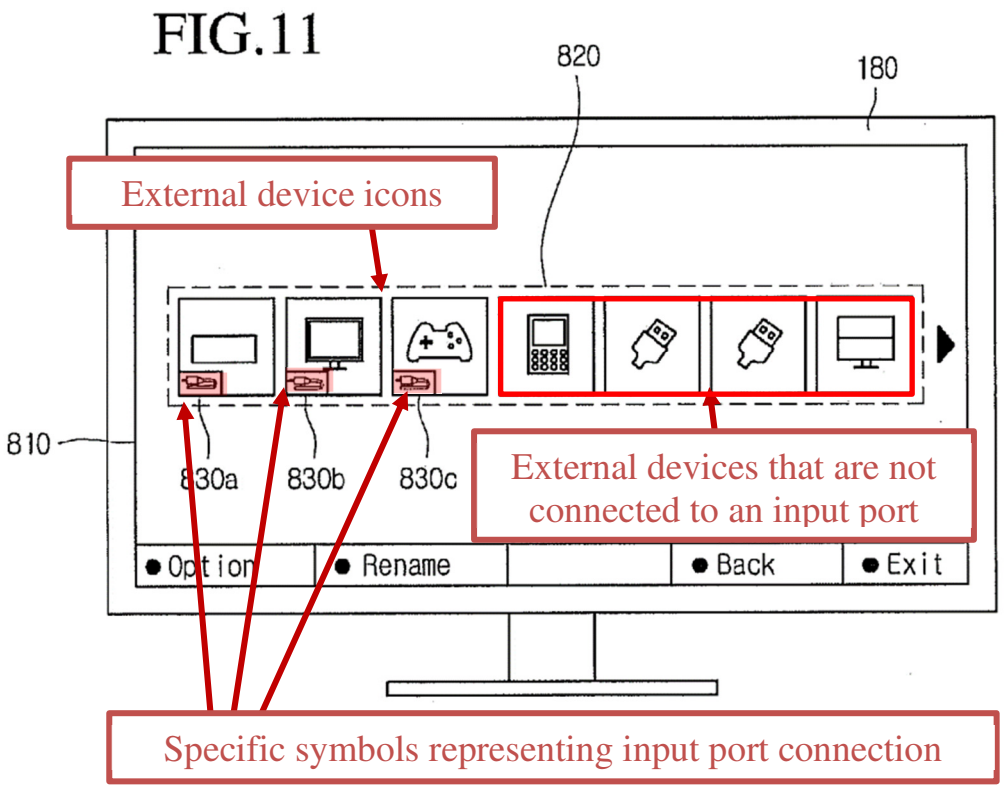
Ex.1005, Fig. 19 (annotated).

The NETCAST card object 1320 "provide[s] a list of [content providers] CPs, e.g., a list of CPs available through NetCast," such as Yakoo, Metflix, weather.com, Picason, MyTube, etc., and the APP STORE card object "may provide a list of applications." Ex.1005, [0195]; *see also* Ex.1005, [0196]-[0202]. The CHANNEL BROWSER card object 1340 includes a list of broadcast channel or station sources, such as DTY 9, DTY 10-1, DTY 11-1, DTY, 12-1, etc., and the EXTERNAL DEVICE card object 1380 includes a list of auxiliary content sources, such as a gaming box, a DVD player, a computer, camera, or another appropriate device, etc., and the PHONE card object 1390 provides a list of call-

related items. Ex.1005, [0196]; *see also* Ex.1005, [0205]-[0211]; Ex.1003, ¶¶121-123.

Third, Choi discloses that external devices may be represented by icons with specific symbols to distinguish connected devices. Ex.1007, [0250] ("As shown in FIG. 11, a plurality of **external device icons 820 representing a plurality of external devices are displayed**… the control unit 170 determines which external device icons 820 are connected to the image display device 100 in order to display **specific symbols 830a, 830b and 830c on the external device icons** that are being connected to the image display device 100."); Ex.1003, ¶124.

Choi's Figure 11 is reproduced below, illustrates that external devices are represented by icons with specific symbols indicating that a given external device is connected to an input port of the image display device 100:



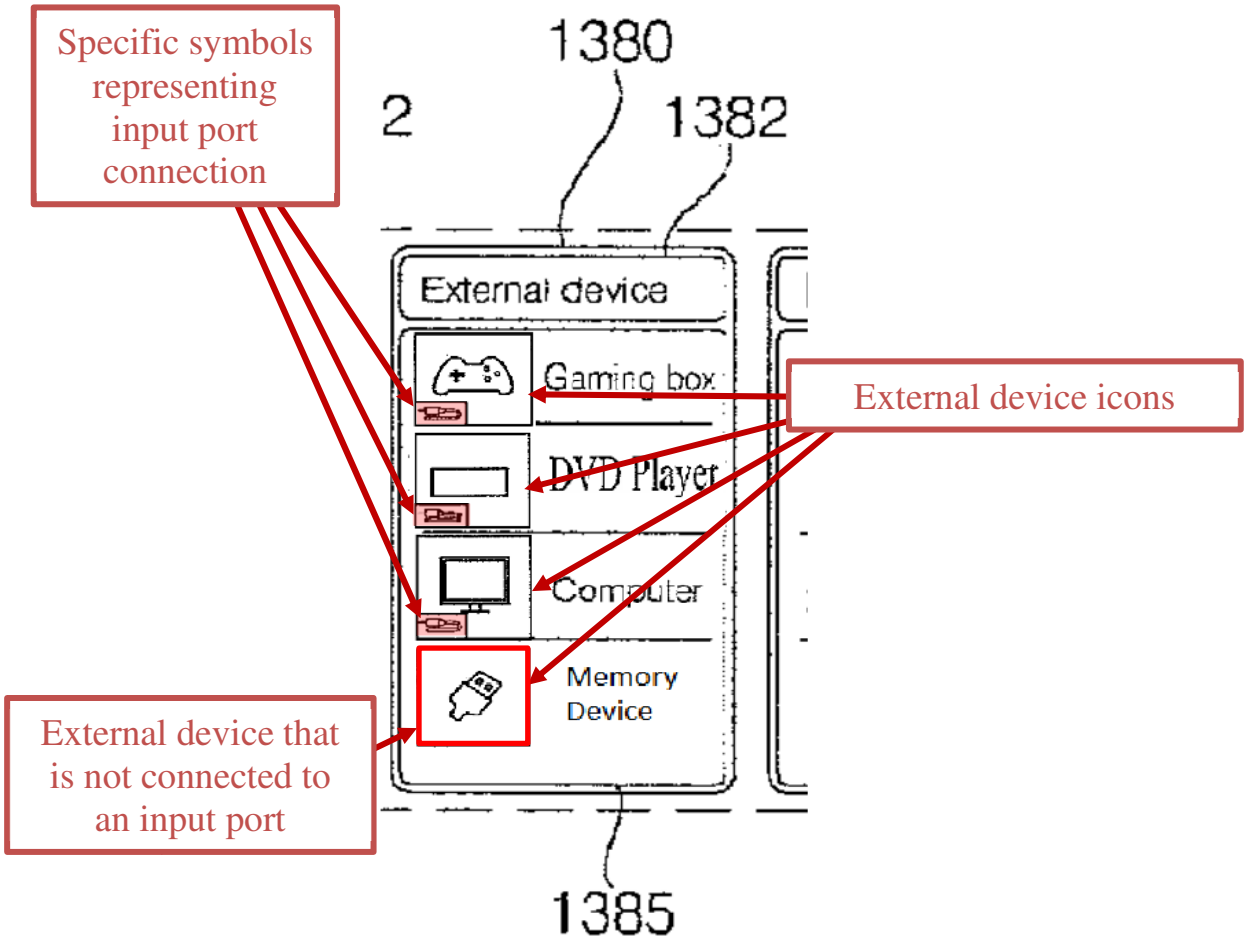
Ex.1007, Fig. 11 (annotated).

Like Kim, Choi's external devices may correspond to a DVD player, a Blue Ray player, a game console, a personal computer (PC), a camera, a camcorder, a memory device, or any other appropriate device. Ex.1005, [0076], [0131]; Ex.1007, [0249]. Also, like Kim, Choi's external devices may be connected to an input port of the image display device 100, including a USB port, a CVBS port, a component port, an S-video port, a DVI port, a HDMI port, an RGB port, and a D-SUB port. Ex.1005, [0077], Ex.1007, [0099]; Ex.1003, ¶¶125-126.

It would have been obvious to a POSITA to implement Kim's EXTERNAL DEVICE card object 1380 ("which may provide a list of external devices which

may be connected to the image display apparatus 100", Ex.1005, [0196]), to include icons representing external devices with specific symbols for port connected devices. This would inform the user as to which external device is actually connected to an input port of the smart TV 100 and which external device is not connected. Ex.1003, ¶127.

In the proposed combination, a POSITA would have implemented Kim's EXTERNAL DEVICE card object 1380 such that external devices that are connected to an input port are represented by an icon with "specific symbols" as illustrated below in Kim's modified Figure 19:



Ex.1005, Fig. 19 (partial, modified in view of Choi).

It would have been obvious for Kim's EXTERNAL DEVICE card object 1380 to include both icons and descriptive text of the connected device, consistent with Kim's other card objects (e.g., 1360 and 1370), so that the user can readily discern the connected device. Also, it would have been obvious to include only icons (as Choi illustrates), so that more or larger icons for external devices can be shown on the EXTERNAL DEVICE card object 1380. It further would have been obvious to utilize only letters to identify input port connected devices. Ex.1007,

[0250] ("… **any one of letters**, symbols, colors, and flashing lights may be used."). For example, when using letters, it was known in the art to present a specific input port description next to an external device connected thereto, e.g., "**HDMI-DVD Player**." Ex.1011, Fig. 17(d). In an implementation with letters, therefore, it would have been obvious to a POSITA to distinguish input port connected devices shown on the EXTERNAL DEVICE card object 1380 by identifying a corresponding input port, e.g., HDMI port, USB port, a CVBS port, etc., so that the user has an understanding of which device is connected to which port. Ex.1003, ¶¶128-129.

The proposed combination is merely combining prior art limitations (an external device icon with a specific symbol representing an input port (or letters), per Choi, with the EXTERNAL DEVICE card object 1380, of Kim) according to known methods to yield predictable results of informing the user which external device is connected to an input port. The combination also represents the use of known technique (above noted technique of Choi) to improve Kim's similar image display apparatus 100 in the same way (e.g., inform the user which external device is connected to an input port). Ex.1003, ¶130.

Thus, Kim in combination with Choi discloses that the home screen includes a list of content sources (see above analysis) for the smart TV 100. *See also infra* [1.7]; Ex.1003, ¶131.

[1.6] *wherein at least one of the sources is highlighted as being associated with the first content information,*

As discussed in the Claim Construction section, "*at least one of*" requires only one of the sources to be highlighted. Ex.1003, ¶132.

First, as discussed at [1.3], Kim discloses thumbnails and descriptive text in each card object 1330, 1360, and 1370 (separately and together "*first content information*."). Further, as discussed at [1.5], Kim discloses content sources ("*the sources*"). Ex.1003, ¶133.

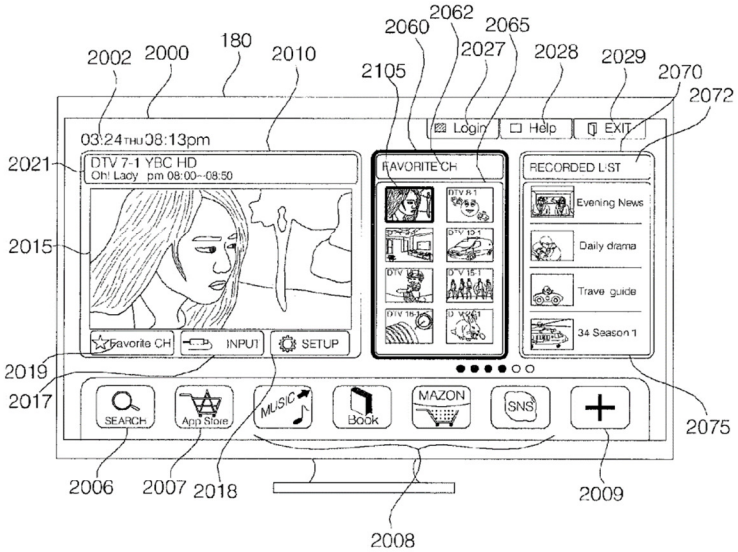
Second, Kim discloses that at least one of the sources "*is highlighted as being associated with the first content information*." Kim gives an example where a card object is highlighted when it is already displayed on the display 180. For example, Kim discloses that "**[i]f the card object 1390 is already displayed on the display 180, it may be highlighted** or otherwise distinguished from the other card objects." Ex.1005, [0211]. Accordingly, Kim discloses "*highlighting,*" as recited in the claim. Ex.1003, ¶134.

