

No. 20-\_\_

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**In the  
Supreme Court of the United States**

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COMCAST CABLE COMMUNICATIONS, LLC,  
*Petitioner,*

v.

ROVI GUIDES, INC.  
AND UNITED STATES OF AMERICA,  
*Respondents.*

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**On Petition for a Writ of Certiorari to the  
United States Court of Appeals  
for the Federal Circuit**

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**APPENDIX**

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APPENDIX A

NOTE: This order is nonprecedential.

IN THE UNITED STATES COURT OF APPEALS  
FOR THE FEDERAL CIRCUIT

Nos. 2019-1215, 2019-1216, 2019-1218

ROVI GUIDES, INC.,

*Appellant*

v.

COMCAST CABLE COMMUNICATIONS, LLC,

*Appellee*

UNITED STATES,

*Intervenor*

Appeals from the United States Patent and  
Trademark Office, Patent Trial and Appeal Board in  
Nos. IPR2017-00950, IPR2017-00951, IPR2017-  
00952.

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Nos. 2019-1293, 2019-1294, 2019-1295

ROVI GUIDES, INC.,

*Appellant*

v.

COMCAST CABLE COMMUNICATIONS, LLC,

*Appellee*

UNITED STATES,

*Intervenor*

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Appeals from the United States Patent and  
Trademark Office, Patent Trial and Appeal Board in  
Nos. IPR2017-01048, IPR2017-01049, IPR2017-  
01050.

Filed April 22, 2020

PER CURIAM.

**ORDER**

In light of this court's decision in *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 132 (Fed. Cir. 2019), *reh'g denied* 953, F.3d 760 (Fed. Cir. 2020) and the fact that Rovi Guides, Inc. has raised an Appointments Clause challenge in its opening brief in these cases,

**IT IS ORDERED THAT:**

- (1) The stay ordered on January 2, 2020, is lifted.
- (2) The Patent Trial and Appeal Board's decisions in Nos. IPR2017-00950, IPR2017-00951, IPR2017-00952 and Nos. IPR2017-01048, IPR2017-01049, IPR2017-01050 are vacated and the cases are remanded to the Board for proceedings consistent with this court's decision in *Arthrex*.

FOR THE COURT

April 22, 2020  
Date

/s/ Peter R. Marksteiner  
Peter R. Marksteiner  
Clerk of Court

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APPENDIX B  
IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL  
BOARD  
COMCAST CABLE COMMUNICATIONS, LLC,  
*Petitioner,*

v.

ROVI GUIDES, INC.,  
*Patent Owner.*

Case IPR2017-00950  
Patent 8,006,263 B2

Entered: September 19, 2018

Before KEVIN F. TURNER, MICHAEL R. ZECHER,  
and JESSICA C. KAISER, *Administrative Patent  
Judges.*

TURNER, *Administrative Patent Judge.*

FINAL WRITTEN DECISION  
*Inter Partes* Review  
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner, Comcast Cable Communications, LLC (“Comcast”), filed a Petition requesting an *inter partes* review of claims 1–19 of U.S. Patent No. 8,006,263 B2 (Ex. 1001, “the ’263 Patent”). Paper 2 (“Pet.”). Patent Owner, Rovi Guides, Inc. (“Rovi”), filed a Preliminary Response. Paper 7. Taking into account the arguments presented in Rovi’s Preliminary Response, we

determined that the information presented in the Petition established that there was a reasonable likelihood that Comcast would prevail in challenging claims 1–19 of the ’263 Patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on September 20, 2017, as to all of the challenged claims, but not all the grounds presented by Comcast in its Petition. Paper 12 (“Dec. on Inst.”).

During the course of trial, Rovi filed a Patent Owner Response (Paper 18, “PO Resp.”), and Comcast filed a Reply to the Patent Owner Response (Paper 31, “Pet. Reply”). A consolidated oral hearing with related Cases IPR2017-00951, IPR2017-00952, IPR2017-01048, IPR2017-01049, IPR2017-01050, IPR2017-01065, IPR2017-01066, and IPR2017-01143 was held on June 19, 2018, and a transcript of the hearing is included in the record. Paper 41 (“Tr.”).

After all substantive briefing was complete, but before the consolidated oral hearing, the United States Supreme Court held that a decision to institute under 35 U.S.C. § 314 may not institute on less than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). Following *SAS*, the U.S. Patent and Trademark Office (“Office”) issued “Guidance on the impact of SAS on AIA trial proceedings,” in which the Office took the policy position that a decision granting institution will institute on all of the challenged claims in the petition

and all the grounds presented in the petition.<sup>1</sup> The U.S. Court of Appeals for the Federal Circuit has since endorsed this Office policy by explaining that “‘the petitioner’s petition, not the Director’s discretion, is supposed to guide the life of the litigation’ and ‘that the petitioner’s contentions, not the Director’s discretion, define the scope of the litigation all the way from institution through to conclusion.’” *Adidas AG v. Nike, Inc.*, 894 F.3d 1256, 1258 (Fed. Cir. 2018) (quoting *SAS*, 138 S. Ct. at 1356–1357). In accordance with *SAS* and Office policy, we issued an Order modifying our Decision on Institution entered on September 20, 2017, to include review of all challenged claims and all grounds presented by Comcast in its Petition. Paper 38. The parties, however, agreed to waive briefing on the grounds we declined to institute in the Decision on Institution. *Id.* The parties also agreed to waive consideration of these previously non-instituted grounds at the consolidated oral hearing. *Id.*

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–19 of the ’263 Patent. For the reasons discussed below, we hold that Comcast has demonstrated by a preponderance of the evidence that these claims are unpatentable under § 103(a).

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<sup>1</sup> Available at <https://www.uspto.gov/patentsapplication-process/patent-trial-and-appeal-board/trials/guidance-impactsas-aia-trial>.

### A. *Related Matters*

The '263 Patent is involved in the following district court cases: (1) *Rovi Guides, Inc. v. Comcast Corp.*, No. 2:16-cv-00322 (E.D. Tex.), which has been transferred to the U.S. District Court for the Southern District of New York and is pending as *Rovi Guides, Inc. v. Comcast Corp.*, No. 1:16-cv-09826 (S.D.N.Y); and (2) *Comcast Corp. v. Rovi Corp.*, No. 1:16-cv-03852 (S.D.N.Y). Pet. 1–2; Paper 4, 2. The '263 Patent also has been asserted against Comcast in a proceeding before the U.S. International Trade Commission (“ITC”) styled *In re Certain Digital Video Receivers and Hardware and Software Components Thereof*, No. 337-TA-1001. Pet. 2; Paper 4, 2.

In addition to this Petition, Comcast filed two other petitions challenging the patentability of claims 1–19 of the '263 Patent (Cases IPR2017-00951 and IPR2017-00952). Pet. 3; Paper 4, 2. Comcast also filed other petitions challenging the patentability of certain subsets of claims in several patents owned by Rovi. Pet. 3.

### B. *The '263 Patent*

The '263 Patent, titled “Interactive Television Program Guide with Remote Access,” issued August 23, 2011, from U.S. Patent Application No. 11/246,392, filed on October 7, 2005. Ex. 1001, [54], [45], [21], [22]. The '263 Patent is a continuation of U.S. Patent Application No. 10/927,814, filed on August 26, 2004, which, in turn, is a continuation of U.S. Patent Application No. 09/354,344, filed on July 16, 1999. *Id.* at [63]. The '263 patent also claims the benefit of U.S. Provisional Application No. 60/097,527, filed on

August 21, 1998, and U.S. Provisional Application No. 60/093,292, filed on July 17, 1998. *Id.* at [60].

The '263 Patent generally relates to interactive television program guide video systems and, in particular, to such systems that provide remote access to program guide functionality. Ex. 1001, 1:19–22. The '263 Patent discloses that conventional interactive television program guide systems typically are implemented on set-top boxes located in the home of a user and, as a result, do not permit the user to perform program guide functions without the user being physically located in the same room as these systems. *Id.* at 1:37–45. Stated differently, conventional interactive television program guide systems require the user to be present in the home to access important program guide features, such as program reminders, parental controls, and program recording. *Id.* at 2:19–22. The '263 Patent purportedly addresses this and other problems by providing an interactive television program guide system that allows a user to access certain features of the program guide remotely and establish settings for those features. *Id.* at 2:23–28.

Figure 1 of the '263 Patent, reproduced below, illustrates a schematic block diagram of the system in accordance with the present invention. Ex. 1001, 3:45–46, 4:29–30.



8a

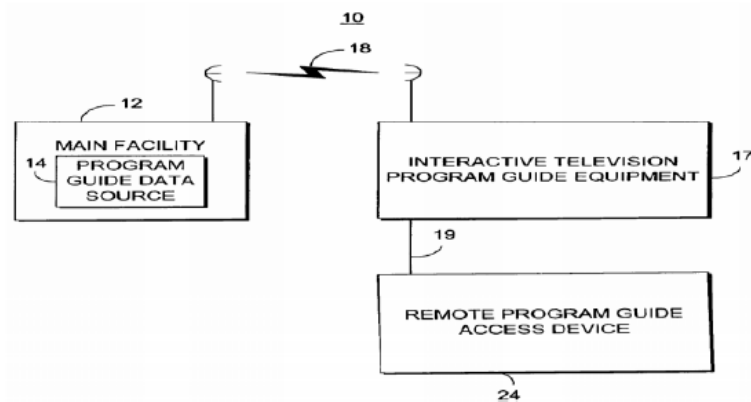


FIG. 1

As shown in Figure 1 reproduced above, system 10 includes main facility 12 that provides interactive television program guide data from program guide data source 14 to interactive television program guide equipment 17 via communication link 18. *Id.* at 4:29–33. Interactive television program guide equipment 17 is connected to at least one remote program guide access device 24 via remote access link 19. *Id.* at 4:47–53.

Figure 2a of the '263 Patent, reproduced below, illustrates one arrangement involving the interactive television program guide equipment 17 and remote program guide access device 24 in accordance with the principles of the present invention. Ex. 1001, 3:47–50, 4:55–57.

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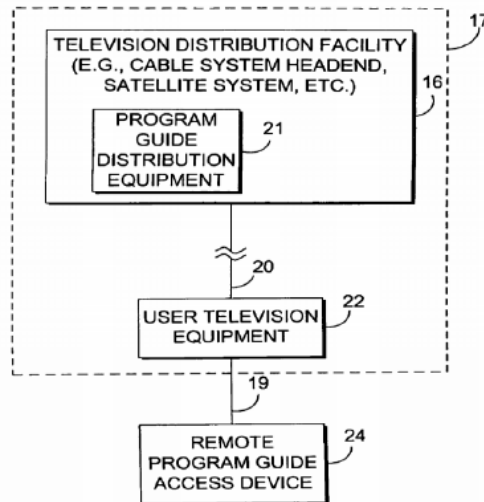


FIG. 2a

As shown in Figure 2a reproduced above, interactive television program guide equipment 17 includes program guide distribution equipment 21 located at television distribution facility 16, which distributes program guide data to user television equipment 22 via communications path 20. *Id.* at 4:57–67. Remote program guide access device 24 receives the program guide data, as well as any additional data necessary to access various functions of the interactive program guide, from user television equipment 22 via remote access link 19. *Id.* at 5:29–39.

In at least one embodiment, the '263 Patent discloses that a remote access interactive television program guide implemented on remote program guide access device 24 communicates with a local interactive television program guide implemented on interactive television program guide equipment 17. Ex. 1001, 12:23–29. In one example, the remote access and local

interactive television program guides may be two different guides that communicate with each other. *Id.* at 12:34–37; *see also id.* at 22:49–23:6 (disclosing steps involved with using the remote access interactive television guide to provide program listing information to a user).

The '263 Patent discloses transferring program guide information and settings between remote program guide access device 24 and interactive television program guide equipment 17 using any suitable application layer protocol. Ex. 1001, 13:7–11. For example, if remote access link 19 is an Internet link, program guide functionality may be accessed using Hypertext Transfer Protocol. *Id.* at 13:11–13. Remote program guide access device 24 and interactive television program guide equipment 17 also may transfer program guide information as files using either File Transfer Protocol or Trivial File Transfer Protocol running over a Transmission Control Protocol/Internet Protocol stack. *Id.* at 13:13–18. The '263 Patent makes clear that “[a]ny suitable file transfer protocol based on any suitable protocol stack may be used.” *Id.* at 13:18–19.

### *C. Illustrative Claim*

Of the challenged claims, claims 1, 5, 8, 11, 14, and 17 are independent. Independent claims 1, 8, and 14 are each directed to a system for selecting television programs over a remote access link that includes an Internet communications path for recording, whereas independent claims 5, 11, and 17 are each directed to a method for performing the same. Claims 2–4 directly depend from independent claim 1; claims 6 and 7

directly depend from independent claim 5; claims 9 and 10 directly depend from independent claim 8; claims 12 and 13 directly depend from independent claim 11; claims 15 and 16 directly depend from independent claim 14; and claims 18 and 19 directly depend from independent claim 17. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A system for selecting television programs over a remote access link comprising an Internet communications path for recording, comprising:

a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide equipment includes user television equipment located within a user's home and the local interactive television program guide generates a display of one or more program listings for display on a display device at the user's home; and

a remote program guide access device located outside of the user's home on which a remote access interactive television program guide is implemented, wherein the remote program guide access device is a mobile device, and wherein the remote access interactive television program guide:

generates a display of a plurality of program listings for display on the remote program guide access device, wherein the display of the plurality of program listings is generated based on a user profile stored at a location remote from the remote program guide access device;

receives a selection of a program listing of the plurality of program listings in the display, wherein the selection identifies a television program corresponding to the selected program listing for recording by the local interactive television program guide; and

transmits a communication identifying the television program corresponding to the selected program listing from the remote access interactive television program guide to the local interactive television program guide over the Internet communications path;

wherein the local interactive television program guide receives the communication and records the television program corresponding to the selected program listing responsive to the communication using the local interactive television program guide equipment.

Ex. 1001, 28:27–63.

*D. Instituted Grounds of Unpatentability*

We instituted a trial based on the asserted grounds of unpatentability (“grounds”) set forth in the table below. Dec. on Inst. 36; Paper 38.

<b>References</b>	<b>Basis</b>	<b>Challenged Claim(s)</b>
Humpleman <sup>2</sup> and Killian <sup>3</sup>	§ 103(a)	1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18
Humpleman, Killian, and Lawler <sup>4</sup>	§ 103(a)	3, 7, 10, 13, 16, and 19
Kondo, <sup>5</sup> Killian, and Kawamura <sup>6</sup>	§ 103(a)	1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18
Kondo, Killian, and Kawamura, and Lawler	§ 103(a)	3, 7, 10, 13, 16, and 19

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<sup>2</sup> U.S. Patent No. 6,182,094 B1; issued Jan. 30, 2001 (Ex. 1006, “Humpleman”).

<sup>3</sup> U.S. Patent No. 6,163,316, issued Dec. 19, 2000 (Ex. 1008, “Killian”).

<sup>4</sup> U.S. Patent No. 5,805,763, issued Sept. 8, 1998 (Ex. 1009, “Lawler”).

<sup>5</sup> Japanese Pat. App. Pub. No. H10-155131, published June 9, 1998 (Ex. 1011, “Kondo”). Comcast has provided a certified translation of Kondo from Japanese into English (Ex. 1012).

<sup>6</sup> Japanese Pat. App. Pub. No. H9-102827, published Apr. 15, 1997 (Ex. 1013, “Kawamura”). Comcast has provided a certified translation of Kawamura from Japanese into English (Ex. 1014).

## II. ANALYSIS

### A. *Claim Construction*

In an *inter partes* review, claim terms of an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision on Institution, we determined that the only claim terms requiring construction are “local/remote access interactive television program guides,” and only to the extent necessary to resolve whether the grounds asserted by Comcast properly accounted for both a “local interactive television program guide” and a “remote access interactive television program guide.” Dec. on Inst. 9 (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy)). Upon reviewing the parties’ preliminary arguments and evidence, we adopted Comcast’s proposed construction that an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the

software.” *Id.* at 13. We further clarified that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide. *Id.*

In its Patent Owner Response, Rovi generally agrees with our initial determination that the only claim terms requiring construction are “local/remote access interactive television program guides.” PO Resp. 10. Rovi, however, proposes that the proper constructions for these claims terms are the following: (1) “local interactive television program guide” is a “guide that allows navigation through television program listings and causes display of program information on user television equipment”; and (2) “remote access interactive television program guide” is a “guide allowing navigation through television program listings using a remote access link.” *Id.* at 10–11. According to Rovi, its proposed constructions for the claim terms “local/remote access interactive television program guides” are consistent with the intrinsic evidence, our preliminary finding that these guides must be distinct guides, and the findings of the ITC in related proceedings. *Id.* at 11 (citing Ex. 1050, 185, 190).

Rovi further contends that, any difference between our constructions and the ITC’s constructions of the claim terms “local/remote access interactive television program guides” is not relevant to the grounds at issue in this proceeding because, according to Rovi, each of Comcast’s asserted grounds fail under Rovi’s broader constructions “that do[] not unnecessarily restrict the



guides to ‘control software’ that ‘controls functions of the software.’” PO Resp. 11. Rovi asserts that, because it is proposing broader constructions for these claim terms, we need not determine whether the asserted prior art satisfies Comcast’s proposed constructions. *Id.* at 11–12. Rovi then proceeds to explain how our preliminary constructions and the ITC’s constructions are consistent in certain respects because (1) they both require the guides to be interactive (i.e., navigable and selectable); and (2) they both agree that the claims require two separate guides, as properly construed. *Id.* at 12–14.<sup>7</sup>

In its Reply, Comcast contends that Rovi’s proposed constructions of the claim terms “local/remote access interactive television program guides” improperly seeks to limit the broadest reasonable interpretation of the claim term “interactive television program guide” to a single software component that generates listings, thereby excluding other software components that assist in providing guide functionality. Pet. Reply 4 (citing PO Resp. 23–24, 32, 34–35; Ex. 2008 ¶ 116). According to Comcast, this inclusion finds no basis in the plain language of the claims and the specification of the ’263 patent. *Id.*

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<sup>7</sup> At the oral hearing for the first time, Rovi argued that “remote access interactive television program guide” requires “dedicated code at the remote device.” *See, e.g.*, Tr. 58:3–7, 60:19–61:14, 66:14–21. We agree with Comcast (*id.* at 96:3–10) that this is a new argument that was not presented and developed in Rovi’s briefs and, therefore, we do not consider it. *See* Paper 13, 3 (cautioning Rovi that “any arguments for patentability not raised in the response will be deemed waived”).

Comcast also contends that Rovi's arguments directed to the claim term "interactive television program guide" contradicts the construction Rovi offered in the related ITC proceeding. Pet. Reply 4. In the related ITC proceeding, Comcast argues that Rovi expanded the scope of the claim term "local interactive television program guide" to capture all software components related to any local guide functionality, including recording. *Id.* (citing Ex. 1050, 180–91, 214–27; Ex. 1054 ¶¶ 158–160, 169, 170, 371, 376). Comcast argues that Rovi's expert in the ITC proceeding, Dr. Michael Shamos, who also is Rovi's expert in this proceeding, provided supporting testimony that the claim term "local interactive television program guide" could be an "extensive collection of hardware and software." *Id.* at 4–5 (emphasis omitted) (quoting Ex. 1054 ¶ 169). In this proceeding, however, Comcast argues that Rovi and Dr. Shamos appear to take the erroneous position that the claim term "local interactive television program guide" is a single software application. *Id.* at 5 (*compare* PO Resp. 34 and Ex. 2108 ¶ 116, *with* Ex. 1054 ¶¶ 169, 371). According to Comcast, we should hold Rovi to the same broad construction of the claim term "local interactive television program guide" in this proceeding that it wielded to exclude others from practicing the claimed invention in the related ITC proceeding. *Id.* at 6.

As an initial matter, it is not clear to us whether Rovi actually disputes our preliminary construction of the claim term "interactive television program guide." On the one hand, Rovi asserts that the ITC's constructions of local interactive television program guide (i.e., a "guide that allows navigation through

television program listings and causes display of program information on user television equipment”) and remote access interactive television program guide (i.e., a “guide allowing navigation through television program listings using a remote access link”) are the proper constructions. PO Resp. 10–11. On the other hand, Rovi argues that both our constructions and the ITC’s constructions “are consistent with respect to the relevant aspects (e.g., navigation and selection)” of a local/remote access interactive television guide. *Id.* at 11. Rovi further contends that “[a]ny differences between the Board’s and the ITC’s constructions *are not relevant* to [Comcast’s] failures of proof regarding the asserted prior art and [g]rounds at issue in this proceeding.” *Id.* (emphasis added); *see also* Ex. 2008 ¶ 25 (Rovi’s declarant, Dr. Shamos, testifies that, “regardless of which constructions the Board applies, my opinions remain the same. The asserted prior art references here fail to disclose the claim limitations . . . under either construction.”) These arguments make it difficult to ascertain what Rovi actually views as to the proper scope and meaning of claim terms “local/remote access interactive television program guides.” Nevertheless, we are charged in this proceeding with determining the broadest reasonable interpretation of these claim terms.

Beginning with the intrinsic record, neither party argues, nor could we find, an explicit definition for the claim term “interactive television program guide” in the specification of the ’263 Patent. The specification, however, is replete with descriptions of conventional, local, or remote interactive television program guides.

For instance, the specification discloses that conventional interactive television program guides display “various groups of television program [guide] listings . . . in predefined or user-defined categories,” and “allow the user to navigate through [the] television program listings” and make a selection “using a remote control.” Ex. 1001, 1:31–36. For a conventional interactive television program guide, the user must physically be located in the same room as the set-top box on which the interactive television program guide is implemented to select programs for recording or to perform other guide functions. *Id.* at 1:37–45. In the context of discussing the implementation of a remote access interactive television program guide, the specification discloses that such a guide works in conjunction with a remote device to “provide users with the opportunity to remotely access features of the interactive television program guide on the interactive television program guide equipment and to remotely set program guide settings.” *Id.* at 2:41–46. The specification goes on to disclose that “[a]ny suitable interactive television program guide function or setting may be accessed,” including, but not limited to, “remotely select[ing] programming for recordings” and “remotely set[ting] and navigat[ing] through favorites (e.g., favorite channels, program categories, services, etc.).” *Id.* at 2:47–56.

Although the aforementioned disclosures provide guidance as to the functionality of an “interactive television program guide” (i.e., navigable, selectable, and capable of controlling certain functions or settings), neither party directs us to, nor can we find,

a disclosure in the specification that specifically identifies what element or elements constitute a “guide.” Given the lack of disclosure in this regard, we decline to limit the “guide” to a single software application. Rather, these disclosures support Comcast’s proposed construction that an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.”

We further clarify that, based on the plain language of independent claims 1, 5, 8, 11, 14, and 17, they indicate that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” (alteration in original) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004))). Our determination in this regard is supported by the specification, which includes various embodiments that treat these claim terms as separately identifiable elements capable of communicating with each other. *See, e.g.*, Ex. 1001, 12:34–37 (“In still another suitable approach, the [local interactive television program guide and remote access interactive television program guide] may be different guides that communicate in a manner or manners discussed . . . herein.”), 20:18–23 (“The

remote access [interactive television] program guide may . . . send audio, graphical, and text messages to the local interactive [television] program guide for playing or display by user television equipment 22.”).

We decline to adopt Rovi’s proposed constructions of the claim terms “local/remote access interactive television program guides” for two reasons. First, we are unable to determine how Rovi’s proposed constructions add any clarity to the scope and meaning of an “interactive television program guide.” That is, we view each of Rovi’s proposed constructions as circular and unhelpful because they define each of the guides as a “*guide* [that allows/allowing] navigation through television program listings.” PO Resp. 10–11 (emphasis added). Rovi, however, does not actually identify what element or elements specifically constitute the “guide.”

Second, Rovi states that its proposed constructions indicate “where the specific guide resides (i.e., on ‘user television equipment’ or over ‘a remote access link’),” *id.* at 14 (emphasis omitted), but readily admits that “these additions merely restate the language of the broader claim limitation[s].” *Id.* (citing Ex. 1050, 185, 190). It is well settled that the U.S. Court of Appeals for the Federal Circuit disfavors any claim interpretation that renders a claim term or phrase superfluous. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“The Board was correct to not include in its construction of ‘menu’ features of menus that are expressly recited in the claims. . . . Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.”). If we

were to adopt the language in Rovi's proposed constructions pertaining to where each guide resides, it would render superfluous the language that is already explicitly recited in independent claim 1, and similarly recited in independent claims 5, 8, 11, 14, and 17—namely, “over a remote access link” and “a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide equipment includes user television equipment.”<sup>8</sup>

Turning now to the extrinsic evidence, in Dr. Tjaden's Declaration accompanying the Petition, he testifies that “the local [interactive television program] guide may be implemented at least in part on a server or other device outside the user's home.” Ex. 1002 ¶ 35. To support this testimony, he directs us to Rovi's interpretation of the claim term “local interactive television program guide” in the related ITC proceeding. *Id.* (citing Ex. 1045, 56; Ex. 1046, 43). In Dr. Tjaden's Declaration accompanying the Reply, he elaborates further on his initial position by testifying that “a [person of ordinary skill in the art] looking at the '263 Patent would have understood that many different arrangements of the software and hardware components comprising an interactive television

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<sup>8</sup> During oral argument, in response to a question regarding the ITC's construction of the “local interactive television program guide” being on user television equipment and its construction that the “remote access television program guide” uses a remote access link, counsel for Rovi stated that “I don't think where [the guides are] implemented is meaningful because that's recited in the claim separately.” Tr. 66:22–67:24.

program guide are possible and acceptable in [the] prior art used to show obviousness.” Ex. 1052 ¶ 15. To support this testimony, he directs us to the different arrangements of software and hardware in the ’263 patent. *Id.* ¶¶ 16–18 (citing Ex. 1001, 4:30–33, 4:47–49, 4:57–61, 6:48–50, 7:53–60, Figs. 1, 2a–2d).

Dr. Shamos’s Declaration in the ITC proceeding serves as further evidence as to what element or elements constitute a “guide.” Although we recognize that the broadest reasonable interpretation standard governs in this proceeding, whereas the district court claim construction standard governs in an ITC proceeding, Dr. Shamos’s testimony in the ITC proceeding is relevant here because it sheds some light on what element or elements he believes constitutes a “guide.” In the ITC proceeding, Dr. Shamos testifies that the claim term “local interactive television program guide” could be an “extensive collection of hardware and software.” Ex. 1054 ¶ 169. He also testifies “that the ‘local [interactive television program] guide’ [should not be construed as] a single software application that must reside on a device in the user’s home,” and “[n]othing in the claims excludes a ‘recording application’ from being part of the local [interactive television program] guide.” *Id.* ¶ 371. Dr. Shamos’s testimony in the ITC proceeding is consistent with Dr. Tjaden’s testimony in this proceeding because, like Dr. Tjaden, Dr. Shamos does not limit a “guide” to a single software application, but rather contemplates that the “guide” may constitute different arrangements of software and hardware.

We note that the aforementioned testimony from Dr. Tjaden and Dr. Shamos suggest that the “guide”



may include both software and hardware. Rovi likewise argues that its proposed construction is broader than Comcast's because "it does not unnecessarily restrict the guides to 'control software.'" PO Resp. 11. We do not find support in the intrinsic record that the "guide" may include hardware. Rather, the '263 Patent separately refers to the interactive television program guide and the hardware on which it is implemented. *See, e.g.,* Ex. 1001, 1:37–38 ("Interactive television program guides are typically implemented on set-top boxes . . . ."). The aforementioned testimony, however, is consistent with our finding that the "guide" may constitute more than just a single software application.

In summary, upon weighing all the evidence bearing on the construction of the claim term "interactive television program guide," we maintain that the broadest reasonable interpretation of this claim term is "control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software." We also maintain that the claim terms "local interactive television program guide" and "remote access interactive television program guide" are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide.

*B. Prior Art Status of Humpleman Provisional*

Additionally, Rovi contends that Humpleman Provisional is not prior art and cannot be used to teach or suggest elements of the challenged claims. PO Resp.

46–49. Rovi argues that 1) Humpleman Provisional is neither a patent nor an application published under 35 U.S.C. § 122(b), and that a provisional application can only qualify as prior art under 35 U.S.C. § 102(e) when the critical disclosures are also present in the corresponding patent; and 2) that the provisional application cannot be relied upon because it has not been properly incorporated by reference into Humpleman. *Id.*

With respect to the first argument, although Rovi is correct about the requirements that determine whether something is valid prior art, standing alone, we are not persuaded that Comcast has relied upon or asserted the Humpleman provisional absent the Humpleman issued patent in the Petition. Comcast does not assert the former without asserting the latter, at least in terms of the grounds of unpatentability proffered in the Petition. Although Rovi is correct that Comcast has stated that “Humpleman Provisional is prior art both as part of Humpleman and on its own” (Pet. 18), Rovi has not pointed to any other occurrence where Comcast has asserted Humpleman Provisional without also asserting Humpleman. As such, Rovi’s argument is without basis because Comcast has not asserted Humpleman Provisional on its own, apart from its incorporation by reference into Humpleman, discussed below.

Rovi also contends that the Humpleman provisional is not properly incorporated by reference into Humpleman. PO Resp. 47–49. Rovi argues that Humpleman does not identify with particularity the specific material in the provisional applications asserted to be incorporated by reference or clearly

indicate where that material is found in the incorporated applications, as required to incorporate material by reference. *Id.* (citing *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000)). We do not agree.

The relevant section of Humpleman is reproduced below:

This patent application claims priority from provisional patent application Ser. No. 60/050,762, filed on Jun. 25, 1997, entitled Home Network, Browser Based, Command and Control and provisional patent application Ser. No. 60/059,499, filed on Sep. 22, 1997, entitled Improved Home Network, Browser Based, Command and Control, *which are incorporated herein by reference.*

Ex. 1006, 1:7–13 (emphasis added). From this cited disclosure, we find the patentee in Humpleman incorporated the entireties of both provisional applications by reference. If the intent was to incorporate only one provisional or just part of one provisional, then we would agree that sufficient particularity has not been supplied. However, a reasonable interpretation of such an incorporation by reference clause is that all of the referenced provisional disclosures are incorporated. Similarly, there is no need to stipulate where particular material to be incorporated is found when that particular material is all.

Rovi also argues that such an incorporation by reference should include certain words, such as “*in its entirety*” or “[t]he contents of” or “*the disclosure of*

*which*,” in order to properly incorporate a reference’s entire disclosure. PO Resp. 48 (citing *Synopsys, Inc. v. Mentor Graphics Corp.*, Case IPR2012-00041, slip op. at 9 (PTAB Feb. 22, 2014) (Paper 16); *WTS Paradigm, LLC v. EdgeAQ LLC*, Case IPR2016-00199, slip op. at 20–21 (PTAB May 22, 2016) (Paper 7); *Sony Corp. v. One-E-Way, Inc.*, Case IPR2016-01639, slip op. at 13 (PTAB Feb. 22, 2017) (Paper 8)).

