

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

MULTIMEDIA TECHNOLOGIES PTE. LTD.,
Patent Owner.

IPR2024-00351
Patent 9,510,040 B2

Before ST. JOHN COURTENAY III, MICHAEL R. ZECHER, and
SHARON FENICK, *Administrative Patent Judges*.

ZECHER, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Petitioner, LG Electronics, Inc. and LG Electronics U.S.A., Inc. (collectively, “LG”), filed a Petition requesting an *inter partes* review (“IPR”) of claims 1–6, 11–16, 21, and 22 of U.S. Patent No. 9,510,040 B2 (Ex. 1001, “the ’040 patent”). Paper 1 (“Pet.”). Patent Owner, Multimedia Technologies Pte. Ltd. (“Multimedia”), filed a Preliminary Response. Paper 5 (“Prelim. Resp.”). Based on the authority delegated to us by the Director under 37 C.F.R. § 42.4(a) (2023), we may not institute an IPR unless the information presented in the Petition and any response thereto shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a) (2023). Taking into account Multimedia’s Preliminary Response, we conclude that the information presented in the Petition establishes that there is a reasonable likelihood that LG would prevail in demonstrating at least one of claims 1–6, 11–16, 21, and 22 of the ’040 patent as unpatentable. Pursuant to § 314, we hereby institute an *inter partes* review as to these claims of the ’040 patent.

A. Real Parties in Interest (“RPIs”)

The Petition identifies LG Electronics, Inc. and LG Electronics U.S.A., Inc. as RPIs. Pet. 95. Multimedia identifies itself as the only RPI. Paper 4 (Multimedia’s Mandatory Notices), 2.

B. Related Matters

The parties indicate that the ’040 patent is the subject of the following two district court cases: (1) *Multimedia Technologies Pte. Ltd. v. LG Electronics Inc.*, No. 2:22-cv-00494 (E.D. Tex. filed Dec. 23, 2022); and (2) *Multimedia Technologies Pte. Ltd. v. Vizio, Inc.*, No. 2:23-cv-00124

(E.D. Tex. Filed Mar. 24, 2023). Pet. 95; Paper 4, 2. In addition to this Petition, LG filed the following three other petitions challenging related patents owned by Multimedia: (1) *LG Electronics, Inc. v. Multimedia Technologies Pte. Ltd.*, IPR2024-00352, Paper 1 (PTAB Dec. 20, 2023) (challenging claims 1–14 of U.S. Patent No. 9,247,174 B2); (2) *LG Electronics, Inc. v. Multimedia Technologies Pte. Ltd.*, IPR2024-00353, Paper 1 (PTAB Dec. 22, 2023) (challenging claims 1–4, 6, 8–10, 12–17, and 19 of U.S. Patent No. 9,055,254 B2); and (3) *LG Electronics, Inc. v. Multimedia Technologies Pte. Ltd.*, IPR2024-00354, Paper 1 (PTAB Dec. 22, 2023) (challenging claims 1–18 of U.S. Patent No. 10,419,805 B2)). Paper 4, 2.

C. The '040 Patent

The '040 patent, titled “Global Panel,” issued from U.S. Patent Application No. 14/834,316, filed on August 24, 2015. Ex. 1001, codes (54), (21), (22). The '040 patent has an extensive priority chain of continuation and provisional applications that ultimately results in a claim of priority to U.S. Provisional Patent Application No. 61/684,672 (“the '672 application”), which was filed on August 17, 2012. *Id.* at codes (60), (63).

The '040 patent generally relates to “methods and systems of displaying content on a television” that includes “receiving an indication associated with a selection by a user,” determining “a global panel to display via the television” based on the received indication,” retrieving “a first content information for display in the global panel” from memory, and then displaying “the retrieved content information in the specified global panel” on the television. Ex. 1001, code (57). According to the '040 patent, “[a] Smart TV [television] is generally conceived as a device that integrates

access to the Internet and Web 2.0 features into television sets.” *Id.* at 2:15–17. The ’040 patent, however, states that “most Smart TV’s have yet to provide seamless and intuitive user interfaces for navigating and/or executing the various features of the Smart TV” and, as a result, “there are still issues with the consolidation of features and the presentation of these features in Smart TVs.” *Id.* at 2:21–26.

The ’040 patent ostensibly addresses these issues with smart TVs by providing “intuitive user interfaces . . . with seamless user interaction capability.” Ex. 1001, 2:30–31. Figure 15B of the ’040 patent, reproduced below, illustrates a global panel configuration consistent with one embodiment. *Id.* at 11:31–32, 29:60–62.

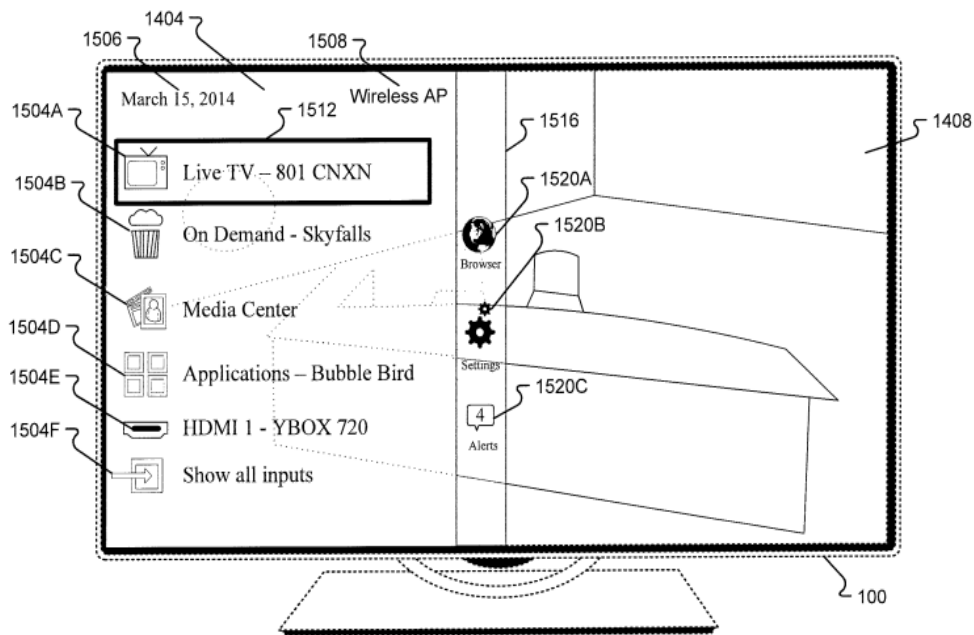


Fig. 15B

Figure 15B illustrates intelligent TV 100 that includes global panel 1404 on the left and active content area 1408 on the right. *See id.* at 29:60–30:5. Global panel 1404 includes, among other things, one or more sources

1504A–E represented by icons or texts. *Id.* at 30:26–27. Global panel 1404 also “indicate[s] a source that is selected or highlight[ed] using indicator 1512.” *Id.* at 30:41–43. As shown above, indicator 1512 is represented as “a box positioned around Live TV—801 CNXN,” which, in turn, results in displaying Live TV in active content area 1408. *Id.* at 30:43–44, 30:65–67.

Figure 15C of the '040 patent, reproduced below, illustrates that same global panel configuration as Figure 15B, except indicator 1512 was moved to a different source. Ex. 1001, 11:31–32, 32:9–12.