Although Kim provides a highlighting example in the context of presently displayed card object 1390, it would have been understood by a POSITA that this teaching generally applies to Kim's other card objects. For example, in the circumstance where the APP STORE card object 1330 is already displayed on the display 180 (see Figure 21), it would have been obvious to a POSITA for the APP

STORE card object 1330 to be highlighted so that it is distinguished from the other card objects and readily identified by the user. Ex.1010, 38:7-11 ("The home screen 2000 may include the [a] card object 2060…[that] **may be highlighted…[so] the user can readily view** the…card object 2060."), Fig. 33B. Kim's card object 1330 being highlighted associates the APP STORE ("*at least one of the sources*") with the respective application thumbnails and descriptive text (separately and together "*first content information*"). Ex.1003, ¶135.

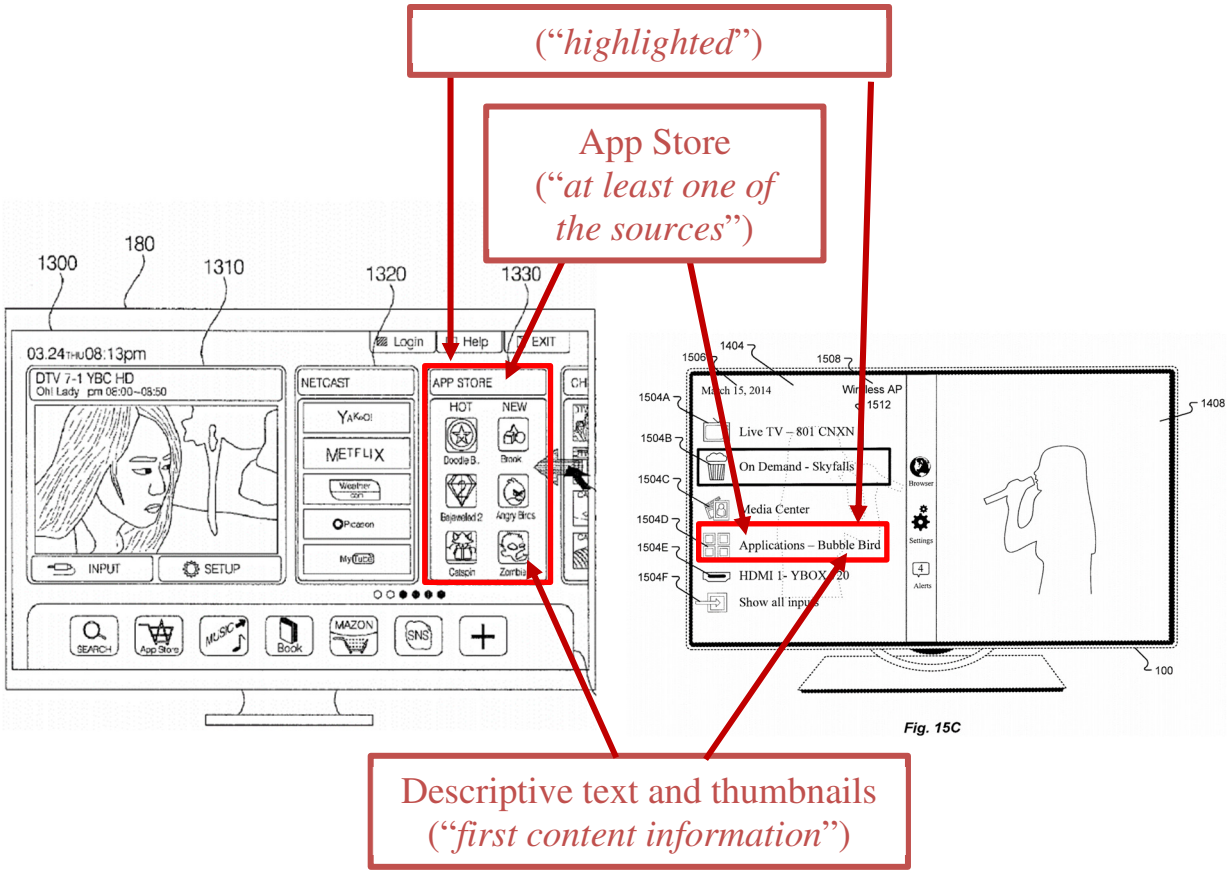
A POSITA would have understood that Kim's card object may be highlighted with a box surrounding the card object, as was known in the art. *See e.g.,* Ex.1010, Figs. 33B (illustrating how it was known to highlight a card object with a surrounding box). Ex.1003, ¶136.

FIG. 33B



Ex.1010, Figs. 33B.

The below side-by-side comparison, illustrates that Kim's highlighting of already displayed card object 1330 results in the "APP STORE" content source "*highlighted as being associated with*" the application thumbnails and descriptive text (e.g., "Angry Birds") consistent with how the '040 patent would highlight the content source "Applications" and associated content information "Bubble Bird":



Ex.1005, Fig. 21 (partial, annotated). **Ex.1001, Fig. 15C (annotated).**

The same would apply to Kim's other card objects. For example, when card object 1360 is already displayed the RESERVATION/REC content source would be highlighted as associated with the thumbnails and descriptive text that identifies

the available content. Similarly, the same reasoning would apply to the remaining card objects. Ex.1003, ¶¶137-139.

Additionally, Kim discloses that active card objects are distinguished from partially displayed card objects by "a **color, tint**, brightness, **shading**, fading, or another appropriate characteristic to further distinguish the partially displayed card objects." Ex.1005, [0228]. Kim's technique of distinguishing renders obvious "*highlighting*." Exemplary "*highlighting*" in the '040 patent includes using "a box…adjusting the background of an icon and text…such that the **color, shade, or hue** is different." Ex.1001, 30:41-51; Ex.1003, ¶¶140-141.

Thus, distinguishing an active card object (e.g., by using one or more of color, tint, shading, etc.), the respective content source (of a given card object) would be highlighted as associated with its respective thumbnails and descriptive text, which renders obvious this limitation. Ex.1003, ¶142.

[1.7] ***and wherein the sources include a live television source, a video on demand source, a media center source, an applications source, and an electrical input associated with the television.***

As a threshold matter, the claim language does not require that of the recited sources be displayed at the same time. On the contrary, the '040 patent's embodiments contemplate that the "[i]f there is too much information (e.g., too many silos or applications) to display at one time in the global panel, the global panel may have a **scrollbar or other means for the user to view the overflow**

information (e.g., information that will not fit on the screen)." Ex.1001, 32, 60-64; *see also*, Ex.1008, *generally* (Patent Owner's Infringement Contentions asserting that a menu that does not display sources all on the same screen nonetheless corresponds to the claimed sources); Ex.1003, ¶143.

As analyzed below, Kim's card objects include the following content sources: **(1)** a live television source, **(2)** a video on demand source, **(3)** a media center source, **(4)** an applications source, and **(5)** an electrical input associated with the smart TV 100. Ex.1003, ¶144.

(1) "*a live television source*"

Each of Kim's BROADCAST card object 1310 and CHANNEL BROWSER card object 1340 correspond to a live ("real-time") television broadcast source. Specifically, Kim discloses that the smart TV 100 may receive "**real-time broadcast content**, application data, and stream events through the **broadcast interface 101**. The real time broadcast content may be referred to as a linear Audio/ Video (A/V) content." Ex.1005, [0038]; *see also* Ex.1005, [0056]. "For example, if a user selects **live broadcasting, such as a conventional broadcasting service**, the service control manager may select and control the service using Internet Group Management Protocol (IGMP) or Real-Time Streaming Protocol (RTSP)." Ex.1005, [0063]. Kim further discloses that the "BROADCAST card object 1310 may display a broadcast image 1315 received

through the tuner 110 or the network interface 130." Ex.1005, [0197]; Ex.1003, ¶145.

Kim additionally discloses that the "card object 1340 may include a card object name 1342 (CHANNEL BROWSER) and a thumbnail list of broadcast channels 1345." Ex.1005, [0205]. "**Upon selection of a thumbnail image from the thumbnail list 1345, a broadcast program from the selected channel may be displayed on the display 180.**" Ex.1005, [0206]; Ex.1003, ¶145.

BROADCAST card object 1310 and CHANNEL BROWSER card object 1340 would be understood by a POSITA to allow the user to view live ("real-time") television broadcasting content. For example, a user would be able to select a thumbnail (representative of a broadcast channel) from card object 1340 so that the selected channel with live broadcasting may be displayed in the card object 1310 on the display 180. Kim's disclosure is within the scope of the '040 patent's live TV, which "refers to a television production broadcast in real-time, as events happen, in the present." Ex.1001, 7:39-41. The BROADCAST card object 1310 and CHANNEL BROWSER card object 1340, separately and together, that provide live television broadcasting sources, render obvious "*a live television source.*" Ex.1003, ¶¶146-147.

(2) "*a video on demand source*"

Kim's NETCAST card object 1320 includes a plurality of content providers ("CP") that provide Video on Demand content. The "**card object 1320 may be named NETCAST and may provide a list of CPs [content providers]**, e.g., a list of CPs available through NetCast," such as "Yakoo, Metflix, weather.com, Picason, and MyTube." Ex.1005, [0195], [0201]. Kim further discloses that "the network interface 130 may receive content such as movies, advertisements, games, **VoD files, broadcast signals as well as information related to the content from a CP**." Ex.1005, [0082]; *see also* Ex.1005, [0063]; Ex.1003, ¶148.

In view of the above disclosure, a POSITA would have understood Kim's CP's (e.g., "Yakoo," "Metflix," and "MyTube")[2] in the NETCAST card object 1310 are content sources that allow the user to select to watch VoD content. Kim's examples are within the scope of "video on demand (VOD)," as used in the '040 patent, which "refers to systems and processes which allow users to select and watch/listen to video or audio content on demand." Ex.1001, 8:4-6. The NETCAST card object 1320 (including one or more of the CPs) that provides video on demand, renders obvious "*a video on demand source*." Ex.1003, ¶¶149-

[2] It appears that "Yakoo," "Metflix," and "MyTube" are different spellings for well-known content providers "Yahoo," "Netflix," and "YouTube," respectively.

150.

(3) "*a media center source*"

Each of Kim's RESERVATION/REC card object 1360 and MY MEDIA card object 1370 allow for the user to access different sources to obtain media (e.g., "**programs which have been recorded", "multimedia files," "moving pictures, still images, and audio in FIG. 19, many other types of media (e.g., text, e-books, etc."**). Ex.1005, [0196], [0208]-]0209]. Kim's examples are within the scope of the '040 patent's "media center source," which similarly "allows for the access of different sources," including "displaying pictures or audio." Ex. 1001, 20:39-45. The RESERVATION/REC card object 1360 and MY MEDIA card object 1370, separately and together, that allows for accessing multimedia files, moving pictures, audio, text, e-books, etc., renders obvious "*a media center source.*" Ex.1003, ¶¶151-153.

(4) "*an applications source*"

Kim's APP STORE card object 1330 provides a list of "**applications available on a server, for example, for download or purchase**." Ex.1005, [0202]; *see also* Ex. 1005, [0195] ("The card object 1330, which may be named **APP STORE, may provide a list of applications**."); Ex.1005, [0185]. The '040 patent's "*applications source*" similarly "allows for the provision, storage and use