We are not persuaded that the default rule should be that an incorporator need to specify an entirety of a reference to accomplish incorporation of all of a reference; rather, we are persuaded that limiting statements, if applicable, should be taken as limits on the full incorporation. We find edifying *Zenon Environmental, Inc. v. U.S. Filter Corp.*, 506 F.3d 1370, 1379 (Fed. Cir. 2007), which found “[t]he plain language expressly limits the incorporation to only relevant disclosures of the patents, indicating that the disclosures are not being incorporated in their entirety.” In the instant case of Humpleman, we find no express limits on the incorporation, and, as a result, we determine that the incorporation of Humpleman Provisional into Humpleman involved the entire provisional application.

As such, we are not persuaded, as a matter of law, that Humpleman did not incorporate both provisional applications into its disclosure. Thus, we are persuaded that the Humpleman provisional can be relied upon for its disclosure, having been properly incorporated by reference according to 37 C.F.R. § 1.57(c) into Humpleman.

*C. Obviousness Over the Combined Teachings of Humpleman and Killian*

Comcast contends that claims 1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18 of the '263 Patent are unpatentable under § 103(a) over the combined teachings of Humpleman and Killian. Pet. 20–42. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1002 ¶¶ 93–185. In its Patent Owner Response, Rovi presents a number of arguments as to why the combined teachings of Humpleman and Killian do not render the limitations of independent claims 1, 5, 8, 11, 14, and 17 obvious. PO Resp. 14–49. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2008 ¶¶ 27–47, 85–96, 99–132.

We begin our analysis with the principles of law that generally apply to a ground based on obviousness, followed by an assessment of the level of skill in the art, proceeded by brief overviews of Humpleman and Killian, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

*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 non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze this asserted ground based on obviousness with the principles identified above in mind.

## 2. *Level of Skill in the Art*

There is evidence in the record before us that enables us to determine the knowledge level of a person of ordinary skill in the art. Relying on the testimony of its declarant, Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art as of July 17, 1998, which is the earliest priority date on the face of the '263 Patent, would be an individual who possesses the following:

a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and two years of experience with interactive program guides, set-top boxes, mobile computer devices, and techniques for delivering content or program guides over communication networks, such as a cable system, a local-area network, and the Internet.

Pet. 13 (quoting Ex. 1002 ¶ 28). Alternatively, once again relying on the testimony of Dr. Tjaden, Comcast

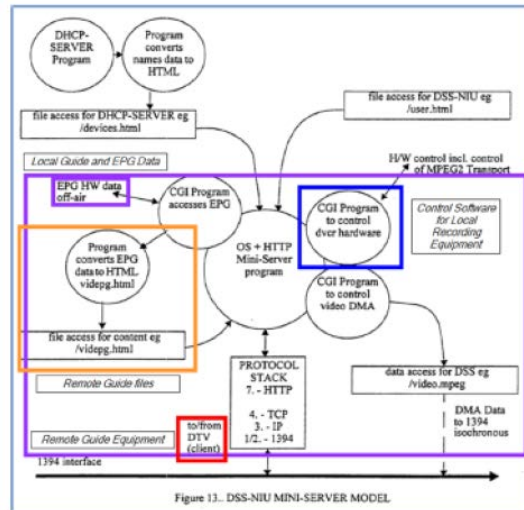
asserts that a person of ordinary skill in the art “could have had equivalent experience in industry or research, such as designing, developing, evaluating, testing, or implementing these technologies.” *Id.* (quoting Ex. 1002 ¶ 28). Conversely, Rovi’s declarant, Dr. Shamos, does not offer an assessment of the level of skill in the art as of July 1998, nor does he explicitly state his intent to adopt Dr. Tjaden’s assessment. *See generally* Ex. 2008. Given Dr. Shamos’s silence on this matter, we adopt Dr. Tjaden’s assessment because it is consistent with the ’263 Patent and the asserted prior art, and apply it to our obviousness evaluation below.

### 3. Humpleman Overview

Humpleman generally relates to the field of networks and, in particular, to home networks that have multi-media devices connected thereto. Ex. 1006, 1:16–18. One objective of Humpleman’s invention is to provide a method for controlling a plurality of devices connected to a home network, where at least one of these devices is a multi-media device, and for generating a program guide from the information provided by the multi-media device on a second device connected to the home network. *Id.* at 2:23–28. The generated program guide may be a Hypertext Markup Language (“HTML”) page that allows for selection of a specific program for recording on local equipment. *Id.* at 20:31–51. That HTML version is generated by a digital satellite services interface device (“DSS”) that also displays a conventional electronic program guide. *Id.* at 22:21–59.

Humpleman claims priority to and incorporates by reference (*id.* at 1:7–13) a provisional patent

application (60/059,499; Ex. 1007), and provides further insight into the software structures disclosed. An annotated version of Figure 13 of that provisional patent application is reproduced below:



This annotated version of Figure 13 illustrates portions that Comcast argues correspond to different claimed portions, with the local guide software and its data in purple, remote guide files in orange, control software for local recording equipment in blue, and referencing remote guide equipment in red. Pet. 22. The provisional application also makes clear that a message is sent to the DSS control application by the remote device over the Internet based on a selection by the user in the HTML program guide, instructing it to control hardware to record the selected program. Ex. 1007, 2–3.

According to Humpleman, a user may customize the programming information that is displayed by the



program guide. Ex. 1006, 22:41–43. For instance, if a user prefers not to display the schedule for a particular channel because it contains inappropriate content, the user may request that the channel be removed from the program guide. *Id.* at 22:43–46. In addition, according to Humpleman, a user can remotely control devices connected to the home network. *Id.* at 20:42–47. “For example, if a user is required to work late and is therefore unable to watch the Monday night football game, the user can program a [digital video cassette recorder (‘DVCR’)] connected to their home network via the Internet, in order to record the particular event.” *Id.* at 20:47–51.

#### 4. Killian Overview

Killian discloses an electronic programming guide (“EPG”) that operates on a JAVA-based computing platform associated with a television and a video recorder. Ex. 1008, at [57], 3:6–12, Fig. 1. A collection of application programming interfaces (“APIs”) allow the platform to support JAVA applets or applications that provide interactive television programming. *Id.* at 3:18–27. In one embodiment, the platform supports an EPG JAVA applet or application “that allows viewers to more intelligently select, schedule, and record viewing opportunities according to viewer profiles” and other information received via the Internet. *Id.* at 3:27–33. The EPG can use other platform components to cause the video recorder to record programs. *Id.* at 15:5–18.

*5. Claims 1, 5, 8, 11, 14, and 17<sup>9</sup>*

In its Petition, Comcast contends that the person of ordinary skill in the art would have found it obvious to include interactive selection and control features in Humpleman's guide software on the DSS, with some of those associated functionalities already disclosed in the '263 Patent. Pet. 23 (citing Ex. 1001, 1:27–38). Comcast also argues that such functionalities are disclosed in Killian, and those aspects would have been implemented in Humpleman's system for several reasons. *Id.* at 23–25.

First, Comcast argues that Humpleman expressly teaches that its home control system is interoperable with conventional hardware, and that a DSS loaded with Killian's guide could and would be utilized in Humpleman's system, because Humpleman was designed to be layered on top of existing hardware and software installations. *Id.* at 24 (citing Ex. 1002 ¶ 103). Second, Comcast argues that Killian expressly teaches that the EPG modules implementing the recording control APIs could be integral to the functioning of external devices other than the receiver, which would have provided greater utility to Humpleman's network of remote devices. *Id.* at 24–25 (citing Ex. 1008, 15:53–16:7; Ex. 1002 ¶ 104). Lastly, Comcast argues that combining Killian with Humpleman would be nothing more than using known techniques to improve similar

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<sup>9</sup> Comcast contends that independent claims 1, 5, 8, 11, 14, and 17 stand or fall together. Pet. 8–11. Rovi does not dispute Comcast's assertion in this regard. *Accord* PO Resp. 21–49 (treating independent claims 1, 5, 8, 11, 14, and 17 as standing or falling together).

devices and a simple substitution of one known, closely-related element for another that produces predictable results. *Id.* at 25 (citing Ex. 1002 ¶¶ 105–106).

For added clarity, we highlight certain arguments presented by Comcast for each limitation recited in independent claim 1. We note that there is no dispute between the parties as to whether the limitations of independent claims 5, 8, 11, 14, and 17 are essentially the same as the limitations of independent claim 1. *Compare* Pet. 8–11, 41, *with* PO Resp. 14–49.

Beginning with the preamble of independent claim 1, Comcast contends that Humpleman teaches “a system for selecting television programs over a remote access link comprising an Internet communications path for recording” because Humpleman discloses selecting programs for recording remotely via the Internet. Pet. 26 (citing Ex. 1006, 20:42–51; Ex. 1002 ¶¶ 110–111). To support this argument, Comcast directs us to Humpleman’s disclosure that, “[f]or example, if a user is required to work late and is therefore unable to watch the Monday night football game, the user can program a DVCR connected to their home network via the Internet, in order to record the particular event.” *Id.* (quoting Ex. 1006, 20:42–51).

Comcast contends that Humpleman teaches “local interactive television program guide equipment on which a local interactive television program guide is implemented,” as recited in independent claim 1, because Humpleman discloses that one controlled home device is a DSS including a vendor-supplied control application through which the DSS can

retrieve and display a guide. *Id.* at 26–27 (citing Ex. 1006, 1:21–36, 19:46–55, 22:31–47; Ex. 1002 ¶¶ 112–123).

Comcast also contends that that one of ordinary skill in the art would have understood that “typical program guides on set-top boxes at the time of invention provided interactive features,” where Comcast contends that the ’263 Patent admits as much. *Id.* at 27 (citing Ex. 1001, 1:27–38; Ex. 1002 ¶¶ 113–115). Comcast further contends that, to the extent Humpleman does not disclose expressly that the local guide allows a user to navigate through television program listings, make selections, and controls functions of the software, one of ordinary skill in the art would have found it obvious to implement an interactive guide on Humpleman’s DSS at least because of the interactive guide software disclosed in Killian. *Id.* (citing Ex. 1008; Ex. 1002 ¶ 115).

Comcast contends that Killian discloses a receiver with a locally installed guide application, where that guide displays program schedules, allows for navigation through program listings, and controls the recording of selected programs. *Id.* (citing Ex. 1008, 3:7–33, 4:7–13, 6:32–56, 7:8–16, 7:49–61, 8:5–56, 13:12–21, 15:53–16:7; Ex. 1002 ¶¶ 116–118). Comcast asserts that it would have been obvious to one of ordinary skill in the art to implement Killian’s local programming guide into Humpleman’s system to provide “users with expected and typical control functionality,” where the combination of the references would have been motivated by the express teachings of both. *Id.* at 28 (citing Ex. 1006, 6:55–64, 19:46–55, 22:47–59; Ex. 1008, 15:53–16:7; Ex. 1002 ¶¶ 119–122).

Comcast further asserts that the combination would have been nothing more than the use of known techniques to improve similar devices and a simple substitution of known elements to obtain predictable results—namely, to “allow[] viewers to more intelligently select, schedule, and record their viewing opportunities.” *Id.* (citing Ex. 1002 ¶ 120).

Comcast also contends that Humpleman teaches “wherein the local interactive television program guide equipment includes user television equipment located within a user’s home,” as recited in independent claim 1, because Humpleman discloses that its DSS equipment is “found in the home.” *Id.* (quoting Ex. 1006, 1:21–31) (citing Ex. 1006, 1:21–36; 2:31–39, 22:30–46). Comcast further argues that Humpleman teaches wherein “the local interactive television program guide generates a display of one or more programs listings for display on a display device at the user’s home,” as recited in independent claim 1, because Humpleman discloses that the “EPG displays a list of available programs and the specific time in which the programs can be viewed through the service.” *Id.* at 28–29 (quoting Ex. 1006, 22:30–46) (citing Ex. 1002 ¶¶ 126–129).

Comcast contends that Humpleman teaches “a remote program guide access device located outside of the user’s home on which a remote access interactive television program guide is implemented,” as recited in independent claim 1, because Humpleman discloses that a digital television or personal computer (“PC”) accesses HTML control pages to allow for remote access, such that a user at work uses his work PC to access the HTML control pages to select a particular

event for recording by devices on his home network. *Id.* at 29 (citing Ex. 1006, 5:55–67, 20:42–51; Ex. 1007, 3, ¶ 3; Ex. 1002 ¶¶ 129–133). Comcast also asserts that, to the extent Humpleman does not disclose expressly using a remote guide to allow a remote user to selecting programs for recording on his/her own PC, a person of ordinary skill in the art would have “understood the advantages associated with providing an IPG user interface to allow users to select a program for recording via a user-friendly interface,” and implementing those through Killian would have required the use of known techniques to improve a similar device and obtaining predictable results. *Id.* at 29–30 (citing Ex. 1008, 3:20–33, 4:7–13, 7:8–16, 13:12–21, Fig. 5; Ex. 1002 ¶¶ 134–136). Additionally, Comcast contends that Humpleman teaches “wherein the remote program guide access device is a mobile device,” because Humpleman discloses that the controlling device may be a laptop computer. *Id.* at 30 (citing Ex. 1006, 1:21–36, 7:25–35; Ex. 1002 ¶ 137).

Comcast also contends that Humpleman teaches “generat[ing] a display of a plurality of program listings for display on the remote program guide access device,” as recited in independent claim 1, because Humpleman generates a remote access HTML program guide based on EPG data underlying the EPG displayed by the DSS, where the HTML guide may be displayed on any browser-equipped device. *Id.* at 31 (citing Ex. 1006, 7:25–35, 20:40–52, 22:30–59; Ex. 1007, 21, Fig. 13; Ex. 1002 ¶ 139). Comcast further contends that, although Humpleman and Humpleman Provisional use an example where the client device is a digital television, they also disclose that the client

device may be a computer outside the home, such as the user's work PC. *Id.* (citing Ex. 1007, 3, ¶3; Ex. 1006, 20:42–52; Ex. 1002 ¶ 139).

Comcast contends that Humpleman teaches “wherein the display of the plurality of program listings is generated based on a user profile stored at a location remote from the remote program guide access device,” as recited in independent claim 1, because Humpleman discloses that “the user can customize the displayed HTML program guide to view only a particular set of the available information,” with Humpleman Provisional illustrating that a user interface can allow the user to view favorite channels. *Id.* at 32 (citing Ex. 1006, 22:47–59, 22:30–59; Ex. 1007, 7, Fig. 5). Comcast also contends that, to the extent that the claim term “user profiles” is narrowly limited, Killian also discloses “building a filtered guide based on a user profile data” and it would have been obvious to employ the conventional listing filtering techniques disclosed in Killian. *Id.* at 33 (citing Ex. 1008, 1:20–41, 7:49–61, 9:10–25, 11:20–21; Ex. 1002 ¶¶ 145–149). Comcast also asserts that it would have been obvious to utilize Killian's user profile data stored locally or remotely to implement the customized HTML program guides of Humpleman because this would have allowed the system to better track a user's preferences and generate more effective user interfaces, and would have entailed the use of a known technique to improve a similar feature to produce a predictable result. *Id.* at 33–34 (citing Ex. 1006, 2:31–39, 22:47–59; Ex. 1008, 9:10–25, 11:20–21; Ex. 1002 ¶¶ 145–149).

Comcast also contends that Humpleman teaches “receiv[ing] a selection of a program listing of the plurality of program listings in the display, wherein the selection identifies a television program corresponding to the selected program listings for recording by the local interactive television program guide,” as recited in independent claim 1, because Humpleman discloses that once a selection is made via the HTML guide, “button ‘click’” information is provided which the interface receives and passes along to the VCR to accomplish a recording of the selected program. *Id.* at 34–35 (citing Ex. 1006, 14:5–14, 22:30–59; Ex. 1007, 2 ¶ 2, 4 ¶ 2; 6 ¶ 6, 10, 14 ¶ 4, Fig. 2; Ex. 1002 ¶¶ 151–153).

Comcast contends that Humpleman teaches “transmit[ting] a communication identifying the television program corresponding to the selected program listing from the remote access interactive television program guide to the local interactive television program guide over the Internet communications path,” as recited in independent claim 1, because Humpleman discloses that a message is sent to the DSS control application by the remote device over the Internet in response to the user making a selection in a displayed HTML program guide, instructing it to control DVCR hardware to record the selected program. *Id.* at 36 (citing Ex. 1006, 20:42–51; Ex. 1007, 14 ¶¶ 1–4, 12 ¶ 1, Fig. 9; Ex. 1002 ¶¶ 156–164).

Lastly, Comcast contends that Humpleman teaches “wherein the local interactive television program guide receives the communication and records the television program corresponding to the



selected program listing responsive to the communication using the local interactive television program guide equipment,” as recited in independent claim 1, because Humpleman discloses that a user is allowed to schedule a recording for an event on local equipment from a remote location via the Internet. *Id.* at 38 (citing Ex. 1006, 20:42–51). Comcast further argues that the Humpleman Provisional explains that it is desirable to allow users to set recordings solely through the DSS interface rather than requiring the user to schedule a channel time on the DSS and then schedule a separate recording operation on the VCR. *Id.* at 38–39 (citing Ex. 1007, 12 ¶ 1, 14 ¶¶ 1–4, Fig. 9; Ex. 1002 ¶¶ 165–167).

In its Patent Owner Response, Rovi presents a number of arguments that can be grouped as follows: (1) whether Comcast has demonstrated that Humpleman and Killian, either alone or in combination, account for all the limitations of independent claims 1, 5, 8, 11, 14, and 17; and (2) whether Comcast has demonstrated that a person of ordinary skill in the art would have had a sufficient reason to combine the teachings of Humpleman and Killian. *See* PO Resp. 21–46. We address these groupings of arguments in turn.

*a. Limitations*

*i. Humpleman Teaches Two Interactive Television Program Guides in Communication with Each Other*

Rovi contends that Humpleman “fails to disclose two guides, let alone two **interactive** program guides.” PO Resp. 23 (emphasis in original). Rovi

points out that “the claims do not allow for the remote access guide to bypass the Local IPG by communicating directly with the local interactive television program guide equipment,” which Rovi alleges that Humpleman’s system does. *See id.* at 22–25. Further, Rovi argues that, even assuming the two guides are present in Humpleman, the two guides are not in communication because Humpleman’s disclosed HTML guide “communicates with a different software application on the DSS (the HTTP Mini-Server program) **and not** the alleged Local IPG.” *Id.* at 24 (emphasis in original). Rovi also argues that the alleged remote guide in Humpleman does not transmit the recording request and the “dss server” is not part of the alleged local guide. *Id.* at 33–34 (citing Ex. 2008 ¶¶ 116, 122).

In its Reply, Comcast contends that “Humpleman has a local guide and a remote guide, that the guides would be made interactive in view of Killian, and that the guides would communicate to schedule recordings.” Pet. Reply 6. Additionally, Comcast asserts that the “dss server,” referred to in Humpleman, is the full “DSS-NIU Mini-Server,” and has been conflated by Rovi to merely encompass the “HTTP Mini-Server program.” *Id.* at 6–7. Comcast also argues that the DSS-NIU Mini-Server must have additional control software to provide the specialized functionality of the One Touch Record feature of Humpleman Provisional, which would be inapplicable to other servers that do have record functions, such as DVD 108. *Id.* at 8–9 (citing Ex. 1052 ¶ 29; Ex. 1006, 6:31–37).

Comcast further argues, when the “dss server” is properly understood, Humpleman teaches that “the HTML user interfaces would be supplemental to the native user interfaces (such as the local EPG)” and uses would remain for the native user interfaces because they are more convenient and provide advanced functionality. *Id.* at 20.

Based on the record developed during trial, we disagree that DSS control application, or local guide of Humpleman, is confined to the HTTP Mini-server program. *See* Dec. on Inst. 22. For this determination, we look to our construction of the claim term “interactive television program guide” above and, in particular, to Dr. Shamos’s testimony in the related ITC proceedings. *See supra* Section II.A. By Dr. Shamos’s own testimony, “the local interactive television guide . . . can comprise an extensive collection of hardware and software located both near the user and at the cable headend, or at other locations.” Ex. 1054 ¶ 169.

When critical to a findings of fact, it is in the interest of justice to consider sworn inconsistent testimony on an identical issue when there is minimal burden for doing so. *Ultratec, Inc. v. CaptionCall, LLC*, 872 F.3d 1267, 1275 (Fed. Cir. 2017) (holding that the Board abused its discretion during *inter partes* review when it refused to admit and consider an expert’s inconsistent trial testimony from a relevant district court case). Therefore, when applying the proper construction of an “interactive television program guide,” we agree with Comcast that the local guide may extend beyond just the software application on a HTTP Mini-server program in Humpleman.

Additionally, Rovi contends that Humpleman teaches a single HTML program that does not communicate with any other program guide. PO Resp. 14, 23. We have previously decided, and Rovi does not appear to dispute, that the Humpleman provisional discloses communication between two guides. *See* Dec. on Inst. 22 (citing Ex. 1007, 2–3); discussion *supra* regarding “transmit” element of claim 1. As such, we are persuaded that the DSS control application and HTML program guide displayed on the remote device disclose a local guide and remote guide in communication with each other.

Rovi also argues that Comcast’s expert, Dr. Tjaden, cannot identify what he considers the local IPG within Humpleman, and suggests that this apparent confusion demonstrates that Comcast has not been clear about what portions of Humpleman constitute the local IPG. PO Resp. 25–29. Regardless of any apparent confusion at Dr. Tjaden’s deposition, we remain persuaded that Comcast’s analysis in the Petition is clear as to what portions of Humpleman are equivalent to the local and remote guides. *See* Pet. 20–23 (“Humbleman Provisional discloses that a message is sent to the DSS control application (i.e., the local guide) by the remote device over the Internet responsive to the user making a selection in a displayed HTML program guide (i.e., the remote guide), instructing it to control DVCR hardware to record the selected program. (Ex-1007, 14, ¶4; Ex-1002, ¶97”).

Rovi also contends that Humpleman fails to disclose a conventional EPG because merely providing data to build the HTML program guide does not

require a conventional EPG as recited in the claims. PO Resp. 30. Further, Rovi asserts that Humpleman does not disclose a conventional EPG because the language “[m]ost digital satellite services provide programming information through an Electronic Programming Guide (EPG)” says nothing about Humpleman’s specific limitations. *Id.* at 29–30.

Although we agree with Rovi that the cited paragraph speaks to the general field of EPGs, this argument is not detrimental in consideration of Humpleman, as a whole. As Comcast points out, Humpleman Provisional describes software to access the off-air EPG hardware and system. Pet. Reply 13 (citing Ex. 1007, 22). We are persuaded that the off-air EPG hardware and system would function through the Humpleman system where televisions are offline or using specialized services such as pay-per-view. *See* Tr. 23:1–13; Pet. 12. Further, we agree with Comcast that “there is no language in Humpleman to support the conclusion that Humpleman’s system would suppress the conventional EPG that it relies on to build its HTML program guide.” Pet. Reply 13 (citing Ex. 1052 ¶¶ 30, 43). Additionally, under the rubric of obviousness, one of ordinary skill would have considered the disclosed, conventional EPG, even if its specific use in the system of Humpleman was not disclosed. “The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain.” *In re Heck*, 699 F.2d 1331, 1332–33 (Fed. Cir. 1983) (quoting *In re Lemelson*, 397 F.2d 1006, 1009 (CCPA 1968)).

Alternatively, Comcast argued at Oral Hearing that “[w]e’ve used Humpleman and Killian in combination to show the local EPG.” Tr. 24:6–20. We agree that the Petition supports this assertion. We are mindful, however, that considering arguments raised at oral argument may deprive a patent owner from substantively and properly responding to those arguments, which our reviewing Court has emphasized.

This case is distinct from circumstances previously considered by the Federal Circuit in which the court found that new arguments or evidence introduced for the first time at an oral hearing may deprive the patent owner of its right to respond. *See In re Nuvasive*, 841 F.3d 966, 972–73 (Fed. Cir. 2016) (finding the Board’s refusal to permit the patentee to file a motion for strike, a sur-reply, or present the new arguments during the final oral hearing violated the patent owner’s due process and Administrative Procedure Act rights); *Dell Inc. v. Acceleron, LLC*, 818 F.3d 1293, 1301 (Fed. Cir. 2016) (holding the “Board denied [patent owner of] its procedural rights by relying in its decision on a factual assertion introduced into the proceeding only at oral argument, after [patent owner] could meaningfully respond”). While these cases provide circumstances in which petitioner asserted new evidence in the reply or oral hearing, Comcast put the Rovi on notice of this argument in the Petition itself:

It would have been obvious to incorporate the features of Killian’s local IPG into Humpleman’s local guide. A [person of ordinary skill in the art] would readily implement the

conventional interactive features of Killian in Humpleman's local guide to provide users with expected and typical television control functionality through a local IPG. (Ex-1001, 1:27-38; Ex-1002, ¶ 119).

Pet. 28. Thus, Comcast argues—and we agree—that Humpleman in view of Killian teaches a local EPG. We determine that one of ordinary skill in the art would have sought to implement the interactive guide features, from Killian, on both the remote guide, as well as the local guide, where Killian illustrates the display of a local electronic program guide on a television, i.e., a local guide. *See* Ex. 1008, 10:66–11:21, Fig. 5. As such, even if we were to assume that the specific system of Humpleman implemented would not have had an electronic program guide like conventional digital satellite services, it would have been obvious to implement such a local electronic program guide in the combined system based on the disclosure of Killian.

To be clear, on either basis, i.e., relying on Humpleman's disclosure alone, i.e., Humpleman's teaching of a local EPG through its DSS, or in combination with Killian, such that the local EPG is rendered obvious in view of the combination of Humpleman and Killian, we determine that the resulting system would have a local EPG that would be distinct from the remote guide, and would meet the requirements of the claimed "local interactive television program guide."

*ii. Remaining Limitations*

In its Patent Owner Response, Rovi does not address separately whether the combined teaching of Humpleman and Killian account for the remaining limitations of independent claims 1, 5, 8, 11, 14, and 17. *See generally* PO Resp. 14–35. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these remaining limitations, and we agree with and adopt Comcast’s analysis. *See* Pet. 11–13, 26–42, 65–75.

*b. Comcast Presents a Sufficient Rationale to Combine the Teachings of Humpleman and Killian*

Rovi contends that Comcast fails to explain how or why one of ordinary skill in the art would have been prompted to modify Humpleman’s television schedule system to include Killian’s viewer profiles. PO Resp. 36. Rovi further contends that a person of ordinary skill would not have modified either of Humpleman’s alleged guides by incorporating features of Killian. *Id.* at 37. Rovi argues that “the very purpose of Humpleman is to eliminate any need to rely on conventional device-control interfaces and instead utilize the common HTML pages across all devices.” *Id.* at 38 (citing Ex. 2008 ¶¶ 121–123) (emphasis omitted).

Rovi also relies on Dr. Shamos’s testimony, that such a modification would be unnecessary, if not inapposite, in view of Humpleman’s express purpose of replacing conventional EPGs with HTML guides, as showing that one of ordinary skill in the art would not have combined Humpleman and Killian. *Id.* at 36–37 (citing Ex. 2008 ¶¶ 121–123). Rovi further asserts



that a person of ordinary skill in the art would not have looked to Killian because use of its device-specific guide is contrary to Humpleman's goal of utilizing a common HTML interface. *Id.* at 42 (emphasis omitted). According to Rovi, Killian discloses a locally installed and implemented IPG, whereas Humpleman's HTML guides operate a client/server interface. *Id.* at 43. Thus, Rovi concludes that Killian's architecture "is fundamentally different from Humpleman's system and would discourage [a person having ordinary skill in the art] from implementing Killian's interactive features in Humpleman." *Id.* (emphasis omitted).

In its Reply, Comcast emphasizes that Killian is cited for limited features and would have been nothing more than using known techniques to improve similar devices in a similar manner, achieving the predictable result of a local guide that "allows viewers to more intelligently select, schedule, and record their viewing opportunities." Pet. Reply 19 (citing Pet. 25; Ex.1008, 1:20–23; Ex. 1002, ¶¶ 105–106). Comcast also contends that a person of ordinary skill in the art would have readily integrated Killian's JAVA-based interactive program guide features into Humpleman's system. Pet. Reply 22 (citing Ex. 1052 ¶ 44). To support this argument, Comcast asserts that Humpleman explicitly suggests JAVA-based systems could be implemented for presenting client interfaces. *Id.* (citing Ex.1006, 4:4–11). Comcast also contends that adding interactive features to either guide in Humpleman would have no impact on the principles of operation of Humpleman's system. *Id.* at 21 (citing Ex. 1052 ¶ 47).

The Supreme Court has held that an obviousness evaluation “cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.” *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether Comcast has set forth “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. at 418. When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to implement Killian’s enhancements in Humpleman’s. When, as here, a technique has been used to improve one device (i.e., Killian’s interactive features), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Killian’s interactive features to Humpleman’s system, thereby allowing viewers to more intelligently select, schedule, and record their viewing opportunities), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 24–25; Ex. 1202 ¶¶ 102–106.

The record includes credible evidence explaining why applying Killian's features to Blake's system would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Comcast declarant, Dr. Tjaden, provides the necessary motivation for doing so—namely, “allowing viewers to more intelligently select, schedule, and record their viewing opportunities.” Ex. 1002 ¶ 106.

Also based on the record developed during trial, we are persuaded by Comcast that a person having ordinary skill in the art would have known that a JAVA-based system, such as the one taught by Killian, could be used to implement a client interface because Humpleman explicitly instructs a person having ordinary skill in the art to do so. Comcast points out the relevant section of Humpleman, which is reproduced below:

In an exemplary embodiment of the present invention, a browser based home network uses Internet technology to control and command home devices that are connected to a home network. Each home device contains interface data (e.g. . . . JAVA . . . or any other format useful for the intended purpose) that provides an interface for the commanding and controlling of the home device over the home network.

See Pet. Reply 22 (quoting Ex. 1006, 4:4–11) (emphasis added).

Contrary to Rovi's argument that “the very purpose of Humpleman is to eliminate any need to rely on conventional device control interfaces and instead utilize the common HTML pages across all devices”

(PO Resp. 38), Humpleman contemplates an embodiment in which the interface utilizes JAVA to provide the client interface. *See* Ex. 1006, 4:4–11.

Further, Rovi argues that a person of ordinary skill in the art would not have modified Humpleman's HTML pages to incorporate Killian's interactive features. PO Resp. 39. According to Rovi, "[t]he HTML guide approach 'neatly solves the [graphical user interface] problem by making the DTV a rendering browser and no interface command set is needed for human control of the home network device,'" and that Humpleman implements a session manager to access HTML pages. *Id.* at 40–42 (citing Ex. 1007, 16). In its Reply, Comcast argues that "there is no reason to conclude that Humpleman's HTML user interfaces would replace every native user interface on household devices." Pet. Reply 20 (citing Ex. 1052 ¶¶ 11, 30, 43). Comcast also argues that "the session manager would still require each client to generate a rendered interface to facilitate [an] interaction." *Id.* at 22 (citing Ex. 1052 ¶¶ 45–47).