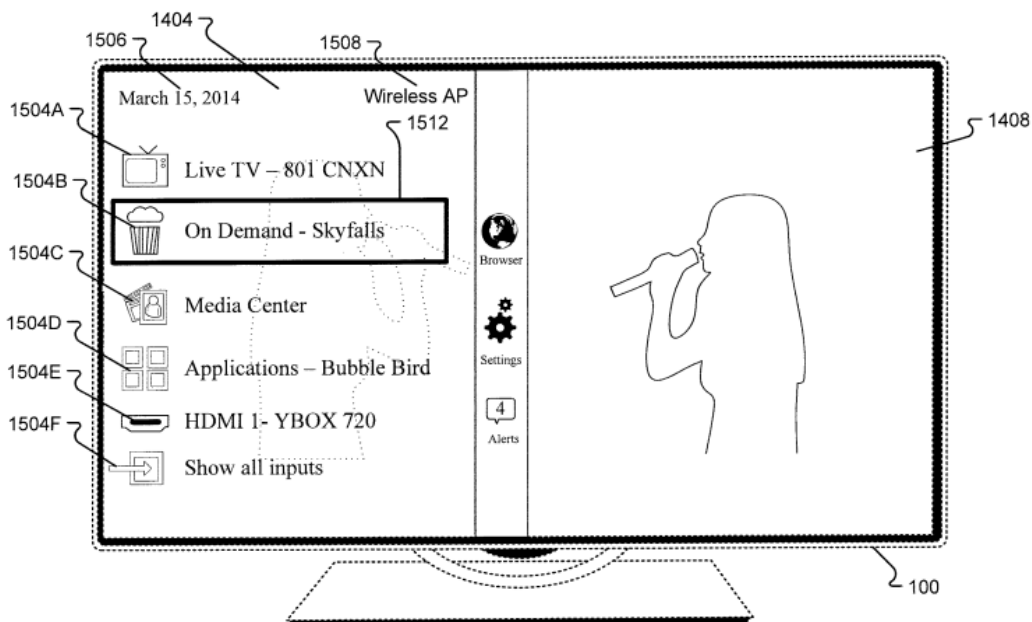


Fig. 15C

Figure 15C illustrates positioning indicator 1512 within global panel 1404 around “On Demand – Skyfalls,” which, in turn, results in displaying an image or video associated with Skyfalls in active content area 1408. *Id.* at 32:12–14.

D. Challenged Claims

Of the challenged claims, claims 1, 11 and 21 are independent. Independent claim 1 is directed to “[a] method of displaying content on a television,” independent claim 11 is directed to “[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,” and independent claim 21 is directed to “[a] system for displaying content on a television.” Ex. 1001, 39:58–59, 41:1–4, 42:29–30. Claims 2–6 directly depend from independent claim 1, claims 12–16 directly depend from independent claim 11, and claim 22 directly depends from independent claim 21. *Id.* at 40:8–49, 41:20–42:5, 42:49–61. Independent claim 1 is illustrative of the challenged claims and is reproduced below.

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

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

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

retrieving, by the processor, 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 sources of content for the intelligent television, wherein at least one of the sources is highlighted as being associated with the first content information, 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.

Id. at 39:58–40:7.

E. Asserted Prior Art References

LG relies on the prior art references set forth in the table below.

Name¹	Reference	Dates	Exhibit Nos.
Kim	US 2012/0054791 A1	published Mar. 1, 2012; filed Mar. 9, 2011	1005
Lee ("Lee-1")	US 9,008,190 B2	issued Apr. 14, 2015; filed Jan. 4, 2010	1006
Choi	US 2013/0057764 A1	published Mar. 7, 2013; filed June 28, 2012	1007
Lee ("Lee-2")	US 9,398,339 B2	issued July 19, 2016; filed Dec. 16, 2010	1010

F. Asserted Grounds of Unpatentability

LG challenges claims 1–6, 11–16, 21, and 22 of the '040 patent based on the asserted grounds of unpatentability set forth in the table below.

Pet. 10–92.

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 11–15, 21	103(a) ²	Kim, Lee-1, Choi
2, 3, 6, 12, 13, 16, 22	103(a)	Kim, Lee-1, Choi, Lee-2

¹ For clarity and ease of reference, we only list the first named inventor.

² The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the '040 patent claims the benefit of the '672 application, which was filed before this date, the pre-AIA version of § 103 applies. Ex. 1001, code (60).

II. ANALYSIS

A. Discretionary Denial Arguments Under § 314(a)

1. Parties Arguments

LG contends that we should not exercise our discretion to deny the Petition under § 314(a), primarily because LG stipulates “that if instituted, [LG] 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.” Pet. 93 (citing Interim Procedure for Discretionary Denials in AIA Post-grant Proceedings with Parallel District Court Litigation at 3, *available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf. (“Director Memo”)). In its Preliminary Response, Multimedia contends that we should exercise our discretion to deny the Petition under § 314(a) because, among other reasons, LG failed to file a stipulation consistent with the holding set forth in *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A) (“*Sotera*”). Prelim. Resp. 2–20. After Multimedia filed its Preliminary Response, we granted LG authorization to file a “Notice of *Sotera* Stipulation,” asserting that a stipulation according to *Sotera* was entered in the district court case where LG is a party. Ex. 1014.

2. Fintiv Analysis

It is well-settled that institution of an IPR is discretionary. *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“[T]he [U.S. Patent and Trademark Office] is permitted, but never compelled, to institute an IPR proceeding.”); 35 U.S.C. § 314(a) (“The Director *may not* authorize an inter partes review to be instituted unless the Director determines that the

information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” (emphasis added)). In *Fintiv*, the Board discussed potential applications of *NHK Spring Co. v. Intrix-Plex Techs., Inc.*, IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018) (precedential), as well as a number of other cases dealing with discretionary denial under § 314(a). *Fintiv* identifies a non-exclusive list of six factors parties may consider addressing, particularly where there is a related district court case involving the same patent and whether such a case provides any basis for discretionary denial. *Fintiv* at 5–16. Those factors include the following:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Id. at 5–6.

On June 21, 2022, the Director issued interim guidance in the form of a memo that further clarifies how we should approach analyzing the *Fintiv*

factors. *See* Director Memo. Notably, the Director stated that “the PTAB [Patent Trial and Appeal Board] will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any ground that could have been reasonably raised before the PTAB.” Director Memo at 3. With this interim guidance in mind, we decline to exercise our discretion to deny institution of this proceeding under *Fintiv* because LG filed a *Sotera* stipulation in both this proceeding and the district court case where LG is a party. Pet. 93; Ex. 1014.

In its Preliminary Response, Multimedia contends that LG fails to provide a proper *Sotera* stipulation for the following two reasons: (1) LG did not file its stipulation in the U.S. District Court for the Eastern District of Texas, which is handling the two parallel district court cases; and (2) LG’s stipulation would have little, if any, impact on the district court case where Vizio, Inc. (“Vizio”) is a party. Prelim. Resp. 11–17. We do not agree with Multimedia’s arguments.

As an initial matter, we do not share Multimedia’s view that a *Sotera* stipulation must be filed in the two parallel district court cases. *See* Prelim. Resp. 13–16. This same argument was raised previously in another proceeding before the Board. *See Taiwan Semiconductor Mfg. Co. Ltd. v. Alidouble, Inc.*, IPR2023-00369, Paper 7 at 10 (PTAB July 12, 2023) (Institution Decision) (declining to discount petitioner’s stipulation because petitioner did not file it in the district court). In *Taiwan Semiconductor*, patent owner urged the Board to exercise discretion to deny institution under § 314(a) in light of a parallel district court litigation because, in part, petitioner had not filed the stipulation in the district court. *Id.* at 9. The

Board disagreed and found that the Director Memo does not require that such a stipulation be filed in the district court, only that the petitioner “stipulate[]” or “present[] a stipulation.” *Id.* (citing Director Memo at 3, 7). We agree with the Board’s reasoning in *Taiwan Semiconductor* case. That is, the Director Memo only requires that LG “stipulate[]” or “present[] a stipulation,” and it does not lay out a requirement for a petitioner to file the stipulation in the district court case where it is a party. Director Memo at 3, 7.