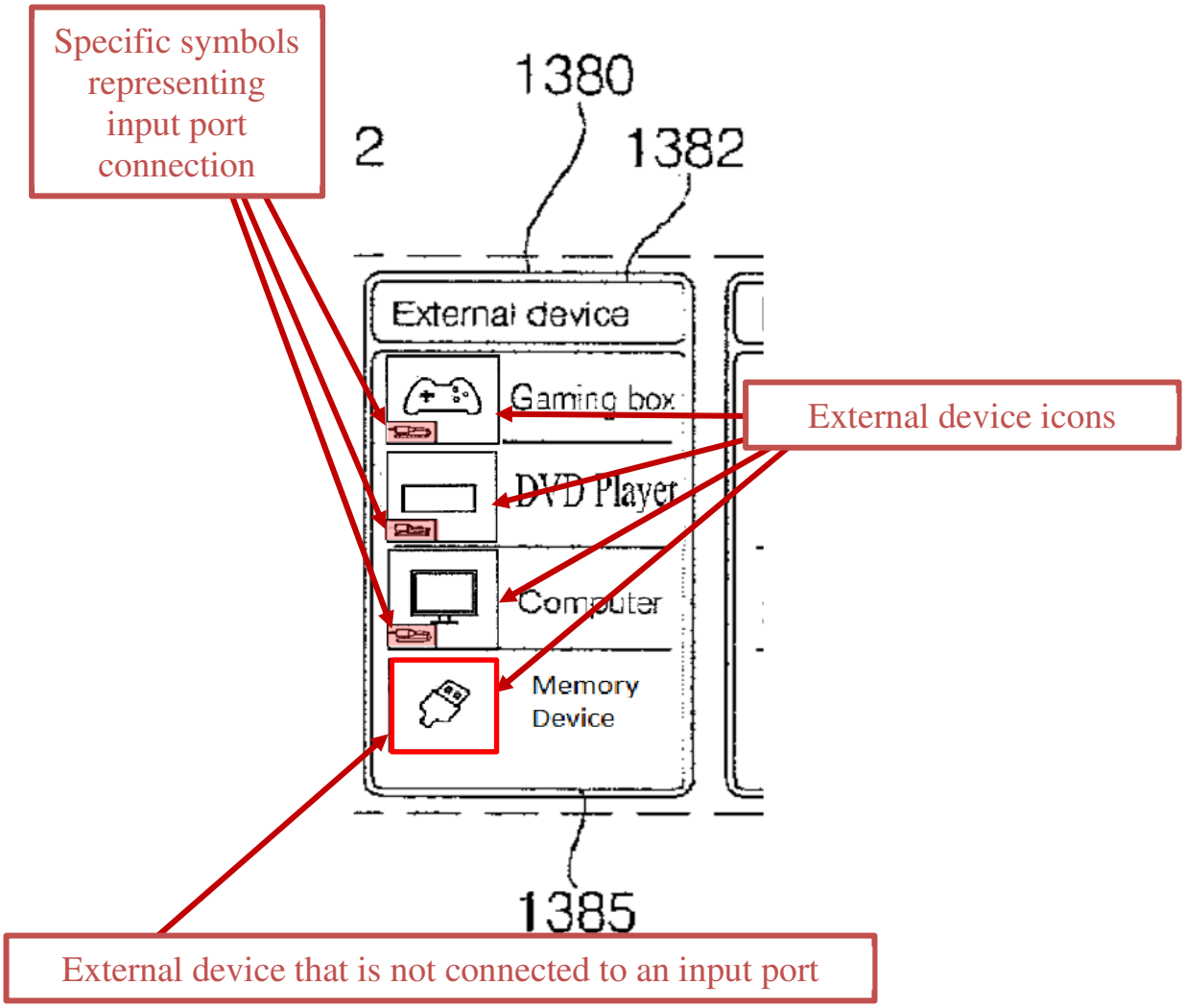
of applications." Ex. 1001, 20:46-47. The APP STORE card object 1330, which allows for purchasing and downloading applications, renders obvious that "*an applications source*." Ex.1003, ¶¶154-156.

(5) "*an electrical input associated with the television*"

First, Kim's EXTERNAL DEVICE card object 1380 corresponds one or more external devices (e.g., "a gaming box, a DVD player, a computer, or another appropriate device") electrically connected to an input port (e.g., "a Universal Serial Bus (USB) port, a Composite Video Banking Sync (CVBS) port, a Component port, a Super-video (S-Video) (analog) port, a Digital Visual Interface (DVI) port, a High-Definition Multimedia Interface (HDMI) port… or another appropriate port") of the smart TV 100. Ex.1005, [0076]-[0077], [0210]; *see also* Ex.1005, [0075]-[0080], Fig. 6 (illustrating that the smart TV 100 includes an external device interface 135 and network interface 130); Ex.1005, [0128], [0131]-[0132], Fig. 9 (illustrating that the smart TV 100 is connected to various external devices 230 that provide an input electrical signal wirelessly or by wire); Ex.1003, ¶157.

Second, as discussed at [1.5], it would have been obvious to a POSITA to implement Kim's EXTERNAL DEVICE card object 1380 ("which may provide a list of external devices which may be connected to the image display apparatus 100", Ex.1005, [0196]), to include icons representing external devices with

specific symbols that distinguish connected devices from devices that are not connected. As shown below at in Kim's modified Figure 19, in the proposed combination with Choi, EXTERNAL DEVICE card object 1380 would include, for each externally connected device, an icon with a specific symbol representing an input port of the smart TV 100 and devices not connected have no symbol:



Ex.1005, Fig. 19 (partial, modified in view of Choi).

To the extent argued that the claim requires the specific input port be

referenced by name, e.g., "HDMI," such would have been obvious as analyzed at [1.5]. Ex.1003, ¶¶158-160.

Each external device (e.g., Gaming Box, DVD player, etc.), renders obvious "*an electrical input associated with the television*." *See* Ex.1001, 6:16-20. Additionally, each specific symbol representing an electrical input port (e.g., USB, HDMI, etc.) associated with the smart TV 100, separately and together with an electrically connected external device, renders obvious "*an electrical input associated with the television*." Ex.1001, 6:20-22; Ex.1003, ¶¶161-162.

7. Claim 2

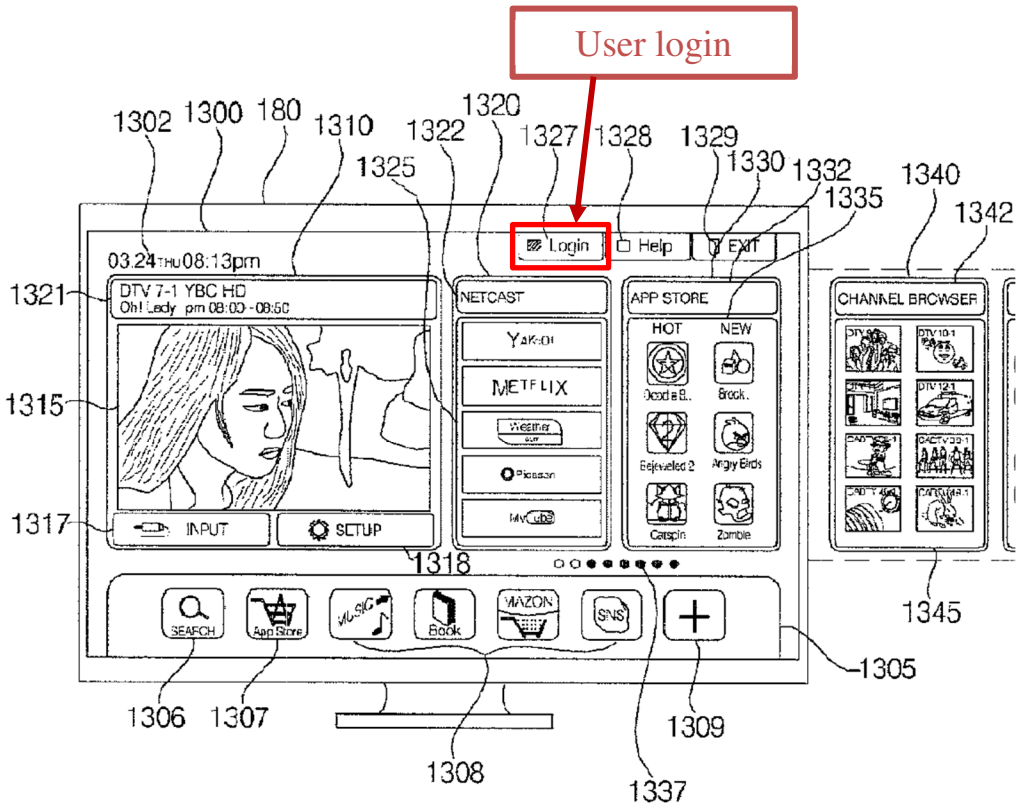
[2.0] ***The method of claim 1, further comprising:***

See claim 1. Ex.1003, ¶163.

[2.1] ***identifying a user associated with the received indication;***

First, as discussed at [1.1]-[1.2], a user makes a selection (e.g., go-to-home screen selection) which is received by the processor ("*the received indication*"). Ex.1003, ¶164.

Second, Kim discloses that the "**<u>user may login</u>** to the APP STORE or a network connected to the image display apparatus 100 using the Login menu item 1327" on the home screen. Ex.1005, [0203]. Kim's Login menu item 1327 is illustrated at Figure 19:



Ex.1005, Fig. 19 (partial, annotated).

Additionally, Kim discloses that the "**<u>users or electronic devices [may be] pre-registered with the image display apparatus 100</u>**." Ex.1005, [0081]; Ex.1003, ¶¶165-167.

A POSITA would have recognized that logging into the smart TV 100's APP STORE includes the user providing unique identification information, e.g., username and password, because such information was well-known to be used for login. Ex.1005, Fig. 18. Also, it would have been obvious to a POSITA that there are instances where the user that made the initial home screen selection (and therefore is "*associated with the received indication*") proceeds to enter login

information in the home screen Login menu item 1327 to log into the smart TV 100's APP STORE. Thus, Kim discloses identifying a user associated with the received indication (via a login procedure or preregistering). Ex.1003, ¶168.

[2.2] ***retrieving one or more settings associated with the identified user;***

First, as discussed at [2.1], a user is identified by preregistering or logging into the smart TV 100's APP STORE ("*the identified user*"). Ex.1003, ¶169.

Second, Kim discloses that the home screen application menu 1305 has "**<u>user-set application menu items 1308</u>**" "e.g., Music, Book, MAZON, and SNS." Ex.1005, [0215]-[0217]. Accordingly, the user-set application menu items 1308 correspond to "*one or more settings associated with the identified user*." Ex.1003, ¶¶170-171.

Third, as discussed at [1.3], Kim's controller 170 provides overall control to the smart TV 100, including reproducing content stored in memory 140. *See also*, Ex.1005, [0065], [0089]. It would have been obvious to a POSITA, for controller 170 to "*retrieve*[]" from memory 140 the user's settings for the application menu item 1308 so that the corresponding application thumbnails would be retrieved from memory 140 and displayed on the home screen. *See infra*, [2.3]-[2.4]; Ex.1003, ¶172.

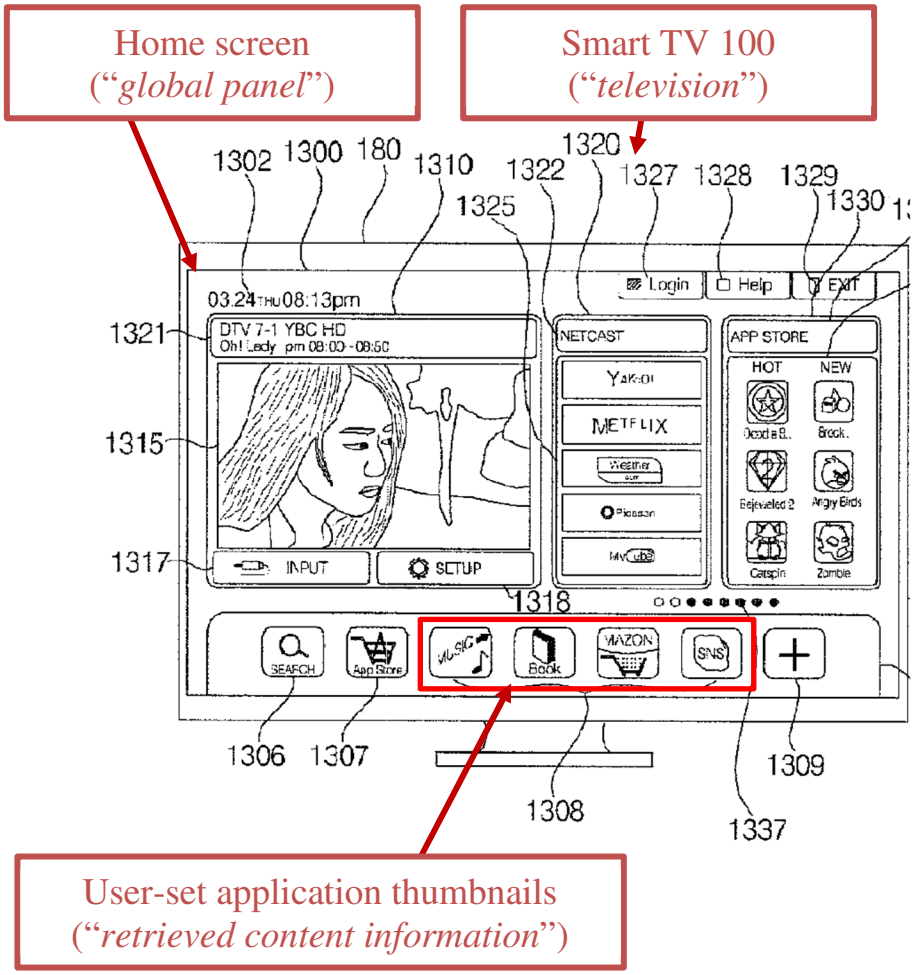
[2.3] ***retrieving, from memory, content information associated with the identified user; and***

As discussed at [2.2], the application menu items 1308 (e.g., applications such as "Music, Book, MAZON, and SNS," etc.) are user-set. The application menu items 1308 are represented as thumbnails. *See* Ex.1005, [0206], Fig. 19. Consistent with the analysis at limitation [1.3], Kim's thumbnails correspond to "*content information*." Because the thumbnails, in this instance, represent user-set applications, the thumbnails are "*associated with the identified user."* Further, consistent with the analysis at limitation [1.3], it would have been obvious in the combination of Kim and Lee-1 for stored application thumbnails to be retrieved from memory 140 so that they may be displayed. *See infra*, [2.4]; Ex.1003, ¶¶173-174.