Based on the record developed during trial, we are persuaded by Comcast that it would have been obvious to implement Humpleman's session manager using Killian's interactive features. Comcast declarant, Dr. Tjaden, provides the necessary motivation for implementing Killian's interactive features—namely, "Humpleman expressly teaches the use of JAVA and JAVASCRIPT programming languages to implement functionality on its devices, as each device requires an interface of some kind in order to facilitate interaction with a user and/or other devices." Ex. 1052 ¶ 44. As such, we are persuaded that one of ordinary skill in the

art would have found it obvious to improve the guides of Humpleman with the interactive features of Killian because Comcast provides at least three reasons as to why it would have been obvious to one of ordinary skill in the art to incorporate Killian's explicitly interactive program guides into Humpleman system that allows for remote and local programming of connected devices. *See* Pet. 24–25.

*c. Summary*

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of independent claims 1, 5, 8, 11, 14, and 17 would have been obvious over the combined teachings of Humpleman and Killian.

*6. Claims 2, 4, 6, 9, 12, 15, and 18*

In its Patent Owner Response, Rovi does not address separately whether the combined teaching of Humpleman and Killian account for the limitations of dependent claims 2, 4, 6, 9, 12, 15, and 18. *See generally* PO Resp. 21–49. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these limitations, as well as its explanations as to how one of ordinary skill in the art would have combined the relevant teachings of Humpleman with those of Killian, and we agree with and adopt Comcast's analysis. *See* Pet. 39–42, 65–75. Comcast, therefore, has demonstrated a by a preponderance of the evidence that the subject matter of dependent claims 2, 4, 6, 9, 12, 15, and 18 would have been obvious over the combined teachings of Humpleman and Killian.

*D. Obviousness Over the Combined Teachings of Humpleman, Killian, and Lawler*

Comcast contends that claims 3, 7, 10, 13, 16, and 19 of the '263 Patent are unpatentable under § 103(a) over the combined teachings of Humpleman, Killian, and Lawler. Pet. 42–43. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1002 ¶¶ 187–191. In its Patent Owner Response, Rovi contends that Comcast does not present sufficient reasoning as to why one of ordinary skill in the art would combine the teachings of Lawler with those of Humpleman and Killian. PO Resp. 45–46. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2008 ¶¶ 126–132.

We begin our analysis with a brief overview of Lawler, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

*1. Lawler Overview*

Lawler generally relates to a system for recording a program on an interactive viewing system and, in particular, to a system that allows a user to identify a program for recording using an interactive program guide and then designate the identified program for automated recording at some later time. Ex. 1009, 1:8–13. According to one aspect of the invention disclosed in Lawler, the recording device is associated with a

head end. *Id.* at 2:24–25. At the direction of the head end, the recording device records the selected program and digitally stores it in a memory at the head end. *Id.* at 2:25–27. The recorded program may then be retrieved from the head end by the user for display at a viewer station. *Id.* at 2:27–29. Lawler discloses that this process would allow multiple users to access a single recording of the program, as well as make the program available to other users who did not set the recording, but nonetheless wish to view the program at some later time. *Id.* at 13:34–38.

*2. Claims 3, 7, 10, 13, 16, and 19*

Dependent claim 3 recites “wherein local interactive television program guide records the television program corresponding to the selected program listing at a television distribution facility.” Ex. 1001, 29:1–4. Dependent claims 7, 10, 13, 16, and 19 each recite a similar limitation. *Id.* at 29:49–52, 30:26–29, 30:64–67, 31:36–39, 32:34–38.

In its Petition, Comcast contends that Lawler teaches recording programs at a central head end (i.e., a television distribution facility) in lieu of recording programs locally. Pet. 42 (citing Ex. 1009, 2:24–29, 13:26–38; Ex. 1002 ¶ 188). Comcast then argues that, as a substitute for recording programs locally, it would have been obvious to modify Humpleman and Killian combination to include recording programs at a television distribution facility, as taught by Lawler, because there are certain advantages to recording programs at the television distribution facility, such as making recorded programs available for other subscribers and eliminating the need for a separate

recorder. *Id.* at 43 (citing Ex. 1002 ¶¶ 189–190). According to Comcast, this proffered combination would be nothing more than using a known technique (i.e., Lawler’s centralized recording at a television distribution facility) to improve a similar system (i.e., the combined Humpleman and Killian television schedule system), and would produce a predictable result that provides the stated benefits of Lawler. *Id.*

In its Patent Owner Response, Rovi contends that Lawler’s recording of programs at a television distribution facility would undermine Humpleman’s stated goals by eliminating the user’s ability to identify all available content on the home network. PO Resp. 45. Rovi argues that Humpleman discloses the creation of HTML guides for each home device that stores multimedia materials, and that Comcast’s proposed combination, i.e., moving the recording device to a remote location, would eliminate the home network’s ability to identify watchable content. *Id.* at 45–46 (citing Ex. 1006, 2:19–22, 22:60–23:10; Ex. 2008 ¶¶ 126–132).

In its Reply, Comcast counters that Rovi has identified only one object of Humpleman, among many others, and that the content material, which is “*associated with a home device connected to the home network*,” need not be located within the home or even on the home network. Pet. Reply 24 (citing Ex. 1006, 15:25–32, 14:19–59). Comcast argues that Humpleman identifies program listings for content originating from broadcast sources, and the physical storage of content at a television distribution facility would not preclude the content from being accessible



and viewable within the home. *Id.* at 24–25 (citing Ex. 1052 ¶¶ 48–49).

As an initial matter, Rovi does not address separately Comcast’s explanations and supporting evidence as to how the combined teachings of Humpleman, Killian, and Lawler account for the limitation of dependent claim 3, and the similar limitations of dependent claims 7, 10, 13, 16, and 19. *See generally* PO. Resp. 45–46. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these limitations, and we agree with and adopt Comcast’s analysis. *See* Pet. 42–43.

The Supreme Court has held that an obviousness evaluation “cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.” *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether Comcast has set forth “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. at 418. When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

Based on the record developed during trial, we agree with Comcast that that one of ordinary skill in the art would have had a sufficient reason to modify the combined television schedule system of Humpleman and Killian to include recording programs at a television distribution facility, as taught by Lawler. When, as here, a technique has been used to improve one device (i.e., Lawler's centralized recording at a television distribution facility), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Lawler's technique to the combined television schedule system of Humpleman and Killian to make recorded programs available for other subscribers and to eliminate the need for a separate recorder), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 42–43; Ex. 1002 ¶¶ 187–191. The record includes credible evidence explaining why applying Lawler's technique to the combined television schedule system of Humpleman and Killian to make recorded programs available to multiple subscribers at a television distribution facility would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Indeed, Lawler itself provides the necessary motivation for doing so—namely, “[to] allow multiple users to access a single recording of the program.” Ex. 1009, 13:33–35.

We do not agree with Rovi's argument Lawler's recording of programs at a television distribution facility would undermine Humpleman's stated goals by eliminating the user's ability to identify all available content on the home network. Although Rovi

posits that moving the recording device to a remote location would eliminate the home network's ability to identify watchable content, the combined system could still identify all the watchable content, even if the content is not stored locally. In other words, the watchable material associated with a home device need not reside on that home device, similarly to the way that pay-per-view material need not reside on the local device, although it can be associated with that local device. As Dr. Tjaden testifies—and we agree—Humbleman's home program guide would not logically exclude content external to the home network, as Rovi proposes, because it includes content delivered by broadcast sources, i.e., external to the home network. See Ex. 1052 ¶ 48.

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 3, 7, 10, 13, 16, and 19 would have been obvious over the combined teachings of Humpleman, Killian, and Lawler.

*E. Obviousness Over the Combined Teachings of Kondo, Killian, and Kawamura*

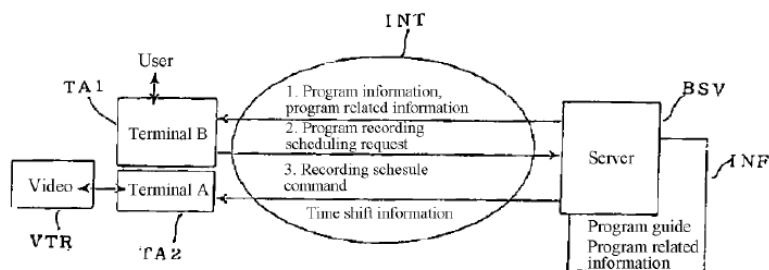
Comcast contends that claims 1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18 of the '263 Patent are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, and Kawamura. Pet. 43–63. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its

positions. Ex. 1002 ¶¶ 194–272. As we explain in our Introduction section above, Rovi waived both briefing on this ground, as well as consideration of this ground at the consolidated oral hearing. *See supra* Section I. For the reasons discussed below, we are not persuaded that Comcast sufficiently demonstrates that the combined teachings of Kondo, Killian, and Kawamura teach or suggest all of the elements of independent claims 1, 5, 8, 11, 14, and 17.

We begin our analysis with brief overviews of Kondo and Kawamura, and then we address whether Comcast demonstrates that the teachings of Kondo, Killian, and Kawamura teach or suggest all of the elements of the independent claims.

### 1. Kondo Overview

Kondo describes a network service system that allows a user to schedule television program recordings on the user's home video recorder over the Internet using a communication terminal connected to a server. Ex. 1012, at [57], ¶ 8. Figure 1 of Kondo, reproduced below, illustrates an embodiment of the network service system disclosed in Kondo.

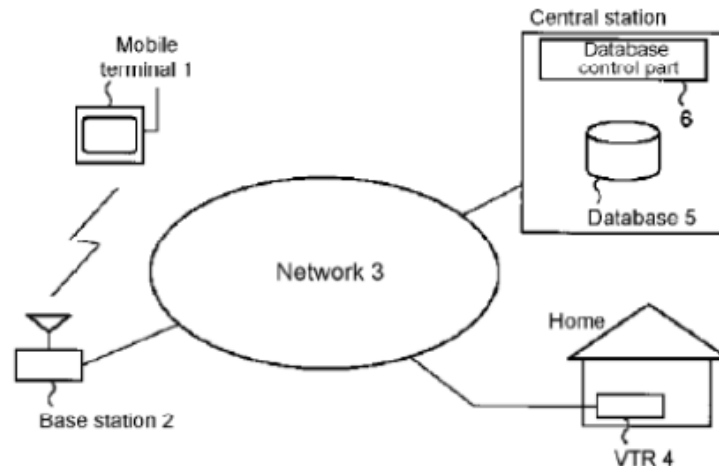


As shown in Figure 1 reproduced above, Kondo's system includes first communication terminal TA1 (also labeled "Terminal B") and second communication terminal TA2 (also labeled "Terminal A"), both of which communicate with server BSV via network INT. *Id.* ¶¶ 10, 12. Communication terminal TA1 is a "general communication terminal," and communication terminal TA2 connects to videotape recorder VTR. *Id.* ¶¶ 10, 11. To schedule video recording, a user may use terminal TA1 to access server BSV via network INT to acquire a broadcast program guide stored on server BSV and select a program for recording. *Id.* ¶ 12. When a user selects a program for recording from terminal TA1, server BSV sends a recording command to terminal TA2 to schedule a recording on videotape recorder VTR. *Id.* ¶¶ 13, 14. A user also can use terminal TA2 to acquire a broadcast program guide from server BSV and then select a program for recording on videotape recorder VTR. *Id.* ¶¶ 12, 13.

## 2. Kawamura Overview

Kawamura describes a remote control system that allows a user to control a videotape recorder ("VTR") in the user's home by operating a remote mobile terminal. Ex. 1014 ¶¶ 1, 23. Figure 1 of Kawamura, reproduced below, illustrates one embodiment of the remote control system described in Kawamura.

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As shown in Figure 1 reproduced above, Kawamura's system includes mobile terminal 1 connected to network 3 by way of base station 2. *Id.* ¶ 24. Database 5 contains a listing of television broadcast programs, or information relating to the content of each program, and is connected to network 3. *Id.* ¶ 27. When a user who is away from home wishes to schedule a program recording on VTR 4, but does not know the channel or time of the program, the user can use mobile terminal 1 to access database 5 by way of network 3. *Id.* §§ 30–31. Mobile terminal 1 displays program listing information obtained from database 5. *Id.* ¶ 32. The user refers to the displayed program listing and schedules a recording of the desired program by transmitting the broadcast channel, starting time, and other confirmed information to VTR 4. *Id.* ¶ 33.

3. *Claims 1, 5, 8, 11, 14, and 17*

Comcast generally relies on Kondo for teaching the system recited in claim 1. Pet. 43–45. Comcast also cites Killian and Kawamura for teaching certain details regarding the claimed “local interactive television program guide” and “remote access interactive television program guide,” respectively. *Id.* at 45–46.

Of particular importance to this ground, claim 1 recites, in relevant part, that the remote access interactive television program guide “transmits a communication identifying the television program corresponding to the selected program listing *from the remote access* interactive television program guide *to the local* interactive television program guide over the Internet communications path.” Ex. 1001, 28:54–58 (emphases added). Similar limitations are also found in the other contested, independent claims.

With respect to this limitation, Comcast argues that, in Kondo, a recording request for a program is transmitted from terminal TA1 to server BSV to schedule a reservation, wherein server BSV then sends a reservation command to local terminal TA2 to schedule a recording on a connected videotape recorder VTR. *Id.* at 59 (citing Ex. 1012 ¶¶ 12–14). As discussed in our Decision on Institution, it is not clear to us whether Kondo teaches two guides in communication with each other, nor is it clear that Comcast has demonstrated, by a preponderance of the evidence, that Comcast’s citation of one terminal communicating with another, via server BSV, meets the

communications between two guides required by claim 1. *See* Dec. on Inst. 32–34.

Kondo makes clear that a user may use either communication terminal, TA1 or TA2, to access the broadcast program guide and request scheduling of a specific program recording. Ex. 1012 ¶ 12. If the user is at terminal TA2, the recording request is locally routed to a connected VTR, i.e., claim 1 would not be satisfied. *Id.* ¶ 13. If the user is at terminal TA1, the request is sent to terminal TA2 for subsequent recording. *Id.* However, Kondo only specifies the acquisition of the broadcast program guide or the information related to the broadcast programs to the terminal that the user is at. There is no apparent disclosure of any guide being acquired by the unattended terminal. Thus, if the user is at terminal TA1, with a guide thereon, there would be no need for terminal TA2 to have the same or similar guide connected to the VTR. As such, both terminals TA1 and TA2 would not need to have guides resident at each, and, therefore, there would be no way for such guides to transmit or receive a communication over an Internet communication path to each other.

In addition, given the nature of the recording request, there would be no need for the receiving terminal, TA2, to necessarily have a program guide, interactive or not. Terminal TA2 could process the recording request without the need for a broadcast programming guide. Additionally, even if users were at both terminals TA1 and TA2, requesting recordings, i.e., so that both terminals would have guides implemented thereon, there would be no reason that a recording request received from a remote terminal



would be processed by the local guide and not merely some other portion of the terminal.

As well, the additional disclosures of Killian and Kawamura, with their additional details about interactive guide features, would not require the presence of a guide at each terminal, nor do they teach or suggest communication between two separate guides. Comcast has also failed to provide any suggestion or motivation for each terminal in Kondo possessing its own guide, with those guides themselves exchanging communications.

In summary, Comcast has not demonstrated that the combined teachings of Kondo, Killian, and Kawamura would teach or suggest all of the elements of independent claims 1, 5, 8, 11, 14, and 17. Accordingly, Comcast has not demonstrated by a preponderance of the evidence that the subject matter of independent claims 1, 5, 8, 11, 14, and 17 would have been obvious over the combined teachings of Kondo, Killian, and Kawamura.

#### *4. Claims 2, 4, 6, 9, 12, 15, and 18*

Because we determine that Comcast has not demonstrated that the teachings of Kondo, Killian, and Kawamura account for all of the elements of independent claims 1, 5, 8, 11, 14, and 17, Comcast has not demonstrated by a preponderance of the evidence that the subject matter of dependent claims of dependent claims 2, 4, 6, 9, 12, 15, and 18 would have been obvious over the combined teachings of Kondo, Killian, and Kawamura.

*F. Remaining Obviousness Ground Based on the Teachings of Kondo, Killian, Kawamura, and Lawler*

Comcast also contends that claims 3, 7, 10, 13, 16, and 19 of the '263 Patent are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, Kawamura, and Lawler. Pet. 64–65. Because we determine that Comcast has not demonstrated that the teachings of Kondo, Killian, and Kawamura account for all of the elements of independent claims 1, 5, 8, 11, 14, and 17, as discussed above, Comcast has not demonstrated by a preponderance of the evidence that the subject matter of dependent claims 3, 7, 10, 13, 16, and 19 would have been obvious over the combined teachings of Kondo, Killian, Kawamura, and Lawler.

### III. CONCLUSIONS

Comcast has demonstrated by a preponderance of the evidence that (1) claims 1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18 are unpatentable under § 103(a) over the combined teachings of Humpleman and Killian; and (2) claims 3, 7, 10, 13, 16, and 19 are unpatentable under § 103(a) over the combined teachings of Humpleman, Killian, and Lawler. Comcast, however, has not demonstrated by a preponderance of the evidence that (1) claims 1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18 are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, and Kawamura; and (2) claims 3, 7, 10, 13, 16, and 19 are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, Kawamura, and Lawler.

IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–19 of the '263 Patent are held to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

APPENDIX C  
IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL  
BOARD  
COMCAST CABLE COMMUNICATIONS, LLC,  
*Petitioner,*

v.

ROVI GUIDES, INC.,  
*Patent Owner.*

Case IPR2017-00951  
Patent 8,006,263 B2

Entered: September 19, 2018

Before KEVIN F. TURNER, MICHAEL R. ZECHER,  
and JESSICA C. KAISER, *Administrative Patent  
Judges.*

ZECHER, *Administrative Patent Judge.*

FINAL WRITTEN DECISION  
*Inter Partes* Review  
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner, Comcast Cable Communications, LLC (“Comcast”), filed a Petition requesting an *inter partes* review of claims 1–19 of U.S. Patent No. 8,006,263 B2 (Ex. 1101, “the ’263 patent”). Paper 2 (“Pet.”). Patent Owner, Rovi Guides, Inc. (“Rovi”), filed a Preliminary Response. Paper 7. Taking into account the arguments presented in Rovi’s Preliminary Response, we

determined that the information presented in the Petition established that there was a reasonable likelihood that Comcast would prevail in challenging claims 1–19 of the '263 patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on September 20, 2017, as to all of the challenged claims, but not all the grounds presented by Comcast in its Petition. Paper 12 (“Dec. on Inst.”).

During the course of trial, Rovi filed a Patent Owner Response (Paper 18, “PO Resp.”), and Comcast filed a Reply to the Patent Owner Response (Paper 31, “Pet. Reply”). A consolidated oral hearing with related Cases IPR2017-00950, IPR2017-00952, IPR2017-01048, IPR2017-01049, IPR2017-01050, IPR2017-01065, IPR2017-01066, and IPR2017-01143 was held on June 19, 2018, and a transcript of the hearing is included in the record. Paper 41 (“Tr.”).

After all substantive briefing was complete, but before the consolidated oral hearing, the United States Supreme Court held that a decision to institute under 35 U.S.C. § 314 may not institute on less than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). Following *SAS*, the U.S. Patent and Trademark Office (“Office”) issued “Guidance on the impact of SAS on AIA trial proceedings,” in which the Office took the policy position that a decision granting institution will institute on all of the challenged claims in the petition

and all the grounds presented in the petition.<sup>1</sup> The U.S. Court of Appeals for the Federal Circuit has since endorsed this Office policy by explaining that “‘the petitioner’s petition, not the Director’s discretion, is supposed to guide the life of the litigation’ and ‘that the petitioner’s contentions, not the Director’s discretion define the scope of the litigation all the way from institution through to conclusion.’” *Adidas AG v. Nike, Inc.*, 894, F.3d 1256, 1258 (Fed. Cir. 2018) (quoting *SAS*, 138 S. Ct. at 1356–1357). In accordance with *SAS* and Office policy, we issued an Order modifying our Decision on Institution entered on September 20, 2017, to include review of all challenged claims and all grounds presented by Comcast in its Petition. Paper 38. The parties, however, agreed to waive briefing on the grounds we declined to institute in the Decision on Institution. *Id.* The parties also agreed to waive consideration of these previously non-instituted grounds at the consolidated oral hearing. *Id.*

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–19 of the ’263 patent. For the reasons discussed below, we hold that Comcast has demonstrated by a preponderance of the evidence that these claims are unpatentable under § 103(a).

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<sup>1</sup> Available at <https://www.uspto.gov/patentsapplication-process/patent-trial-and-appeal-board/trials/guidance-impactsas-aia-trial>.

### *A. Related Matters*

The '263 patent is involved in the following district court cases: (1) *Rovi Guides, Inc. v. Comcast Corp.*, No. 2:16-cv-00322 (E.D. Tex.), which has been transferred to the U.S. District Court for the Southern District of New York and is pending as *Rovi Guides, Inc. v. Comcast Corp.*, No. 1:16-cv-09826 (S.D.N.Y); and (2) *Comcast Corp. v. Rovi Corp.*, No. 1:16-cv-03852 (S.D.N.Y). Pet. 1–2; Paper 4, 2. The '263 patent also has been asserted against Comcast in a proceeding before the U.S. International Trade Commission (“ITC”) styled *In re Certain Digital Video Receivers and Hardware and Software Components Thereof*, No. 337-TA-1001. Pet. 2; Paper 4, 2.

In addition to this Petition, Comcast filed two other petitions challenging the patentability of claims 1–19 of the '263 patent (Cases IPR2017-00950 and IPR2017-00952). Pet. 3; Paper 4, 2. Comcast also filed other petitions challenging the patentability of certain subsets of claims in several patents owned by Rovi. Pet. 3.

### *B. The '263 Patent*

The '263 patent, titled “Interactive Television Program Guide with Remote Access,” issued August 23, 2011, from U.S. Patent Application No. 11/246,392, filed on October 7, 2005. Ex. 1101, [54], [45], [21], [22]. The '263 patent is a continuation of U.S. Patent Application No. 10/927,814, filed on August 26, 2004, which, in turn, is a continuation of U.S. Patent Application No. 09/354,344, filed on July 16, 1999. *Id.* at [63]. The '263 patent also claims the benefit of U.S. Provisional Application No. 60/097,527, filed on

August 21, 1998, and U.S. Provisional Application No. 60/093,292, filed on July 17, 1998. *Id.* at [60].

The '263 patent generally relates to interactive television program guide video systems and, in particular, to such systems that provide remote access to program guide functionality. Ex. 1101, 1:19–22. The '263 patent discloses that conventional interactive television program guide systems typically are implemented on set-top boxes located in the home of a user and, as a result, do not permit the user to perform program guide functions without the user being physically located in the same room as these systems. *Id.* at 1:37–45. Stated differently, conventional interactive television program guide systems require the user to be present in the home to access important program guide features, such as program reminders, parental controls, and program recording. *Id.* at 2:19–22. The '263 patent purportedly addresses this and other problems by providing an interactive television program guide system that allows a user to access certain features of the program guide remotely and establish settings for those features. *Id.* at 2:23–28.

Figure 1 of the '263 patent, reproduced below, illustrates a schematic block diagram of the system in accordance with the present invention. Ex. 1101, 3:45–46, 4:29–30.



72a

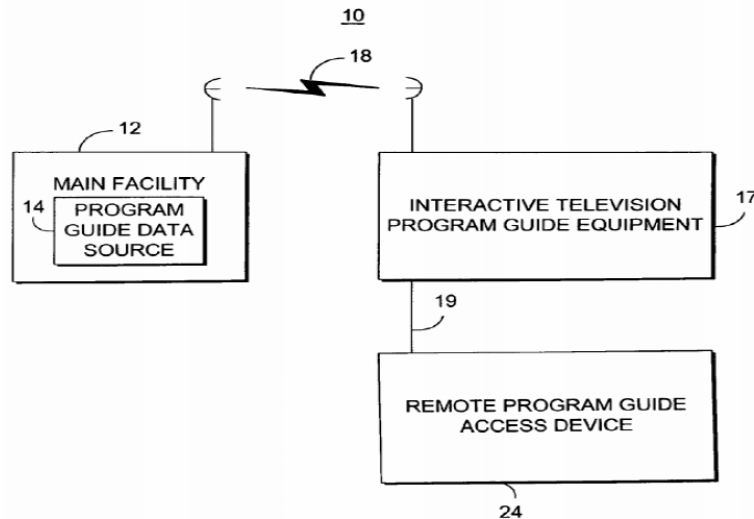


FIG. 1

As shown in Figure 1 reproduced above, system 10 includes main facility 12 that provides interactive television program guide data from program guide data source 14 to interactive television program guide equipment 17 via communication link 18. *Id.* at 4:29–33. Interactive television program guide equipment 17 is connected to at least one remote program guide access device 24 via remote access link 19. *Id.* at 4:47–53.

Figure 2a of the '263 patent, reproduced below, illustrates one arrangement involving the interactive television program guide equipment 17 and remote program guide access device 24 in accordance with the principles of the present invention. Ex. 1101, 3:47–50, 4:55–57.

73a

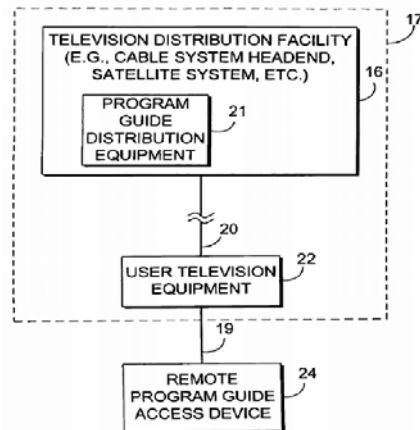


FIG. 2a

As shown in Figure 2a reproduced above, interactive television program guide equipment 17 includes program guide distribution equipment 21 located at television distribution facility 16, which distributes program guide data to user television equipment 22 via communications path 20. *Id.* at 4:57–67. Remote program guide access device 24 receives the program guide data, as well as any additional data necessary to access various functions of the interactive program guide, from user television equipment 22 via remote access link 19. *Id.* at 5:29–39.

In at least one embodiment, the '263 patent discloses that a remote access interactive television program guide implemented on remote program guide access device 24 communicates with a local interactive television program guide implemented on interactive television program guide equipment 17. Ex. 1101, 12:23–29. In one example, the remote access and local interactive television program guides may be two

different guides that communicate with each other. *Id.* at 12:34–37; *see also id.* at 22:49–23:6 (disclosing steps involved with using the remote access interactive television program guide to provide program listing information to a user). In another example, the remote access and local interactive television program guides may be the same guide but compiled to run on two different platforms. *Id.* at 12:29–32.

The '263 patent discloses transferring program guide information and settings between remote program guide access device 24 and interactive television program guide equipment 17 using any suitable application layer protocol. Ex. 1101, 13:7–11. For example, if remote access link 19 is an Internet link, program guide functionality may be accessed using Hypertext Transfer Protocol. *Id.* at 13:11–13. Remote program guide access device 24 and interactive television program guide equipment 17 also may transfer program guide information as files using either File Transfer Protocol or Trivial File Transfer Protocol running over a Transmission Control Protocol/Internet Protocol stack. *Id.* at 13:13–18. The '263 patent makes clear that “[a]ny suitable file transfer protocol based on any suitable protocol stack may be used.” *Id.* at 13:18–19.

### *C. Illustrative Claim*

Of the challenged claims, claims 1, 5, 8, 11, 14, and 17 are independent. Independent claims 1, 8, and 14 are each directed to a system for selecting television programs over a remote access link that includes an Internet communications path for recording, whereas independent claims 5, 11, and 17 are each directed to

a method for performing the same. Claims 2–4 directly depend from independent claim 1; claims 6 and 7 directly depend from independent claim 5; claims 9 and 10 directly depend from independent claim 8; claims 12 and 13 directly depend from independent claim 11; claims 15 and 16 directly depend from independent claim 14; and claims 18 and 19 directly depend from independent claim 17. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A system for selecting television programs over a remote access link comprising an Internet communications path for recording, comprising:

- a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide equipment includes user television equipment located within a user's home and the local interactive television program guide generates a display of one or more program listings for display on a display device at the user's home; and

- a remote program guide access device located outside of the user's home on which a remote access interactive television program guide is implemented, wherein the remote program guide access device is a mobile device, and wherein the remote access interactive television program guide:

generates a display of a plurality of program listings for display on the remote program guide access device, wherein the display of the plurality of program listings is generated based on a user profile stored at a location remote from the remote program guide access device;

receives a selection of a program listing of the plurality of program listings in the display, wherein the selection identifies a television program corresponding to the selected program listing for recording by the local interactive television program guide; and

transmits a communication identifying the television program corresponding to the selected program listing from the remote access interactive television program guide to the local interactive television program guide over the Internet communications path;

wherein the local interactive television program guide receives the communication and records the television program

corresponding to the selected program listing responsive to the communication using the local interactive television program guide equipment.

Ex. 1101, 28:27–63.

*D. Prior Art Relied Upon*

Comcast relies upon the following prior art references:

<b>Inventor<sup>2</sup></b>	<b>Patent or Publication No.</b>	<b>Relevant Dates</b>	<b>Exhibit No.</b>
Humpleman	U.S. Patent No. 6,182,094 B1	issued Jan. 30, 2001, filed June 24, 1998	1106
Lawler	U.S. Patent No. 5,805,763	issued Sept. 8, 1998, filed May 5, 1995	1109
Allport	U.S. Patent No. 6,104,334	issued Aug. 15, 2000, filed Dec. 31, 1997	1110
Sato	U.S. Patent No. 6,408,435 B1	issued June 18, 2002, filed April 29, 1997	1115
Woo	U.S. Patent No. 5,485,219	issued Jan. 16, 1996, filed Apr. 18, 1994	1116

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<sup>2</sup> For clarity and ease of reference, we only list the first named inventor.

Mizuno	PCT Int'l Pub. No. WO 97/18636	published May 22, 1997, filed Nov. 13, 1996	1117
Rzeszewski	U.S. Patent No. 5,699,125	issued Dec. 16, 1997, filed Mar. 31, 1995	1118

*E. Instituted Grounds of Unpatentability*

We instituted a trial based on the asserted grounds of unpatentability (“grounds”) set forth in the table below. Dec. on Inst. 43; Paper 38.

<b>References</b>	<b>Basis</b>	<b>Challenged Claim(s)</b>
Sato and Humpleman	§ 103(a)	1, 2, 5, 6, 8, 9, 11, 12, 14, 15, 17, and 18
Sato, Humpleman, and Lawler	§ 103(a)	3, 7, 10, 13, 16, and 19
Sato, Humpleman, and Allport	§ 103(a)	4
Woo, Mizuno, and Rzeszewski	§ 103(a)	1, 2, 5, 6, 8, 9, 11, 12, 14, 15, 17, and 18
Woo, Mizuno, Rzeszewski, and Lawler	§ 103(a)	3, 7, 10, 13, 16, and 19

Woo, Mizuno, Rzeszewski, and Allport	§ 103(a)	4
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## II. ANALYSIS

### A. *Claim Construction*

In an *inter partes* review proceeding, claim terms of an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision on Institution, we determined that the only claim terms requiring construction are “local/remote access interactive television program guides,” and only to the extent necessary to resolve whether the grounds asserted by Comcast properly accounted for both a “local interactive television program guide” and a “remote access interactive television program guide.” Dec. on Inst. 10 (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy)). Upon reviewing the parties’ preliminary arguments and evidence, we adopted Comcast’s proposed construction that an “interactive



television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *Id.* at 13. We further clarified that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide. *Id.* at 13–14.