In any event, even if we were to agree with Multimedia’s argument, LG filed a Notice of *Sotera* Stipulation in the district court case where LG is a party. Ex. 1014. This Notice states the following:

[LG] hereby stipulates, consistent with the stipulation made by the [p]etitioner in *Sotera* that, if the PTAB institutes an IPR in response to [LG’s] petition against [Multimedia’s] U.S. Patent No. 9,510,040 (IPR2024-00351), [LG] will not pursue in this litigation the grounds raised or any other grounds that could have reasonably been raised before the PTAB in that instituted proceeding.

Id. at 2. Consequently, the purpose of LG’s *Sotera* stipulation has been achieved here because it “mitigates any concerns of duplicative efforts between the district court and the Board, as well as concerns of potentially conflicting decisions.” *Sotera*, Paper 12 at 19 (citing *Sand Revolution II, LLC v. Cont’l Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 at 12 (PTAB June 16, 2020) (Decision Granting Request for Rehearing) (informative)).

Although Multimedia is correct that LG’s *Sotera* stipulation would have little, if any, impact on the district court case where Vizio is a party (*see* Prelim. Resp. 16–17), the Director’s interim guidance does not

condition or otherwise qualify the effect of a *Sotera* stipulation on our exercise of discretion to deny the Petition based on any remaining defendants in the parallel district court cases that are not subject to the stipulation (*see* Director Memo at 7, 9). Put simply, LG has filed a *Sotera* stipulation in this proceeding and, as a result, we will not exercise our discretion to deny the Petition.

B. Claim Construction

In this IPR, claim terms are construed using the same claim construction standard as in a civil action under 35 U.S.C. § 282(b). *See* 37 C.F.R. § 42.100(b) (2023). That is, claim terms generally are construed in accordance with their ordinary and customary meaning, as would have been understood by a person of ordinary skill in the art, in view of the specification and the prosecution history pertaining to the patent at issue. *See id.* The ordinary and customary meaning of a claim term “is its meaning to the ordinary artisan after reading the entire patent,” and “as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 1321 (Fed. Cir. 2005) (en banc).

In its Petition, LG contends that, “for purposes of this proceeding and the grounds presented herein, no claim term requires express construction.” Pet. 9. Despite this contention, LG proposes that we construe the claim term “at least one,” as recited in each of claims 1, 6, 11, 21, and 22. *Id.* According to LG, “the phrasing of ‘at least one of A, B, C’ and ‘at least one of A, B, or C’ includes ‘A alone, B alone, C alone, A and B together, B and C together, or A, B, and C together.’” *Id.* (citing Ex. 1001, 3:49–56; Ex. 1003 (Declaration of Andrew Lippman, Ph.D.) ¶¶ 34–39). In its Preliminary Response, “[Multimedia] does not dispute [LG’s] statement[s]

on claim construction for purposes of [its] Preliminary Response.” Prelim. Resp. 30 (citing Pet. 9).

Based on the preliminary record, there is no readily discernible controversy between the parties that requires us to construe any claim terms at this time. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

C. Obviousness Over the Combined Teachings of Kim, Lee-1, and Choi

LG contends that claims 1–5, 11–15, and 21 of the ’040 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over the combined teachings of Kim, Lee-1, and Choi. Pet. 10–76. LG contends that the combined teachings of Kim, Lee-1, and Choi account for the subject matter of each challenged claim, and provides reasoning as to why a person of ordinary skill in the art would have been prompted to modify the teachings of these references. *Id.* LG also relies on the testimony of Dr. Lippman to support its positions. *See* Ex. 1003.

Based on the preliminary record, we determine that LG has shown that there is a reasonable likelihood that it would prevail in challenging at least one of claims 1–5, 11–15, and 21 of the ’040 patent as unpatentable. We begin our analysis with the principles of law that generally apply to an asserted ground based on obviousness, followed by an assessment of the level of skill in the art, next we provide overviews of Kim, Lee-1, and Choi, and then we address the parties’ contentions with respect to the independent claims 1, 11, and 21.

1. Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, “would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) when in evidence, objective indicia of obviousness or non-obviousness (i.e., secondary considerations, such as commercial success, long-felt but unsolved needs, failure of others, etc.).³ *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966). We analyze the asserted grounds based on obviousness with the principles we identify above in mind.

2. Level of Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The “person having ordinary skill in the art” is a hypothetical construct, from whose vantage

³ At this stage in the proceeding, Multimedia does not present arguments or evidence of secondary considerations. *See* Prelim. Resp.

point obviousness is assessed. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

Factors pertinent to a determination of the level of ordinary skill in the art include “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). “Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case.” *Id.* at 696–97.

For purposes of institution, there is sufficient evidence in the record that enables us to determine the knowledge level of a person of ordinary skill in the art. Relying on the testimony of Dr. Lippman, LG argues the following:

[a] Person of Ordinary Skill in The Art . . . 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 [person of ordinary skill in the art] 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.

Pet. 8–9 (citing Ex. 1003 ¶¶ 18–20). For the limited purposes of its Preliminary Response, “[Multimedia] does not dispute [LG’s] definition of a

person of ordinary skill in the art.” Prelim. Resp. 30 (citing Pet. 8–9).
To the extent necessary, we adopt LG’s assessment of the level of skill in the art because it is consistent with the ’040 patent and the asserted prior art.

3. Overview of Kim

Kim generally relates to “[a] multifunctional display device” that displays multiple card objects in different portions of the display. Ex. 1005, code (57). Kim discloses image display apparatus 100 (e.g. a smart TV) that includes, among other things, display 180. *Id.* ¶¶ 38, 65, Figs. 2, 6. Figure 19 of Kim, reproduced below, illustrates an exemplary home screen display according to one embodiment. *Id.* ¶¶ 21, 192.

FIG. 19

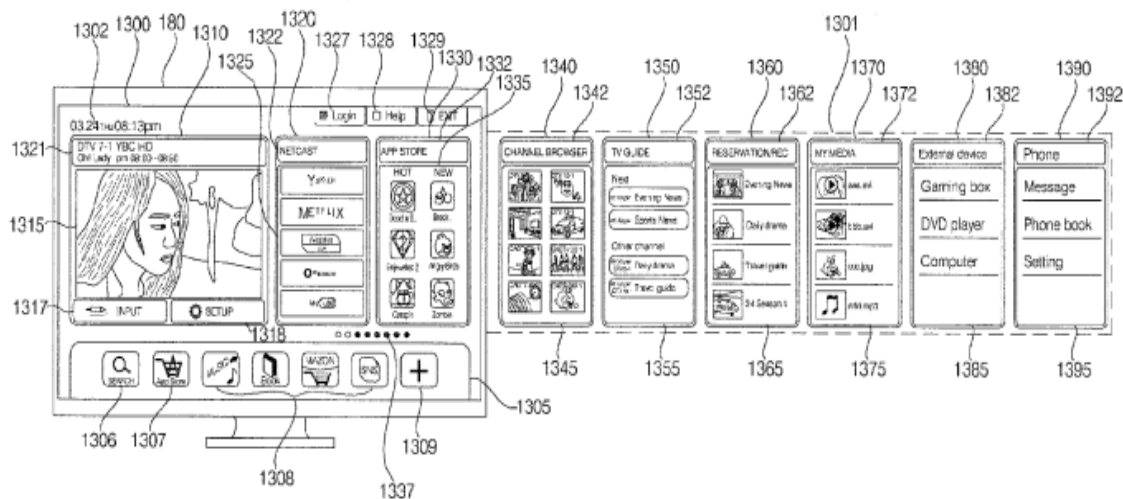


Figure 19 illustrates display 180 that includes home screen 1300 displaying three card objects: (1) card object 1310 named BROADCAST, (2) card object 1320 named NETCAST, and (3) card object 1330 named APP STORE. *Id.* ¶¶ 192, 193, 195. Hidden area 1301 includes additional card objects 1340, 1350, 1360, 1370, 1380, and 1390, which a user may shift or