[2.4] ***displaying, via the television, the retrieved content information in the global panel.***

First, as discussed at [2.3], the prior art discloses retrieving thumbnails (e.g., user-set thumbnails corresponding to applications such as Music, Book, MAZON, and SNS) ("the retrieved content *information*"). Ex.1003, ¶175.

Second, Kim discloses that the application menu items 1308 thumbnails are displayed, via the smart TV 100, in the home screen. Ex.1005, [0205]-[0206], [0215]-[0218], Figs. 19-23; Ex.1003, ¶¶176-177.



Ex.1005, Fig. 19 (partial, annotated).

8. Claim 3

Limitations [3.0]-[3.1], and [3.4]

See [2.0]-[2.1], and [2.4]. Ex.1003, ¶¶178-179, 182.

[3.2] ***retrieving, from memory, one or more settings associated with the identified user;***

As discussed in connection with element [2.3], the prior art discloses retrieving, from memory 140, one or more settings associated with the identified

user. Ex.1003, ¶180.

[3.3] ***retrieving, from memory, content information associated with the identified user and the one or more settings associated with the user; and***

As discussed at [2.3], the prior art discloses retrieving, from memory 140, application thumbnails associated with the identified user. Additionally, consistent with the discussion at limitations [2.2]-[2.3], the retrieved application thumbnails are also associated to the one or more settings associated with the user because the thumbnails correspond to the user settings for application menu items 1308. Ex.1003, ¶181.

9. Claim 4

[4.0] ***The method of claim 1, further comprising:***

See claim 1. Ex.1003, ¶183.

[4.1] ***receiving a second indication associated with a selection by a user;***

First, as discussed at [1.1], controller 170 (or "any other processor") is operable to receive selection signals associated with a user selection from an input device (e.g., remote controller 200). Ex.1003, ¶184.

Second, the prior art discloses this limitation in two different ways, for example, in the context of: (1) the CHANNEL BROWSER card object 1340 ("second card object"), and (2) the MY MEDIA card object 1370 ("third card object"). Ex.1003, ¶185.

(1) CHANNEL BROWSER card object 1340 ("second card object")

Kim, discloses that its home display may provide a plurality of objects, where "**a second card object in a second area of the display… ha[s] at least one link for connecting to a content provider**." Ex.1005, [0287]-[0289]. "**The at least one link corresponds to a channel in a broadcast signal.**" Ex.1005, [0292]. "**The at least one link is an icon" that may be "*select[ed]*" by the user**. Ex.1005, [0292]; Ex.1003, ¶186.

Because the second card object includes at least one link (or icon) that corresponds to a broadcast channel, a POSITA would have understood that the second card object corresponds to Kim's earlier disclosed CHANNEL BROWSER card object 1340, which includes thumbnails (or icons) of broadcast channels. Ex.1003, ¶187.

This is consistent with Kim's disclosure that the user may select a thumbnail (or icon) from the CHANNEL BROWSER card object 1340. According to Kim, "card object 1340 may represent a list of broadcast channels. This card object 1340 may include a card object name 1342 (CHANNEL BROWSER) and a thumbnail list of broadcast channels 1345." Ex.1005, [0205]. "Upon selection of a thumbnail image from the thumbnail list 1345, a broadcast program from the selected channel may be displayed on the display 180." Ex.1005, [0206]; *see also* Ex.1005, [0086] ("**The user input interface 150 transmits a signal received from the user to the**

controller 170…For example… a channel selection signal, and a screen setting signal from a remote controller 200."); Ex.1005, [0060]-[0061]; Ex.1003, ¶188.

Kim's disclosure that the user selects a thumbnail or icon in the CHANNEL BROWSER card object 1340 (e.g., a second card object) using the remote control 200 and the controller 170 receives a corresponding signal from the user input interface 150, renders obvious this limitation. Ex.1003, ¶189.

(2) MY MEDIA card object 1370 ("third card object")

Kim further discloses that the home screen includes "a third card object in a third area of the display." Ex.1005, [0289]. The third card object includes selectable thumbnails. For example, Kim discloses that "**[a] selection of the at least one thumbnail may cause the at least one of a broadcast content, content stored on the content server, or content stored on the storage device to be retrieved for display on the display**." Ex.1005, [0293]; Ex.1003, ¶190.

Because the third card object's "thumbnail includes a still image or a video image representative of the corresponding content," a POSITA would have understood that the third card object corresponds to Kim's earlier disclosed MY MEDIA card object 1370, which includes thumbnails as still or video images, as shown at Figure 19. This is also consistent with Kim's disclosure that the user may select a thumbnail from the MY MEDIA card object 1370 to view content stored in memory 140 or from external device (e.g., content server). Ex.1005, [0085],

[0196], [0209]; Ex.1003, ¶191.

In view of the above disclosure, it would have been obvious to a POSITA for one or more thumbnails in MY MEDIA card object 1370 to correspond to one of broadcast content, content stored on external device (e.g., on the content server) or content stored on in memory 140 (internal content source). Ex.1003, ¶193.

When the user selects a thumbnail in the MY MEDIA card object 1370 (e.g., a third card object) using the remote control 200, the controller 170 receives a corresponding signal from the user input interface 150, which renders obvious this limitation. Ex.1003, ¶194.

[4.2] ***determining, based on the second indication, a source of content information to be displayed in the global panel based;***

(1) CHANNEL BROWSER card object 1340 ("second card object")

As discussed at [4.1], Kim discloses that the user selects to a thumbnail or icon (corresponding to a "**link for connecting to a content provider**") in the CHANNEL BROWSER card object 1340. Ex.1005, [0287]-[0289]. The "**link may include a URL configured to retrieve a multimedia content stored on the content server**." Ex.1005, [0292]. The retrieved content (e.g., video) is displayed in a "first card object" on the home screen. Ex.1005, [0294]. In the context the CHANNEL BROWSER card object 1340, a broadcast channel is also displayed in the card object 1310 of the home screen upon a selection of a thumbnail. Ex.1005,

[0205]-[0206]; Ex.1003, ¶¶195-197.

It would have been obvious to a POSITA for the CHANNEL BROWSER card object 1340, to include a "link for connecting to a content provider" with "a URL configured to retrieve a multimedia content stored on the content server" so that the smart TV 100 would be able to determine the content source that provides content (e.g., a selected channel) and related content information (e.g., program title) to display in the home screen. Ex.1005, [0090], [0097]. As shown at Kim's Figure 19, the home screen includes card object 1310 that displays video content (1315) as well as related content information, such as a title in an information object (1321). Ex.1003, ¶198.

Thus, Kim discloses determining, based on the received selection of a thumbnail or icon (corresponding to a link with a URL) in the CHANNEL BROWSER card object 1340, a content source that provides information about the user-selected channel to be displayed in the home screen. Ex.1003, ¶199.

(2) MY MEDIA card object 1370 ("third card object")

Kim further discloses that the thumbnails in the third card object correspond to "**at least one of a broadcast content, content stored on the content server content stored on the content server, or content stored on the storage device**." Ex.1005, [0293]. The selection of a thumbnail causes "**the at least one of a broadcast content, content stored on the content server content stored on the**

content server, or content stored on the storage device to be retrieved for display on the display." Ex.1005, [0293]. "**[I]f the thumbnail corresponds to a video content, the video content may be displayed in the first card object**." Ex.1005, [0293]; Ex.1003, ¶200.

Additionally, in the context of the MY MEDIA card object 1370, Kim discloses that selecting a thumbnail displays content stored in memory 140 or from external device (e.g., content server). Ex.1005, [0085], [0196]; Ex.1003, ¶201.

It would have been obvious to a POSITA (because the thumbnails in the MY MEDIA card object 1370 represent content stored on an external device or content stored on in memory 140) for the external device to correspond to a content server and for the memory 140 to correspond to the storage device disclosed in the context of the third card object. When the user selects a given thumbnail, it would have been obvious for the controller 170 to determine the corresponding content source (e.g., external content server or internal storage device) so that the content (e.g., video) and related content information (e.g., title or file name) may be displayed in the home screen card object 1310 (e.g., a first card object). Ex.1005, [0090], [0082], [0097]; Ex.1003, ¶202.

It would have been obvious to a POSITA that when the content corresponds to video, for the information related to the content to include at least the video title (e.g., movie name) and the file name. As shown at Kim's Figure 19, the home

screen card object 1310 displays the video (1315) as well as related content information, such as title in an information object (1321). It would have been obvious to a POSITA to display a title (or file name) related to a retrieved video content so that the user is informed regarding the currently displayed video. Ex.1003, ¶203.

Thus, Kim discloses determining, based on the received selection of a thumbnail in the MY MEDIA card object 1370, a content source (e.g., external content server or internal storage device) that is the source of information about the video to be displayed in the home screen, which renders obvious this limitation. Ex.1003, ¶204.

[4.3] ***retrieving at least a portion of content information from the determined source; and***

(1) CHANNEL BROWSER card object 1340 ("second card object")

Consistent with the discussion at [4.2], Kim discloses that the link (corresponding to a thumbnail) in CHANNEL BROWSER card object 1340, "may include a URL configured to **retrieve** a multimedia content stored on the content server" and that the "link corresponds to a channel in a broadcast signal." Ex.1005, [0292]. It would have been obvious to a POSITA that when the URL is used to retrieve multimedia content corresponding to a broadcast channel, for the retrieved content to include both the multimedia content (e.g., video) and related content

information (e.g., program title). Ex.1005, [0082], [0090], [0097]; Ex.1003, ¶¶205-208.

(2) MY MEDIA card object 1370 ("third card object")

Consistent with the discussion at [4.2], Kim discloses that the thumbnail in MY MEDIA card object 1370 causes "the at least one of a broadcast content, content stored on the content server, or content stored on the storage device to be **retrieved** for display on the display." Ex.1005, [0292]. It would have been obvious to a POSITA for the retrieved content to include both the content (e.g., video) and related content information (e.g., title). Ex.1005, [0082], [0090], [0097]; Ex.1003, ¶¶209-210.

[4.4] ***displaying, via the television, the content information associated with the determined source.***

(1) CHANNEL BROWSER card object 1340 ("second card object")

Consistent with the discussion at [4.3], Kim discloses that the retrieved content is "**displayed in the first card object**" on the home screen. Ex.1005, [0294]; *see also* Ex.1005, [0206] ("Upon selection of a thumbnail image from the thumbnail list 1345, a broadcast program from the selected channel may be **displayed on the display 180**."). It would have been obvious to a POSITA for the related content information (see [4.3]) to also be displayed so that the user is informed about the currently displayed content. Ex.1005, [0082], [0090], [0097];

Ex.1003, ¶¶211-214.

(2) MY MEDIA card object 1370 ("third card object")

As discussed above, Kim discloses that the content is "**retrieved for display on the display"** in a "first card object" on the home screen. Ex.1005, [0293]-[0294]; *see also* Ex.1005, [0085], [0196]. It would have been obvious to a POSITA for the related content information (see [4.3]) to also be displayed so that the user is informed about the currently displayed content. Ex.1005, [0082], [0090], [0097]. For example, as shown at Kim's Figure 19, the smart TV 100 home screen includes card object 1310 (e.g., a first card object) that displays video content (1315) as well as related content information, such as a title in an information object (1321). Ex.1003, ¶¶215-217.