In its Patent Owner Response, Rovi generally agrees with our initial determination that the only claim terms requiring construction are “local/remote access interactive television program guides.” PO Resp. 8. Rovi, however, proposes that the proper constructions for these claim terms are the following: (1) “local interactive television program guide” is a “guide that allows navigation through television program listings and causes display of program information on user television equipment”; and (2) “remote access interactive television program guide” is a “guide allowing navigation through television program listings using a remote access link.” *Id.* at 8–9. According to Rovi, its proposed constructions for the claim terms “local/remote access interactive television program guides” are consistent with the intrinsic evidence, our preliminary finding that these guides must be distinct guides, and the findings of the ITC in related proceedings. *Id.* at 9 (citing Ex. 1150, 185, 190). Rovi further contends that any difference between our constructions and the ITC’s constructions of the claim terms “local/remote access interactive television

program guides” is not relevant to the grounds at issue in this proceeding because, according to Rovi, each of Comcast’s asserted grounds fail under Rovi’s broader constructions “that do[] not unnecessarily restrict the guides to ‘control software’ that ‘controls functions of the software.’” PO Resp. 9. Rovi asserts that, because each of Comcast’s asserted grounds fail under broader constructions for these claim terms, we need not determine whether the asserted prior art satisfies Comcast’s proposed constructions. *Id.* at 9–10. Rovi then proceeds to explain how our preliminary constructions and the ITC’s constructions are consistent in certain respects because (1) they both require the guides to be interactive (i.e., navigable and selectable); and (2) they both agree that the claims require two separate guides, as properly construed. *Id.* at 10–12.<sup>3</sup>

In its Reply, Comcast contends that Rovi’s proposed constructions of the claim terms “local/remote access interactive television program guides” improperly seeks to limit the broadest reasonable interpretation of the claim term “interactive television program guide” to a single software component that generates listings, thereby excluding other software components that assist in providing guide functionality. Pet. Reply

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<sup>3</sup> For the first time at the oral hearing, Rovi argued that “remote access interactive television program guide” requires “dedicated code at the remote device.” *See, e.g.*, Tr. 58:3–7, 60:19–61:14, 66:14–21. We agree with Comcast (*id.* at 96:3–10) that this is a new argument that was not presented and developed in Rovi’s briefs and, therefore, we do not consider it. *See* Paper 13, 3 (cautioning Rovi that “any arguments for patentability not raised in the response will be deemed waived”).

4 (citing PO Resp. 30–34; Ex. 2108 ¶¶ 136, 137, 146–150). According to Comcast, this inclusion finds no basis in the plain language of the claims and the specification of the '263 patent. *Id.* (citing Ex. 1152 ¶¶ 10–14).

Comcast also contends that Rovi's arguments directed to the claim term "interactive television program guide" contradicts the construction Rovi offered in the related ITC proceeding. Pet. Reply 4. In the related ITC proceeding, Comcast argues that Rovi expanded the scope of the claim term "local interactive television program guide" to capture all software components related to any local guide functionality, including recording. *Id.* (citing Ex. 1150, 180–91, 214–27; Ex. 1154 ¶¶ 158–160, 169, 170, 371, 376). Comcast argues that Rovi's expert in the ITC proceeding, Dr. Michael Shamos, who also is Rovi's expert in this proceeding, provided supporting testimony that the claim term "local interactive television program guide" could be an "extensive collection of hardware and software." *Id.* at 5 (emphasis omitted) (quoting Ex. 1154 ¶ 169). In this proceeding, however, Comcast argues that Rovi and Dr. Shamos appear to take the erroneous position that the claim term "local interactive television program guide" is a single software application. *Id.* at 5–6 (*compare* PO Resp. 32 and Ex. 2108 ¶ 149, *with* Ex. 1154 ¶¶ 169, 371). According to Comcast, we should hold Rovi to the same broad construction of the claim term "local interactive television program guide" in this proceeding that it wielded to exclude others from practicing the claimed invention in the related ITC proceeding. *Id.* at 6.

As an initial matter, it is not clear to us whether Rovi actually disputes our preliminary construction of the claim term “interactive television program guide.” On the one hand, Rovi asserts that the ITC’s constructions of local interactive television program guide (i.e., a “guide that allows navigation through television program listings and causes display of program information on user television equipment”) and remote access interactive television program guide (i.e., a “guide allowing navigation through television program listings using a remote access link”) are the proper constructions. PO Resp. 8–9. On the other hand, Rovi argues that both our constructions and the ITC’s constructions “are consistent with respect to the relevant aspects (e.g., navigation and selection)” of a local/remote access interactive television program guide. *Id.* at 9. Rovi further contends that “[a]ny differences between the Board’s and the ITC’s constructions *are not relevant* to [Comcast’s] failures of proof regarding the asserted prior art and [g]rounds at issue in the proceeding.” *Id.* (emphasis added); *see also* Ex. 2108 ¶ 25 (Rovi’s declarant, Dr. Shamos, testifies that, “regardless of which constructions the Board applies, my opinions remain the same. The asserted prior art references here fail to disclose the claim limitations . . . under either construction.”). These arguments make it difficult to ascertain what Rovi actually views as the proper scope and meaning of the claim terms “local/remote access interactive television program guides.” Nevertheless, we are charged in this proceeding with determining the broadest reasonable interpretation of these claim terms.

Beginning with the intrinsic record, neither party argues, nor could we find, an explicit definition for the claim term “interactive television program guide” in the specification of the ’263 patent. The specification, however, is replete with descriptions of conventional, local, or remote interactive television program guides. For instance, the specification discloses that conventional interactive television program guides display “various groups of television program [guide] listings . . . in predefined or user-defined categories,” and “allow the user to navigate through [the] television program listings” and make a selection “using a remote control.” Ex. 1101, 1:31–36. For a conventional interactive television program guide, the user must physically be located in the same room as the set-top box on which the interactive television program guide is implemented to select programs for recording or to perform other guide functions. *Id.* at 1:37–45. In the context of discussing the implementation of a remote access interactive television program guide, the specification discloses that such a guide works in conjunction with a remote device to “provide users with the opportunity to remotely access features of the interactive television program guide on the interactive television program guide equipment and to remotely set program guide settings.” *Id.* at 2:41–46. The specification goes on to disclose that “[a]ny suitable interactive television program guide function or setting may be accessed,” including, but not limited to, “remotely select[ing] programming for recordings” and “remotely set[ting] and navigat[ing] through favorites (e.g., favorite

channels, program categories, services, etc.).” *Id.* at 2:47–56.

Although the aforementioned disclosures provide guidance as to the functionality of an “interactive television program guide” (i.e., navigable, selectable, and capable of controlling certain functions or settings), neither party directs us to, nor can we find, a disclosure in the specification that specifically identifies what element or elements constitute a “guide.” Given the lack of disclosure in this regard, we decline to limit the “guide” to a single software application. Rather, these disclosures support Comcast’s proposed construction that an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.”

We further clarify that, based on the plain language of independent claims 1, 5, 8, 11, 14, and 17, they indicate that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” (alteration in original) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004))). Our determination in this regard is supported by the specification, which includes various embodiments that treat these claim terms as

separately identifiable elements capable of communicating with each other. *See, e.g.*, Ex. 1101, 12:34–37 (“In still another suitable approach, the [local interactive television program guide and remote access interactive television program guide] may be different guides that communicate in a manner or manners discussed . . . herein.”), 20:18–23 (“The remote access [interactive television] program guide may . . . send audio, graphical, and text messages to the local interactive [television] program guide for playing or display by user television equipment 22.”). The specification also explains that the “local interactive television program guide” and “remote access interactive television program guide” may be the same guide, in which case they are separately identifiable elements in that each guide is compiled to run on a different platform. *See id.* at 12:29–32 (“The remote access and local guide may, for example, be the same guide but compiled to run on two different platforms and to communicate in a manner or manners discussed herein.”).

We decline to adopt Rovi’s proposed constructions of the claim terms “local/remote access interactive television program guides” for two reasons. First, we are unable to determine how Rovi’s proposed constructions add any clarity to the scope and meaning of an “interactive television program guide.” That is, we view each of Rovi’s proposed constructions as circular and unhelpful because they define each of the guides as a “*guide* [that allows/allowing] navigation through television program listings.” PO Resp. 8–9 (emphasis added). Rovi, however, does not actually

identify what element or elements specifically constitutes the “guide.”

Second, Rovi states that its proposed constructions indicate “where the specific guide resides (i.e., on ‘user television equipment’ or over ‘a remote access link’),” but readily admits that “these additions merely restate the language of the broader claim limitation[s].” PO Resp. 12 (emphasis omitted) (citing Ex. 1150, 185, 190). It is well settled that the Federal Circuit disfavors any claim interpretation that renders a claim term or phrase superfluous. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“The Board was correct to not include in its construction of ‘menu’ features of menus that are expressly recited in the claims. . . . Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.”). If we were to adopt the language in Rovi’s proposed constructions pertaining to where each guide resides, it would render superfluous the language that is already explicitly recited in independent claim 1, and similarly recited in independent claims 5, 8, 11, 14, and 17—namely, “over a remote access link” and “a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide equipment includes user television equipment.”<sup>4</sup>

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<sup>4</sup> During oral argument, in response to a question regarding the ITC’s construction of the “local interactive television program guide” being on user television equipment and its construction that the “remote access television program guide” uses a remote



Turning now to the extrinsic evidence, in Dr. Tjaden's Declaration accompanying the Petition, he testifies that "the local [interactive television program] guide may be implemented at least in part on a server or other device outside the user's home." Ex. 1102 ¶ 35. To support this testimony, he directs us to Rovi's interpretation of the claim term "local interactive television program guide" in the related ITC proceeding. *Id.* (citing Ex. 1145, 56; Ex. 1146, 43). In Dr. Tjaden's Declaration accompanying the Reply, he elaborates further on his initial position by testifying that "a [person of ordinary skill in the art] looking at the '263 Patent would have understood that many different arrangements of the software and hardware components comprising an interactive television program guide are possible and acceptable in [the] prior art used to show obviousness." Ex. 1152 ¶ 11. To support this testimony, he directs us to the different arrangements of software and hardware in the '263 patent. *Id.* (citing Ex. 1101, 4:30–33, 4:47–49, 4:57–61, 6:48–50, 7:53–60, Figs. 1, 2a–2d).

Comcast also directs us to Dr. Shamos's Declaration in the ITC proceeding as further evidence as to what element or elements constitute a "guide." Although we recognize that the broadest reasonable interpretation standard governs in this proceeding, whereas the district court claim construction standard governs in an ITC proceeding, Dr. Shamos's testimony in the ITC proceeding is relevant here because it sheds

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access link, counsel for Rovi stated that "I don't think where [the guides are] implemented is meaningful because that's recited in the claim separately." Tr. 66:22–67:24.

some light on what element or elements he believes constitutes a “guide.” In the ITC proceeding, Dr. Shamos testifies that the claim term “local interactive television program guide” could be an “extensive collection of hardware and software.” Ex. 1154 ¶ 169. He also testifies “that the ‘local [interactive television program] guide’ [should not be construed as] a single software application that must reside on a device in the user’s home,” and “[n]othing in the claims exclude a ‘recording application’ from being part of the local [interactive television program] guide.” *Id.* ¶ 371. Dr. Shamos’s testimony in the ITC proceeding is consistent with Dr. Tjaden’s testimony in this proceeding because, like Dr. Tjaden, Dr. Shamos does not limit a “guide” to a single software application, but rather contemplates that the “guide” may constitute different arrangements of software and hardware.

We note that the aforementioned testimony from Dr. Tjaden and Dr. Shamos suggests that the “guide” may include both software and hardware. Rovi likewise argues that its proposed construction is broader than Comcast’s because “it does not unnecessarily restrict the guides to ‘control software.’” PO Resp. 9. We do not find support in the intrinsic record that the “guide” may include hardware. Rather, the ’263 patent separately refers to the interactive television program guide and the hardware on which it is implemented. *See, e.g.,* Ex. 1101, 1:37–38 (“Interactive television program guides are typically implemented on set-top boxes . . . .”). The aforementioned testimony, however, is consistent with our conclusion that the “guide” may constitute more than just a single software application.

In summary, upon weighing all the evidence bearing on the construction of the claim term “interactive television program guide,” we maintain that the broadest reasonable interpretation of this claim term is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” We also maintain that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide.

*B. Obviousness Over the Combined Teachings of Sato and Humpleman*

Comcast contends that claims 1, 2, 5, 6, 8, 9, 11, 12, 14, 15, 17, and 18 of the '263 patent are unpatentable under § 103(a) over the combined teachings of Sato and Humpleman. Pet. 20–36. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1102 ¶¶ 104–161. In its Patent Owner Response, Rovi presents a number of arguments as to why the combined teachings of Sato and Humpleman do not render the limitations of independent claims 1, 5, 8, 11, 14, and 17 obvious. PO Resp. 19–40. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2108 ¶¶ 99–159.

We begin our analysis with the principles of law that generally apply to a ground based on obviousness, followed by an assessment of the level of skill in the art, proceeded by brief overviews of Sato and Humpleman, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

### *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 non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze this asserted ground based on obviousness with the principles identified above in mind.

### *2. Level of Skill in the Art*

There is evidence in the record before us that enables us to determine the knowledge level of a person of ordinary skill in the art. Relying on the testimony of its declarant, Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art as of July 17, 1998, which is the earliest priority date on the face of

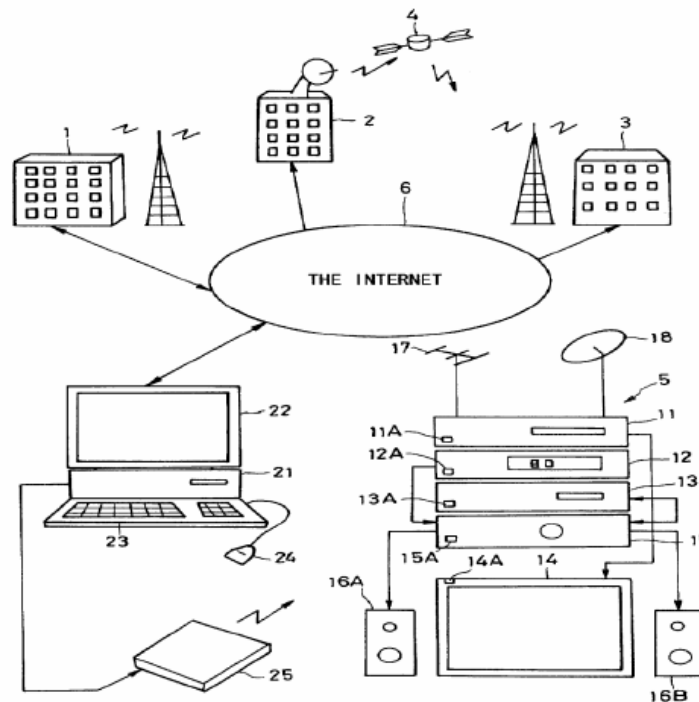
the '263 patent, would be an individual who possesses the following:

a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and two years of experience with interactive program guides, set-top boxes, mobile computer devices, and techniques for delivering content or program guides over communication networks, such as a cable system, a local-area network, and the Internet.

Pet. 13–14 (quoting Ex. 1102 ¶ 28). Alternatively, once again relying on the testimony of Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art “could have had equivalent experience in industry or research, such as designing, developing, evaluating, testing, or implementing these technologies.” *Id.* (quoting Ex. 1102 ¶ 28). Conversely, Rovi's declarant, Dr. Shamos, does not offer an assessment of the level of skill in the art as of July 1998, nor does he explicitly state his intent to adopt Dr. Tjaden's assessment. *See generally* Ex. 2108. Given Dr. Shamos's silence on this matter, we adopt Dr. Tjaden's assessment because it is consistent with the '263 patent and the asserted prior art, and apply it to our obviousness evaluation below.

### 3. *Sato Overview*

Sato generally relates to a remote controller suitable for use in operating audio/visual devices and, in particular, one that is suitable for use in a system for transmitting broadcast program reservation tables through a computer network. Ex. 1115, 1:7–12. Figure 1, reproduced below, illustrates a block diagram of the network system used in Sato. *Id.* at 2:61–62, 3:49–51.

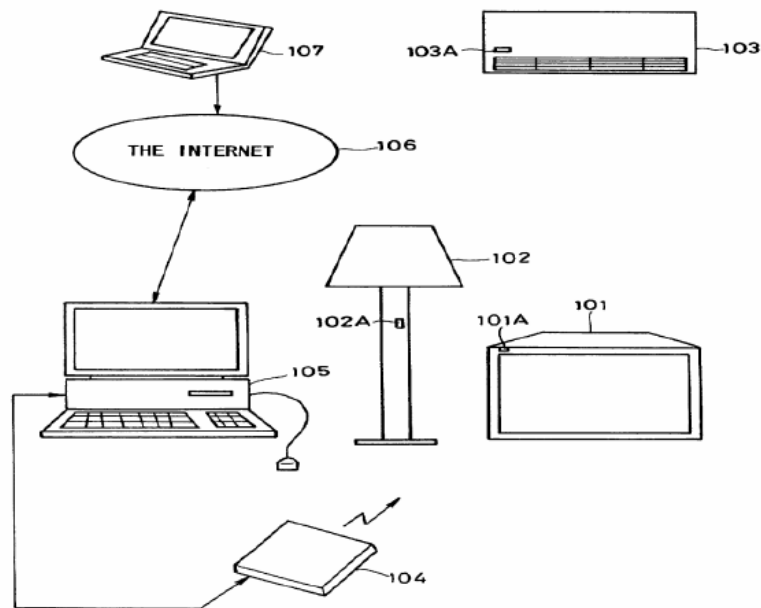
**Fig. 1**

The network system illustrated in Figure 1 reproduced above includes surface wave television ("TV") broadcasting station 1, satellite TV broadcasting station 2, and frequency modulation ("FM") radio broadcasting station 3 that broadcast TV programs and/or FM radio programs to audio/visual equipment 5. *Id.* at 3:51-4:1. Audio/video equipment 5 includes, among other things, video tape recorder/player ("VTR") 11 and TV receiver 14, each of which is capable of being controlled remotely by infrared signals. *Id.* at 4:1-9. The network system further includes personal computer 21 connected to Internet 6. *Id.* at 4:46-47.

Personal computer 21 sends commands to interface box 25, which, in turn, uses infrared signals to communicate desired modes of operation to VTR 11 and TV receiver 14. *Id.* at 4:52–59.

Figure 17, reproduced below, illustrates one embodiment in accordance with the present invention. Ex. 1115, 3:44–45, 9:29–30.

**Fig. 17**



The embodiment illustrated in Figure 17 reproduced above includes TV receiver 101 that is capable of being set to a desired mode of operation using infrared signals from interface box 104 connected to personal computer 105. *Id.* at 9:30–36. This embodiment further includes external portable computer 107,

which connects to personal computer 105 through Internet 106 to control TV receiver 101. *Id.* at 9:51–54. For instance, external portable computer 107 generates hypertext commands for setting TV receiver 101 to a desired mode of operation. *Id.* at 9:56–59. The hypertext commands are sent from external portable computer 107 to personal computer 105 through Internet 106. *Id.* at 9:56–61. When interface box 104 receives the hypertext commands from personal computer 105, it issues an infrared signal corresponding to the command contained in the hypertext and, subsequently, sets TV receiver 101 to the desired mode of operation. *Id.* at 9:61–65.

#### 4. Humpleman Overview

Humpleman generally relates to the field of networks and, in particular, to home networks that have multimedia devices connected thereto. Ex. 1106, 1:16–18. One objective of Humpleman's invention is to provide a method for controlling a plurality of devices connected to a home network, where at least one of these devices is a multimedia device, and for generating a program guide from the information provided by the multi-media device on a second device connected to the home network. *Id.* at 2:23–28. According to Humpleman, a user may customize the programming information that is displayed by the program guide. *Id.* at 22:41–43. For instance, if a user prefers not to display the schedule for a particular channel because it contains inappropriate content, the user may request that the channel be removed from the program guide. *Id.* at 22:43–46.



*5. Claims 1, 5, 8, 11, 14, and 17<sup>5</sup>*

In its Petition, Comcast contends that Sato’s program guide system accounts for most of the limitations of independent claims 1, 5, 8, 11, 14, and 17, except “user profiles” used to generate the “remote access interactive television program guide.” Pet. 20–24 (citing Ex. 1115, 4:51–59, 5:18–25, 9:51–65, Figs. 1, 17; Ex. 1102 ¶¶ 104–107); *see also id.* at 27–35 (arguing the same). Comcast turns to Humpleman’s generation of local customized program guides for display by a remote device to teach this particular limitation. *Id.* at 24–25 (citing Ex. 1106, 22:30–46; Ex. 1102 ¶ 108); *see also id.* at 31–32 (arguing the same).

For added clarity, we identify the arguments presented by Comcast for all the limitations of independent claim 1. We note that there is no dispute between the parties as to whether the limitations of independent claims 5, 8, 11, and 17 are essentially the same as the limitations of independent claim 1. *Compare* Pet. 8–11, 35, *with* PO Resp. 19–21. Beginning with the preamble of independent claim 1, Comcast contends that Sato teaches “a system for selecting television programs over a remote access link comprising an Internet communications path for recording” because Sato discloses that external portable computer 107 allows a remote user to communicate with personal computer 105 over

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<sup>5</sup> Comcast contends that independent claims 1, 5, 8, 11, 14, and 17 stand or fall together. Pet. 8–11. Rovi does not dispute Comcast’s assertion in this regard. *Accord* PO Resp. 19–40 (treating independent claims 1, 5, 8, 11, 14, and 17 as standing or falling together).

Internet 106 to control devices within the user's home. Pet. 27 (citing Ex. 1115, 9:51–65). According to Comcast, Sato's methods of controlling TV receiver 101 and VTR 11 involve the use of program guide webpages to schedule recordings. *Id.* (citing Ex. 1115, 5:18–25, 5:45–54, Fig. 2; Ex. 1102 ¶¶ 118–119). Comcast argues that, because Sato's external portable computer 107 also is described as being capable of controlling these same home electronic devices, a person of ordinary skill in the art would have understood that external portable computer 107 presents a program guide that allows the remote user to select a program for recording, as this is how Sato's program guide system receives selections of programs. *Id.*

Comcast contends that Sato teaches “local interactive television program guide equipment on which a local interactive television program is implemented,” as recited in independent claim 1, because Sato discloses that a family may connect its home personal computer to the Internet to access HTML program guides provided by the TV stations. Pet. 27–28 (citing Ex. 1115, 4:46–54, 9:29–37, Fig. 1; Ex. 1102 ¶ 122). Comcast argues that Sato's browser, when presenting the program guide web page, constitutes the claimed “interactive television program guide” because it is control software that is operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software (e.g., schedule a recording on local equipment). *Id.* at 28 (citing Ex. 1115, 5:8–25).

Comcast contends that Sato teaches “wherein the local interactive television program guide equipment includes user television equipment located within a user’s home,” as recited in independent claim 1, because TV receiver 101 and VTR 11 are components of an audio/visual system located in a user’s home. Pet. 28 (citing Ex. 1115, 4:1–9, 4:46–51, 4:52–59, Fig. 1; Ex. 1102 ¶ 123). Comcast argues that Sato teaches wherein “the local interactive television program guide generates a display of one or more programs listings for display on a display device at the user’s home,” as recited in independent claim 1, because users access the program guide webpage using their local personal computer (i.e., personal computer 105), and a browser that runs on the local personal computer generates a program guide display, such as the one illustrated in Sato’s Figure 2. *Id.* at 28–29 (citing Ex. 1115, 4:60–5:2, 5:45–54, Figs. 2, 5; Ex. 1102 ¶ 124).

Comcast contends that Sato teaches “a remote program guide access device located outside the user’s home on which a remote access interactive television program guide is implemented,” as recited in independent claim 1, because external portable computer 107 is described as being capable of controlling the same home electronic devices as personal computer 105. Pet. 29 (citing Ex. 1115, 9:51–65, Fig. 17; Ex. 1102 ¶¶ 125–131). According to Comcast, a person of ordinary skill in the art would have understood that Sato’s external portable computer 107 presents a program guide display that allows the remote user to select a program for recording because this is how Sato’s program guide system receives program selections. *Id.* (citing Ex.

1102 ¶¶ 126, 129). Comcast also argues that, to the extent Sato's personal computer 105 (Figure 17) and personal computer 21 (Figure 1) are not described as the same element, it would have been obvious to a person of ordinary skill in the art to allow external portable computer 107 to control personal computer 21 because external portable computer 107 is described as capable of controlling any electronic device in the user's home. *Id.* at 29–30 (citing Ex. 1115, 9:51–65; Ex. 1102 ¶ 130). Comcast further argues that Sato teaches “wherein the remote program guide access device is a mobile device,” as recited in independent claim 1, because external portable computer 107 is a portable, computer-based device (i.e., mobile device). *Id.* at 30 (citing Ex. 1102 ¶ 127).

Comcast contends that Sato's remote guide “generates a display of a plurality of program listings for display on the remote program guide access device,” as recited in independent claim 1, because Sato discloses methods for certain home electronic devices (e.g., TV receiver 101 or VTR 11) that involve using program guide webpages to schedule recordings. Pet. 30 (citing Ex. 1115, 5:45–54, Fig. 2). Comcast argues that a person of ordinary skill in the art would have understood that Sato's external portable computer 107 presents a program guide webpage to a remote user, which, in turn, allows the remote user to select a program for recording, because this is how Sato's program guide system receives selections for programs. *Id.* (citing Ex. 1115, 4:1–9, 5:3–7, 5:18–25, 5:45–54; Ex. 1102 ¶¶ 132, 133). Comcast further argues that Sato makes clear that its methods use “hypertexts” rendered for display by a browser on an

accessing computer, and this display includes a plurality of program listings from which a remote user may select a program for recording. *Id.* (citing Ex. 1115, Fig. 2).

Comcast also contends that, to the extent Sato does not teach “wherein the display of the plurality of program listings is generated based on a user profile stored at a location remote from the remote program guide access device,” as recited in independent claim 1, it would have been obvious to one of ordinary skill in the art to generate customized program guides, as taught by Humpleman, for display at Sato’s external portable computer 107. Pet. 31 (citing, Ex. 1102 ¶¶ 134–142). To support this argument, Comcast directs us to various teachings in Humpleman that pertain to generating local customized guides that are capable of being displayed on any browser-equipped device, including a remote personal computer. *Id.* (citing Ex. 1106, 2:31–39, 7:25–35, 20:47–51, 20:58–21:3, 22:30–59). Comcast argues that it would have been obvious to a person of ordinary skill in the art to improve Sato’s web-based program guides with Humpleman’s generation of local customized guides for display by a remote device to provide the user operating Sato’s external portable computer 107 with better access to the content he/she desires. *Id.* at 32 (citing Ex. 1102 ¶¶ 131–133, 137–142).

Comcast contends that Sato’s remote guide “receives a selection of a program listing of the plurality of program listings in the display, wherein the selection identifies a television program corresponding to the selected program listings for recording by the local interactive television program

guide,” as recited in independent claim 1 because Sato discloses that a user may click on the title of a desired program displayed in the program guide webpage, thereby causing Sato’s program guide system to send a record command to local hardware. Pet. 33 (citing Ex. 1115, 5:8–17, 5:8–25, 9:8–17, 9:56–65; Ex. 1102 ¶¶ 148, 149). Comcast argues that, although Sato’s program guide is discussed with respect to local personal computers 21 and 105, Sato’s external portable computer 107 also is capable of controlling any home electronic device, which one of ordinary skill in the art would have understood to include personal TV receiver 101 or VTR 11 illustrated in Figure 1. *Id.* at 33–34 (citing Ex. 1115, 5:45–54, Fig. 2; Ex. 1102 ¶ 148).

Comcast contends that Sato’s remote guide “transmits a communication identifying the television program corresponding to the selected program listing from the remote access interactive television program guide to the local interactive television program guide over the Internet communications path,” as recited in independent claim 1, because, when the user selects an operation (e.g., a program to be recorded), Sato’s external portal computer 107 sends a hypertext command to personal computer 105. Pet. 34 (citing Ex. 1115, 6:10–17, 9:56–65; Ex. 1102 ¶¶ 150, 151). Comcast argues that, in the case of a scheduled recording, this command includes a representation of a “G code” that is associated with the selected program. *Id.* (citing Ex. 1115, 6:10–17).

Lastly, Comcast contends that Sato teaches “wherein the local interactive television program guide receives the communication and records the television

program corresponding to the selected program listing responsive to the communication using the local interactive television program guide equipment,” as recited in independent claim 1, because control software on personal computer 105, which also includes a browser, receives the hypertext command from external portal computer 107 and issues appropriate commands to local hardware. Pet. 34–35 (citing Ex. 1115, 5:18–25, 9:56–65; Ex. 1102 ¶¶ 152, 153). In the case of a recording command, Comcast argues that interface box 25 outputs an infrared signal instructing VTR 11 to record the program at the indicated time. *Id.* at 35 (citing Ex. 1115, 5:18–25); *see also id.* at 9:29–65 (disclosing the same communication process with respect to Figure 17—namely, interface box 104 outputs an infrared signal that sets TV receiver 101 to a desired mode of operation).

Turning to the rationale to combine, Comcast contends that it would have been obvious to one of ordinary skill in the art to incorporate Humpleman’s generation of local customized program guides for display by a remote device into Sato’s program guide system for at least the following three reasons: (1) it would have been nothing more than using known techniques (i.e., Humpleman’s remote display of local customized program guide webpages) to improve a similar device (i.e., Sato’s program guide system) in the same way; (2) it would have been a simple substitution of Humpleman’s generation of local customized program guides for Sato’s webpages to produce the predictable result of preventing the display of disfavored channels or content; and (3) using Humpleman’s generation of local customized program

guides to improve Sato’s program guide system—specifically, its webpages—would provide a complete picture of the content available on the user’s local television receiver. *Id.* at 25–26 (citing Ex. 1106, 2:23–28, 22:30–46, 22:60–65; Ex. 1115, 4:60–5:2, 9:51–65; Ex. 1102 ¶¶ 111–114); *see also id.* at 32–33 (arguing the same).

In its Patent Owner Response, Rovi presents a number of arguments that can be grouped as follows: (1) whether Comcast has demonstrated that Sato and Humpleman, either alone or in combination, account for all the limitations of independent claims 1, 5, 8, 11, 14, and 17; and (2) whether Comcast has demonstrated that a person of ordinary skill in the art would have had sufficient reasons to combine the teachings of Sato and Humpleman. PO Resp. 21–40. We address these groupings of arguments in turn.

#### *a. Limitations*

##### *i. Sato Teaches Two Interactive Television Program Guides*

Rovi contends that each independent claim requires two interactive television program guides—namely, “a local interactive television program guide” and “a remote access interactive television program guide.” *See* PO Resp. 19–21. Rovi argues that Sato does not teach two interactive television program guides because it is directed to a rudimentary system for controlling home peripherals through a network using infrared signals. *Id.* at 22. In particular, Rovi argues that Comcast improperly relies on the embodiment illustrated in Sato’s Figure 17 to teach two interactive television program guides because there is no



disclosure of an interactive television program guide in association with this figure, let alone a disclosure of both a local interactive television program guide and a remote access interactive television program guide. *Id.* at 23 (citing Ex. 1115, 9:51–55, Fig. 17; Ex. 2108 ¶¶ 133–136).