scroll to on display 180 to replace card objects 1310, 1320, or 1330. *Id.*

¶ 196. The number of card objects included in display 180 may vary “from three to either four or two card objects.” *Id.* ¶ 198. As one example, “upon receipt of an incoming call,” if display 180 already includes card object 1390, “it may be highlighted or otherwise distinguished from the other card objects.” *Id.* ¶ 211.

4. Overview of Lee-1

Lee-1 generally relates to “an apparatus for processing images and an operating method thereof.” Ex. 1006, 1:15–19. Lee-1 discloses an apparatus for displaying images 100 that includes, among other things, display 180. *Id.* at 1:66–2:6, Fig. 1. Display 180 is capable of displaying thumbnail image screen 500. *Id.* at 12:38–43, Fig. 10. Thumbnail image screen 500 displays thumbnail images that may include “a currently inputted image, or a previously stored image.” *Id.* at 12:65–67.

5. Overview of Choi

Choi generally relates to “an image display device” and, in particular, “to a method for providing a list of external devices.” Ex. 1007 ¶ 2. Figure 11 of Choi, reproduced below, illustrates “a screen that provides an external device list” according to one embodiment. *Id.* ¶¶ 19, 250.

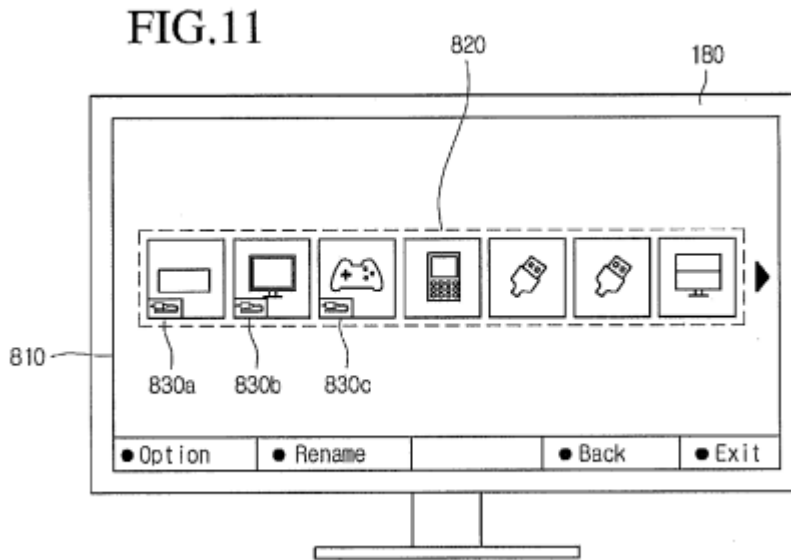


Figure 11 illustrates display unit 180 that includes full screen 810 displaying a plurality of external device icons 820. *Id.* ¶ 250. The external devices actually connected to the image display device are identified using specific symbols 830a, 830b, and 830c. *Id.*

6. Claims 1, 11, and 21

For purposes of consistency and added clarity, we address each limitation of independent claims 1, 11, and 21 in turn by relying on the bracketed annotations provided by LG in the Petition. *See* Pet. 15–56, 72–73, 75–76, 97–103 (Claims Appendix). The preamble of independent claim 1 recites [1.0]—“[a] method of displaying content on a television, comprising[.]” Ex. 1001, 39:58–59. To the extent the preamble should be treated as limiting, LG contends that Kim teaches the features recited therein because it discloses smart TV 100 displaying exemplary content, including, among other things, BROADCAST image 1315, NETCAST content 1320 and APP STORE content 1330. Pet. 15–17 (citing Ex. 1005 ¶¶ 193–202, 282–289, Figs. 9, 19–21; Ex. 1003 ¶¶ 63–65).

The first step of independent claim 1 recites limitation [1.1]—“receiving, by a processor, an indication associated with a selection by a user.” Ex. 1001, 39:60–61. LG contends that Kim teaches this limitation because it discloses controller 170, which includes a video processor, audio processor, data processor, and application processor, that executes software to operate smart TV 100 by receiving a user selection from input interface 150 via remote controller 200. Pet. 17–23 (citing Ex. 1005 ¶¶ 85–87, 90, 94, 109, 110, 112, 113, 133, 145, 166–175, 187, 192, Figs. 6, 11, 12; Ex. 1003 ¶¶ 66–79; Ex. 1001, 17:5–9).

The second method step of independent claim 1 recites limitation [1.2]—“determining, by the processor, based on the received indication, a global panel to display via the television.” Ex. 1001, 39:62–63. LG contends that Kim teaches this limitation because it discloses, “upon receipt of a go-to-home screen input,” controller 170 displays the home screen on display 180 that includes “a plurality of card objects classified according to content sources.” Pet. 23 (quoting Ex. 1005 ¶ 94 (emphasis omitted)) (citing Ex. 1005 ¶ 192; Ex. 1003 ¶ 81), 24–27 (citing Ex. 1005 ¶¶ 89, 94, 96, 193, 196, Figs. 6, 19–23; Ex. 1003 ¶¶ 82–86; Ex. 1001, 29:58–59, 32:60–65). LG argues that Kim’s home screen may include card objects representing “a thumbnail list of broadcast channels,” “a broadcast program guide,” “a program reservation list or a program recording list,” “a media list of a device connected to [smart TV] 100,” “a list of connected external devices,” “an application menu,” etc. *Id.* at 23–24 (quoting Ex. 1005 ¶ 94) (citing Ex. 1003 ¶¶ 81, 82).

The third method step of independent claim 1 recites limitation [1.3]—“retrieving, by the processor, from memory, a first content

information for display in the global panel.” Ex. 1001, 39:64–65. Relying on its argument and evidence for limitations [1.1] and [1.2], LG contends that Kim in combination with Lee-1 teaches this limitation because Kim’s controller 170 determines the home screen to display on smart TV 100, including whether the home screen displays descriptive text (e.g., application names, video genre, video title, and audio/visual indicator) and thumbnails. Pet. 27 (citing Ex. 1003 ¶¶ 87, 88). More specifically, LG argues that Kim’s card objects 1330, 1360, and 1370 include descriptive text informing the user of available content. *Id.* at 27–28 (citing Ex. 1005 ¶¶ 137, 208, Fig. 21). As one example, LG argues that Kim’s card object 1330 includes “Angry Birds” and “Bejeweled 2,” both of which are descriptive text because they correspond to a “title” or “name” of an application available to the user. *Id.* at 28 (citing Ex. 1005, Fig. 21; Ex. 1003 ¶¶ 89–91; Ex. 1001, 25:41–49, 27:23–30, Fig. 15C). LG also argues that Kim’s card objects 1330, 1360, and 1370 include thumbnails informing the user of available content. *Id.* at 29–30 (citing Ex. 1005 ¶¶ 137, 184–186, 208, 209, Figs. 19–21). As one example, Kim’s card object 1330 displays a thumbnail image informing the user that the application “Angry Birds” is available. *Id.* at 30 (citing Ex. 1005 ¶¶ 84, 208; Ex. 1003 ¶¶ 95–97; Ex. 1001, Fig. 15C).