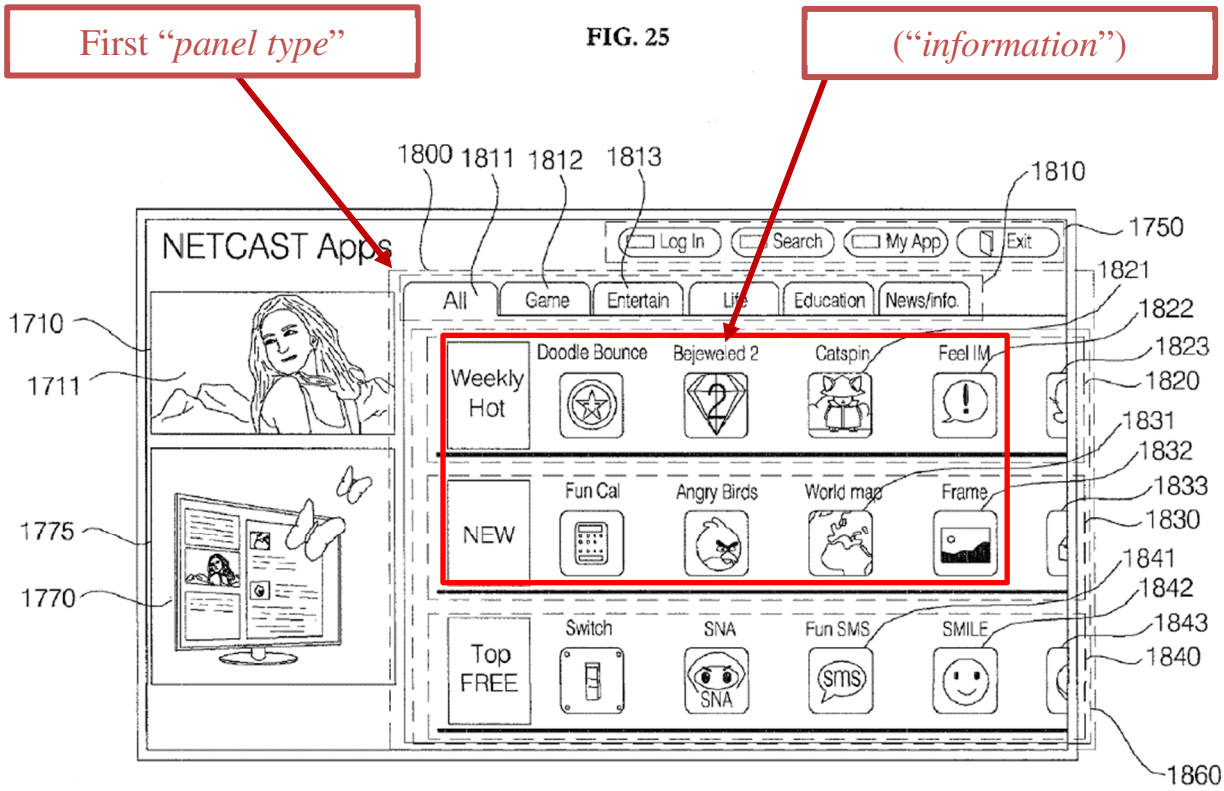
10. Claim 5

[5.0] ***The method of claim 1,***

See claim 1. Ex.1003, ¶218.

[5.1] ***wherein the global panel comprises information from at least two different panel types.***

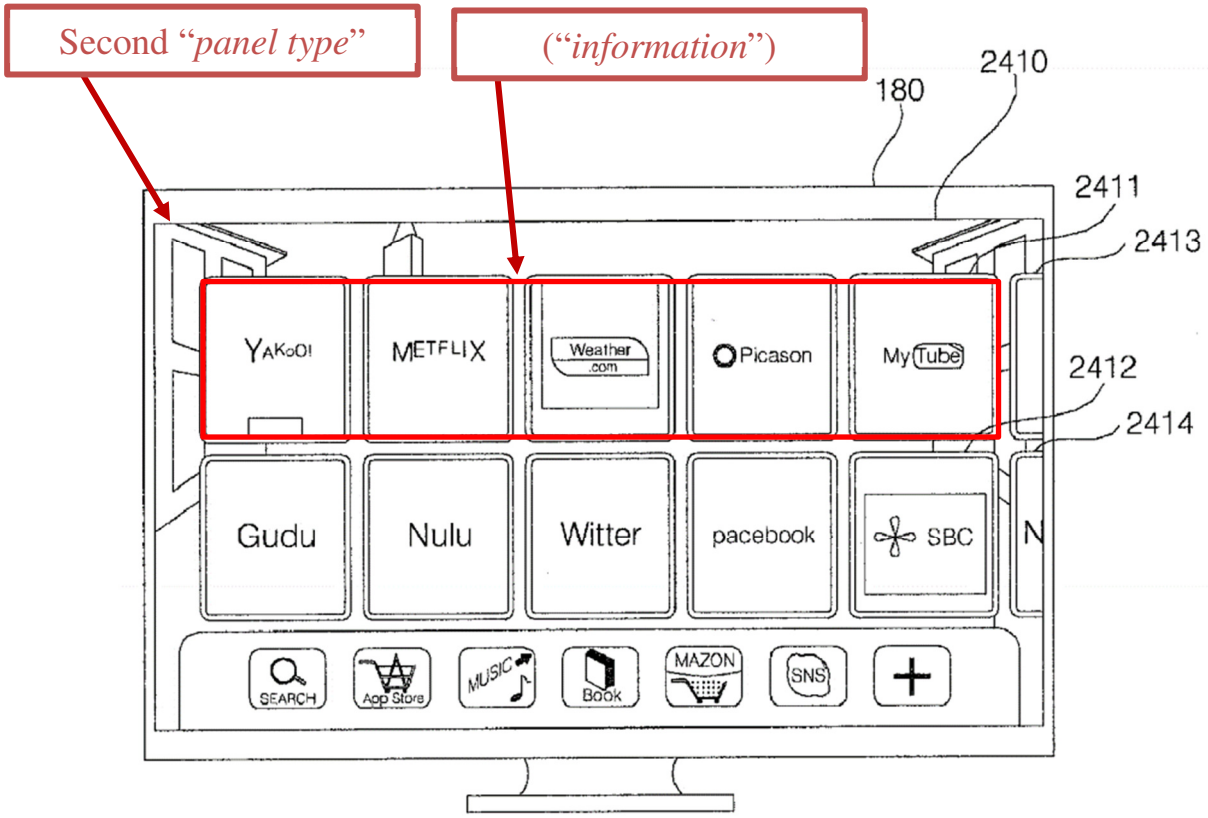
First, Kim at Figure 25 discloses an application store screen displayed on a display area 1800 (which is a first type of panel). The application store screen shows available applications classified into various categories, such as "Weekly Hot," "NEW," etc. Ex.1005, [0236]-[0039], Fig. 25; Ex.1003, ¶¶219-220.



Ex.1005, Fig. 25 (annotated).

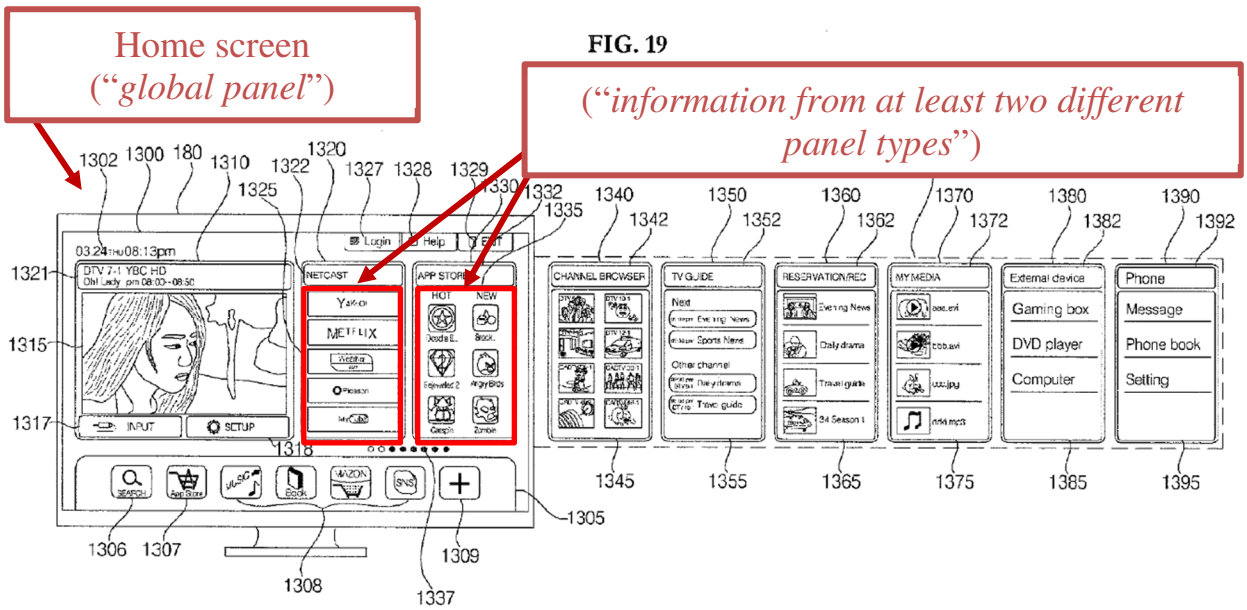
Second, Kim at Figure 42 discloses Netcast display area 2410 (which is a second type of panel). Ex.1005, [0277], Fig. 42; Ex.1003, ¶¶221-222.

FIG. 42



Ex.1005, Fig. 42 (annotated).

As illustrated below, Kim's home screen includes APP STORE card object 1330 with information from the application store display area 1800 and NETCAST card object 1320 with information from the Netcast display area 2410. Ex.1003, ¶¶222-223.



Ex.1005, Fig. 19 (annotated).

11. Claim 11

Claim 11 is substantially similar to claim 1 except for preamble [11.0], which is addressed below. For limitations [11.1]-[11.7] see analysis at [1.1]-[1.7]. Ex.1003, ¶¶224, 230-236.

[11.0] ***A non-transitory computer readable information storage medium having stored thereon instructions that cause a computing system to execute a method of displaying content on a television, comprising:***

To the extent limiting, the prior art renders obvious the preamble. As discussed at [1.0], Kim discloses a method of displaying content on a, smart TV 100. Ex.1003, ¶***. Further, Kim discloses **non-transitory medium such as "a ROM, a CD-ROM, a magnetic tape, a floppy disc, an optical data storage" having "code that is written on a computer-readable recording medium and,**

can thus, be read by a processor" and "executed" to perform the noted method. Ex.1005, [0299]; *see also* [1.1]; Ex.1001, 4:32-49; Ex.1003, ¶¶225-229.

12. Claim 12

Limitation [12.0]

See claim 11. Ex.1003, ¶237.

Limitations [12.1]-[12.4]

See [2.1]-[2.4]. Ex.1003, ¶¶238-241.

13. Claim 13

Limitation [13.0]

See claim 11. Ex.1003, ¶242.

Limitations [13.1]-[13.4]

See [3.1]-[3.4]. Ex.1003, ¶¶243-246.

14. Claim 14

Limitation [14.0]

See claim 11. Ex.1003, ¶247.

Limitations [14.1]-[14.4]

See [4.1]-[4.4]. Ex.1003, ¶¶248-251.

15. Claim 15

[15.0] ***The non-transitory computer-readable medium of claim 11, further comprising***

See claim 11. Ex.1003, ¶252.

[15.1] ***retrieving from memory a second content information for display in the global panel; and***

As discussed at [1.3], the prior art discloses that controller 170 retrieves from memory 140 thumbnails and descriptive text (associated with the APP STORE card object 1330, the RESERVATION/REC card object 1360, and the MY MEDIA card object 1370) for display in the home screen. In the present example, any combination of the thumbnails and descriptive text associated with the MY MEDIA card object 1370 corresponds to the "*second content information*." Ex.1003, ¶¶253-254.

[15.2] ***displaying, via the television, the retrieved first content information and the retrieved second content information in the global panel.***

As discussed at [1.3]-[1.4], the prior art discloses that the thumbnails and descriptive text in the card objects (e.g., 1330, 1360, and 1370) on the home screen are either initially displayed via the smart TV 100 or are moved (e.g., shifted or scrolled) so that they are displayed via the smart TV 100. In the instance where adjacent card objects 1360 and 1370 are both (at the same time) displayed in the home screen via the smart TV 100, the prior art renders obvious this limitation. Ex.1003, ¶255.

16. Claim 21

Claim 21 is substantially similar to claim 1 except for limitations [21.0]-[21.3], which are addressed below. For limitations [21.4]-[21.10] see analysis at [1.1]-[1.7]. Ex.1003, ¶¶256, 264-270.

[21.0] ***A system for displaying content on a television, comprising:***

To the extent limiting, the prior art renders obvious the preamble. As discussed at [1.0], Kim discloses a "**system**" for displaying content (e.g., multimedia, broadcast, etc.) on a smart TV 100. Ex. 1005, [0031], [0038], Figs. 1-2; Ex.1003, ¶¶257-260.

[21.1] ***an input device associated with the television;***

As discussed at [1.1], the prior art discloses a remote controller 200 and a user input interface 150, which separately and together render obvious this limitation. Ex.1003, ¶261.

[21.2] ***a memory; and***

As discussed at [1.1] and limitation [1.3], the prior art discloses a memory 140, which renders obvious this limitation. Ex.1003, ¶262.