Next, Rovi contends that, although Sato discloses passing hypertext commands for devices such as TV receiver 101, illuminator 102, or air conditioner 103 from external portable computer 107 to personal computer 105, Sato is silent with respect to what information is displayed on external portable computer 107, how the display is generated, and whether a user is able to schedule a recording. PO Resp. 23–24 (citing Ex. 1115, 9:56–65). Indeed, Rovi asserts that a browser program for displaying television listings would not be suitable for devices like Sato’s illuminator 102 or air conditioner 103. *Id.* at 24 (citing Ex. 2108 ¶ 134). Rovi further argues that, with respect to the embodiment illustrated in Sato’s Figure 17, Sato does not disclose any source of program guide information for external portable computer 107 that would be necessary for that computer to display television listings, nor does Sato disclose what is displayed on any browser of personal computer 105. *Id.* (citing Ex. 2108 ¶ 135; Ex. 2107, 116:16–117:8).

Rovi then contends that, to overcome the failures of proof with respect to the embodiment illustrated in Sato’s Figure 17, Comcast improperly relies on the teachings of the embodiment illustrated in Sato’s Figure 1 and mistakenly asserts that a guide must exist in the embodiment associated with Figure 17 because “that is how Sato’s system receives selection

of programs.” PO Resp. 25 (quoting Pet. 23). Rovi also argues that Comcast improperly relies on the program listing screen illustrated in Sato’s Figure 2 as teaching an interactive television program guide because this figure is not discussed in connection with external portable computer 107 illustrated in Sato’s Figure 17, nor is it discussed with respect to any purported remote interactive television program guide. *Id.* (citing Ex. 1102 ¶¶ 118, 124). Indeed, Rovi argues that the program listing screen illustrated in Sato’s Figure 2 would not be suitable for controlling illuminator 102 or air conditioner 103 because these devices would not use program listings. *Id.* (citing Ex. 2108 ¶¶ 138–140). Rovi further argues that a person of ordinary skill in the art would not have been motivated to combine the embodiments illustrated in Sato’s Figures 1, 2, and 17 because they are different embodiments for different purposes, and the embodiment in Figure 17 is a separate, complete system that would not be understood to work in conjunction with any other embodiments. *Id.* at 26 (citing *Jackel Int’l Ltd. v. Mayborn USA, Inc.*, Case IPR2015-00979, slip op. at 4 (PTAB May 20, 2016) (Paper 21); Ex. 1115, 3:44–45, 9:30–31; Ex. 2108 ¶ 139).

Lastly, Rovi contends that modifying the teachings of Sato with those of Humpleman would not produce the claimed two interactive television program guides. PO Resp. 27. Relying on the Humpleman provisional (Ex. 1107), Rovi argues that the DirecTV Satellite System (“DSS”) server observes a request from the DSS’s Hypertext Markup Language (“HTML”) page, retrieves the necessary information, and then passes it along to the digital video cassette record’s HTML

page. *Id.* at 28–29 (citing Ex. 1107, 14; Ex. 2108 ¶¶ 115, 116). Rovi asserts that Humpleman’s DSS server is not guide software that is capable of handling recording requests and, therefore, inserting Humpleman’s HTML program guides into the embodiment illustrated in Sato’s Figure 17 would not yield the claimed two interactive program guides. *Id.* at 29.

In its Reply, Comcast counters that Rovi’s arguments attempt to “erect an artificial wall” between the embodiment illustrated in Sato’s Figure 17 and Sato’s teachings of program guide webpages. Pet. Reply 8. According to Comcast, a person of ordinary skill in the art would not have read the embodiment illustrated in Sato’s Figure 17 in isolation from the rest of the teachings in Sato. *Id.* Comcast argues that, because Sato explicitly discloses that “TV receiver 101 . . . or any other electronic device can be controlled through the external portable computer 107,” a person of ordinary skill in the art would have understood that “any other electronic device” includes VTR 11 illustrated in Sato’s Figure 1, and that VTR 11 could be instructed “to record the program at the indicated time” responsive to a remote user selecting a program on external portable computer 107. *Id.* at 9 (quoting Ex. 1115, 9:51–55, 5:18–25) (citing Ex. 1152 ¶¶ 9, 20, 27, 28).

Next, Comcast argues that Sato provides extensive disclosures of program guide webpages for scheduling recordings. Pet. Reply 9 (citing Ex. 1115, 5:18–25, 5:45–54, Fig. 2). Comcast then asserts that, based on these disclosures, a person of ordinary skill in the art would have understood that using Sato’s personal

computer 105 or external portable computer 107 to control VTR 11 for purposes of recording a TV program would have been done using the same program guide webpages in the same way that is taught with respect to Sato's personal computer 21. *Id.* (citing Ex. 1115, 4:60–5:25, Figs. 1, 2, 16; Ex. 1152 ¶¶ 21–23). Comcast argues that Sato's Figures 1 and 17 have a number of common components and the different purpose for which Sato's Figure 17 refers to is allowing external portable computer 107 to control home electronic devices remotely. *Id.* (citing Ex. 1152 ¶ 27).

Comcast further contends that there is no support for Rovi's assertion that Sato's Figure 17 illustrates an embodiment that would or could not use program guide information. Pet. Reply 10. Indeed, Comcast argues that the similarities between Sato's Figures 1 and 17 “does not require a leap of inventiveness” to support its assertion that external portable computer 107 illustrated in Figure 17 is capable of controlling VTR 11 or TV receiver 101 using the same program guide webpages used for controlling VTR 11 and TV receiver 14 illustrated in Figure 1. *Id.* (quoting *Boston Scientific Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed Cir. 2009)). Comcast further argues that Rovi's arguments presume that one of ordinary skill in the art lacked any amount of creativity as to what information is capable of being displayed on Sato's external portable computer 107 and essentially denies such a person the ability to consider Sato, as a whole. *Id.*

Comcast takes issue with Rovi's argument that Sato's program guide webpages would not be suitable for controlling illuminator 102 or air conditioner 103

because these devices would not use program listings. Pet. Reply 12 (citing PO Resp. 24–25, 27). Relying on the supporting testimony of Dr. Tjaden, Comcast asserts that different commands and interfaces would be used for different devices. *Id.* (citing Ex. 1152 ¶ 23). For instance, Comcast argues that Sato discloses controls to maintain “an optimum value of the cooling effect by the air conditioner 103” that would not be suitable for controlling TV receiver 101. *Id.* (quoting Ex. 1115, 9:39–41). Stated differently, Comcast argues that there is no requirement in Sato that a single universal user interface must be used to control all home electronic devices. *Id.*

Comcast also contends that Rovi’s reliance on the discussion of combining two different embodiments in the Board’s Decision on Request for Rehearing in *Jackel International Ltd. v. Mayborn USA, Inc.*, Case IPR2015-00979 (PTAB May 20, 2016) (Paper 21) (“*Jackel Int’l*”) is misplaced. Pet. Reply 10. Comcast asserts that *Jackel Int’l* is distinguishable from this case because the Petitioner in *Jackel Int’l* argued that combining two different embodiments was obvious merely because “it’s the same reference,” whereas here Comcast has provided detailed reasoning as to why one of ordinary skill in the art would have been motivated to use Sato’s external portable computer 107 illustrated in Figure 17 to control VTR 11 or TV receiver 101 using the same program guide webpages used to control VTR 11 or TV receiver 14 illustrated in Figure 1. *Id.* at 10–11 (quoting *Jackel Int’l*, slip op. at 4) (citing Pet. 24–26).

Lastly, Comcast contends that it only relies on the teachings of Humpleman in connection with the “user

profiles” used to generate the “remote access interactive television program guide,” as claimed. Pet. Reply 17. Comcast asserts that, even though Humpleman teaches communication between two interactive television program guides, Comcast relies on Sato’s teachings on this point. *Id.* at 17–18 (citing Pet. 34–35; Ex. 1152 ¶¶ 31–33).

When evaluating claims for obviousness, it is well settled that “the prior art as a whole must be considered.” *In re Hedges*, 783 F.2d 1038, 1041 (Fed. Cir. 1986); *see also In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (explaining that a reference “must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole”). “It is impermissible within the framework of section 103 to pick and choose [teachings] from any one reference . . . to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.” *Hedges*, 783 F.2d at 1041 (quoting *In re Wesslau*, 353 F.2d 238, 241 (CCPA 1965)). In the same vein, “[a] reference must be considered for everything that it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect.” *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985).

Based on the record developed during trial, we agree with Comcast that Sato renders the claimed “local interactive television program guide” obvious because Sato teaches or fairly suggests that a remote user may access a program guide webpage, such as the one illustrated in Figure 2, using a browser that runs on personal computer 105 illustrated in Figure 17. *See*

Pet. 27–29. With reference to Figure 17, Sato discloses that external portable computer 107 sends hypertext commands to personal computer 105 through Internet 106. Ex. 1115, 9:56–61. After personal computer 105 receives these hypertext commands, they are then sent to interface box 104, which, in turn, generates infrared signals responsive to the commands that are used to control a number of home electronic devices (e.g., TV receiver 101, illuminator 102, air conditioner 103, or any other electronic device, such as VTR 11 illustrated in Figure 1). *Id.* at 9:45–55, 9:61–65.

Although the corresponding description of Sato's Figure 17 is silent with respect to how personal computer 105 receives and displays hypertext commands from external portable computer 107, other disclosures in Sato provide a full appreciation as to how personal computer 105 operates in this regard. For instance, and as discussed in more detail below, after reading Sato in its entirety, one of ordinary skill in the art would have recognized that there is a corollary between personal computer 21 illustrated in Figure 1 and personal computer 105 illustrated in Figure 17. Sato discloses that personal computer 21 operates browser 41 that, when rendering a webpage that includes a program guide display such as the one illustrated in Figure 2, allows a user to record desired programs. Ex. 1115, 4:60–5:17, 5:45–54, Figs. 2, 5. Using mouse 24, the user may click on the desired program and, in response, interface box 25 sends an infrared signal to VTR 11 to record the selected program. *Id.* at 5:18–25. Given these disclosures regarding personal computer 21 illustrated in Figure 1, we find that one of ordinary skill in the art would

have understood that personal computer 105 illustrated in Figure 17 operates a browser to access a program guide webpage, such as the one illustrated in Figure 2, in the same way as personal computer 21 operates a browser to access the same program guide webpage.

Comcast's declarant, Dr. Tjaden, provides testimony that supports our finding that one of ordinary skill in the art would have understood that Sato's personal computer 105 operates a browser that, when rendering a webpage that includes a program guide display such as the one illustrated in Figure 2, allows a user to record desired programs. In his Declaration accompanying the Petition, Dr. Tjaden clarifies that "[o]ne of ordinary skill in the art would [have understood] that . . . browser software operates to receive user input and execute instructions in the HTML code of the [webpage] (such as Sato's recording links)." Ex. 1102 ¶ 106 (citing Ex. 1115, 9:51–65). In his Reply Declaration, Dr. Tjaden testifies that "a [person of ordinary skill in the art] would have understood that the computers depicted in [Figure] 17 would be implemented using the same browsers disclosed in [Figures] 1 and 2." Ex. 1152 ¶ 24. We credit the aforementioned testimony of Dr. Tjaden because it is consistent with reading Sato, as a whole, without viewing the corresponding description of Sato's Figure 17 at the exclusion of other teachings in Sato that provide a full appreciation as to how personal computer 105 uses a browser to receive and display hypertext commands.

Our finding in this regard also comports with our construction of "interactive television program guide."



In our claim construction section above, we determine that the broadest reasonable interpretation of an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *See supra* Section II.A. When the browser operating on Sato’s personal computer 105 renders a webpage that includes a program guide display and allows a user to select desired programs for recording, we find that it effectively operates as part of an “interactive television program guide” because it displays program listings and allows the user to navigate through the listings, make selections, and control recording functions.

Based on the record developed during trial, we also agree with Comcast that Sato renders the claimed “remote access interactive television program guide” obvious because Sato teaches or fairly suggests that external portable computer 107 uses a browser to present a program guide webpage that allows the remote user to select a program for recording. *See Pet.* 29–30. As we explained above with respect to Sato’s Figure 17, when external portable computer 107 is connected to personal computer 105 through Internet 106, it is capable of controlling TV receiver 101, illuminator 102, air conditioner 103, and any other electronic device, such as VTR 11 illustrated in Figure 1. *Ex.* 1115, 9:51–55; *see also id.* at 4:1–5, 5:18–25 (disclosing that audio/visual system 5 that each family

owns includes, among other things, VTR 11 that records programs).<sup>6</sup>

Although Sato discloses that external portable computer 107 sends hypertext commands for controlling these home electronic devices to personal computer 105 (Ex. 1115, 9:59–61), the corresponding description of Sato’s Figure 17 is silent as to what is displayed on external portable computer 107 and how the hypertext commands are sent to personal computer 105. Nonetheless, after reading Sato in its entirety, there are other disclosures in Sato that provide one of ordinary skill in the art with a full appreciation as to how external portable computer 107 operates to perform this function. For instance, Sato suggests that external portable computer 107 uses a browser to send hypertext commands to personal computer 105 because Sato discloses that a hypertext command is a key underlying concept of a webpage displayed by a browser. *See, e.g., id.* at 5:30–31 (disclosing that “the [world wide web] page shown in FIG. 2 contains a description in [the] form of a hypertext as shown in FIG. 3”), Figs. 2, 3 (illustrating web pages with hypertext commands). In addition, apart from being described as both external and portable, there is nothing in Sato that suggests that external portable computer 107 is anything other than

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<sup>6</sup> Rovi does not argue that Sato’s disclosure of “any other electronic device[s]” (Ex. 1115, 9:53–54) does not include VTR 11 illustrated in Figure 1. Instead, Rovi argues that Sato’s Figure 17 embodiment does not teach any interactive television program guide for controlling such a VTR, and that it would not have been obvious to combine Sato’s Figure 17 embodiment with the separate embodiments of Figures 1 and 2. *See* PO Resp. 21–27.

a general purpose computer that uses a browser to render a webpage in the same way that both personal computer 21 illustrated in Figure 1 and personal computer 105 illustrated in Figure 17 use a browser to render a webpage.

Comcast's declarant, Dr. Tjaden, provides testimony that supports our finding that one of ordinary skill in the art would have understood that Sato's personal computer 107 operates a browser that, when rendering a webpage that includes a program guide display such as the one illustrated in Figure 2, allows a user to record desired programs. In his Declaration accompanying the Petition, Dr. Tjaden testifies that a person of ordinary skill in the art would have understood that:

“external portable computer 107” could and would access the HTML program guide [illustrated in Figure 2] using a browser to implement a similar interactive television program guide as described for the “personal computer 105,” because this is how Sato describes effecting the recording features and both devices are computers described as operating to set the user television equipment to a desired mode of operation.

Ex. 1102 ¶ 128 (citing Ex. 1115, 5:3–7, 9:51–61); *see also* Ex. 1152 ¶ 23 (Dr. Tjaden testifies that “external portable computer 107 could and would display television program listings like those described with respect to [Sato's Figures] 1 and 2 using Sato's WWW [world wide web] client-server teachings.”).

Dr. Tjaden also testifies that, to the extent Sato does not disclose explicitly how external portable computer 107 operates, “a [person of ordinary skill in the art] would be motivated to look elsewhere in the Sato disclosure to determine how to configure the ‘external portable computer 107.’” Ex. 1102 ¶ 129. According to Dr. Tjaden, “[w]hen doing so, a [person of ordinary skill in the art] would [have recognized] that both the ‘external portable computer 107’ and the ‘personal computer[s] 21 and 105’ are similar in that they are personal computers [that] control audio/visual equipment over the Internet via use of WWW pages.” *Id.* We credit the aforementioned testimony of Dr. Tjaden because it is consistent with reading Sato, as a whole, without viewing the corresponding description of Sato’s Figure 17 at the exclusion of other teachings in Sato that provide a full appreciation as to how external portable computer 107 uses a browser to display and send hypertext commands.

Similar to our analysis above, our finding in this regard also comports with our construction of “interactive television program guide.” In our claim construction section above, we determine that the broadest reasonable interpretation of an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *See supra* Section II.A. When the browser operating on Sato’s external portable computer 107 renders a webpage that includes a program guide display and allows a user to

select desired programs for recording, as in Sato's Figure 2, we find that it effectively operates as part of an "interactive television program guide" because it displays program listings and allows the user to navigate through the listings, make selections, and control recording functions. Moreover, Sato's external portable computer 107 is a different platform than personal computer 105 such that the interactive television program guides that run on each of these devices are separately identifiable. *See supra* Section II.A (citing Ex. 1101, 12:29–32)

Rovi's arguments that the program guide display illustrated in Figure 2 of Sato would not be suitable for controlling illuminator 102 or air conditioner 103 because these devices would not use program listings is misplaced. *See* PO Resp. 24–25. There is no requirement in Sato that a single universal user interface, such as the program guide webpage illustrated in Figure 2, must be used to control all home electronic devices (i.e., TV receiver 101, illuminator 102, air conditioner 103, VTR 11, etc.). Separate commands for controlling Sato's illuminator 102 and air conditioner 103 are not present in Figure 2 because there is no illuminator or air conditioner being controlled in that embodiment. Comcast's declarant, Dr. Tjaden, testifies—and we agree—that "[a] person of ordinary skill in the art would . . . have understood that different devices around the home require different commands and interfaces." Ex. 1152 ¶ 23 (citing Ex. 1115, 9:39–44, 9:51–65). Based on the teachings of Sato identified above and Dr. Tjaden's supporting testimony, we find that one of ordinary skill in the art would have appreciated the controls

suitable for illuminator 102 and air conditioner 103 differ in certain respects from the controls suitable for TV receiver 101 and VTR 11. Stated differently, one of ordinary skill in the art would have recognized that Sato's program guide webpage is capable of being equipped with the commands that correspond to the actual electronic devices that are being controlled.

We do not agree with Rovi's argument that a person of ordinary skill in the art would not have been motivated to combine the embodiments illustrated in Sato's Figures 1, 2, and 17 because they are different embodiments for different purposes, and the embodiment in Figure 17 is a separate, complete system that would not be understood to work in conjunction with any other embodiments. *See* PO Resp. 26. Although Sato discloses that Figure 17 illustrates "an example of a system used for a different purpose" (Ex. 1115, 9:29–30), Sato's Figures 1 and 17 also share a number of common components (i.e., interface box 24 and 104, personal computer 21 and 105, TV receiver 14 and 101, Internet 6 and 106, etc.). Given the similarities between these figures, it is incumbent upon us in an obviousness evaluation to look to the corresponding description of Figure 1 to get a full appreciation as to what that figure fairly suggests to one of ordinary skill in the art with respect to the components it shares with Figure 17. *See In re Burckel*, 592 F.2d 1175, 1179 (Fed. Cir. 1979) ("Under 35 U.S.C. § 103, a reference must be considered not only for what it expressly teaches, but also for what it fairly suggests.").

To the extent Sato's Figure 17 is directed to a different purpose than Sato's Figure 1, Comcast's

declarant, Dr. Tjaden, explains that “a [person of ordinary skill in the art would have understood that the ‘different purpose’ of [Figure] 17 is to control [home electronic] devices remotely, including devices for recording television programs.” Ex. 1152 ¶ 27 (citing Ex. 1115, 9:51–65). Notwithstanding this difference (or any other differences including the additional electronic devices being controlled), the embodiment illustrated in Figure 17 describes the same functionality of the embodiment illustrated in Figure 1 with respect to controlling a TV receiver and other electronic devices using a computer and infrared signals. *Compare* Ex. 1115, 4:41–59, *with id.* at 9:51–65. One of ordinary skill in the art would have known to combine the embodiment illustrated in Figure 17 with certain elements of Figures 1 and 2 to achieve the same functions described in relation to Figure 17. *See Tyco Healthcare Grp. LP v. Ethicon Endo-Surgery, Inc.*, 774 F.3d 968, 978 (Fed. Cir. 2014) (“[O]ne of ordinary skill is also one of ‘ordinary creativity’ that knows how to combine familiar prior art elements to achieve the same functions.”); *Boston Sci. Scimed*, 554 F.3d at 991 (“Combining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness.”). Accordingly, we agree with Dr. Tjaden that a person of ordinary skill in the art would have looked to Figures 1 and 2 for a teaching as to how the system illustrated in Figure 17 controls electronic devices, such as a VTR for scheduling program recordings. Ex. 1152 ¶¶ 27, 28.

We agree with Comcast that Rovi’s reliance on the discussion of combining two different embodiments in the Board’s Decision on Request for Rehearing in

*Jackel Int'l* is misplaced. *See* Pet. Reply 10. As an initial matter, the Board's Decision on Request for Rehearing in *Jackel Int'l* is not precedential and is not binding on this panel. Nevertheless, we have reviewed this Decision on Request for Rehearing. Our review of this Decision, however, reveals that it is distinguishable from the arguments and evidence presented by Comcast in this case.

In *Jackel Int'l*, the Board explained that the petitioners challenged claims 6 and 13 of U.S. Patent No. 8,695,841 B2 ("the '841 patent") as unpatentable § 103(a) over the combined teachings of Mutti, Kano, and Suffa. *Jackel Int'l*, slip op. at 4. The Board then explained that the petitioners relied on Mutti's Figure 6 to account for the limitations of independent claim 1 of the '841 patent, and then relied on Mutti's Figures 1–5 to account for the limitations of claim 6 of the '841 patent, which depends from independent claim 1. *Id.* The Board explained that the petitioners' rationale for doing so was that "the 'motivation to combine the teachings of Mutti in one embodiment with the teachings of Mutti in another embodiment is entirely obvious—it's the same reference.'" *Id.* The Board, however, explained that this rationale was not presented and developed in the petition itself, but rather was presented in the first instance in the request for rehearing. *Id.* at 5. The Board further found that there was no motivation to combine the embodiments where the modification involved adding a feature from Figure 1 to perform a function that was already being performed in Figure 6. *See id.*

In contrast, Comcast does not advocate that the motivation to combine the teachings of the



embodiment illustrated in Sato's Figure 17 with the teachings of the embodiments illustrated in Sato's Figures 1 and 2 is obvious simply because these figures are in the same reference. Unlike in *Jackel Int'l*, Comcast sets forth a motivation to combine the embodiments in Figures 1 and 17 in the Petition itself, which has a rational basis. In particular, Comcast explains that the combination results in the remote guide having a useful user interface allowing users to select programs, as is done on the local device. Pet. 24. Moreover, as we explained above, the evidence of record provides a number reasons as to why one of ordinary skill in the art would have read Sato, as a whole, to get a full appreciation of the embodiment illustrated in Sato's Figure 17, including, but not limited to: (1) Sato's Figure 1 and 17 share common components; (2) the supporting testimony of Dr. Tjaden makes clear that certain aspects of Sato's Figure 17, specifically how personal computer 105 and external portable computer 107 operate browsers that render webpages including hypertext commands for controlling home electronic devices, are described in more detail with respect to Sato's Figures 1 and 2; and (3) one of ordinary skill in the art would have known to combine the embodiment illustrated in Figure 17 with certain elements of Figures 1 and 2 to achieve the same functions described in relation to Figure 17.

Lastly, contrary to Rovi's argument, Comcast does not seek to modify the teachings of Sato with those of Humpleman to account for the claimed two interactive television program guides. *See* PO Resp. 27–29. As we explain above, Comcast's asserted ground based on the combined teachings of Sato and Humpleman relies on

both Sato's personal computer 105 and external portable computer 107 operating browsers, each of which renders webpages that include the program guide display such as the one illustrated in Figure 2, to account for the "local/remote access interactive television program guides," as claimed. *See* Pet. 23–24, 27–30, 34–35. Comcast turns to Humpleman to teach the "user profiles" used to generate the "remote access interactive television program guide," as claimed. *See id.* at 24–26, 30–33.

*ii. Sato Teaches Guide-to-Guide Communication*

Rovi contends that each independent claim requires communication between two interactive television program guides. *See* PO Resp. 19–21, 30. Rovi argues that Comcast does not take the position that the browsers operating on Sato's external portable computer 107 and personal computer 105 communicate with each other, but rather Comcast only argues that these two computers can communicate with each other. *Id.* at 30 (citing Pet. 34–35). Relying on the testimony of its declarant, Dr. Shamos, Rovi argues that any browsers in Sato do not communicate with each other as the claims require. *Id.* (citing Ex. 2018 ¶ 136). At most, Rovi argues that Comcast identifies communications between the alleged browser operating on Sato's external portable computer 107 and hardware (i.e., personal computer 105 and interface box 104), which improperly conflates hardware and software, and does not comport with our preliminary construction of "guide" that requires "control software"—not hardware. *Id.*

Rovi further contends that Comcast does not identify any evidence that Sato's external portable computer 107 sends hypertext commands to the browser operating on personal computer 105. PO Resp. 31. According to Rovi, this hypertext command passes through personal computer 105 to interface box 104, but there is no disclosure that any browser operating on personal computer 105 actually receives the hypertext command. *Id.* (citing Ex. 2108 ¶¶ 148, 149). Rovi argues that Comcast's declarant, Dr. Tjaden, does not provide any additional support for this position because he fails to identify any disclosure in Sato that the browsers operating on external portable computer 107 and personal computer 105 communicate with each other. *Id.* Indeed, Rovi asserts that Dr. Tjaden conceded at his deposition that the hypertext command is "probably not" sent to any browser on Sato's personal computer 105, and that Sato does not disclose what software on personal computer 105 handles the hypertext command. *Id.* (citing Ex. 2107, 116:17–22); *see also id.* at 32 (arguing the same).

Next, Rovi contends that Sato does not teach that browsers operating on external portable computer 107 and personal computer 105 communicate with each other because Sato discloses the hypertext commands are sent to the home electronic devices from external portable computer 107 to interface box 104 through personal computer 105. PO Resp. 32. To support this argument, Rovi argues that Sato explicitly discloses, "[i]n receipt of the hypertext, the interface box 104 issues an infrared signal corresponding to the command in the hypertext." *Id.* (quoting Ex. 1115, 9:61–63).

Rovi then contends that Sato does not disclose the browser operating on personal computer 105 receives hypertext commands, or that the browser operating on external portable computer 107 transmits hypertext commands to a browser on personal computer 105. PO Resp. 32. According to Rovi, Sato's alleged browsers cannot communicate with each other because there is no corresponding browser communications protocol. *Id.* (citing Ex. 2108 ¶¶ 149, 150). Instead, Rovi argues that Sato's personal computer 105 would act like a server that receives hypertext commands and passes those commands to interface box 104, without necessarily invoking any browser. *Id.* (citing Ex. 1115, 6:28–39).

Lastly, Rovi contends Comcast improperly relies on inherency arguments to demonstrate that Sato discloses guide-to-guide communication. PO Resp. 33. Relying on its declarant, Dr. Shamos, Rovi argues that not only does Sato's browsers lack a communication protocol for communicating with each other, but Sato's external portable computer 107 sends hypertext commands to personal computer 105—not any browser operating on that computer. *Id.* (citing Ex. 2108 ¶ 150). Rovi asserts that Comcast fails to show that Sato's Figure 17 requires a browser operating on personal computer 105 that receives hypertext commands, but rather Sato only discloses that personal computer 105 passes those commands to interface box 104. *Id.* (citing Ex. 1115, 9:44–65).

In its Reply, Comcast counters that Rovi mischaracterizes its position as relying on just the browser operating on personal computer 105 to teach the claimed “local interactive television program

guide” Pet. Reply 12–13. Instead, Comcast argues that it relies on the control software on Sato’s personal computer 105—not just the browser—to account for this limitation. *Id.* at 13 (citing Pet. 34–35; Dec. on Inst. 22). Relying on the testimony of its declarant, Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art would have understood that Sato’s external portable computer 107 sends a hypertext command to communications software on personal computer 105. *Id.* (citing Ex. 1152 ¶¶ 29, 30, 36, 37). Comcast argues that Rovi’s argument that the browsers on these two computers do not communicate directly with each other overlooks that, under the broadest reasonable interpretation standard, the communications software on Sato’s personal computer 105 is part of the claimed “local interactive television program guide.” *Id.* (citing Ex. 1152 ¶¶ 34, 25, 54, 55).

Comcast disagrees with Rovi’s argument that the communications from Sato’s external portable computer 107 are handled solely by hardware of personal computer 105 or interface box 104 because this argument ignores the actual skill in the relevant art. Pet. Reply 13. Relying on the testimony of Dr. Tjaden, Comcast argues that a person of ordinary skill in the art would have understood that control software of Sato’s personal computer 105 would process the received hypertext commands and issue appropriate commands to local devices. *Id.* (citing Ex. 1102 ¶¶ 152, 153; Ex. 1152 ¶¶ 36–40; Ex. 1115, 9:56–65, Fig. 17). Comcast clarifies that it never argued in the Petition that Sato’s browsers communicate directly with each other. *Id.* at 14. To demonstrate that it did not present this line of argument, Comcast directs us to the

supporting testimony of Dr. Tjaden in his Declaration accompanying the Petition. *Id.* (quoting Ex. 1102 ¶ 153). Comcast reiterates that control software of Sato's personal computer 105 is considered properly to be part of the claimed "local interactive television program guide." *Id.* (citing Ex. 1152 ¶¶ 34, 35, 49–51).

Comcast also disagrees with Rovi's characterization of Sato's personal computer 105 as merely a conduit that receives hypertext commands for external portable computer 107 and passes those commands to interface box 104. Pet. Reply 14 (citing PO Resp. 32–33; Ex. 2108 ¶ 50). Comcast argues that Rovi fails to appreciate that the control software on Sato's personal computer 105 would need to receive the hypertext commands for external portable computer 107 and generate an appropriate command to send to interface box 104. *Id.* at 14–15 (citing Ex. 1152 ¶ 39). Comcast further argues that the hypertext commands themselves are not suitable for direct conversion to infrared signals, and that some processing is required by Sato's personal computer 105 in receipt of those commands. *Id.* at 15. Consequently, Comcast asserts that control software on Sato's personal computer 105 receives and processes the hypertext commands, and controls interface box 104 to generate a suitable infrared signal. *Id.*

In response to the argument presented by Rovi's declarant, Dr. Shamos, that Sato's personal computer 105 would be configured to use server software to receive and forward hypertext commands, but would not use a browser, Comcast contends that just because Sato's personal computer 105 supports external access does not mean that it cannot allow users to control

home electronic devices using a browser. Pet. Reply 15 (citing PO Resp. 32; Ex. 2108 ¶¶ 136–138, 149). Relying on the testimony of Dr. Tjaden, Comcast argues that a person of ordinary skill in the art would have understood that Sato’s personal computer 105 includes a browser that allows it to control home electronic devices, as well as a server component that allows it to receive hypertext commands from external portable computer 107 and execute those commands. *Id.* (citing Ex. 1152 ¶¶ 35, 52, 53). Comcast, once again, reiterates that control software on Sato’s personal computer 105, collectively with the browser that renders a webpage of a program guide display, is considered properly as part of the extensive arrangement of software that makes up the claimed “local interactive television program guide.” *Id.* at 16 (emphasis omitted) (citing Ex. 1154 ¶¶ 54, 55, 169).