LG further contends that Kim’s smart TV 100 “reproduce[s] content stored in memory 140” and that “controller 170 may control display of the home screen on the display 180.” Pet. 31 (quoting Ex. 1005 ¶ 85, then quoting *id.* ¶ 94 (emphasis omitted)) (citing Ex. 1005 ¶¶ 84–86, 92–94; Ex. 1003 ¶ 102); *see also id.* at 32–33 (arguing the same) (quoting Ex. 1005 ¶ 92) (citing Ex. 1005 ¶¶ 94, 117, 206; Ex. 1003 ¶ 105). Based on these and

other cited disclosures in Kim, LG asserts that it would have been obvious to a person of ordinary skill in the art for Kim's controller 170 to retrieve content stored in memory 140, such as descriptive text and thumbnails, so it may reproduce the retrieved content on the home screen of display 180. *Id.* at 31–34 (citing Ex. 1005 ¶¶ 65, 84, 85, 89, 92, 117, 192, 213, 293, claim 1, Fig. 6; Ex. 1003 ¶¶ 103, 104, 106, 107).

In addition, LG contends that Kim incorporates by reference Lee-1. Pet. 34 (citing Ex. 1005 ¶ 106). LG argues that Lee-1 discloses that the “displayed thumbnail images may be a . . . previously stored image.” *Id.* at 34–35 (quoting Ex. 1006, 12:65–67 (emphasis omitted)). Based on this cited disclosure in Lee-1, LG asserts that it would have been obvious to a person of ordinary skill in the art for Kim's smart TV 100 to store Lee-1's thumbnails in memory 140 and display those images to the user. *Id.* at 35 (citing Ex. 1005 ¶¶ 65, 192, 239; Ex. 1006, 12:65–67; Ex. 1003 ¶ 108). Turning to rationale to combine, LG contends that a person of ordinary skill in the art would have “considered and applied Lee-1's incorporated by reference thumbnail teachings to successfully implement Kim's system and method thereof, which [also] uses thumbnails.” *Id.* at 12–13 (citing Ex. 1005 ¶ 106). Stated differently, LG asserts that it would have been obvious to combine the teachings of Kim and Lee-1 because “[Lee-1] provide[s] implementation details directly applicable to successfully implementing Kim's system and method.” *Id.* (citing Ex. 1003 ¶¶ 53, 54).

The fourth method step of independent claim 1 recites limitation [1.4]—“displaying, via the television, the retrieved content information in the global panel.” Ex. 1001, 39:66–67. Relying on its arguments and evidence for limitations [1.1], [1.2], and [1.3], LG contends that Kim teaches

this limitation because it discloses controller 170 retrieving from memory 140 descriptive text and thumbnails to display on the home screen of smart TV 100. Pet. 36 (citing Ex. 1003 ¶ 111). According to LG, Kim’s controller 170 controls the display of the home screen because it “control[s] 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.” *Id.* at 36–37 (quoting Ex. 1005 ¶ 96 (emphasis omitted; second alteration in original)) (citing Ex. 1005 ¶¶ 65, 94, 196, 213, Fig. 6). In addition, LG argues that Kim’s BROADCAST image 1315 may be resized or reduced to display a home screen with more card objects (e.g., four card objects instead of three card objects). *Id.* at 37–38 (citing Ex. 1005 ¶ 198).

Based on these disclosures in Kim, LG contends that, when the user desires to access specific card objects, it would have been obvious to a person of ordinary skill in the art to reduce the size of Kim’s BROADCAST image 1315 or, alternatively, scroll or shift card objects, so that display 180 presents more or different card objects (e.g., card objects 1360 and 1370). Pet. 38 (citing Ex. 1003 ¶¶ 112–116). LG then asserts that Figure 21 of Kim illustrates one example of how, by shifting and scrolling, descriptive text and thumbnails present in card objects 1330 and 1360 would be displayed on the home screen. *Id.* (citing Ex. 1005 ¶¶ 138, 208, Figs. 21, 22; Ex. 1003 ¶ 117).

The first wherein clause of independent claim 1 recites limitation [1.5]—“wherein the global panel includes a list of sources of content for the intelligent television.” Ex. 1001, 39:67–40:2. Relying on its arguments and

evidence for limitations [1.0] and [1.2], LG contends that Kim teaches this limitation because it discloses how smart TV 100 displays the home screen, which “may include a plurality of card objects classified according to content sources.” Pet. 39 (quoting Ex. 1005 ¶ 94 (emphasis omitted)) (citing Ex. 1005 ¶¶ 192, 193, 282, 283, Figs. 1, 19; Ex. 1003 ¶¶ 119, 120; Ex. 1001, 7:14–17). LG then argues that Figure 19 of Kim illustrates one example where the home screen includes cards objects 1310, 1320, 1330, 1340, 1350, 1360, 1370, 1380, and 1390, which, separately or together, amount to the claimed “list of sources of content.” *Id.* at 39–41 (citing Ex. 1005 ¶¶ 195–202, 205–211, Fig. 19; Ex. 1003 ¶¶ 121–123).

Alternatively, LG contends that Choi teaches the claimed “list of sources of content” required by limitation [1.5] because Figure 11 of Choi illustrates a plurality of external device icons 820 that include specific symbols 830a, 830b, and 830c representing external devices connected to image display device 100. Pet. 41–42 (citing Ex. 1007, Fig. 11; Ex. 1003 ¶ 124). Similar to Kim, LG argues that Choi’s external devices connect to an input port of image display device 100. *Id.* at 42 (citing Ex. 1005 ¶¶ 76, 77, 131; Ex. 1007 ¶¶ 99, 249; Ex. 1003 ¶¶ 125, 126).

Turning to rationale to combine, LG contends that it would have been obvious to a person of ordinary skill in the art to implement Kim’s EXTERNAL DEVICE card object 1380 to include Choi’s specific symbols representing external devices connected to the input ports of smart TV 100 to inform the user which external devices are actually connected to the smart TV versus those that are not connected. Pet. 42–44 (citing Ex. 1005, Fig. 19 (modifying card object 1380); Ex. 1003 ¶ 137); *see also id.* at 14 (arguing the same). LG argues this proposed combination is merely combining prior

art elements (i.e., Choi’s specific symbols representing external devices connected via input ports, with Kim’s EXTERNAL DEVICE card object 1380) according to known methods to yield the predictable result of “informing the user which external device is connected to an input port.” *Id.* at 45; *see also id.* at 14–15 (arguing the same). LG also argues that this proposed combination represents the use of a known technique (i.e., Choi’s specific symbols representing external devices connected via input ports) to improve a similar device (i.e., Kim’s smart TV 100) in the same way (i.e., “to inform the user which external device is connected to an input port). *See id.* (citing Ex. 1003 ¶ 130); *see also id.* at 15 (arguing the same). LG asserts that there would have been a reasonable expectation of success in making this proposed combination because both Kim and Choi disclose “similar televisions” with “external devices connected via an input port,” and implementing Kim with Choi’s thumbnail icons that have specific symbols representing input ports would have been “a matter of routine software programming.” *Id.* at 15 (citing Ex. 1003 ¶ 61).