[21.3] ***a microprocessor that is programmed to:***

As discussed at [1.1], controller 170 (or "any other processor") that stores a software platform with operating system ("OS") that enables the controller 170 (or "other processor") to implement display apparatus operations. Ex.1005, [0147],

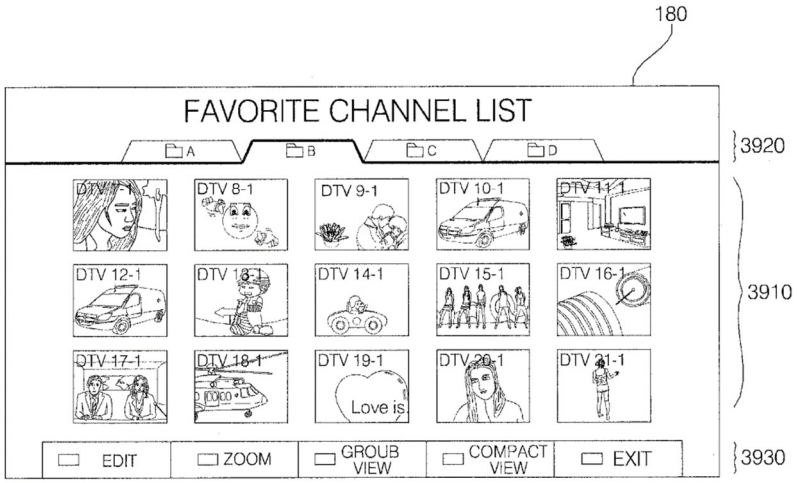
[0166], [0282]-[00283]. It would have been obvious to a POSITA for Kim's "any other processor" to correspond to a "*microprocessor*," consistent with Kim's disclosure of utilizing a "microcomputer." Ex.1005, [0140]; Ex.1009, 1; Ex.1012, 3; Ex.1013, 1-2; Ex.1003, ¶263.

C. Ground 2: Claims 2-3, 6, 12-13, 16, and 22 are obvious under 35 U.S.C. § 103(a) over Kim in view of Lee-1, Choi, and Lee-2.

1. Summary of Lee-2

Lee-2 discloses that a user has a specific favorite channel list (Ex.1010, 41:47-55), as shown below at Figure 39B:

FIG. 39B



Ex.1010, Fig. 39B (annotated).

The user can also access favorite channel list settings using a setup menu 3930, shown above at Figure 39B. Ex.1010, 41:61-67. Additional favorite channel teachings of Lee-2 are discussed in the analysis below. Ex.1010, 33:63-67, 37:61-

38:11, Figs. 32A, 32B; Ex.1003, ¶¶271-278.

2. Reasons to Combine Kim and Lee-2

A POSITA when considering the teachings of Kim (as modified by Lee-1 and Choi) would have also considered the teachings of Lee-2. Kim, although disclosing that its thumbnails may correspond to pre-stored user favorite channel list, provides limited details pertaining to how it sets up or presents the favorite channel list to the user. Ex.1005, [0206]. In that regard, Lee-2 provides implementation details regarding a user's favorite channel list. For example, Lee-2 provides details of how a user's favorite channel list that may be edited and how the user may define the number of corresponding thumbnails for display. Ex.1010, 41:61-67, Fig. 39B. Additionally, Lee-2 discloses how the user's favorite channel list is displayed in the home screen. Ex.1010, 38:4-11, Fig. 33B; Ex.1003, ¶279.

It would have been obvious to a POSITA, when implementing Kim's display device 100 and method, to apply the user favorite channel list teachings of Lee-2 because they provide implementation details directly applicable to successfully implementing Kim's display device 100 and method, which contemplates providing the user a favorite channel list. This reason is sufficient to explain why a POSITA would have sought and combined the identified disclosures of Lee-2 and Kim (as modified by Lee-1 and Choi). Nevertheless, additional reasons for combining the relevant teachings are provided in the claim analysis

below. Ex.1003, ¶280.

The results of Lee-2 and Kim (as modified in in view of Lee-1 and Choi) would have been predictable and there would have been a reasonable expectation of success in the combination given that Kim and Lee-2 are very similar, and both implement user favorite channel lists. Ex.1003, ¶281.

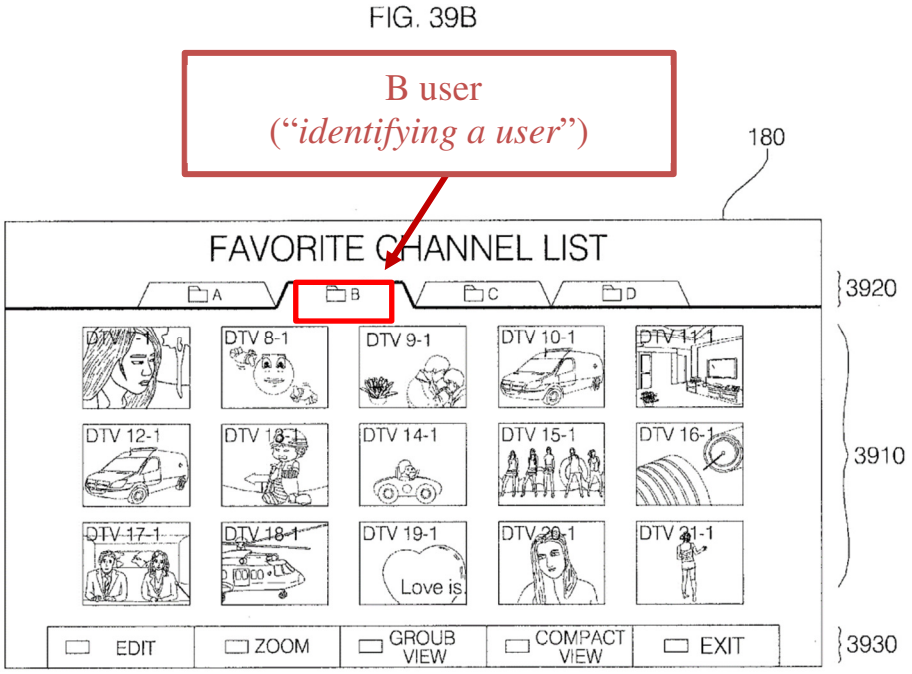
3. Claim 2

[2.0] ***The method of claim 1, further comprising:***

See claim 1, Ground 1. Ex.1003, ¶283.

[2.1] ***identifying a user associated with the received indication;***

Kim discloses that its "thumbnail images may correspond to **pre-stored user channels (e.g., favorite list)**." Ex.1005, [0206]. In the same vein, Lee-2 identifies a user (e.g., B user) for a given favorite channel list:



Ex.1010, Fig. 39B (annotated).

In the above figure, "[s]ince the channel list screen is displayed upon selection of the favorite channel object 2019 in the BROADCAST card object 2010 by a **<u>B user, the B group tabbed menu may be selected by default</u>**." Ex.1010, 41:47-55; Ex.1003, ¶¶284-285.

It would have been obvious to a POSITA that there are instances where B user made the initial home screen selection (see [1.1]) and therefore is "*associated with the received indication*" and is currently browsing the FAVORITE CHANNEL LIST illustrated at Figure 39B. Ex.1003, ¶286.

It would have been obvious to a POSITA to implement Kim (which discloses a user favorite channel list, see Ex.1005, [0206]) to identify the user that

made the home screen selection so that a corresponding tab may be selected by default when presenting the favorite channel list to the user. Ex.1010, 41:47-55 ("B user, the B group tabbed menu may be selected by default."). Because the user's specific favorite channel list is also displayed on the home screen (see, *infra*, [2.4]), "a user can easily identify favorite channels and thus user convenience is increased." Ex.1010, 42:2-4; analysis *infra*, [2.1]; *see also* Reasons to Combine Kim and Lee-2; Ex.1003, ¶¶287-288.

[2.2] ***retrieving one or more settings associated with the identified user;***

As analyzed at [2.1], Kim contemplates providing a pre-stored user favorite channel list. Ex.1005, [0206]. Lee-2 supplements and discloses that the favorite channel list settings are configured by the user using a setup menu 3930. "For example, the channel **setup menu 3930 may include menu items, EDIT for editing channels, ZOOM for changing the number of displayed thumbnail images,**" among other setup options. Ex.1010, 41:61-67; Ex.1003, ¶¶289-290.

It would have been obvious to a POSITA to store favorite channel list setup data (i.e., data input by the user using setup menu 3930, such as which channels to include in the favorite list and the number of displayed thumbnails) in view of Lee-2's disclosure that "**memory 140 may store user-specific information**" and also "**may store setup data for the system**." Ex.1010, 8:29, 11:3; *see also* Ex.1005, [0206] ("…**pre-stored user channels (e.g., favorite list)**…"). Because the setup

data would be stored in memory 140, when the user selects to view the FAVORITE CHANNEL LIST (see Ex.1010, 41:36-44), the setup data would be retrieved from memory 140 and used to determine the user's specific favorite channel list and the number of thumbnail images to be displayed. *See also infra*, [1.3]; Ex.1003, ¶291.

It would have been obvious to a POSITA to implement Kim such that it stores and retrieves, from memory 140, setup data (e.g., the user's favorite channel list and the number of displayed thumbnails), as Lee-2 teaches, so that the user would "easily identify favorite channels and thus user convenience is increased." Ex.1010, 42:3-4; *see also* Reasons to Combine Kim and Lee-2; Ex.1003, ¶¶292-293.

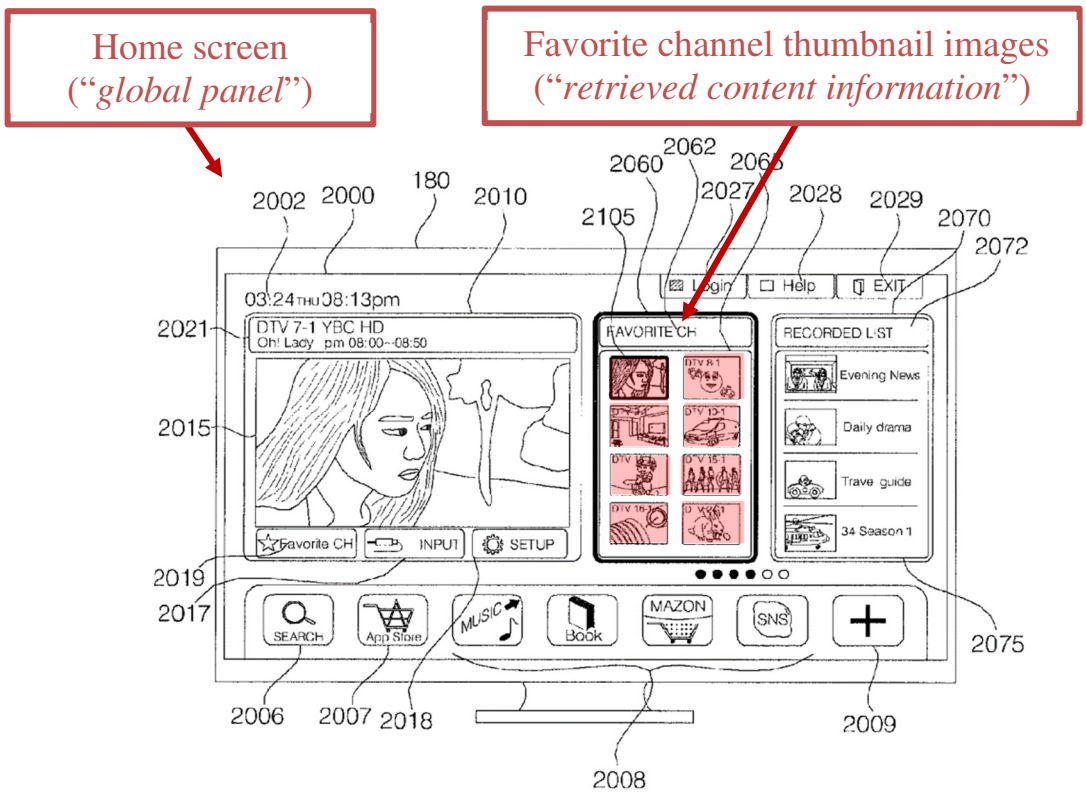
[2.3] *retrieving, from memory, content information associated with the identified user; and*

As discussed at [2.2], Ground 2, the favorite channel list is represented as thumbnail images. *See* Ex.1005, [0206]; Ex.1010, 41:61-67, Figs. 26C, 39B. Consistent with the analysis at limitation [1.3], Ground 1, the favorite channel thumbnails, which convey information regarding a given channel, correspond to "*content information*." *See also* Ex.1010, 39:57-63. Because the user sets the favorite channels and corresponding number of thumbnails, the thumbnails are "*associated with the identified user*." Further, consistent with the analysis at

limitation [1.3], Ground 1, and limitation [2.2], Ground 2, it would have been obvious for stored thumbnails to be retrieved from memory 140 so that they may be displayed. *See also infra*, [2.4]; Reasons to Combine Kim and Lee-2; Ex.1003, ¶¶294-295.

[2.4] ***displaying, via the television, the retrieved content information in the global panel.***

Lee-2 discloses that the "**favorite channel list is displayed on a home screen**." Ex.1010, 42:2-3. For example, Lee-2 discloses that the user may select a favorite channel object to view the favorite channel list (including corresponding thumbnail images) on the home screen. Ex.1010, 38:4-11, 42:5-7. As shown below at Figure 33B, Lee-2 displays, via the smart TV 100, the retrieved favorite channel list thumbnails in the FAVORITE CH card object in the home screen:



Ex.1010, Fig. 33B (annotated).