As we explain previously, a proper obviousness evaluation requires reading Sato, as a whole. *See Hedges*, 783 F.2d at 1041. Indeed, it would be improper for us to focus solely on Sato’s Figure 17 and its corresponding description at the exclusion of other disclosures in Sato that are necessary to fully appreciate what Sato suggests to one of ordinary skill in the art about certain components in this figure, such as personal computer 105. *See id.*

Upon reading Sato, as a whole, we agree with Comcast that Sato renders communication between the claimed “local/remote access interactive television program guides” obvious because control software operating on Sato’s personal computer 105, which also includes a browser operating thereon, receives hypertext commands from external portable computer

107 and issues appropriate commands to local hardware. *See* Pet. 34–35. In our previous analysis, we note that Sato’s Figure 17 and its corresponding description indicate that external portable computer 107 sends hypertext commands to personal computer 105 through Internet 106. Ex. 1115, 9:56–61. After personal computer 105 receives these hypertext commands, they are then sent to interface box 104, which, in turn, generates infrared signals responsive to the commands that are used to control a number of home electronic devices (e.g., TV receiver 101, illuminator 102, air conditioner 113, or any other electronic device, such as VTR 11). *Id.* at 9:45–55, 9:61–65.

Although the corresponding description of Sato’s Figure 17 is silent with respect to how personal computer 105 receives hypertext commands from external portable computer 107 and issues appropriate commands to local hardware, other disclosures in Sato provide a full appreciation as to how personal computer 105 operates in this regard. For instance, after reading Sato in its entirety, one of ordinary skill in the art would have recognized that there is a corollary between personal computer 21 illustrated in Figure 1 and personal computer 105 illustrated in Figure 17. Sato discloses that, when personal computer 21 is connected to Internet 6, it receives hypertext commands for determining the behavior of home electronic devices through input/output (“I/O”) interface 40. Ex. 1115, 5:45–49, Fig. 5. Browser 41 operating on personal computer 21 “deals with the hypertext[ commands] to link text to data,” which entails moving image data, audio data, and so forth to



form a multimedia picture. *Id.* at 5:50–53, Fig. 5. When a user selects a hypertext command in the multimedia picture using a mouse or keyboard, that command is transmitted from command transmitter 44 to interface box 25. *Id.* at 6:5–9. Given these disclosures regarding personal computer 21 illustrated in Figure 1, we find that one of ordinary skill in the art would have understood that personal computer 105 illustrated in Figure 17 receives hypertext commands via an I/O interface (i.e., control software) and then transmits a selected command via a command transmitter to local hardware in the same way that personal computer 21 receives hypertext commands via I/O interface 40 and transmits a selected command via command transmitter 44 to local hardware.

Comcast’s declarant, Dr. Tjaden, provides testimony that supports our finding that one of ordinary skill in the art would have understood that an I/O interface (i.e., control software) operating on Sato’s personal computer 105 receives hypertext commands from external portable computer 107 and issues appropriate commands to local hardware. In his Declaration accompanying the Petition, Dr. Tjaden testifies that Sato’s external portable computer 107 and personal computer 105 communicate with each other because “control software on the [personal computer 105] would operate to receive the commands from the external portable computer [107] over the Internet [106], process the received commands and output them from the interface box [104] to local hardware.” Ex. 1102 ¶ 153 (citing Ex. 1115, 5:19–22, 9:51–65); Ex. 1152 ¶ 35 (testifying the same). We credit the aforementioned testimony of Dr. Tjaden

because it is consistent with reading Sato, as a whole, without viewing the corresponding description of Sato's Figure 17 at the exclusion of other teachings in Sato that provide a full appreciation as to how personal computer 105 uses an I/O interface to receive hypertext commands from external portable 107.

Our finding in this regard also comports with our construction of "interactive television program guide." In our claim construction section above, we determine that the broadest reasonable interpretation of an "interactive television program guide" is "control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software." *See supra* Section II.A. We clarify that neither the intrinsic or extrinsic record limits the "guide" to a single software application. *See supra* Section II.A. Consequently, we find that the I/O interface (i.e., control software) operating on Sato's personal computer 105 that receives hypertext commands from external portable computer 107, together with the browser operating on Sato's personal computer 105 that renders a webpage of a program guide display, collectively teaches a "local interactive television program guide" because (1) these software applications work together to display program listings and allow the user to navigate through the listings, make selections, and control recording functions; and (2) more than one software application may constitute a "guide."

We do not agree with Rovi's arguments that Comcast only relies on communication between browsers operating on external portable computer 107

and personal computer 105 to account for communication between two interactive television program guides because they do not characterize Comcast's position with respect to this limitation accurately. *See* PO Resp. 30–32. As we explain above, Comcast contends—and we agree—that control software for receiving hypertext commands on Sato's personal computer 105, together with the browser that renders a webpage of a program guide display, falls within a permissible arrangement of software that constitutes the claimed “local interactive television program guide.” *See* Pet. 34–35; Pet. Reply 12–16. That is, we find that one of ordinary skill in the art would have understood that Sato's personal computer 105 includes both an I/O interface (i.e., control software) and a browser application. Together, these software applications constitute the “local interactive television program guide” because they (1) receive hypertext communications from the “remote access interactive television program guide” (i.e., the browser operating on Sato's personal computer 107 that, when rendering a webpage that includes a program guide display such as the one illustrated in Figure 2, allows a user to record desired programs); and (2) work together to display program listings and allow the user to navigate through the listings, make selections, and control recording functions.<sup>7</sup>

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<sup>7</sup> We recognize that, in our Decision on Institution, we stated that we were persuaded that Comcast had presented “sufficient evidence that would support a finding that Sato's browsers operating on personal computer 105 and external portable computer 107 communicate with each other in the manner required by the independent claims.” Dec. on Inst. 22–23. We note

We also do not agree with Rovi's characterization of Sato's personal computer 105 as merely a conduit that receives hypertext commands for external portable computer 107 and passes those commands to interface box 104, without any processing by personal computer 105 itself. *See* PO Resp. 32–33. Sato discloses that personal computer 21 does not just receive hypertext commands through I/O interface 40 and pass them to interface box 25, without any additional processing. Instead, upon receipt of the hypertext commands through I/O interface 40, browser 41 formulates the commands into a webpage for display to the user and, once a selection is made, command transmitter 44 transmits the selected command to interface box 25. Ex. 1115, 5:45–53, 6:5–9, Fig. 5. Given that one of ordinary skill in the art would have understood that Sato's personal computer 21 and personal computer 105 include similar components that possess the same capabilities and functionalities, we find that, when personal computer 105 receives a hypertext command from external portable computer 107, that command is processed at least through an I/O interface prior to being

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that the Petition contends that, in Sato, “[c]ontrol software on [personal computer 105] (which includes the browser – local guide) receives the hypertext command from the external portable computer [107] and issues appropriate commands to local hardware.” Pet. 34–35 (citing Ex. 1115, 9:56–65; Ex. 1102 ¶¶ 152–153). Comcast addressed this point extensively in its Petitioner Reply (Pet. Reply 12–17), and Rovi did not request a sur-reply. Comcast also made this point at the oral hearing (Hearing Tr. 37:5–10), and Rovi had ample opportunity to address it at the oral hearing (*id.* at 78:18–80:6).

transmitted to interface box 104 via a command transmitter.

In his Reply Declaration, Dr. Tjaden reinforces that a certain level of processing occurs in Sato's personal computer 105 prior to interface box 104 outputting an infrared signal to local hardware. Dr. Tjaden testifies that "[personal computer 105] would process the hypertext command prior to transmission to the interface box [104] as the hypertext commands themselves would not be suitable for direct conversion to infrared signal. Thus, control software of [personal computer 105] would receive and process the hypertext commands so as to be able to control the . . . interface box [104]." Ex. 1152 ¶ 39. The processing identified in Dr. Tjaden's testimony is consistent with our understanding that, when Sato's personal computer 105 receives a hypertext command from external portable computer 107, that command is processed at least through an I/O interface prior to being transmitted to interface box 104 via a command transmitter.

Rovi's declarant, Dr. Shamos, also acknowledges that some level of processing occurs at Sato's personal computer 105 prior to interface box 104 outputting an infrared signal to local hardware. Dr. Shamos testifies that "personal computer 105 acts like a server to receive external hypertext commands, convert them to device code and pass them to infrared interface box 104. Such operations would not be conducted by a browser." Ex. 2108 ¶ 149. Dr. Shamos's testimony that personal computer 105 "converts" the hypertext commands, along with his testimony that the conversion operation "would not be conducted by a

browser,” also is consistent with our understanding that, when Sato’s personal computer 105 receives a hypertext command from external portable computer 107, that command is processed at least through an I/O interface prior to being transmitted to interface box 104 via a command transmitter.

Lastly, we do not agree with Rovi’s arguments that Comcast relies solely on inherency arguments to account for communication between two interactive television program guides for two reasons. *See* PO Resp. 32–33. First, Rovi’s arguments are predicated, in part, on the notion that the browsers operating on Sato’s personal computer 105 and external portable computer 107 communicate directly with each other. As we explain above, Sato’s external portable computer 107 sends hypertext commands to an I/O interface (i.e., control software) operating on personal computer 105—not the browser operating on this computer. Second, when addressing this particular issue in the Decision on Institution, we recognized that Dr. Tjaden testifies that “[personal computer 105] *would necessarily include* control software that operated to access and display the program guide pages, such as a browser.” Dec. on Inst. 23 (citing Ex. 1102 ¶ 53). In our view, this cited portion of Dr. Tjaden’s testimony is directed to whether the browser operating on personal computer 105 would necessarily access and display program guide webpage—not whether personal computer 105 includes an I/O interface (i.e. control software) for receiving hypertext commands from external portable computer 107. As we explain above, we find that one of ordinary skill in the art would have understood that Sato’s personal

computer 105 receives hypertext commands via I/O interface (i.e., control software) from external portable computer 107 in the same way that personal computer 21 receives hypertext commands via I/O interface 40.

*iii. Remaining Limitations*

In its Patent Owner Response, Rovi does not address separately whether the combined teachings of Sato and Humpleman account for the remaining limitations of independent claims 1, 5, 8, 11, 14, and 17. *See generally* PO Resp. 19–34. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these remaining limitations, and we agree with and adopt Comcast’s analysis. *See* Pet. 8–11, 27–35.

*b. Comcast Presents a Sufficient Rationale to Combine the Teachings of Sato and Humpleman*

Rovi contends that Comcast relies on disparate portions of Sato and Humpleman without explaining how or why one of ordinary skill in the art would have combined these disparate portions, much less how that proffered combination would have worked. PO Resp. 34 (citing Ex. 2108 ¶¶ 151–159). Rovi then presents three arguments as to why one of ordinary skill in the art would not have had sufficient reasons to combine the teachings of Sato with those of Humpleman.

First, Rovi contends that a person of ordinary skill in the art would not have been motivated to combine the teachings of Sato and Humpleman because these references are fundamentally different and incompatible. PO Resp. 34. On the one hand, Rovi argues that Humpleman is directed to a home network

that creates HTML pages for each peripheral device using information stored in those devices, and uses a separate “Mini-Server” application to create an interface. *Id.* at 34–35. Rovi asserts that Humpleman describes the peripherals as “home devices,” but explicitly excludes personal computers. *Id.* (citing Ex. 1106, 1:21–25). On the other hand, Rovi argues that Sato is directed to an “[I]nternet downloaded programmable remote control” that uses a browser on a computer and infrared box to control peripherals based on the transmission of hypertext commands. *Id.* (citing Ex. 2108 ¶¶ 48, 49, 154). In addition, Rovi argues that Humpleman discusses problems with remote controls that “use static control and command logic,” whereas Sato’s system uses a static control and command device. *Id.* (quoting Ex. 1106, 1:45–67) (citing Ex. 1106, 1:58–67; Ex. 1115, 6:40–51, 6:62–7:54, 8:41–49). Consequently, Rovi asserts that Sato’s interface box 104 is a remote control that can “only control and command those home devices for which it includes the necessary control and command logic,” which is something that Humpleman sought to avoid. *Id.* at 35 (quoting Ex. 1106, 1:55–58) (citing Ex. 2108 ¶¶ 28, 153).

Second, Rovi contends that, because Humpleman and Sato have different principles of operation, a person of ordinary skill in the art would not have looked to combine their teachings. PO Resp. 36 (citing Ex. 2108 ¶ 154). Rovi argues that Humpleman’s principle of operation is a browser-based home network where each home electronic device connected to the network contains one or more HTML pages that provide for command and control of the home



electronic device, whereas Sato's principle of operation is the control of home electronic devices using an infrared remote control of the type that was criticized in Humpleman. *Id.* (citing Ex. 1106, 1:45–67, 23:46–49). Rovi also argues that Humpleman is directed to generating HTML pages for each home electronic device by using information stored in memory installed on those devices. *Id.* at 37. By contrast, Rovi argues that the embodiment illustrated in Sato's Figure 17 does not access information about a home electronic device directly from that device. *Id.* (citing Ex. 2107, 123:18–124:10). As a result, Rovi asserts that implementing Humpleman's customized HTML pages in Sato's program guide system would change Sato's principle of operation. *Id.* (citing *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959); *Plas-Pak Indus. Inc. v. Sulzer Mixpac AG*, 600 F. App'x 755, 757–59 (Fed. Cir. 2015)).

Third, Rovi contends that each of Comcast's three reasons as to why one of ordinary skill in the art would have combined the teachings of Sato with those of Humpleman do not withstand scrutiny. PO Resp. 38. Turning to Comcast's argument that the combination would have been nothing more than using a known technique to improve a similar device in the same way, Rovi argues that Comcast does not explain how using Humpleman's HTML program guides would offer "better access to desired information," when Sato already discloses television listings and allows the use of G codes to control home electronic devices. *Id.* at 38–39. Indeed, Rovi asserts that adding Humpleman's method of customizing HTML pages could require more data, hardware, and steps because it would

involve generating an HTML page for each of Sato's home electronic devices using information stored in memory on each device. *Id.* (citing Ex. 1106, 2:40–63).

In Reply, Comcast maintains that a person of ordinary skill in the art would have had sufficient reasons to combine the teachings of Sato and Humpleman. Pet. Reply 18 (citing Pet. 25–26, 31–33). Beginning with Rovi's argument that Sato and Humpleman are fundamentally different and incompatible, Comcast disagrees with this argument because both references are directed to systems operable to control devices from an external computer over the Internet using program guide webpages. *Id.* Comcast also does not agree with Rovi's argument that it relies on disparate portions of Sato and Humpleman without explaining how or why a person of ordinary skill in the art would have combined their teachings, nor does Comcast agree with Rovi's argument that it has not explained how the proffered combination would work. *Id.* Comcast counters that Rovi ignores the detailed rationales to combine set forth in the Petition and the supporting testimony of Dr. Tjaden. *Id.* at 18–19 (citing Pet. 24–26, Ex. 1102 ¶¶ 111–114; Ex. 1152 ¶¶ 44–46). Comcast then reiterates that a person of ordinary skill in the art would have incorporated Humpleman's local generation of customized program guides for display by a remote device in Sato's program guide system to allow a user to avoid viewing a display that includes a disfavored channel or content, and to provide the user with improved access to his/her desired content. *Id.* (citing Ex. 1106, 22:43–46; Ex. 1102 ¶ 46; Ex. 1152 ¶¶ 15, 16).

Comcast does not agree with Rovi's argument that Sato's program guide system involves static control and command logic that is disparaged in Humpleman's "Background of the Invention" section. Pet. Reply 19. According to Comcast, Rovi's argument in this regard incorrectly characterizes Sato as based on a single component—namely, the infrared interface (i.e., interface box 25 or 104)—without considering the other components disclosed in Sato. *Id.* Comcast argues that, even if each of Sato's interface boxes 25 and 104 could be considered a static control and command system, Rovi's incorrect characterization oversimplifies and overlooks significant portions of Sato's disclosure, such as Sato's Internet-enabled program guide system for setting recordings on local equipment. *Id.* at 19–20 (citing Ex. 1115, 4:41–46, 9:8–17; Ex. 1102 ¶ 104; Ex. 1152 ¶¶ 17–19). Comcast also argues that Rovi mischaracterizes Dr. Tjaden's supporting testimony as purportedly admitting that Sato's interface boxes 25 and 104 use static control and command logic. *Id.* at 20 (citing PO Resp. 36). Contrary to Rovi's characterization of this testimony, Comcast asserts that Dr. Tjaden never conceded that he incorrectly read Sato, but rather only indicated that adding new electronic devices to Sato's program guide system would require Sato's interface boxes 25 and 104 to be modified such that their code storage portions 52 would include additional infrared signal codes. *Id.* (citing Ex. 2107, 128:1–130:10; Ex. 1115, 8:35–40). Indeed, Comcast argues that modifying Sato's program guide system in this way meshes well with Humpleman's stated goals of improving coverage

for different types and models of home electronic devices. *Id.* (citing Ex. 1152 ¶¶ 44, 45).

Lastly, Comcast does not agree with Rovi's argument that modifying Sato's program guide system with Humpleman's local generation of customized program guides for display by a remote device would change Sato's principle of operation. Pet. Reply 20–21. Relying on Federal Circuit precedent, Comcast argues that modifying Sato with the teachings of Humpleman would not destroy the “high level ability” of Sato's program guide system. *Id.* at 21 (citing *In re Mouttet*, 686 F.3d, 1322, 1332 (Fed. Cir. 2012)). In addition, Comcast argues that Sato's descriptions of interface boxes 25 and 104 controlling home electronic devices is not a principle of operation as that term has been used by the Federal Circuit. *Id.* Instead, following the guidance laid out in *Mouttet*, Comcast asserts that Sato's principle of operation would be more appropriately characterized as setting recordings on a multimedia system using a program guide system connected to the Internet. *Id.* at 21–22 (citing Ex. 1152 ¶¶ 41, 42).

The Supreme Court has held that an obviousness evaluation “cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.” *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether Comcast has set forth “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. at 418.

When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to combine Sato’s program guide system with Humpleman’s local generation of customized program guides for display by a remote device. Humpleman discloses that a user may customize the programming information that is displayed by the program guide based on user preferences. Ex. 1106, 22:41–43. For instance, if a user prefers not to display the schedule for a particular channel because it contains inappropriate content, the user may request that the channel be removed from the program guide. *Id.* at 22:43–46. Humpleman makes clear that any device that employs a browser may access the customized HTML guide, including one located remotely from the home network via the Internet. *Id.* at 5:55–67, 6:1–18, 20:32–51; *see also* Ex. 1102 ¶ 108 (testifying to the same).

With these disclosures from Humpleman in mind, we agree with Comcast that, when, as here, a technique has been used to improve one device (i.e., Humpleman’s local generation of a customized program guide for display by a remote device), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e.,

applying Humpleman's technique to Sato's program guide system to render a customized program guide as a webpage on the browser operating on Sato's external portable computer 107), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 25–26; Ex. 1102 ¶ 112. The record includes credible evidence explaining why applying Humpleman's technique to Sato's program guide system to render a customized program guide as a webpage on the browser operating on Sato's external portable computer 107 would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Indeed, Humpleman itself provides the necessary motivation for doing so—namely, to allow a user to avoid viewing a display that includes a disfavored channel or content, and to provide the user with improved access to his/her desired content. Ex. 1106, 22:43–46.

We do not agree with Rovi's argument that Sato and Humpleman are fundamentally different and incompatible. *See* PO Resp. 34–35. As an initial matter, Sato generally relates to a remote control that operates home electronic devices, including one that is capable of receiving a program guide webpage through a computer network. Ex. 1115, [54], 1:8–13, 2:6–16. Similarly, Humpleman generally relates to controlling a plurality of home electronic devices connected to a home network. Ex. 1106, at [54], 1:16–18, 2:15–28. Consequently, we find that Sato and Humpleman fall in the same field endeavor.

Dr. Tjaden's testimony supports our finding Sato and Humpleman are not fundamentally different and incompatible. In his Declaration accompanying the

Petition, Dr. Tjaden testifies that “[i]t would have been obvious to one of ordinary skill in the art to incorporate Humpleman’s system for locally generating customized HTML guides for display by a remote device in Sato’s remote control system to provide users with improved access to their desired content.” Ex. 1102 ¶ 111. In his Declaration accompanying the Reply, Dr. Tjaden clarifies that combining the teachings of Sato and Humpleman in this manner “would improve Sato’s [stated objective] of ‘provid[ing] a remote control device easily operated for reservations, etc. of programs and flexibly coping with changes to schedule of programs.’” Ex. 1152 ¶ 46 (quoting Ex. 1115, 2:6–9).

Contrary to Rovi’s arguments, we do not agree that Sato’s program guide system uses a static control and command logic device that is disparaged in Humpleman’s “Background of the Invention” section. *See* PO Resp. 35–36. Rovi’s argument in this regard focuses on Sato’s interface boxes 25 and 104. When taking a closer look at Humpleman’s “Background of the Invention” section, it criticizes the use of a single remote control that “allows a homeowner to control and command several different home electronic devices using a single interface.” Ex. 1106, 1:47–49. Humpleman discloses that such a remote control “[would] not be able to control and command . . . new home [electronic] devices that require control and command logic that was not known at the time the remote control . . . was developed.” *Id.* at 1:62–67. These disclosures in Humpleman, however, do not mention, much less criticize, using an interface box that stores code data, which it then uses to generate

infrared signals for transmission to home electronic devices, as taught by Sato.

Even if we were to assume that Sato's interface boxes 25 and 104 have some relevance to the "static" single remote control with the single user interface that is disparaged in Humpleman's "Background of the Invention" section, there is sufficient evidence of record to support a finding that one of ordinary skill in the art would have understood that code storage portions 52 of Sato's infrared interface 25 and 104 are not static, but rather configured to introduce and store new code data for transmission to new home electronic devices. Sato discloses that interface box 25 includes code storage portion 52, which "stores all code data of all devices of different manufacturers." Ex. 1115, 6:40–51, Figs. 8, 9; *see also id.* at 8:32–33 (disclosing the same). Sato recognizes that "infrared codes may be changed" and, therefore, discloses that "code storage portion [52] may be configured to do both reading and writing so as to introduce code data entered from the exterior as a leaning [sic] remote controller." *Id.* at 8:36–39. These disclosures would have been equally applicable to interface box 104.

During his deposition, Dr. Tjaden was asked whether code storage portion 52 of Sato's infrared boxes 25 and 104 are capable of storing new code data for new home electronic devices. The relevant exchange is reproduced below:

"Q So for the Sato IR box to send a new command, the Sato IR box would have to be modified so that the code storage portion stored a new code corresponding to that command. Correct?



A That is correct.”

Ex. 2107, 130:6–10. In his Declaration accompanying the Reply, Dr. Tjaden testifies that the aforementioned cross-examination testimony confirms that he never used the word “static” and, instead, “affirm[s] that Sato does not use ‘static control and command logic.’” Ex. 1152 ¶ 45. Dr. Tjaden further testifies that, because “Sato teaches that the IR box is modified to send new commands, . . . it is necessarily not ‘static.’” *Id.* We credit this testimony from Dr. Tjaden because it is consistent with Sato’s disclosure that new code data may be written to code storage portions 52 of interface boxes 25 and 104. Neither Rovi nor its declarant, Dr. Shamos, provides credible evidence that undermines Dr. Tjaden’s position that Sato’s interface boxes 25 and 104 are not “static” because their respective code storage portions 52 are configured to accept and store new code data for new home electronic devices.

We also do not agree with Rovi’s argument that modifying Sato’s program guide system with Humpleman’s local generation of customized program guides for display on a remote device would change Sato’s principle of operation. *See* PO Resp. 36–38. Rovi’s argument is, once again, predicated on the notion that Sato’s infrared boxes 25 and 105 are the type of “static” remote control devices disparaged in Humpleman’s “Background of the Invention” section. For the same reasons set forth above, we do not agree that Sato’s infrared boxes 25 and 105 are the type of “static” devices disparaged in Humpleman’s “Background of the Invention” section, but rather the evidence of record suggest that these infrared boxes

are configured to accept and store new code data for new electronic devices.

There are two additional reasons that we do not agree with Rovi's argument that modifying Sato's program guide system with Humpleman's local generation of customized program guides for display by a remote device would change Sato's principle of operation. First, as we explain at length above, Comcast proposes applying Humpleman's local generation of a customized program guide for display by a remote device to Sato's program guide system to render a customized program guide as a webpage on the browser operating on Sato's external portable computer 107. In our view, combining the teachings of Sato and Humpleman in this way would have little, if any, bearing on the code data stored in code storage portions 52 of Sato's interface boxes 25 and 104 that are used to generate infrared signals for transmission to home electronic devices. Even if combining the teachings of Sato and Humpleman in the manner asserted by Comcast would affect Sato's interface boxes 25 and 104, there is sufficient evidence of record suggesting that their respective code storage portions 52 are not "static," but rather configured so as to accept and store new code data for new home electronic devices.

Second, Rovi's reliance on *Ratti* to support its change in principle of operation argument is misplaced. See PO Resp. 37. *Ratti* stands for the proposition that, if the combination of references would change the principle of operation of the prior art, then the teachings cannot suffice to render claims obvious. 270 F.2d at 813. *Ratti*, however, is

inapplicable where the modified system still operates “on the same principles as before.” *In re Umbarger*, 407 F.2d 425, 430–31 (CCPA 1969). In this case, modifying Sato’s program guide system with Humpleman’s local generation of customized program guides for display by a remote device only affects how the customized program guide webpage is generated and displayed at Sato’s external portable computer 107. This does not affect Sato’s overall principle of operation of a remote control that operates home electronic devices, including one that is capable of receiving a program guide webpage through a computer network. Ex. 1115, [54], 1:8–13, 2:6–16.

*c. Summary*

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of independent claims 1, 5, 8, 11, 14, and 17 would have been obvious over the combined teachings of Sato and Humpleman.

*6. Claims 2, 6, 9, 12, 15, and 18*

In its Patent Owner Response, Rovi does not address separately whether the combined teachings of Sato and Humpleman account for the remaining limitations of dependent claims 2, 6, 9, 12, 15, and 18. *See generally* PO Resp. 19–40. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these limitations, as well as its explanations as to how one of ordinary skill in the art would have combined the relevant teachings of Sato with those of Humpleman, and we agree with and adopt Comcast’s analysis. *See* Pet. 8–11, 24–26, 35–36. Comcast, therefore, has

demonstrated by a preponderance of the evidence that the subject matter of dependent claims 2, 6, 9, 12, 15, and 18 would have been obvious over the combined teachings of Sato and Humpleman.

*C. Obviousness Over the Combined Teachings of Sato, Humpleman, and Lawler*

Comcast contends that claims 3, 7, 10, 13, 16, and 19 of the '263 patent are unpatentable under § 103(a) over the combined teachings of Sato, Humpleman, and Lawler. Pet. 36–37. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1102 ¶¶ 165–170. In its Patent Owner Response, Rovi contends that (1) Lawler does not account for the claimed “local/remote access interactive television guides” in communication with each other and, therefore, Lawler does not remedy the purported deficiencies in the combined teachings of Sato and Humpleman; and (2) Comcast does not present sufficient reasoning as to why one of ordinary skill in the art would combine the teachings of Lawler with those of Sato and Humpleman. PO Resp. 41–43. Rovi relies upon the Declaration of Dr. Shamos to support its positions. Ex. 2108 ¶¶ 160–162.

We begin our analysis with a brief overview of Lawler, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

### 1. *Lawler Overview*

Lawler generally relates to a system for recording a program on an interactive viewing system and, in particular, to a system that allows a user to identify a program for recording using an interactive program guide and then designate the identified program for automated recording at some later time. Ex. 1109, 1:8–13. According to one aspect of the invention disclosed in Lawler, the recording device is associated with a head end. *Id.* at 2:24–25. At the direction of the head end, the recording device records the selected program and digitally stores it in a memory at the head end. *Id.* at 2:25–27. The recorded program may then be retrieved from the head end by the user for display at a viewer station. *Id.* at 2:27–29. Lawler discloses that this process would allow multiple users to access a single recording of the program, as well as make the program available to other users who did not set the recording, but nonetheless wish to view the program at some later time. *Id.* at 13:34–38.

### 2. *Claims 3, 7, 10, 13, 16, and 19*

Dependent claim 3 recites “wherein local interactive television program guide records the television program corresponding to the selected program listing at a television distribution facility.” Ex. 1101, 29:1–4. Dependent claims 7, 10, 13, 16, and 19 recite a similar limitation. *Id.* at 29:49–52, 30:26–29, 30:64–67, 31:36–39, 32:34–38.

In its Petition, Comcast contends that Lawler teaches recording programs at a central head end (i.e., a television distribution facility) in lieu of recording programs locally. Pet. 36–37 (citing Ex. 1109, 2:24–29,

13:26–38; Ex. 1102 ¶ 166). Comcast then argues that, as a substitute for recording a program locally, it would have been obvious to modify the Sato and Humpleman combination to include recording programs at a television distribution facility, as taught by Lawler, because there are certain advantages to recording programs at the television distribution facility, such as making recorded programs available for other subscribers and eliminating the need for a separate recorder. *Id.* at 37 (citing Ex. 1102 ¶¶ 167, 168). According to Comcast, this proffered combination would be nothing more than using a known technique (i.e., Lawler’s centralized recording at a television distribution facility) to improve a similar system (i.e., the combined Sato and Humpleman remote access system), and would produce a predictable result that provides the stated benefits of Lawler. *Id.*

In its Patent Owner Response, Rovi contends that Lawler does not account for the claimed “local/remote access interactive television guides” in communication with each other and, therefore, Lawler does not remedy the purported deficiencies in the combined teachings of Sato and Humpleman. PO Resp. 41 (citing Ex. 1109, 5:38–42, 6:37–41, 7:3–5). We do not agree with this argument because, as we explain previously in our analysis of the ground based on the combined teachings of Sato and Humpleman, Sato teaches the claimed “local/remote access interactive television guides” in communication with each other. *See supra* Section II.B.5.a.i–ii. Consequently, there are no deficiencies with respect to these elements in the combined teachings of Sato and Humpleman for Lawler to remedy.

Next, Rovi contends that Comcast's explanations for combining the teachings of Sato, Humpleman, and Lawler are conclusory and fail to provide a sufficient reason for making the proffered combination. PO Resp. 42 (citing Ex. 2108 ¶¶ 160–162). According to Rovi, Comcast fails to explain how or why one of ordinary skill in the art would have incorporated Lawler's technique for recording programs at a television distribution facility into the combined program guide system of Sato and Humpleman. *Id.* In particular, Rovi argues that Comcast does not explain how a person of ordinary skill in the art would have moved the recorder to Lawler's television distribution facility, while still maintaining the operability of the combined program guide system of Sato and Humpleman, including the ability for the user to control operations of Sato's VTR 11 using interface box 25, both of which are local to the user's system. *Id.* at 43. Rovi further argues that Comcast does not explain how the combined program guide system of Sato and Humpleman would be modified to send commands to Lawler's television distribution facility. *Id.*

In its Reply, Comcast counters that Lawler's centralized recording still would allow the user to view recorded content at his/her home using the combined program guide system of Sato and Humpleman. Pet. Reply 22. Comcast argues that integrating this teaching in Lawler into the combined program guide system of Sato and Humpleman would provide the added advantage of allowing the physical storage of content to occur at Lawler's television distribution facility, which was, and remains, a well-known method

for increasing storage efficiency. *Id.* (citing Ex. 1152 ¶ 47).