The second wherein clause of independent claim 1 is limitation [1.6]—“wherein at least one of the sources is highlighted as being associated with the first content information.” Ex. 1001, 40:2–4. Relying on its arguments and evidence for limitations [1.3] and [1.5], LG contends that Kim teaches this limitation because its card objects (e.g., card objects 1330, 1360, and 1370) include descriptive text and thumbnails indicative of content sources. Pet. 46 (citing Ex. 1003 ¶¶ 132, 133). LG further argues that Kim teaches the highlighting required by this limitation because it discloses that, “[i]f the card object 1390 is already displayed on the display 180, it may be highlighted.” *Id.* (quoting Ex. 1005 ¶ 211 (emphasis

omitted)) (citing Ex. 1003 ¶ 134). LG then argues that, although Kim provides a highlighting example in the context of displaying card object 1390, it would have been understood by a person of ordinary skill in the art that highlighting would generally apply to Kim's other card objects. *Id.* As one example, LG asserts that, when APP STORE card object 1330 is being displayed on display 180 (as illustrated in Kim's Figure 21), it would have been obvious to a person of ordinary skill in the art to highlight APP STORE card object 1330 so as to distinguish it from other card objects and make it readily identifiable by the user. *Id.* at 46–47 (citing Ex. 1010, 38:7–11, Fig. 33B; Ex. 1003 ¶ 135). Relying on a disclosure in Lee-2, LG also asserts that it was known in the art to highlight a card object with a surrounding box, and a person of ordinary skill in the art would have understood that this same technique of visually distinguishing a card object would apply to Kim's card objects. *Id.* at 47–48 (citing Fig. 1005, Fig. 21; Ex. 1010, Fig. 33B; Ex. 1003 ¶ 137–139; Ex. 1001, Fig. 15C). Lastly, LG argues that Kim's technique of distinguishing active card objects from partially displayed card objects by using “color, tint, brightness, shading, fading, or another appropriate characteristic” renders obvious the highlighting required by this limitation. *Id.* at 49 (quoting Ex. 1005 ¶ 228 (emphases omitted)) (citing Ex. 1003 ¶¶ 140, 141; Ex. 1001, 30:41–51).

The third wherein clause of independent claim 1 is limitation [1.7]—“and wherein the sources include a live television source, a video on demand source, a media center source, an application source, and electrical input associated with the television.” Ex. 1001, 40:4–7. As a threshold matter, LG contends that this limitation does not require that each of the identified sources be displayed at the same time. Pet. 49–50 (citing Ex. 1001, 32:60–

64; Ex. 1008 (Multimedia's Infringement Contentions); Ex. 1003 ¶ 143). LG argues that Kim's card objects teach each of the content sources as follows: (1) BROADCAST card object 1310 or CHANNEL BROWSER card object 1340 each teach the claimed "live television source"; (2) NETCAST card object 1320, which include a plurality of content providers that provide video on demand, teaches the claimed "video on demand source"; (3) RESERVATION/REC card object 1360 and MY MEDIA card object 1370, individually or collectively, teach the claimed "media center source"; (4) APP STORE card object 1330, which provides a list of applications, teaches the claimed "application source"; and (5) EXTERNAL DEVICE card object 1380, which, as discussed above with respect to limitation [1.5], would include Choi's specific symbols representing external devices connected to the input ports of smart TV 100, teach the claimed "electrical input associated with the television." *Id.* at 50–56 (citing Ex. 1005 ¶¶ 38, 56, 63, 75–80, 82, 128, 131, 132 185, 195–197, 201, 202, 205, 206, 208–210, Figs. 9, 19; Ex. 1003 ¶¶ 145–162; Ex. 1001, 6:16–22, 7:39–41, 8:4–6, 20:39–47)

Independent claim 11 includes essentially the same limitations as independent claim 1, except the preamble of independent claim 11 recites "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[.]" *Compare* Ex. 1001, 41:1–19 (claim 11), *with id.* at 39:58–40:7 (claim 1). For the most part, LG contends that the same arguments and evidence it provides to explain how the combined teachings of Kim, Lee-1, and Choi account for all the limitations of independent claim 1 equally apply to the limitations of

independent claim 11. Pet. 72 (citing Ex. 1003 ¶¶ 224, 230–236). Turning to the unique recitation of the preamble of independent claim 11, LG argues that, to the extent the preamble should be treated as limiting, Kim discloses the features recited therein because it discloses a method of displaying content on smart TV 100 that uses “non-transitory medium such as ‘a [read only memory], a [compact disc-read only memory], a magnetic tape, a floppy disc, an optical 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.” *Id.* at 72–73 (quoting Ex. 1005 ¶ 299 (emphasis omitted)) (citing Ex. 1003 ¶¶ 225–229; Ex. 1001, 4:32–49).

Independent claim 21 includes essentially the same limitations as independent claim 1, except the preamble of independent claim 21 recites “[a] system for displaying content on a television, comprising[,]” and the body of independent claim 21 recites “an input device associated with the television,” “a memory,” and “a microprocessor that is programmed to” perform certain steps. *Compare* Ex. 1001, 42:29–48 (claim 21), *with id.* at 39:58–40:7 (claim 1). For the most part, LG contends that the same arguments and evidence it provides to explain how the combined teachings of Kim, Lee-1, and Choi account for all the limitations of independent claim 1 equally apply to the limitations of independent claim 21. Pet. 75 (citing Ex. 1003 ¶¶ 256, 264–270). Turning the unique recitation of the preamble of independent claim 21, LG argues that, to the extent the preamble should be treated as limiting, Kim discloses the features recited therein because it discloses a system for displaying content on smart TV 100. *Id.* (citing Ex. 1005 ¶¶ 31, 38, Figs. 1, 2; Ex. 1003 ¶¶ 257–260). LG argues that Kim’s remote controller 200 and user input interface 150, either individually or

collectively, teach the claimed “input device associated with the television,” Kim’s memory 140 teaches the claimed “memory,” and Kim’s controller 170 that stores a software platform with an operating system that enables the controller to implement display operations teaches the claimed “microprocessor that is programmed to” perform certain steps. *Id.* at 75–76 (citing Ex. 1005 ¶ 140; Ex. 1009, 1; Ex. 1012, 3; Ex. 1013, 1–2; Ex. 1003 ¶¶ 261–263).

Based on the preliminary record, we discern no deficiency in LG’s characterizations of Kim, Lee-1, Choi, and the general background knowledge in the art, or in LG’s reasoning as to why a person of ordinary skill in the art would have been prompted to modify these references. In addition, for purposes of institution, we are persuaded by Dr. Lippman’s testimony concerning the relevant disclosures in Kim, Lee-1, and Choi. At this stage of the proceeding, Multimedia argues that the combined teachings of Kim, Lee-1, and Choi do not account for “wherein at least one of the sources is highlighted as being associated with the first content information,” as recited in each of independent claims 1, 11, and 21. Prelim. Resp. 31–36. We address this argument below.

a. “wherein at least one of the sources is highlighted as being associated with the first content information”

In its Preliminary Response, Multimedia contends that Kim “fails to identify or suggest any instance of highlighting wherein the highlighting indicates association with the ‘first content information’ displayed on the screen,” as claimed. Prelim. Resp. 31. Instead, Multimedia argues that Kim only contemplates highlighting disparate “card objects,” and it does not “provide any indication that the . . . highlighted card object is associated

with content presented on the screen.” *Id.* at 32 (citing Ex. 1005, Fig. 21). Stated differently, Multimedia argues that “there is no indication in Kim that the presented content changes along with the highlighted source.” *Id.* at 34 (footnote omitted).