Consistent with the discussion in connection with limitations [2.2]-[2.3], Ground 2, it would have been obvious to a POSITA that to apply Lee-2's teachings to Kim, because it would make the user "instantly [] aware of the FAVORITE CH card object [] including the favorite channel list" and also because displaying a thumbnail of the currently watched channel would allow the "the user [to] easily identify the channel that he or she is watching." Ex.1010, 31:14-21, 37:67-38:2; *see also* Reasons to Combine Kim and Lee-2; Ex.1003, ¶¶296-298.

4. Claim 3

Limitation [3.0]

See claim 1, Ground 1. Ex.1003, ¶299.

Limitations [3.1]-[3.2] and [3.4]

See [2.1]-[2.2] and [2.4], Ground 2. Ex.1003, ¶¶300-301, 303.

[3.3] ***retrieving, from memory, content information associated with the identified user and the one or more settings associated with the user; and***

As discussed at [2.3], Ground 2, the prior art discloses retrieving, from memory 140, favorite channel thumbnails associated with the identified user. Additionally, consistent with the discussion at limitation [2.3], Ground 2, the retrieved thumbnails are also associated to the one or more settings associated with the user because the user setup the number of thumbnails and which channels to include in the pre-stored favorite channel list. Ex.1003, ¶302.

5. Claim 6

[6.0] ***The method of claim 1, further comprising:***

See claim 1, Ground 1. Ex.1003, ¶304.

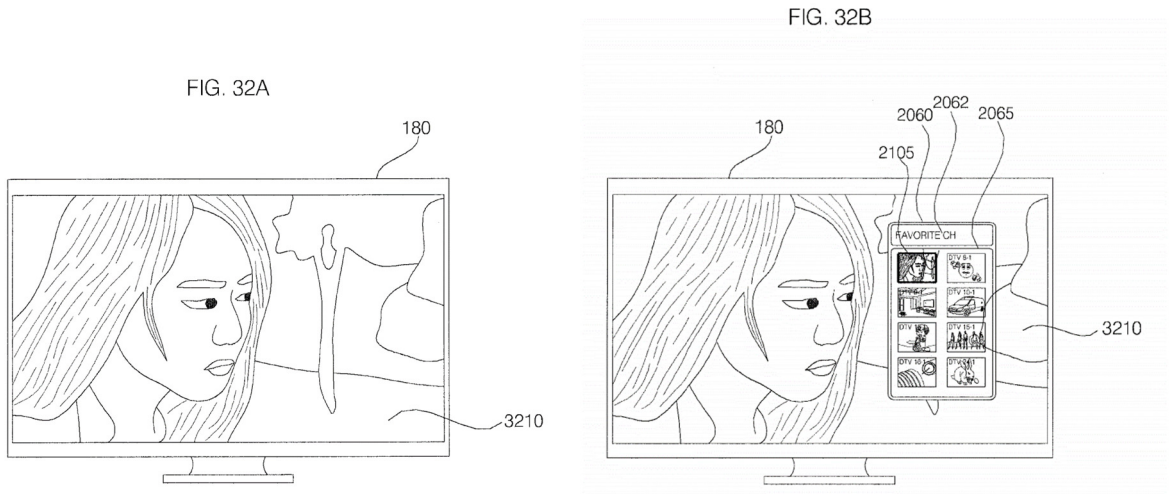
[6.1] ***identifying at least one of a content source and a content information currently being displayed via a television;***

As discussed in the Claim Construction section, "*at least one of*" requires only one of the sources or content information to be identified. Ex.1003, ¶305.

Lee-2 discloses that "[u]pon input of a local key (not shown) or a favorite channel key (not shown) of the remote controller, the FAVORITE CH card object 2060 may be displayed." Ex.1010, 37:61-38:2, Figs. 32A, 32B. "**A channel that**

<u>the user is watching may be included in the FAVORITE CH card object."</u>

Ex.1010, 33:63-67. As shown below, the television (Fig. 32A) changes to display a FAVORITE CH card object 2060 (Fig. 32B) with a highlighted thumbnail corresponding to the currently watched channel:



Ex.1010, Figs. 32A and 32B.

It would have been obvious to a POSITA that the currently watched channel (e.g., DTV 7-1) is "*identif[ied]*" so that it may be included in the FAVORITE CH card object 2060 as a corresponding highlighted thumbnail. Ex.1003, ¶¶306-309.

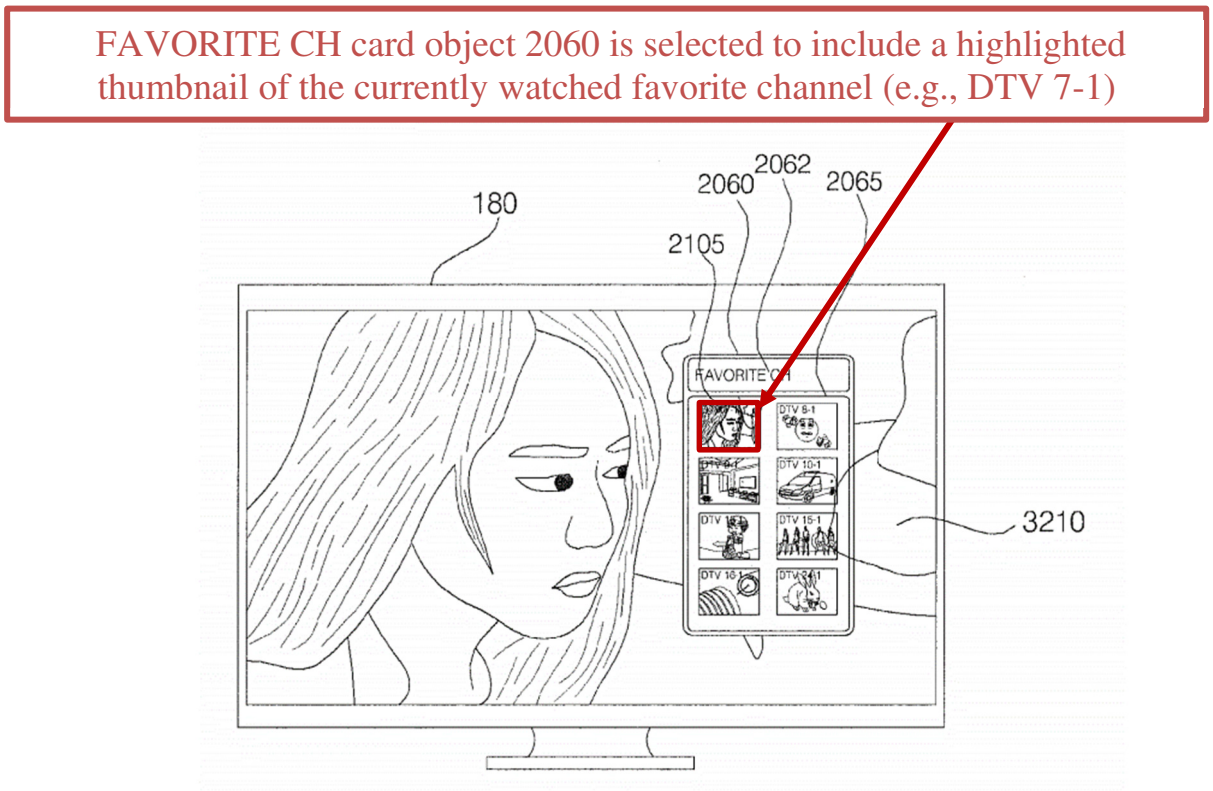
It would have been obvious to a POSITA to apply Lee-2's teachings to Kim. Specifically, a POSITA would have been motivated to apply Lee-2's teachings of receiving an input of a local key or a favorite channel of the remote controller (when watching a channel) to display a corresponding FAVORITE CH card object that includes the channel that the user is watching, because this would make the

user "instantly [] aware of the FAVORITE CH card object [] including the favorite channel list." Ex.1010, 37:67-38:2. In such an implementation, the channel that the user is watching (when receiving an input) would be identified so that it may be included as a thumbnail and highlighted within the FAVORITE CH card object, so that "the user can easily identify the channel that he or she is watching." *See* Ex.1010, 31:14-21; Reasons to Combine Kim and Lee-2; Ex.1003, ¶¶310-311.

[6.2] ***selecting a panel type based on the identified at least one of content source and content information currently being displayed via the television;***

First, as discussed in connection with limitation [6.1], the prior art discloses selecting to display a FAVORITE CH card object ("*the selected panel type*.") Ex.1003, ¶312.

Second, Lee-2 discloses selecting a FAVORITE CH card object 2060 that includes a thumbnail image corresponding to the identified currently watched channel (e.g., DTV 7-1). Ex.1010, 33:63-67, 37:61-38:2, Figs. 32A, 32B. As shown below, the FAVORITE CH card object 2060 is selected to include a highlighted thumbnail of the currently watched channel (e.g., DTV 7-1):



Ex.1010, Figs. 32B (annotated).

Lee-2's disclosure is consistent with Kim's disclosure that "the thumbnail images may correspond to pre-stored user channels (e.g., favorite list)." Ex.1005, [0206]; Ex.1003, ¶¶313-315.

Accordingly, because the FAVORITE CH card object is selected so that it includes a thumbnail image corresponding to the currently watched channel (e.g., DTV 7-1), Lee-2 discloses "*selecting a panel type*" that is "*based on*" the content source. Ex.1003, ¶316.

Consistent with the discussion at [6.1], it would have been obvious to a POSITA that to apply Lee-2's teachings to Kim, because it would make the user

"instantly [] aware of the FAVORITE CH card object [] including the favorite channel list" and also because including a highlighted thumbnail of the currently watched channel would allow the "the user [to] easily identify the channel that he or she is watching." Ex.1010, 31:14-21, 37:67-38:2; *see also* Reasons to Combine Kim and Lee-2; Ex.1003, ¶317.

Thus, Kim in combination with Lee-2 discloses selecting a FAVORITE CH card object, based on the identified channel currently being displayed via the television 180, which renders obvious this limitation. Ex.1003, ¶318.

[6.3] ***retrieving, from memory, content information based on the selected panel type; and***

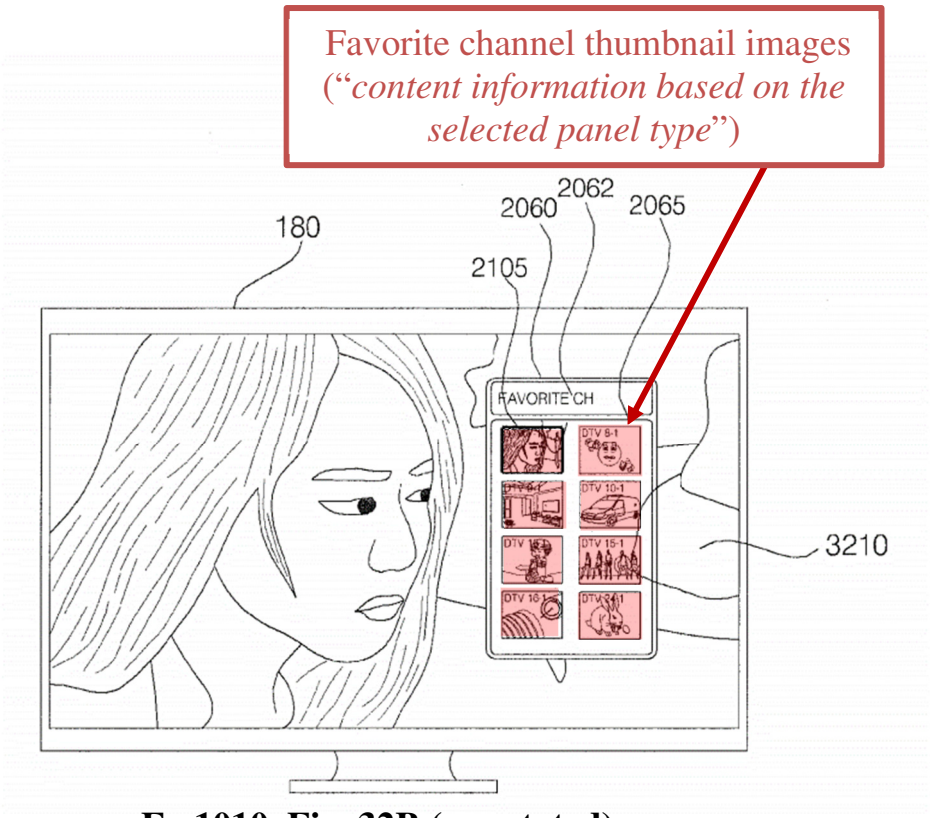
First, as discussed at [6.2], the prior art discloses selecting to display a FAVORITE CH card object ("*the selected panel type*.") Ex.1003, ¶319.

Second, Lee-2 discloses that the FAVORITE CH card object is generated "using a favorite channel list **pre-stored**" in memory. Ex.1010, 38:4-11; *see also* Ex.1010, 33:63-67 ("[T]he card object generator 345 may generate the FAVORITE CH card object using a list of favorite channels **pre-stored in the memory 140**. A channel that the user is watching may be included in the FAVORITE CH card object."). Ex.1003, ¶320.