As an initial matter, Rovi does not address separately Comcast's explanations and supporting evidence as to how the combined teachings of Sato, Humpleman, and Lawler account for the limitation of dependent claim 3, and the similar limitations of dependent claims 7, 10, 13, 16, and 19. *See generally* PO Resp. 41–43. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these limitations, and we agree with and adopt Comcast's analysis. *See* Pet. 36–37.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to modify the combined program guide system of Sato and Humpleman to include recording programs at a television distribution facility, as taught by Lawler. When, as here, a technique has been used to improve one device (i.e., Lawler's centralized recording at a television distribution facility), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Lawler's technique to the combined program guide system of Sato and Humpleman to make recorded programs available for other subscribers and to eliminate the need for a separate recorder), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 36–37; Ex. 1102 ¶¶ 167, 168. The record includes credible evidence explaining why applying Lawler's technique to the combined program guide



system of Sato and Humpleman to make recorded programs available to multiple subscribers at a television distribution facility would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Indeed, Lawler itself provides the necessary motivation for doing so—namely, “[to] allow multiple users to access a single recording of the program.” Ex. 1109, 13:33–35.

We do not agree with Rovi’s argument that Comcast does not explain how a person of ordinary skill in the art would have moved the recorder to Lawler’s television distribution facility, while still maintaining the operability of the combined program guide system of Sato and Humpleman. PO Resp. 43. As Comcast explains in the Petition, modifying the Sato and Humpleman combination to include recording programs at a television distribution facility, as taught by Lawler, serves as a substitute for the user’s ability to record programs locally on Sato’s VTR 11 using interface boxes 25 or 104. *See* Pet. 37. For instance, instead of using interface boxes 25 or 104 to instruct Sato’s VTR 11 to record programs, which still remains a viable option, a user would communicate with Lawler’s television distribution facility to record programs via Sato’s external portable computer 107 or personal computer 105. Dr. Tjaden testifies—and we agree—that recording programs at Lawler’s television distribution facility, in lieu of recording programs locally on Sato’s VTR 11, would increase storage efficiency by making these recordings available to other users and it would eliminate the need for each user maintain a separate recorder. *See* Ex. 1102 ¶ 168; Ex. 1152 ¶ 47.

We also do not agree with Rovi's argument that Comcast does not explain how the combined program guide system of Sato and Humpleman would be modified to send commands to Lawler's television distribution facility. *See* PO Resp. 43. Instead, the evidence of record supports that Lawler's television distribution facility would be capable of receiving commands from the combined program guide system of Sato and Humpleman. In particular, Dr. Tjaden testifies that "[o]ne of ordinary skill in the art would readily recognize that [the] arrangement [disclosed in Lawler] is typical of cable or satellite systems such as those described in Sato and Humpleman." Ex. 1102 ¶ 166. Moreover, Rovi seeks a particular explanation as to "what specific component would be used to make the communication and the format of that communication." PO Resp. 43. Lawler, however, does not restrict the network by which the viewer stations and television distribution facility communicate to any particular type of network. Ex. 1109, 5:29–36. Similarly, the '263 patent does not restrict how program guide information may be communicated between remote program guide access device 24 and interactive television program guide equipment 17. Ex. 1101, 13:7–19 (disclosing that program guide information may be communicated using "any suitable application layer protocol"). Because neither Lawler nor the '263 patent limits the means of communication, we find that a person of ordinary skill in the art would have understood that the combined program guide system of Sato and Humpleman would have been capable of communicating commands to Lawler's television distribution facility via a network,

such as Sato's Internet 106, for the purpose of recording programs at the television distribution facility.

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 3, 7, 10, 13, 16, and 19 would have been obvious over the combined teachings of Sato, Humpleman, and Lawler.

*D. Obviousness Over the Combined Teachings of Sato, Humpleman, and Allport*

Comcast contends that claim 4 of the '263 patent is unpatentable under § 103(a) over the combined teachings of Sato, Humpleman, and Allport. Pet. 38–39. Comcast explains how this proffered combination teaches or suggests the subject matter of this challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1102 ¶¶ 173–176. In its Patent Owner Response, Rovi contends that (1) Allport does not account for the claimed “local/remote access interactive television guides” in communication with each other and, therefore, Allport does not remedy the purported deficiencies in the combined teachings of Sato and Humpleman; and (2) Comcast does not present sufficient reasoning as to why one of ordinary skill in the art would combine the teachings of Allport with those of Sato and Humpleman. PO Resp. 41–44. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2108 ¶¶ 163–164.

We begin our analysis with a brief overview of Allport, and then we address the parties' contentions with respect to dependent claim 4.

*1. Allport Overview*

Allport generally relates to remote controls for controlling consumer devices and, in particular, to remote controls for controlling a wide variety of consumer devices that are capable of using data downloaded from the Internet and other data sources. Ex. 1110, 1:18–23. According to Allport, a “welcome” screen that may be displayed on the remote control (in accordance with the invention disclosed in Allport) provides a user with the option of accessing a scheduling feature, which, in turn, allows the user to monitor and control, among other things, the prior history of the tasks performed by the devices under the control of the remote control. *Id.* at 10:17–26. Allport also discloses a “past program[]” screen that allows the user to review the past actions taken by users of the remote control. *Id.* at 21:32–41.

*2. Claim 4*

Dependent claim 4 recites “wherein the local interactive television program guide stores information indicating the user who selected the program listing with the remote access interactive television program guide.” Ex. 1101, 29:5–8.

In its Petition, Comcast contends that, to the extent Sato and Humpleman may not disclose explicitly storing information indicating which user selected the program for recording, this would have been an obvious modification in view of the teachings of

Allport. Pet. 38. Comcast argues that Allport teaches storing information about a user who requests a command from a remote control, such as which user scheduled a particular recording. *Id.* at 38–39 (citing Ex. 1110, [57], 10:17–26, 20:55–21:2, 21:31–41; Ex. 1102 ¶¶ 174, 175). Comcast then argues it would have been obvious to use Allport’s technique of tracking a user’s actions in the combined program guide system of Sato and Humpleman because it would provide certain benefits disclosed by Allport, including allowing parents to view the actions taken by their children. *Id.* at 39 (citing Ex. 1102 ¶ 176). According to Comcast, this proffered combination would be nothing more than using a known technique (i.e., Allport’s tracking of a user’s actions) to improve a similar system (i.e., the combined Sato and Humpleman remote access system), and would obtain the predictable result of allowing users individualized experiences and facilitating tracking of those who scheduled recording events. *Id.*

In its Patent Owner Response, Rovi contends that Allport does not account for the claimed “local/remote access interactive television guides” in communication with each other and, therefore, Allport does not remedy the purported deficiencies in the combined teachings of Sato and Humpleman noted above. PO Resp. 41–42 (citing Ex. 1110, 20:21–40, 20:55–21:22). We do not agree with this argument because, as we explain previously in the ground based on the combined teachings of Sato and Humpleman, Sato teaches the claimed “local/remote access interactive television guides” in communication with each other. *See supra* Section II.B.5.a.i–ii. Consequently, there are

no deficiencies with respect to these elements in the combined teachings of Sato and Humpleman for Allport to remedy.

Next, Rovi contends that Comcast's assertions for combining the teachings of Sato, Humpleman, and Allport are conclusory and fail to provide a sufficient rationale for making the proffered combination. PO Resp. 43 (citing Ex. 2108 ¶¶ 163, 164). According to Rovi, Comcast fails to explain how or why one of ordinary skill in the art would have incorporated Allport's technique for tracking a user's actions at a central remote device into the combined program guide system of Sato and Humpleman. *Id.* at 43–44. In particular, Rovi argues that Comcast does not explain how a person of ordinary skill in the art would have integrated Allport's central remote device, which stores tracking information, in the combined program guide system of Sato and Humpleman, which already allows multiple devices to issue commands to home electronic devices. *Id.*

In its Reply, Comcast maintains that Allport's technique for tracking a user's actions would improve the combined program guide system of Sato and Humpleman to obtain the predictable result of allowing users to have individualized experiences and to facilitate tracking of those who scheduled program recordings. Pet. Reply 23 (citing Pet. 38–39; Ex. 1102 ¶ 176). Comcast argues that adding this teaching in Allport would improve the combined program guide system of Sato and Humpleman because it would provide the added advantage of tracking a user's actions, which was, and remains, a well-known method for improving individualized experiences and

facilitates tracking of which user scheduled a program recording. *Id.* (citing Ex. 1152 ¶ 48).

As an initial matter, Rovi does not address separately Comcast's explanations and supporting evidence as to how the combined teachings of Sato, Humpleman, and Allport account for the limitation of dependent claim 4. *See generally* PO Resp. 41–44. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches this limitation, and we agree with and adopt Comcast's analysis. *See* Pet. 38–39.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to modify the combined program guide system of Sato and Humpleman to use Allport's technique of tracking a user's actions. In particular, we agree with Comcast that it would have been obvious to one of ordinary skill in the art to integrate the feature of using Allport's technique of tracking a user's actions in the combined program guide system of Sato and Humpleman because it would provide certain benefits disclosed by Allport, including tracking those who scheduled recording events. Indeed, Allport explicitly contemplates a parental control feature that allows a parent to view actions taken by their children, such as requests to schedule recording events. *See* Ex. 1110, 20:55–21:10. In his Declaration accompanying the Petition, Dr. Tjaden reinforces that combining the teachings of Sato, Humpleman, and Allport in the manner asserted by Comcast would have been obvious to one of ordinary skill in the art because it integrates the feature of tracking "information indicating the

user who selected the program listing,” as taught by Allport, into the combined program guide system of Sato and Humpleman “to gain features such as parental controls.” Ex. 1102 ¶ 176 (emphasis omitted).

We do not agree with Rovi’s argument that Comcast does not explain how a person of ordinary skill in the art would have integrated the feature of using Allport’s central remote device into the combined program guide system of Sato and Humpleman. *See* PO Resp. 43–44. This argument is predicated on the notion that Allport’s central remote device is bodily incorporated into the combined program guide system of Sato and Humpleman. The specific structure of Allport’s central remote device, however, is not relevant to Comcast’s ground based on the combined teachings of Sato, Humpleman, and Allport because Comcast does not advocate combining the specific structure of Allport’s central remote device with the combined program guide system of Sato and Humpleman. Instead, Comcast argues that Allport’s technique of tracking a user’s actions is a well-known method, and using this technique with the combined program guide system of Sato and Humpleman provides the added benefit of tracking those who scheduled recording events, such as parents who wish to view actions taken by their children. *See In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) (“Combining the *teachings* of references does not involve an ability to combine their specific structures.”). For the reasons we identify above, the evidence of record supports Comcast’s explanation in this regard. *See* Pet. 39; Pet. Reply 23–24; Ex. 1102 ¶ 176; Ex. 1152 ¶ 48.



In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of dependent claim 4 would have been obvious over the combined teachings of Sato, Humpleman, and Allport.

*E. Obviousness Over the Combined Teachings of Woo, Mizuno, and Rzeszewski*

Comcast contends that claims 1, 2, 5, 6, 8, 9, 11, 12, 14, 15, 17, and 18 of the '263 patent are unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, and Rzeszewski. Pet. 39–62. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1102 ¶¶ 180–244. As we explain in our Introduction section above, Rovi waived both briefing on this ground, as well as consideration of this ground at the consolidated oral hearing. *See supra* Section I.

We begin our analysis with brief overviews of Woo, Mizuno, and Rzeszewski, and then we address whether Comcast provides a sufficient rationale for combining the teachings of Woo and Mizuno.

*1. Woo Overview*

Woo generally relates to controlling a recording device that receives commercial broadcasts and, in particular, to eliminating commercials from recorded TV broadcasts. Ex. 1116, 1:7–11. According to Woo, a user selects a desired TV program for recording from a

menu, and selects whether to record the program commercial-free. *Id.* at 1:43–45. One feature offered by Woo allows a user who has not selected a particular channel for recording to call in by telephone to a control station, which, based on the direction of the user, enters appropriate data into the user’s processor in order to record a desired program. *Id.* at 2:17–21.

Figure 1 of Woo, reproduced below, illustrates an embodiment of the broadcast recording control system in accordance with the present invention. Ex. 1116, 2:39–41, 2:55–57.

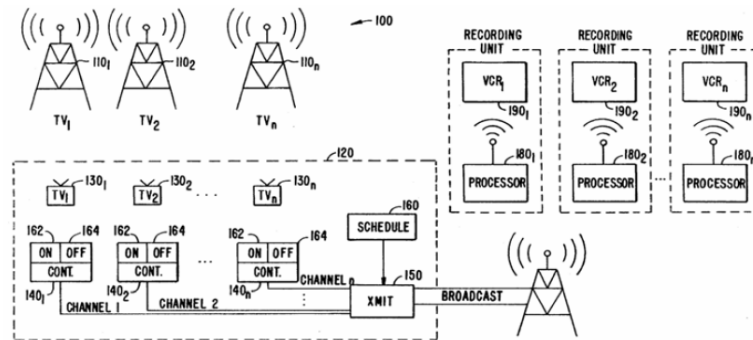


FIG. 1.

As shown in Figure 1 reproduced above, system 100 includes control station 120 with a plurality of TV monitors 130, a plurality of controllers 140, transmitter 150, and scheduler 160. *Id.* at 2:59–62. Scheduler 160 develops a TV program schedule table of future TV broadcasts. *Id.* at 3:8–10. The TV program schedule table identifies TV broadcasts by name, channel, and day of the week. *Id.* at 3:10–12. System 100 also includes a plurality of processors 180, each of which is associated with one of a plurality of video cassette recorders (“VCRs”) 190. *Id.* at 3:28–30.

Figure 4 of Woo, reproduced below, illustrates the display of processor 180 depicted in Figure 1 of Woo. Ex. 1116, 2:46, 6:51–53.

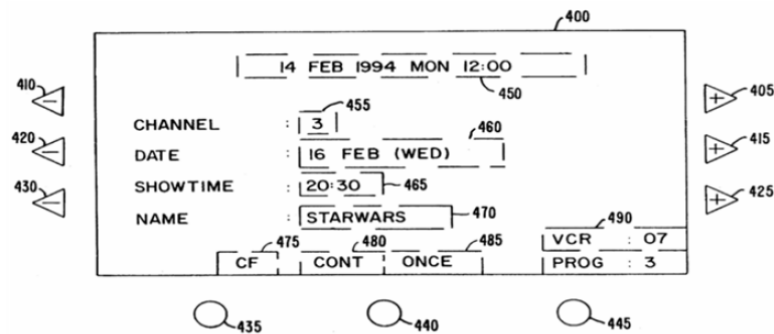
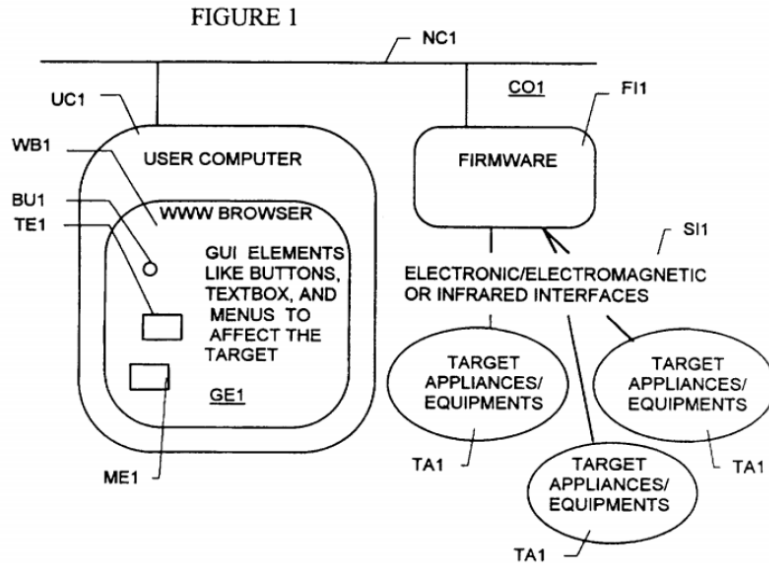


FIG. 4.

As shown in Figure 4 reproduced above, display 400 includes, among other things, date/time field 450 to display the present date and time. *Id.* at 6:62–63. Display 400 also includes a number of fields for accessing the TV program schedule table, such as channel field 455, date field 460, “showtime” field 465, and “showname” field 470. *Id.* at 6:63–7:10.

## 2. Mizuno Overview

Mizuno generally relates to controlling remote devices at remote locations via the Internet, preferably using hypertext transfer protocol. Ex. 1117, 1:4–8. In one embodiment, Mizuno discloses a controller that serves HTML pages to remote user computers for controlling a number of devices located in a home, such as TVs and VCRs. *Id.* at 1:24–2:12. Figure 1 of Mizuno, reproduced below, illustrates a block diagram of the system architecture used to implement this embodiment.



As shown in Figure 1 above, user computer UC1 uses ethernet network connection NC1 to connect to controller CO1 composed of firmware FI1, which, in turn, connects to a number of target appliances/equipment (e.g., TVs, VCRs, etc.). *Id.* at 3:7–10. User computer UC1 includes WWW browser WB1 that includes graphical interface elements GE1, such as buttons BU1, textbox TE1, and menus ME1 that may be used to control the target appliances/equipment TA1. *Id.* at 3:15–18. Controller CO1 creates a web page of TV listings, which, when served to user computer UC1 via WWW browser WB1, allows the user to control target appliances/equipment TA1 (e.g., by programming a VCR to record a future TV program). *Id.* at 9:20–10:4.

### 3. *Rzeszewski Overview*

Rzeszewski generally relates to electronic program guides for TV receivers and, in particular, to an improved electronic TV program guide that offers flexibility, versatility, and cost savings over conventional electronic TV program guides. Ex. 1118, 1:6–10. One feature offered by Rzeszewski’s improved electronic TV guide is a “Favorite Station” feature that stores certain channels pre-selected by a user. *Id.* at 5:38–45.

### 4. *Claims 1, 5, 8, 11, 14, and 17*

In its Petition, Comcast contends that Woo’s broadcast recording control system accounts for most of the limitations recited in independent claims 1, 5, 8, 11, 14, and 17, except a “remote program guide access device” that provides a “remote access interactive television guide,” and “user profiles” used to generate the “remote access interactive television program guide.” Pet. 39–45 (citing Ex. 1116, 1:43–50, 2:9–30, 3:7–18, 6:50–7:1, 7:50–65, 8:25–32, 9:56–63, Figs. 1, 4; Ex. 1102 ¶¶ 180–183); *see also id.* at 47–57 (arguing the same). Comcast turns to Mizuno’s remote access guide web pages displayed on user computer UC1 to teach a “remote program guide access device” that provides a “remote access interactive television guide.” *Id.* at 41–42 (citing Ex. 1117, 1:24–2:12, 5:19–22, 9:20–10:8, 10:18–11:3, Fig. 1; Ex. 1102 ¶¶ 185–188); *see also id.* at 49–51 (arguing the same). Comcast turns to Rzeszewski’s “favorite station” feature to teach “user profiles” used to generate the “remote access interactive television program guide.” *Id.* at 44–45

(citing Ex. 1118, 1:6–10, 5:32–45; Ex. 1102 ¶¶ 189–192).

Of particular importance to this ground is Comcast's argument that it would have been obvious to one of ordinary skill in the art to automate Woo's manual call-in scheduling process by using Mizuno's remote access guide web pages. Pet. 42–43. According to Comcast, there are at least three reasons as to why one of ordinary skill in the art would have combined the teachings of Woo and Mizuno in this manner. Those reasons are listed as follows: (1) supplementing Woo's manual call-in scheduling process with Mizuno's remote access guide web pages is nothing more than automating a manual process, which has long been recognized as insufficient to distinguish over prior art systems; (2) using Mizuno's remote access guide web pages to improve Woo's manual call-in scheduling process would be nothing more than using known techniques to improve similar devices to obtain a predictable result; and (3) it would have been a simple substitution of Mizuno's remote access guide web pages for Mizuno's human operator for the manual call-in process to obtain a predictable result. *Id.* at 43–44 (citing Ex. 1102 ¶¶ 186–188); *see also id.* at 50–51 (arguing the same).

We do not agree that Comcast or Dr. Tjaden provides sufficient reasoning as to how or why one of ordinary skill in the art would have replaced Woo's manual call-in scheduling process with Mizuno's remote access guide web pages to arrive at the claimed invention. As an initial matter, we do not view supplementing Woo's manual call-in scheduling process with Mizuno's remote access guide web pages

as simply automating a manual process. Comcast's proffered combination requires the wholesale insertion of a new component—in this case, Mizuno's user computer UC1 that displays remote access guide web pages—in Woo's broadcast recording control system. In our view, this goes beyond simply automating a manual process, but rather requires a significant modification to the structure and operations of Woo's broadcast recording control system. For instance, Comcast does not explain how Woo's controller 120, which uses transmitter 150 to broadcast control and programming information (Ex. 1116, 3:20–28), is capable of connecting to the Internet such that it could serve HTML pages to Mizuno's user computer UC1.

Nor do we agree that combining the teachings of Woo and Mizuno in the manner proposed by Comcast is nothing more than using known techniques to improve a similar device in the same way, or is a simple substitution of one known element for another to obtain a predictable result. Comcast's assertions in this regard are predicated on the benefits associated with automation. *See* Pet. 43 (stating “[t]his would obtain the predictable benefits associated with automation described above”), 44 (stating the same); Ex. 1102 ¶¶ 187, 188 (stating the same). As we explain above, supplementing Woo's manual call-in scheduling process with Mizuno's remote access guide web pages goes beyond simply automating a manual process—it requires significant modifications to the structure and operations of Woo's broadcast recording control system. Moreover, by simply providing generic reasons for combining the teachings of Woo and Mizuno, such as using “known techniques to improve similar

devices” (Pet. 43) and “simple substitution” (*id.* at 44), Comcast does not adequately address the issue of rationale to combine in this ground because it fails to explain how one of ordinary skill in the art would have modified Woo’s broadcast recording control system to include Mizuno’s remote access guide web pages. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan . . . *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”).<sup>8</sup>

In summary, because we determine that Comcast does not provide sufficient reasoning for combining the teachings of Woo and Mizuno, Comcast has not demonstrated by a preponderance of the evidence that the subject matter of independent claims 1, 5, 8, 11, 14, and 17 would have been obvious over the combined teachings of Woo, Mizuno, and Rzeszewski.

#### *5. Claims 2, 6, 9, 12, 15, and 18*

Because we determine that Comcast does not provide sufficient reasoning for combining the teachings of Woo and Mizuno, Comcast has not demonstrated by a preponderance of the evidence that the subject matter of dependent claims 2, 6, 9, 12, 15, and 18 would have been obvious over the combined teachings of Woo, Mizuno, and Rzeszewski.

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<sup>8</sup> Because we determine that Comcast does not provide sufficient reasoning for combining the teachings of Woo and Mizuno, we need not reach whether Comcast also provides sufficient reasoning for combining the teachings of Rzeszewski with those of Woo and Mizuno.



*F. Remaining Obvious Grounds Based, in Part, on  
Combining the Teachings of Woo, Mizuno, and  
Rzeszewski*

Comcast also contends that (1) claims 3, 7, 10, 13, 16, and 19 of the '263 patent are unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, Rzeszewski, and Lawler; and (2) claim 4 of the '263 patent is unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, Rzeszewski, and Allport. Pet. 62–65. Each of these remaining grounds relies upon Comcast's argument that it would have been obvious to one of ordinary skill in the art to automate Woo's manual call-in scheduling process by using Mizuno's remote access guide web pages. Pet. 42–44 (citing Ex. 1102 ¶¶ 186–188); *see also id.* at 50–51 (arguing the same). Because we determine that Comcast does not provide sufficient reasoning for combining the teachings of Woo and Mizuno, Comcast has not demonstrated by a preponderance of the evidence that (1) the subject matter of dependent claims 3, 7, 10, 13, 16, and 19 would have been obvious over the combined teachings of Woo, Mizuno, Rzeszewski, and Lawler; and (2) the subject matter of dependent claim 4 would have been obvious over the combined teachings of Woo, Mizuno, Rzeszewski, and Allport.

### III. CONCLUSIONS

Comcast has demonstrated by a preponderance of the evidence that (1) claims 1, 2, 5, 6, 8, 9, 11, 12, 14, 15, 17, and 18 are unpatentable under § 103(a) over the combined teachings of Sato and Humpleman; (2) claims 3, 7, 10, 13, 16, and 19 are unpatentable under

§ 103(a) over the combined teachings of Sato, Humpleman, and Lawler; and (3) claim 4 is unpatentable under § 103(a) over the combined teachings of Sato, Humpleman, and Allport. Comcast, however, has not demonstrated by a preponderance of the evidence that (1) claims 1, 2, 5, 6, 8, 9, 11, 12, 14, 15, 17, and 18 are unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, and Rzeszewski; (2) claims 3, 7, 10, 13, 16, and 19 are unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, Rzeszewski, and Lawler; and (3) claim 4 is unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, Rzeszewski, and Allport.

#### IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–19 of the '263 patent are held to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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APPENDIX D  
IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL  
BOARD  
COMCAST CABLE COMMUNICATIONS, LLC,  
*Petitioner,*

v.

ROVI GUIDES, INC.,  
*Patent Owner.*

Case IPR2017-00952  
Patent 8,006,263 B2

Entered: September 19, 2018

Before KEVIN F. TURNER, MICHAEL R. ZECHER,  
and JESSICA C. KAISER, *Administrative Patent*  
*Judges.*

ZECHER, *Administrative Patent Judge.*

FINAL WRITTEN DECISION  
*Inter Partes* Review  
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner, Comcast Cable Communications, LLC (“Comcast”), filed a Petition requesting an *inter partes* review of claims 1–19 of U.S. Patent No. 8,006,263 B2 (Ex. 1201, “the ’263 patent”). Paper 2 (“Pet.”). Patent Owner, Rovi Guides, Inc. (“Rovi”), filed a Preliminary Response. Paper 6. Taking into account the arguments presented in Rovi’s Preliminary Response, we

determined that the information presented in the Petition established that there was a reasonable likelihood that Comcast would prevail in challenging claims 1–19 of the '263 patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on September 20, 2017, as to all of the challenged claims and all the grounds presented the Petition. Paper 11 (“Dec. on Inst.”).

During the course of trial, Rovi filed a Patent Owner Response (Paper 17, “PO Resp.”), and Comcast filed a Reply to the Patent Owner Response (Paper 30, “Pet. Reply”). A consolidated oral hearing with related Cases IPR2017-00950, IPR2017-00951, IPR2017-01048, IPR2017-01049, IPR2017-01050, IPR2017-01065, IPR2017-01066, and IPR2017-01143 was held on June 19, 2018, and a transcript of the hearing is included in the record. Paper 40 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–19 of the '263 patent. For the reasons discussed below, we hold that Comcast has demonstrated by a preponderance of the evidence that these claims are unpatentable under § 103(a).

#### *A. Related Matters*

The '263 patent is involved in the following district court cases: (1) *Rovi Guides, Inc. v. Comcast Corp.*, No. 2:16-cv-00322 (E.D. Tex.), which has been transferred to the U.S. District Court for the Southern District of New York and is pending as *Rovi Guides, Inc. v. Comcast Corp.*, No. 1:16-cv-09826 (S.D.N.Y); and (2)

*Comcast Corp. v. Rovi Corp.*, No. 1:16-cv-03852 (S.D.N.Y). Pet. 1–2; Paper 4, 2. The '263 patent also has been asserted against Comcast in a proceeding before the U.S. International Trade Commission (“ITC”) styled *In re Certain Digital Video Receivers and Hardware and Software Components Thereof*, No. 337-TA-1001. Pet. 2; Paper 4, 2.

In addition to this Petition, Comcast filed two other petitions challenging the patentability of claims 1–19 of the '263 patent (Cases IPR2017-00950 and IPR2017-00951). Pet. 3; Paper 4, 2. Comcast also filed other petitions challenging the patentability of certain subsets of claims in several patents owned by Rovi. Pet. 3.

#### *B. The '263 Patent*

The '263 patent, titled “Interactive Television Program Guide with Remote Access,” issued August 23, 2011, from U.S. Patent Application No. 11/246,392, filed on October 7, 2005. Ex. 1201, [54], [45], [21], [22]. The '263 patent is a continuation of U.S. Patent Application No. 10/927,814, filed on August 26, 2004, which, in turn, is a continuation of U.S. Patent Application No. 09/354,344, filed on July 16, 1999. *Id.* at [63]. The '263 patent also claims the benefit of U.S. Provisional Application No. 60/097,527, filed on August 21, 1998, and U.S. Provisional Application No. 60/093,292, filed on July 17, 1998. *Id.* at [60].

The '263 patent generally relates to interactive television program guide video systems and, in particular, to such systems that provide remote access to program guide functionality. Ex. 1201, 1:19–22. The '263 patent discloses that conventional interactive

television program guide systems typically are implemented on set-top boxes located in the home of a user and, as a result, do not permit the user to perform program guide functions without the user being physically located in the same room as these systems. *Id.* at 1:37–45. Stated differently, conventional interactive television program guide systems require the user to be present in the home to access important program guide features, such as program reminders, parental controls, and program recording. *Id.* at 2:19–22. The '263 patent purportedly addresses this and other problems by providing an interactive television program guide system that allows a user to access certain features of the program guide remotely and establish settings for those features. *Id.* at 2:23–28.

Figure 1 of the '263 patent, reproduced below, illustrates a schematic block diagram of the system in accordance with the present invention. Ex. 1201, 3:45–46, 4:29–30.

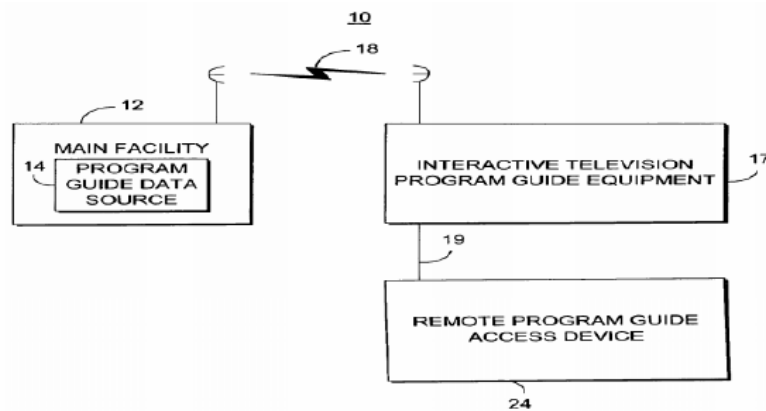


FIG. 1

As shown in Figure 1 reproduced above, system 10 includes main facility 12 that provides interactive television program guide data from program guide data source 14 to interactive television program guide equipment 17 via communication link 18. *Id.* at 4:29–33. Interactive television program guide equipment 17 is connected to at least one remote program guide access device 24 via remote access link 19. *Id.* at 4:47–53.