Multimedia also contends that LG “improperly relies on Lee-2” to teach highlighting a card object with a surrounding box because Lee-2 was not included in the asserted obviousness ground based on the combined teachings of Kim, Lee-1, and Choi. Prelim. Resp. 33 n.7. In any event, Multimedia asserts that, even if we were to consider Lee-2’s highlighting technique, it “teaches no more than the Petition asserts Kim itself does—adding only an actually highlighted card object.” *Id.* (citing Pet. 47–48). According to Multimedia, “there is no indication in Lee-2 that the content presented on the television is associated with a highlighted source (or would change as the highlighted card object changes).” *Id.* at 33–34 n.7.

Based on the preliminary record, we are persuaded that LG has presented sufficient evidence that would support a finding that Kim teaches “wherein at least one of the sources is highlighted as being associated with the first content information.” Pet. 46–48 (citing Ex. 1005 ¶¶ 211, 228; Ex. 1003 ¶¶ 133–142). Kim discloses that, “[u]pon receipt of an incoming call,” smart TV 100 automatically displays PHONE card object 1390 on display 180. Ex. 1005 ¶ 211. If the incoming call is received while PHONE card object 1390 is already being displayed on display 180, “[PHONE card object 1390] may be highlighted or otherwise distinguished from the other card objects.” *Id.* This is consistent with another passage in Kim, which discloses distinguishing active card objects from partially displayed card objects using “*color, tint, brightness, shading, fading, or another appropriate*

characteristic.” *Id.* ¶ 228 (emphases added). In our view, these cited disclosures in Kim collectively teach or suggest that, when smart TV 100 actively displays a card object (e.g., PHONE card object 1390), it distinguishes the active card object from other card objects presented on display 180 by using highlighting.

We are not persuaded by Multimedia’s argument that LG improperly relies on Lee-2 in its asserted obvious ground based on the combined teachings of Kim, Lee-1, and Choi to account for this disputed limitation. Prelim. Resp. 33–34 n.7. We understand LG to rely on Lee-2 as evidence that it was well-known to highlight a card object with a surrounding box. Pet. 47 (citing to Ex. 1010, 38:7–11, Fig. 33B). It is well-settled that LG may rely on Lee-2 to demonstrate the general background knowledge possessed by one of ordinary skill in the art. *See Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015) (explaining that evidence submitted with a petition may be considered to demonstrate the general knowledge that one of skill in the art “would bring to bear in reading the prior art identified as producing obviousness”); *see also Randall Mfg. v. Rea*, 733 F.3d 1355, 1362–63 (Fed. Cir. 2013) (emphasizing that additional prior art references or evidence are not for the purpose of changing the prior art combination that forms the basis of the asserted ground, but rather are merely for the purpose of providing evidence of the state of the art, including the general background knowledge of a person of ordinary skill in the art). Contrary to Multimedia’s assertion, we need not reach whether Lee-2 actually teaches the highlighting required by the disputed limitation because, as we explain above, Kim alone appears to teach this highlighting requirement. *See* Prelim. Resp. 33–34 n.7.

b. Summary

In summary, LG has shown a reasonable likelihood that it would prevail on its assertions that the subject matter of independent 1, 11, and 21 would have been obvious over the combined teachings of Kim, Lee-1, and Choi.

7. Claims 2–5 and 12–15

Because LG has demonstrated a reasonable likelihood of success in demonstrating that at least one claim of the '040 patent is unpatentable, we institute on all challenged claims and all grounds raised in the Petition. *See* 37 C.F.R. § 42.108(a) (2023). Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of dependents claims 2–5 and 12–15 under this asserted obviousness ground. Nevertheless, we separately address certain dependent claims to provide additional guidance to the parties.

As one example, claim 2 depends from independent claim 1, and further recites the following limitations: “[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.” Ex. 1001, 40:8–15 (LG’s bracketing added). Claims 12 recites essentially the same limitations, but depends from independent claim 11. *Id.* at 41:20–28.

Relying in part on its arguments and evidence for limitations [1.1] and [1.2], LG contends that Kim teaches limitation [2.1]—“identifying a user associated with the received indication”—because it discloses a user making a selection to go to the home screen, the user logging into APP STORE card

object 1330 via the home screen, and the user pre-registering or logging in to the APP STORE. Pet. 56–58 (citing Ex. 1005 ¶¶ 81, 203, Figs. 18, 19; Ex. 1003 ¶¶ 164–168). LG contends that Kim teaches limitation [2.2]—“retrieving one or more settings associated with the identified user”—because it discloses that, once the user pre-registers or logs into the APP STORE, controller 170 retrieves from memory 140 user-set application menu items 1308 specific to the user. *Id.* at 58 (citing Ex. 1005 ¶¶ 65, 89, 215–27; Ex. 1003 ¶¶ 169–172). LG contends that Kim teaches limitation [2.3]—“retrieving, from memory, content information associated with the identified user; []”—because it discloses controller 170 retrieving from memory 140 the application menu items 1308 that are specific to the user and displaying them as thumbnails on display 180. *Id.* at 59 (citing Ex. 1005 ¶ 206, Fig. 19; Ex. 1003 ¶¶ 173, 174). LG contends that Kim teaches limitation [2.4]—“displaying, via the television, the retrieved content information in the global panel”—because it discloses displaying the thumbnails representing the application menu items 1308 specific to the user on the home screen of smart TV 100. *Id.* at 59–60 (citing Ex. 1005 ¶¶ 205, 206, 215–28, Figs. 19–23; Ex. 1003 ¶¶ 175–177). LG contends that the same arguments and evidence it provides to explain how the combined teachings of Kim, Lee-1, and Choi account for all the limitations of dependent claim 2 equally apply to the limitations of dependent claim 12. *Id.* at 73.

Based on the preliminary record, LG’s arguments and supporting evidence with respect to dependents claims 2–5 and 12–15 are sufficient for purposes of institution. At this stage of the proceeding, Multimedia does not address separately LG’s arguments and supporting evidence as to how the

combined teachings of Kim, Lee-1, and Choi account for the additional limitations of these dependent claims. *See* Prelim. Resp. 36–37. When considering LG’s un rebutted arguments and supporting evidence, LG has demonstrated a reasonable likelihood that it would prevail on its assertions that the subject matter of dependent claims 2–5 and 12–15 would have been obvious over the combined teachings of Kim, Lee-1, and Choi.

*D. Obviousness Over the Combined Teachings
Kim, Lee-1, Choi, and Lee-2*

LG contends that claims 2, 3, 6, 12, 13, 16, and 22 of the ’040 patent are unpatentable under 35 U.S.C. § 103 as obvious over the combined teachings of Kim, Lee-1, Choi, and Lee-2. Pet. 76–92. LG contends that the combined teachings of Kim, Lee-1, Choi, and Lee-2 account for the subject matter of each challenged claim, and provides reasoning as to why a person of ordinary skill in the art would have been prompted to modify the teachings of these references. *Id.* LG also relies on the testimony of Dr. Lippman to support its positions. *See* Ex. 1003.