Consistent with the discussion at [1.3], it would have been obvious to a POSITA, in view of Kim and Lee-1, for the thumbnail images to be stored in

memory 140 so that they may be retrieved and readily displayed to the user. This is consistent with Kim's disclosure that "the **thumbnail images may correspond to pre-stored user channels (e.g., favorite list)**." Ex.1005, [0206]; Ex.1003, ¶321.

As shown at Figure 32B, the generated FAVORITE CH card object includes favorite channel list thumbnails 2065 that with images of available content:



Ex.1010, Fig. 32B (annotated).

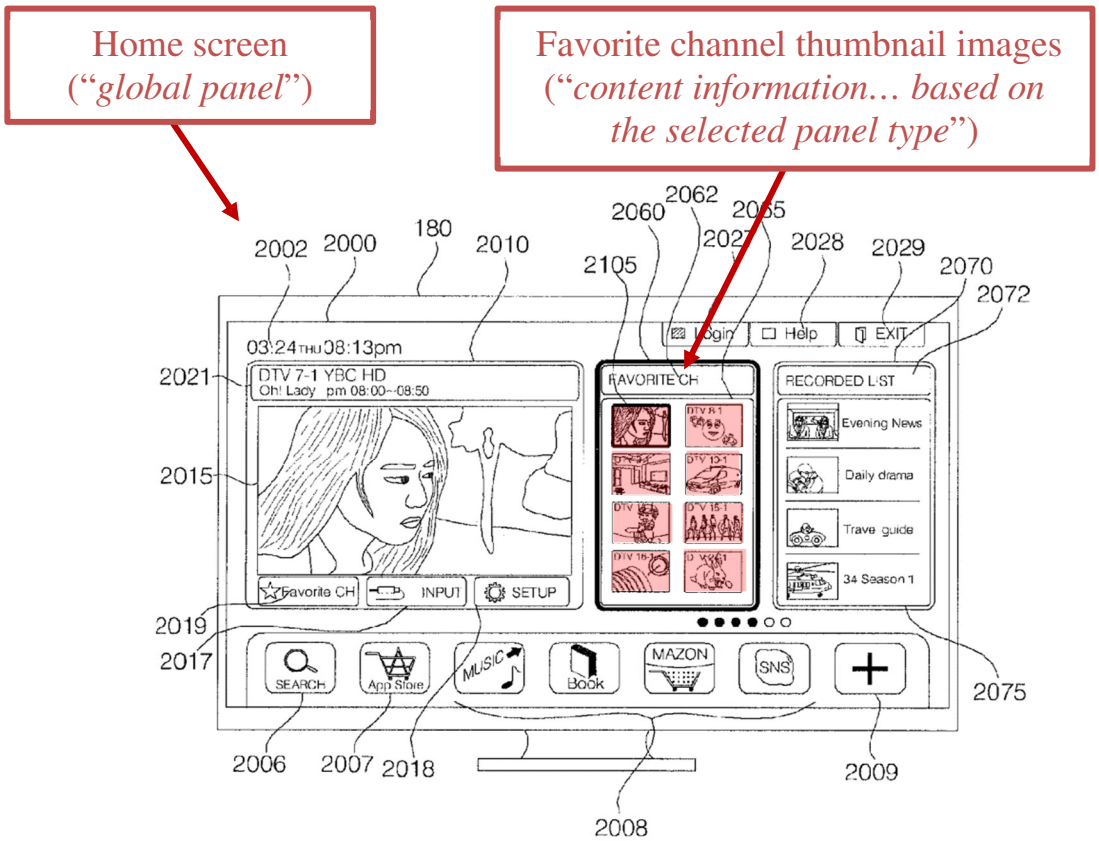
Because the favorite channel thumbnail images are retrieved from memory 140 to generate the selected FAVORITE CH card object, Kim in combination with Lee-1 and Lee-2 renders obvious that the retrieved "*content information*" is "*based on*" the selected panel type. Ex.1003, ¶¶322-323.

Consistent with the discussion in connection with limitations [6.1]-[6.2], it would have been obvious to a POSITA when applying Lee-2's teachings to Kim to retrieve from memory 140 favorite channel list thumbnails so that the FAVORITE CH card object may be generated and displayed to the user, thereby making the user "instantly [] aware of the FAVORITE CH card object [] including the favorite channel list" and also because retrieving and displaying a thumbnail of the currently watched channel would allow the "the user [to] easily identify the channel that he or she is watching." Ex.1010, 31:14-21, 37:67-38:2; *see also* Reasons to Combine Kim and Lee-2; Ex.1003, ¶¶324-325.

[6.4] ***displaying, via the television, the retrieved content information in the global panel based on the selected panel type.***

First, as discussed at [6.3], the prior art discloses retrieving favorite channel list thumbnails ("*the retrieved content information*."). Ex.1003, ¶326.

Second, Lee-2 displays, via the television, the retrieved favorite channel list thumbnails in the selected FAVORITE CH card object in the home screen. Ex.1010, 38:4-11; *see also infra* [6.4]. As shown below at Figure 33B, Lee-2 displays, via the television, the retrieved favorite channel list thumbnails 2065 in the FAVORITE CH card object 2060 in the home screen:



Ex.1010, Fig. 33B (annotated).

Consistent with the discussion in connection with limitations [6.1]-[6.3], it would have been obvious to a POSITA that to apply Lee-2's teachings to Kim, because it would make the user "instantly [] aware of the FAVORITE CH card object [] including the favorite channel list" and also because displaying a thumbnail of the currently watched channel would allow the "the user [to] easily identify the channel that he or she is watching." Ex.1010, 31:14-21, 37:67-38:2; *see also* Reasons to Combine Kim and Lee-2; Ex.1003, ¶¶327-330.

6. Claim 12

Limitation [12.0]

See claim 11, Ground 1. Ex.1003, ¶331.

Limitations [12.1]-[12.4]

See [2.1]-[2.4], Ground 2. Ex.1003, ¶¶332-335.

7. Claim 13

Limitation [13.0]

See claim 11, Ground 1. Ex.1003, ¶336.

Limitations [13.1]-[13.4]

See [3.1]-[3.4], Ground 2. Ex.1003, ¶¶337-340.

8. Claim 16

Limitation [16.0]

See claim 11, Ground 1. Ex.1003, ¶341.

Limitations [16.1]-[16.4]

See [6.1]-[6.4], Ground 2. Ex.1003, ¶¶342-345.

9. Claim 22

Limitation [22.0]

See claim 21, Ground 1. Ex.1003, ¶346.

Limitations [22.1]-[22.4]

See [6.1]-[6.4], Ground 2. Ex.1003, ¶¶347-350.

IX. DISCRETIONARY DENIAL WOULD BE INAPPROPRIATE

A. Discretionary denial under the *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 '040 Patent.

X. CONCLUSION

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

Respectfully submitted,

/David L. McCombs/
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Registration No. 32,271

Dated: December 20, 2023
HAYNES AND BOONE, LLP
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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 ’040 patent is involved in the following cases:

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

C. Lead and Back-up Counsel and Service Information

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

XII. CLAIMS APPENDIX

[1.0] 1. A method of displaying content on a television, comprising:

[1.1] receiving, by a processor, an indication associated with a selection by a user;

[1.2] determining, by the processor, based on the received indication, a global panel to display via the television;

[1.3] retrieving, by the processor, from memory, a first content information for display in the global panel; and

[1.4] displaying, via the television, the retrieved content information in the global panel,

[1.5] wherein the global panel includes a list of sources of content for the intelligent television,

[1.6] wherein at least one of the sources is highlighted as being associated with the first content information, and

[1.7] wherein the sources include a live television source, a video on demand source, a media center source, an applications source, and an electrical input associated with the television.

[2.0] 2. The method of claim 1, further comprising:

[2.1] identifying a user associated with the received indication;

[2.2] retrieving one or more settings associated with the identified user;

[2.3] retrieving, from memory, content information associated with the identified

user; and

[2.4] displaying, via the television, the retrieved content information in the global panel.

[3.0] 3. The method of claim 1, further comprising:

[3.1] identifying a user associated with the received indication;

[3.2] retrieving, from memory, one or more settings associated with the identified user;

[3.3] retrieving, from memory, content information associated with the identified user and the one or more settings associated with the user; and

[3.4] displaying, via the television, the retrieved content information in the global panel.

[4.0] 4. The method of claim 1, further comprising:

[4.1] receiving a second indication associated with a selection by a user;

[4.2] determining, based on the second indication, a source of content information to be displayed in the global panel based;

[4.3] retrieving at least a portion of content information from the determined source; and

[4.4] displaying, via the television, the content information associated with the determined source.

[5.0] 5. The method of claim 1, wherein the global panel comprises information

from at least two different panel types.

[6.0] 6. The method of claim 1, further comprising:

[6.1] identifying at least one of a content source and a content information currently being displayed via a television;

[6.2] selecting a panel type based on the identified at least one of content source and content information currently being displayed via the television;

[6.3] retrieving, from memory, content information based on the selected panel type; and

[6.4] displaying, via the television, the retrieved content information in the global panel based on the selected panel type.

[11.0] 11. A non-transitory computer readable information storage medium having stored thereon instructions that cause a computing system to execute a method of displaying content on a television, comprising:

[11.1] receiving an indication associated with a selection by a user;

[11.2] determining, based on the received indication, a global panel to display via the television;

[11.3] retrieving from memory, a first content information for display in the global panel; and

[11.4] displaying, via the television, the retrieved content information in the global panel,

[11.5] wherein the global panel includes a list of sources of content for the intelligent television,

[11.6] wherein at least one of the sources is highlighted as being associated with the first content information, and

[11.7] wherein the sources include a live television source, a video on demand source, a media center source, an applications source, and an electrical input associated with the television.

[12.0] 12. The non-transitory computer-readable medium of claim 11, wherein the instructions further comprise:

[12.1] identifying a user associated with the received indication;

[12.2] retrieving one or more settings associated with the identified user;

[12.3] retrieving, from memory, content information associated with the identified user; and

[12.4] displaying, via the television, the retrieved content information in the global panel..

[13.0] 13. The non-transitory computer-readable medium of claim 11, wherein the instructions further comprise:

[13.1] identifying a user associated with the received indication;

[13.2] retrieving, from memory, one or more settings associated with the identified user;

[13.3] retrieving, from memory, content information associated with the identified user and the one or more settings associated with the user; and

[13.4] displaying, via the television, the retrieved content information in the global panel.

[14.0] 14. The non-transitory computer-readable medium of claim 11, wherein the instructions further comprise:

[14.1] receiving a second indication associated with a selection by a user;

[14.2] determining, based on the second indication, a source of content information to be displayed in the global panel based;

[14.3] retrieving at least a portion of content information from the determined source; and

[14.4] displaying, via the television, the content information associated with the determined source.

[15.0] The non-transitory computer-readable medium of claim 11, further comprising

[15.1] retrieving from memory a second content information for display in the global panel; and displaying, via the television, the retrieved first content information and the retrieved second content information in the global panel.

[16.0] 16. The non-transitory computer-readable medium of claim 11, further comprising:

[16.1] identifying at least one of a content source and a content information currently being displayed via a television;

[16.2] selecting a panel type based on the identified at least one of content source and content information currently being displayed via the television;

[16.3] retrieving, from memory, content information based on the selected panel type; and

[16.4] displaying, via the television, the retrieved content information in the global panel based on the selected panel type.

[21.0] 21. A system for displaying content on a television, comprising:

[21.1] an input device associated with the television;

[21.2] a memory; and

[21.3] a microprocessor that is programmed to:

[21.4] receive an indication associated with a selection by a user;

[21.5] determine, based on the received indication, a global panel to display via the television;

[21.6] retrieve from the memory, a first content information for display in the global panel; and

[21.7] display, via the television, the retrieved content information in the global panel,

[21.8] wherein the global panel includes a list of sources of content for the

intelligent television,

[21.9] wherein at least one of the sources is highlighted as being associated with the first content information, and

[21.10] wherein the sources include a live television source, a video on demand source, a media center source, an applications source, and an electrical input associated with the television.

[22.0] 22. The system of claim 21, wherein the microprocessor is further operable to:

[22.1] identify at least one of a content source and a content information currently being displayed via a television;

[22.2] select a panel type based on the identified at least one of content source and content information currently being displayed via the television;

[22.3] retrieve, from the memory, content information based on the selected panel type; and

[22.4] display, via the television, the retrieved content information in the global panel based on the selected panel type.

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 13,990. 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 20, 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 20, 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. 9,510,040; Petitioner's Exhibit List; Exhibits Ex.1001 through Ex.1013; Petitioner's Power of Attorney.
Persons served	Sheridan Ross P.C. 1560 Broadway Suite 1200 Denver, CO 80202

/David L. McCombs/
David L. McCombs
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