Based on the preliminary record, we determine that LG has shown that there is a reasonable likelihood that it would prevail in challenging claims 2, 3, 6, 12, 13, 16, and 22 of the ’040 patent as unpatentable. We begin our analysis with an overview of Lee-2, and then we address the parties’ contentions with respect to certain challenged claims.

1. Overview of Lee-2

Lee-2 generally relates to “an image display apparatus and a method for operating the same.” Ex. 1006, 1:18–21. Lee-2 discloses image display apparatus 100 that includes, among other things, display 180. *Id.* at 8:37–47, Fig. 6. Display 180 is capable of displaying a favorite channel list screen

that includes channel list area 3910 with thumbnails representing favorite channels, group area 3920 with tabbed menus for different groups A, B, C, and D, and channel setup menu 3930 that provides edit, zoom, group view, compact view, and exit functionalities. *Id.* at 41:47–67, Fig. 39B.

2. *Claims 2, 3, 6, 12, 13, 16, and 22*

Once again, because LG has demonstrated a reasonable likelihood of success in demonstrating that at least one claim of the '040 patent is unpatentable, we institute on all challenged claims and all grounds raised in the Petition. *See* 37 C.F.R. § 42.108(a) (2023). Therefore, at this stage of the proceeding, it is not necessary for us to provide an assessment of dependents claims 2, 3, 6, 12, 13, 16, and 22 under this asserted obviousness ground. Nevertheless, we separately address certain dependent claims challenged under this asserted obviousness ground to provide additional guidance to the parties.

As one example, claim 6 depends from independent claim 1, and further recites the following limitations:

[6.1] identifying at least one of a content source and 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.

Ex. 1001, 40:39–49 (LG's bracketing added). Claims 16 and 22 recite essentially the same limitations, but depend from independent claims 11 and 21, respectively. *Id.* at 41:56–42:5, 42:49–61.

LG contends that the combined teachings of Kim and Lee-2 account for limitation [6.1]—“identifying at least one of a content source and content information currently being displayed via a television”—because Lee-2 discloses using a favorite channel key on a remote controller to display FAVORITE CH card object 2060 that highlights the thumbnail corresponding to the currently watched channel. Pet. 84–85 (citing Ex. 1010, 33:63–67, 37:61–38:2, Figs. 32A, 32B). According to LG, it would have been obvious to a person of ordinary skill in the art that Lee-2 “identif[ies]” the currently watched channel “so that it may be included in the FAVORITE CH card object 2060 as a corresponding highlighted thumbnail.” *Id.* at 85 (citing Ex. 1003 ¶¶ 306–309).

LG contends that the combined teachings of Kim and Lee-2 account for limitation [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”—because Lee-2’s disclosure of selecting FAVORITE CH card object 2060 that includes a thumbnail image corresponding to the currently watched channel is consistent with Kim’s disclosure of “thumbnail images [that] correspond to pre-stored user channels (e.g., favorite list).” Pet. 86–87 (quoting Ex. 1005 ¶ 206) (citing Ex. 1010, 33:63–67, 37:61–38:2, Figs. 32A, 32B; Ex. 1003 ¶¶ 313–315). Accordingly, LG asserts that Lee-2’s disclosure of selecting FAVORITE CH card object 2060 that includes a thumbnail image corresponding to the currently watched channel effectively amounts to “selecting a panel type” that is “based on” the content source, as required by limitation [6.2]. *Id.* at 87 (citing Ex. 1003 ¶ 316).

LG contends that the combined teachings of Kim and Lee-2 account for limitation [6.3]—“retrieving, from memory, content information based

on the selected panel type”—because Lee-2 discloses that card object generator 345 generates FAVORITE CH card object 2060 using the list of favorite channels pre-stored in memory 140. Pet. 88 (citing Ex. 1010, 33:63–67, 38:4–11; Ex. 1003 ¶ 320). Relying on its argument and evidence for limitation [1.3], LG argues that it would have been obvious to a person of ordinary skill in the art for Kim’s smart TV 100 to retrieve and display thumbnail images from memory 140, including Lee-2’s FAVORITE CH card object 2060. *Id.* at 88–89 (citing Ex. 1005 ¶ 206; Ex. 1010, Fig. 32B; Ex. 1003 ¶ 321). LG then asserts that, because Lee-2 discloses retrieving favorite channel thumbnail images from memory 140, Kim in combination with Lee-2 renders obvious the claimed retrieving “content information based on the selected panel type,” as required by limitation [6.3]. *Id.* at 89 (citing Ex. 1003 ¶¶ 322, 323).

Lastly, LG contends that the combined teachings of Kim and Lee-2 account for limitation [6.4]—“displaying, via the television, the retrieved content information in the global panel based on the selected panel type”—because Lee-2 discloses displaying the retrieved favorite channel list thumbnails 2065 in FAVORITE CH card object 2060 on the home screen. Pet. 90–91 (citing Ex. 1010, 38:4–11, Fig. 33B). LG contends that the same arguments and evidence it provides to explain how the combined teachings of Kim, Lee-1, Choi, and Lee-2 account for all the limitations of dependent claim 6 equally apply to the limitations of dependent claim 16 and 22. *Id.* at 92.

Turning to rationale to combine, LG contends that it would have been obvious to a person of ordinary skill in the art to apply Lee-2’s FAVORITE CH card object 2060 including favorite channel list 2065 to Kim’s smart TV

100 because “[Lee-2] provide[s] implementation details directly applicable to successfully implementing Kim’s [smart TV 100], which [explicitly] contemplates providing the user a favorite channel list.” Pet. 77. In addition, LG argues that the proposed combination “would make the user ‘instantly [] aware of the FAVORITE CH card object 2060 including the favorite channel list 2065,” and it would allow “the user [to] easily identify the channel that he or she is watching.” *Id.* at 85 (first alteration in original) (quoting Ex. 1010, 37:67–38:2, then quoting Ex. 1010, 31:14–21) (citing Ex. 1003 ¶¶ 310, 311); *see also* Pet. 87–88 (arguing the same), 90 (arguing the same), 91 (arguing the same).

Based on the preliminary record, LG’s arguments and supporting evidence with respect to dependent claims 2, 3, 6, 12, 13, 16, and 22 are sufficient for purposes of institution. At this stage of the proceeding, Multimedia does not address separately LG’s arguments and supporting evidence as to how the combined teachings of Kim, Lee-1, Choi, and Lee-2 account for the additional limitations of these dependent claims, nor does Multimedia dispute LG’s rationale to combine the relevant teachings of these references. *See* Prelim. Resp. 37. When considering LG’s unrebutted arguments and supporting evidence, LG has demonstrated a reasonable likelihood that it would prevail on its assertions that the subject matter of dependent claims 2, 3, 6, 12, 13, 16, and 22 would have been obvious over the combined teachings of Kim, Lee-1, Choi, and Lee-2.

III. CONCLUSION

Taking into account Multimedia’s Preliminary Response, we conclude that the information presented in the Petition demonstrates that there is a reasonable likelihood that LG would prevail in challenging at least one of

claims 1–6, 11–16, 21, and 22 of the '040 patent as unpatentable.

Accordingly, we institute an IPR as to all challenged claims and all the grounds raised in the Petition. *See* 37 C.F.R. § 42.108(a) (2023). At this stage of the proceeding, we have not made a final determination with respect to the construction of any claim term or the patentability of the challenged claims.

IV. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a), an IPR is hereby instituted as to all of the challenged claims and all of the grounds raised in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), notice is hereby given of the institution of a trial; the trial will commence on the entry date of this decision.

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For PETITIONER

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