Figure 2a of the '263 patent, reproduced below, illustrates one arrangement involving the interactive television program guide equipment 17 and remote program guide access device 24 in accordance with the principles of the present invention. Ex. 1201, 3:47–50, 4:55–57.

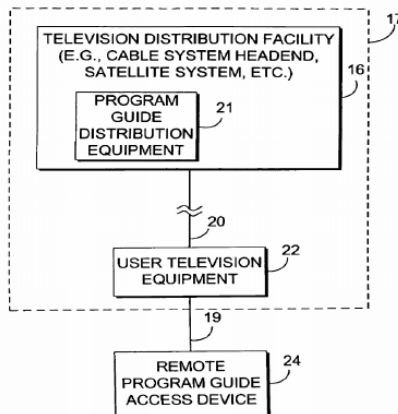


FIG. 2a

As shown in Figure 2a reproduced above, interactive television program guide equipment 17 includes program guide distribution equipment 21 located at television distribution facility 16, which distributes

program guide data to user television equipment 22 via communications path 20. *Id.* at 4:57–67. Remote program guide access device 24 receives the program guide data, as well as any additional data necessary to access various functions of the interactive program guide, from user television equipment 22 via remote access link 19. *Id.* at 5:29–39.

In at least one embodiment, the '263 patent discloses that a remote access interactive television program guide implemented on remote program guide access device 24 communicates with a local interactive television program guide implemented on interactive television program guide equipment 17. Ex. 1201, 12:23–29. In one example, the remote access and local interactive television program guides may be two different guides that communicate with each other. *Id.* at 12:34–37; *see also id.* at 22:49–23:6 (disclosing steps involved with using the remote access interactive television program guide to provide program listing information to a user). In another example, the remote access and local interactive television program guides may be the same guide, but compiled to run on two different platforms. *Id.* at 12:29–32.

The '263 patent discloses transferring program guide information and settings between remote program guide access device 24 and interactive television program guide equipment 17 using any suitable application layer protocol. Ex. 1201, 13:7–11. For example, if remote access link 19 is an Internet link, program guide functionality may be accessed using Hypertext Transfer Protocol. *Id.* at 13:11–13. Remote program guide access device 24 and interactive television program guide equipment 17



also may transfer program guide information as files using either File Transfer Protocol or Trivial File Transfer Protocol running over a Transmission Control Protocol/Internet Protocol stack. *Id.* at 13:13–18. The '263 patent makes clear that “[a]ny suitable file transfer protocol based on any suitable protocol stack may be used.” *Id.* at 13:18–19.

*C. Illustrative Claim*

Of the challenged claims, claims 1, 5, 8, 11, 14, and 17 are independent. Independent claims 1, 8, and 14 are each directed to a system for selecting television programs over a remote access link that includes an Internet communications path for recording, whereas independent claims 5, 11, and 17 are each directed to a method for performing the same. Claims 2–4 directly depend from independent claim 1; claims 6 and 7 directly depend from independent claim 5; claims 9 and 10 directly depend from independent claim 8; claims 12 and 13 directly depend from independent claim 11; claims 15 and 16 directly depend from independent claim 14; and claims 18 and 19 directly depend from independent claim 17. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A system for selecting television programs over a remote access link comprising an Internet communications path for recording, comprising:

a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program

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guide equipment includes user television equipment located within a user's home and the local interactive television program guide generates a display of one or more program listings for display on a display device at the user's home; and

a remote program guide access device located outside of the user's home on which a remote access interactive television program guide is implemented, wherein the remote program guide access device is a mobile device, and wherein the remote access interactive television program guide:

generates a display of a plurality of program listings for display on the remote program guide access device, wherein the display of the plurality of program listings is generated based on a user profile stored at a location remote from the remote program guide access device;

receives a selection of a program listing of the plurality of program listings in the display, wherein the selection identifies a television program corresponding to the selected program listing for recording by the local interactive television program guide; and

transmits a communication identifying the television program corresponding to the selected program listing from the remote access interactive television program guide to the local interactive television program guide over the Internet communications path;

wherein the local interactive television program guide receives the communication and records the television program corresponding to the selected program listing responsive to the communication using the local interactive television program guide equipment.

Ex. 1201, 28:27–63.

*D. Prior Art Relied Upon*

Comcast relies upon the following prior art references:

<b>Inventor<sup>1</sup></b>	<b>Patent or Publication No.</b>	<b>Relevant Dates</b>	<b>Exhibit No.</b>
Killian	U.S. Patent No. 6,163,316	issued Dec. 19, 2000, filed Oct. 3, 1997	1208
Lawler	U.S. Patent No. 5,805,763	issued Sept. 8, 1998, filed May 5, 1995	1209

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

Blake <sup>2</sup>	PCT Int'l Pub. No. WO 98/10589	published Mar. 12, 1998, filed Sept. 2, 1997	1222
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*E. Instituted Grounds of Unpatentability*

We instituted a trial based on the asserted grounds of unpatentability (“grounds”) set forth in the table below. Dec. on Inst. 36.

References	Basis	Challenged Claims
Blake and Killian	§ 103(a)	1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18
Blake, Killian, and Lawler	§ 103(a)	3, 7, 10, 13, 16, and 19

## II. ANALYSIS

### A. Claim Construction

In an *inter partes* review, claim terms of an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary

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<sup>2</sup> Blake incorporates by reference U.S. Patent No. 4,706,121 B1 (Ex. 1223, “Young”).

skill in the art, in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision on Institution, we determined that the only claim terms requiring construction are “local/remote access interactive television program guides,” and only to the extent necessary to resolve whether the grounds asserted by Comcast properly accounted for both a “local interactive television program guide” and a “remote access interactive television program guide.” Dec. on Inst. 9 (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy)). Upon reviewing the parties’ preliminary arguments and evidence, we adopted Comcast’s proposed construction that an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *Id.* at 13. We further clarified that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide. *Id.*

In its Patent Owner Response, Rovi generally agrees with our initial determination that the only claim terms requiring construction are “local/remote access interactive television program guides.” PO Resp. 8. Rovi, however, proposes that the proper

constructions for these claims terms are the following: (1) “local interactive television program guide” is a “guide that allows navigation through television program listings and causes display of program information on user television equipment”; and (2) “remote access interactive television program guide” is a “guide allowing navigation through television program listings using a remote access link.” *Id.* at 9. According to Rovi, its proposed constructions for the claim terms “local/remote access interactive television program guides” are consistent with the intrinsic evidence, our preliminary finding that these guides must be distinct guides, and the findings of the ITC in related proceedings. *Id.* (citing Ex. 1250, 185, 190).

Rovi further contends that any difference between our constructions and the ITC’s constructions of the claim terms “local/remote access interactive television program guides” is not relevant to the grounds at issue in this proceeding because, according to Rovi, each of Comcast’s asserted grounds fail under Rovi’s broader constructions “that do[] not unnecessarily restrict the guides to ‘control software’ that ‘controls functions of the software.’” PO Resp. 10. Rovi asserts that, because each of Comcast’s asserted grounds fail under broader constructions for these claim terms, we need not determine whether the asserted prior art satisfies Comcast’s proposed constructions. *Id.* Rovi then proceeds to explain how our preliminary constructions and the ITC’s constructions are consistent in certain respects because (1) they both require the guides to be interactive (i.e., navigable and selectable); and (2) they

both agree that the claims require two separate guides, as properly construed. *Id.* at 10–12.<sup>3</sup>

In its Reply, Comcast counters with the following: (1) its arguments apply the broadest reasonable interpretation standard; (2) it relies on Rovi’s arguments from the related ITC proceeding regarding the proper scope and meaning of the claim terms “local/remote access interactive television program guides” as evidence of the broadest reasonable interpretation of these claims terms in this proceeding; and (3) it disagrees with Rovi’s proposed constructions both in this proceeding and in the ITC proceeding. Pet. Reply 1 n.1.

As an initial matter, it is not clear to us whether Rovi actually disputes our preliminary construction of the claim term “interactive television program guide.” On the one hand, Rovi asserts that the ITC’s constructions of local interactive television program guide (i.e., a “guide that allows navigation through television program listings and causes display of program information on user television equipment”) and remote access interactive television program guide (i.e., a “guide allowing navigation through television program listings using a remote access link”) are the proper constructions. PO Resp. 9. On the

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<sup>3</sup> For the first time at the oral hearing, Rovi argued that “remote access interactive television program guide” requires “dedicated code at the remote device.” *See, e.g.*, Tr. 58:3–7, 60:19–61:14, 66:14–21. We agree with Comcast (*id.* at 96:3–10) that this is a new argument that was not presented and developed in Rovi’s briefs and, therefore, we do not consider it. *See* Paper 12, 3 (cautioning Rovi that “any arguments for patentability not raised in the response will be deemed waived”).

other hand, Rovi argues that both our constructions and the ITC's constructions "are consistent with respect to the relevant aspects (e.g., navigation and selection)" of a local/remote access interactive television program guide. *Id.* at 9–10. Rovi further contends that "[a]ny differences between the Board's and the ITC's constructions *are not relevant* to [Comcast's] failures of proof regarding the asserted prior art and [g]rounds at issue in the proceeding." *Id.* (emphasis added); *see also* Ex. 2208 ¶ 25 (Rovi's declarant, Dr. Shamos, testifies that, "regardless of which constructions the Board applies, my opinions remain the same. The asserted prior art references here fail to disclose the claim limitations . . . under either construction."). These arguments make it difficult to ascertain what Rovi actually views as the proper scope and meaning of the claim terms "local/remote access interactive television program guides." Nevertheless, we are charged in this proceeding with determining the broadest reasonable interpretation of these claim terms.

Beginning with the intrinsic record, neither party argues, nor could we find, an explicit definition for the claim term "interactive television program guide" in the specification of the '263 patent. The specification, however, is replete with descriptions of conventional, local, or remote interactive television program guides. For instance, the specification discloses that conventional interactive television program guides display "various groups of television program [guide] listings . . . in predefined or user-defined categories," and "allow the user to navigate through [the] television program listings" and make a selection



“using a remote control.” Ex. 1201, 1:31–36. For a conventional interactive television program guide, the user must physically be located in the same room as the set-top box on which the interactive television program guide is implemented to select programs for recording or to perform other guide functions. *Id.* at 1:37–45. In the context of discussing the implementation of a remote access interactive television program guide, the specification discloses that such a guide works in conjunction with a remote device to “provide users with the opportunity to remotely access features of the interactive television program guide on the interactive television program guide equipment and to remotely set program guide settings.” *Id.* at 2:41–46. The specification goes on to disclose that “[a]ny suitable interactive television program guide function or setting may be accessed,” including, but not limited to, “remotely select[ing] programming for recordings” and “remotely set[ting] and navigat[ing] through favorites (e.g., favorite channels, program categories, services, etc.).” *Id.* at 2:47–56.

Although the aforementioned disclosures provide guidance as to the functionality of an “interactive television program guide” (i.e., navigable, selectable, and capable of controlling certain functions or settings), neither party directs us to, nor can we find, a disclosure in the specification that specifically identifies what element or elements constitute a “guide.” Given the lack of disclosure in this regard, we decline to limit the “guide” to a single software application. Rather, these disclosures support Comcast’s proposed construction that an “interactive

television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.”

We further clarify that, based on the plain language of independent claims 1, 5, 8, 11, 14, and 17, they indicate that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” (alteration in original) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004))). Our determination in this regard is supported by the specification, which includes various embodiments that treat these claim terms as separately identifiable elements capable of communicating with each other. *See, e.g.*, Ex. 1201, 12:34–37 (“In still another suitable approach, the [local interactive television program guide and remote access interactive television program guide] may be different guides that communicate in a manner or manners discussed . . . herein.”), 20:18–23 (“The remote access [interactive television] program guide may . . . send audio, graphical, and text messages to the local interactive [television] program guide for playing or display by user television equipment 22.”). The specification also explains that the “local interactive television program guide” and “remote

access interactive television program guide” may be the same guide, in which case they are separately identifiable elements in that each guide is compiled to run on a different platform. *See id.* at 12:29–32 (“The remote access and local guide may, for example, be the same guide but compiled to run on two different platforms and to communicate in a manner or manners discussed herein.”).

We decline to adopt Rovi’s proposed constructions of the claim terms “local/remote access interactive television program guides” for two reasons. First, we are unable to determine how Rovi’s proposed constructions add any clarity to the scope and meaning of an “interactive television program guide.” That is, we view each of Rovi’s proposed constructions as circular and unhelpful because they define each of the guides as a “*guide* [that allows/allowing] navigation through television program listings.” PO Resp. 8–9 (emphasis added). Rovi, however, does not actually identify what element or elements specifically constitute the “guide.”

Second, Rovi states that its proposed constructions indicate “where the specific guide resides (i.e., on ‘user television equipment’ or over ‘a remote access link’),” but readily admits that “these additions merely restate the language of the broader claim limitation[s].” PO Resp. 12–13 (emphasis omitted) (citing Ex. 1250, 185, 190). It is well settled that the U.S. Court of Appeals for the Federal Circuit disfavors any claim interpretation that renders a claim term or phrase superfluous. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“The Board was correct to not include in its construction of ‘menu’

features of menus that are expressly recited in the claims. . . . Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.”). If we were to adopt the language in Rovi’s proposed constructions pertaining to where each guide resides, it would render superfluous the language that is already explicitly recited in independent claim 1, and similarly recited in independent claims 5, 8, 11, 14, and 17—namely, “over a remote access link” and “a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide equipment includes user television equipment.”<sup>4</sup>

Turning now to the extrinsic evidence, in Dr. Tjaden’s Declaration accompanying the Petition, he testifies that “the local [interactive television program] guide may be implemented at least in part on a server or other device outside the user’s home.” Ex. 1202 ¶ 35. To support this testimony, he directs us to Rovi’s interpretation of the claim term “local interactive television program guide” in the related ITC proceeding. *Id.* (citing Ex. 1245, 56; Ex. 1246, 43). In Dr. Tjaden’s Declaration accompanying the Reply, he elaborates further on his initial position by testifying

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<sup>4</sup> During oral argument, in response to a question regarding the ITC’s construction of the “local interactive television program guide” being on user television equipment and its construction that the “remote access television program guide” uses a remote access link, counsel for Rovi stated that “I don’t think where [the guides are] implemented is meaningful because that’s recited in the claim separately.” Tr. 66:22–67:24.

that “a [person of ordinary skill in the art] looking at the ’263 Patent would have understood that many different arrangements of the software and hardware components comprising an interactive television program guide are possible and acceptable in [the] prior art used to show obviousness.” Ex. 1252 ¶ 15. To support this testimony, he directs us to the different arrangements of software and hardware in the ’263 patent. *Id.* (citing Ex. 1201, 4:30–33, 4:47–49, 4:57–61, 6:48–50, 7:53–60, Figs. 1, 2a–2d).

Dr. Shamos’s Declaration in the ITC proceeding serves as further evidence as to what element or elements constitute a “guide.” Although we recognize that the broadest reasonable interpretation standard governs in this proceeding, whereas the district court claim construction standard governs in an ITC proceeding, Dr. Shamos’s testimony in the ITC proceeding is relevant here because it sheds some light on what element or elements he believes constitutes a “guide.” In the ITC proceeding, Dr. Shamos testifies that the claim term “local interactive television program guide” could be an “extensive collection of hardware and software.” Ex. 1254 ¶ 169. He also testifies “that the ‘local [interactive television program] guide’ [should not be construed as] a single software application that must reside on a device in the user’s home,” and “[n]othing in the claims exclude a ‘recording application’ from being part of the local [interactive television program] guide.” *Id.* ¶ 371. Dr. Shamos’s testimony in the ITC proceeding is consistent with Dr. Tjaden’s testimony in this proceeding because, like Dr. Tjaden, Dr. Shamos does not limit a “guide” to a single software application, but

rather contemplates that the “guide” may constitute different arrangements of software and hardware.

We note that the aforementioned testimony from Dr. Tjaden and Dr. Shamos suggests that the “guide” may include both software and hardware. Rovi likewise argues that its proposed construction is broader than Comcast’s because “it does not unnecessarily restrict the guides to ‘control software.’” PO Resp. 10. We do not find support in the intrinsic record that the “guide” may include hardware. Rather, the ’263 patent separately refers to the interactive television program guide and the hardware on which it is implemented. *See, e.g.*, Ex. 1201, 1:37–38 (“Interactive television program guides are typically implemented on set-top boxes . . . .”). The aforementioned testimony, however, is consistent with our finding that the “guide” may constitute more than just a single software application.

In summary, upon weighing all the evidence bearing on the construction of the claim term “interactive television program guide,” we maintain that the broadest reasonable interpretation of this claim term is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” We also maintain that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide.

*B. Obviousness Over the Combined Teachings of  
Blake and Killian*

Comcast contends that claims 1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18 of the '263 patent are unpatentable under § 103(a) over the combined teachings of Blake and Killian. Pet. 23–51. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1202 ¶¶ 94–193. In its Patent Owner Response, Rovi presents a number of arguments as to why the combined teachings of Blake and Killian do not render the limitations of independent claims 1, 5, 8, 11, 14, and 17 obvious. PO Resp. 19–39. Rovi relies upon the Declaration of Dr. Shamos to support its positions. Ex. 2208 ¶¶ 165–195.

We begin our analysis with the principles of law that generally apply to a ground based on obviousness, followed by an assessment of the level of skill in the art, proceeded by brief overviews of Blake and Killian, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

*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 non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze this asserted ground based on obviousness with the principles identified above in mind.

## 2. *Level of Skill in the Art*

There is evidence in the record before us that enables us to determine the knowledge level of a person of ordinary skill in the art. Relying on the testimony of its declarant, Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art as of July 17, 1998, which is the earliest priority date on the face of the '263 patent, would be an individual who possesses the following:

a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and two years of experience with interactive program guides, set-top boxes, mobile computer devices, and techniques for delivering content or program guides over communication networks, such as a cable system, a local-area network, and the Internet.

Pet. 17 (quoting Ex. 1202 ¶ 28). Alternatively, once again relying on the testimony of Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art “could have had equivalent experience in industry or



research, such as designing, developing, evaluating, testing, or implementing [these] technologies.” *Id.* (quoting Ex. 1202 ¶ 28). Conversely, Rovi’s declarant, Dr. Shamos, does not offer an assessment of the level of skill in the art as of July 1998, nor does he explicitly state his intent to adopt Dr. Tjaden’s assessment. *See generally* Ex. 2208. Given Dr. Shamos’s silence on this matter, we adopt Dr. Tjaden’s assessment because it is consistent with the ’263 patent and the asserted prior art, and apply it to our obviousness evaluation below.

### 3. Blake Overview

Blake generally relates to a television schedule system with enhanced recording capability. Ex. 1222, 1:17–19. Blake specifically describes the enhanced recording capability with reference to Figures 12 and 13. *Id.* at 16:11–18:29.

Figure 12 of Blake is reproduced below:

	11:00 AM	11:30 AM	12:00 PM
2	JUDGE (PART 1)	JUDGE (PART 2)	AT NOON
4	GOLDEN GIRLS	NEWS	INSIDE EDITION
5	YOUNG & RESTLESS		NEWS
7	PERFECT STRA	LOVING	ALL MY CHILD
9	SESAME STREET		
13	ALL MY CHILDREN		NEWS
44	EVERYDAY		MOVIE
A&E	LORNE GREEN'S WORLD OF S		FUGITIVE
CNN	NEWS		NEWS
DIS	WALT DISNEY PRESENTS		LUNCH BOX
LIF	JANE WALLACE		FRUGAL GOURM
TNT	MOVIE		
CH 2	KNTV-FOX	CBL 2	11:25A TUE APR 3

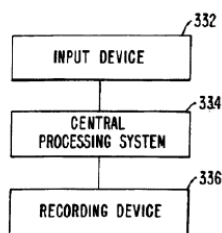
FIG. 12.

Figure 12 of Blake illustrates an example of a television schedule guide that provides television schedule information in a grid-like display on a television screen. Ex. 1222, 16:12–14. Through a user

interface, a user may scroll through the television schedule information and may tune to a program by highlighting and selecting a program displayed in the guide. *Id.* at 16:17–19. Also, the user may select one or more programs for automatic, unattended recording. *Id.* at 16:17–19, 16:22–25. Peripheral devices—which may be televisions, video cassette recorders (“VCRs”), or set-top boxes—store time and channel information entries for programs to be recorded. *Id.* at 4:28–30, 16:26–28.

Blake incorporates by reference the entirety of Young. Ex. 1222, 2:3–5. Blake presents Young as background information and describes it in similar terms to that of Figure 12—namely, Blake states that Young discloses a system that provides television schedule information on a user’s television screen, and allows for user selection of programs and the automatic, unattended recording of programs that are listed in the television schedule information. *Id.* at 1:23–24, 1:27–30.

Figure 13 of Blake is reproduced below:



*FIG. 13.*

Figure 13 of Blake illustrates an arrangement for scheduling recordings from a remote location. Ex.

1222, 4:5–6. According to Blake, the user’s ability to schedule recordings from a remote location enhances the recording capability of the schedule guide. *Id.* at 17:1–2. In Figure 13, a user who is away from home employs input device 332 to access and communicably connect to central processing system 334. *Id.* at 17:3–5. Input device 332 may be any device capable of transmitting data from a remote location, including a personal or laptop computer or cellular telephone. *Id.* at 17:5–8. Recording device 336 may be a VCR or any device with video and/or audio recording capabilities. *Id.* at 17:19–21.

Input device 332 transmits user input in one of several forms, including: a code; channel, date, time, and length information; the title; or theme data. Ex. 1222, Claims 4–7, 17:8–10, 17:15–16, 17:25–26, 18:1–2. Where the input information is theme data, the user first chooses to select a program to record by themes. *Id.* at 18:5–7. For example, if the user wishes to record the Chicago Bulls v. Los Angeles Lakers game, the user selects sports when presented with a list of theme selections, and further selects basketball. *Id.* at 18:5–8. The user is presented with a list of basketball games that are either being played or are scheduled to be played, and then selects the Bulls v. Lakers game. *Id.* at 18:8–10. Alternatively, the user may enter “Bulls,” and processing system 334 will present a list of Bulls games, and the user may select one or more of the games to record. *Id.* at 18:10–12. The input data are received by processing system 334, which stores the information and activates recording device 336 to record the program at the appropriate time. *Id.* at Claim 1, 17:10–19, 17:29–30, 18:12–16.

#### 4. *Killian Overview*

Killian generally relates to an electronic programming guide that operates on a computing platform using information from the Internet for display on a television. Ex. 1208, 2:1–3, 3:18–23. Killian uses viewer profiles to generate a preferred programming schedule that allows viewers to more intelligently select programs that may be desirable for viewing or recording. *Id.* at 10:61–66. Each viewer associated with a television receiver may generate a viewer profile for storage in a database, and the database may include an arrangement of information at one or more locations that are integral to or separate from the television receiver. *Id.* at 9:10–25. The preferred schedule that is generated according to the user profile indicates the desirability of a particular program relative to other programs. *Id.* at 2:11–12.

#### 5. *Claims 1, 5, 8, 11, 14, and 17*<sup>5</sup>

In its Petition, Comcast contends that Blake’s television schedule system with enhanced recording capability accounts for all the limitations of independent claims 1, 5, 8, 11, 14, and 17. Pet. 23–27 (citing Ex. 1222, 4:24–30, 17:1–21, 18:1–16, Figs. 12–13); *see also id.* at 32–48 (citing Ex. 1202 ¶¶ 116, 117, 127); *id.* at 54–63 (showing correspondence among the limitations in the independent claims). For instance, Comcast relies on Blake’s television schedule guide

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<sup>5</sup> Comcast contends that independent claims 1, 5, 8, 11, 14, and 17 stand or fall together. Pet. 12–14. Rovi does not dispute Comcast’s assertion in this regard. *Accord* PO Resp. 19–39 (treating independent claims 1, 5, 8, 11, 14, and 17 as standing or falling together).

illustrated in Figure 12 as an example of a display generated by a “local interactive television program guide.” *Id.* at 26, 34–35. Comcast also relies on Blake’s input device 332 as a “mobile device” (*id.* at 27, 39–40), and the ability of the user in Blake to select a program to record according to themes, which allows for navigating program listings and making program selections, as establishing a “remote access interactive television program guide” (*id.* at 27–28, 37–38 (citing Ex. 1202 ¶¶ 99–103, 134–137)).

To the extent Blake does not disclose certain limitations, Comcast presents alternative arguments. Pet. 28–30, 38–40 (“remote access interactive television program guide”); *id.* at 30–31, 42–43 (“user profile”); *id.* at 33 (“Internet communications path”); *id.* at 46–47 (“local interactive television program guide”). Of particular importance to this case, Comcast relies on Killian’s viewer profiles (i.e., user profile data) to teach the claimed “user profile.” *Id.* at 15, 30–31, 42–43. Here, Comcast argues that it would have been obvious to one of ordinary skill in the art to implement Killian’s viewer profiles in the remote user interface on Blake’s input device 332 to better track a user’s preferences and generate more effective user interfaces that better identify desired/undesired content. *Id.* at 31, 42–43.

For added clarity, we highlight certain arguments presented by Comcast for each limitation recited in independent claim 1. We note that there is no dispute between the parties as to whether the limitations of independent claims 5, 8, 11, 14, and 17 are essentially the same as the limitations of independent claim 1. *Compare* Pet. 12–15, 51, *with* PO Resp. 19–22.

Beginning with the preamble of independent claim 1, Comcast contends that Blake teaches “a system for selecting television programs over a remote access link comprising an Internet communications path for recording” because Blake discloses selecting programs for recording using a remote user interface on input device 332. Pet. 32 (citing Ex. 1222, 18:1–10; Ex. 1202 ¶¶ 115, 116). According to Comcast, these selections are sent to central processing system 334, which, in turn, stores program selections made remotely and activates recording device 336 to record the selected program. *Id.* (citing Ex. 1222, 17:13–15, 18:12–16; Ex. 1202 ¶ 115).

Comcast further argues that, to the extent Blake does not disclose “a remote access link comprising an Internet communications pathway,” this limitation would have been obvious in light of Blake’s system. Pet. 33 (citing Ex. 1202 ¶ 117). Comcast argues that Blake discloses that input device 332 “transmit[s] data from a remote location,” and the Internet was a common way of transmitting data from a remote location, as evidenced by Killian. *Id.* (quoting Ex. 1222, 17:5–8) (citing Ex. 1208, 3:18–20, 3:38–43; Ex. 1202 ¶¶ 117, 118). Comcast asserts that a person of ordinary skill in the art would have found it obvious to try using the Internet to transmit Blake’s program guide information because Internet transmission was well-known as an identified, predictable solution to data transmission that provides predictable benefits. *Id.* (citing Ex. 1202 ¶¶ 117, 118).

Comcast contends that Blake teaches “local interactive television program guide equipment on which a local interactive television program is

implemented,” as recited in independent claim 1, because Blake discloses television equipment within a user’s home that includes software that uses television schedule information to generate a local guide. Pet. 33–34 (citing Ex. 1222, 4:10–16, 4:26–30, 5:1–3, Fig. 12; Ex. 1202 ¶¶ 121–123). Comcast argues that Blake discloses a local guide that displays television program listing information to a user on a television or monitor, and allows the user to interact with the local guide via a remote control or other interface to schedule program recordings. *Id.* at 34 (citing Ex. 1222, 6:18–20, 15:3–5, 16:12–16, 16:26–33, Fig. 12; Ex. 1202 ¶ 122). Comcast argues that Young, which Blake incorporates by reference in its entirety, further discloses a local guide with interactive features that users may personalize based on user preferences, such as themes. *Id.* (citing Ex. 1222, 2:8–9; Ex. 1223, 10:13–18, 10:45–47, 11:26–28, 12:46–54, 13:1–5, 13:61–63; Ex. 1202 ¶ 125).

Comcast contends that Blake teaches “wherein the local interactive television program guide equipment includes user television equipment located within a user’s home,” as recited in independent claim 1, because Blake implements a portion of the local guide on television equipment in a user’s home, which may include devices such as set-top boxes, personal computers, personal computer televisions, and VCRs. Pet. 35–36 (citing Ex. 1222, 4:24–26, 4:28–32, 5:2–6). Comcast argues that Blake’s central processing system 334 also constitutes part of the claimed “local interactive television program guide equipment” because it provides program guide functionality on equipment in the user’s home, such as the scheduling

of recordings. *Id.* at 36 (citing Ex. 1222, 17:1–5, 18:5–16; Ex. 1202 ¶ 127). Notably, Comcast argues that, when applying the broadest reasonable interpretation standard, the claimed “local interactive television program guide” is not limited to an implementation solely on equipment within the user’s home and, therefore, Comcast asserts that Blake’s central processing system 334 properly constitutes part of the claimed “local interactive television program guide equipment.” *Id.* (citing Ex. 1202 ¶¶ 35, 127). Comcast further argues that Blake teaches wherein “the local interactive television program guide generates a display of one or more programs listings for display on a display device at the user’s home,” as recited in independent claim 1, because Blake’s local guide generates and displays “television schedule information . . . in a grid-like display on the television screen.” *Id.* (quoting Ex. 1222, 16:12–14) (citing Ex. 1222, 6:11–13, 6:18–19, Fig. 12).

Comcast contends that Blake teaches “a remote program guide access device located outside the user’s home on which a remote access interactive television program guide is implemented,” as recited in independent claim 1, because Blake’s input device 332 allows “a user who is away from home to record a program remotely by . . . access[ing] and communicably connect[ing] to central processing system 334.” Pet. 37 (quoting Ex. 1222, 17:3–5) (citing Ex. 1202 ¶¶ 132, 133). Comcast argues that the remote user interface on Blake’s input device 332 generates a display of television program listings according to themes. *Id.* (citing Ex. 1222, 18:8–10; Ex. 1202 ¶¶ 134, 135). Comcast further argues that the remote user



interface on Blake's input device 332 constitutes software that allows the user to view and navigate television program listings, make program selections, and control recording device 336 to record a selected program. *Id.* at 37–38 (citing Ex. 1222, 18:1–16; Ex. 1202 ¶¶ 134, 135). Comcast asserts that, because the remote user interface on Blake's input device 332 presents television program listings and receives selections of programs for recording, a person of ordinary skill in the art would have understood that it constitutes the claimed "remote access interactive television program guide." *Id.* at 38 (citing Ex. 1202 ¶¶ 136, 137). Comcast further argues that Blake teaches "wherein the remote program guide access device is a mobile device," as recited in independent claim 1, because Blake's input device 332 may be a "laptop computer" or "cellular telephone," both of which are mobile devices. *Id.* at 39–40 (quoting Ex. 1222, 17:5–8) (citing Ex. 1202 ¶ 132).

Comcast contends that Blake teaches "generat[ing] a display of a plurality of program listings for display on the remote program guide access device," as recited in independent claim 1, because, when applying the broadest reasonable interpretation standard, a person of ordinary skill in the art would have understood that the remote user interface on Blake's input device 332 constitutes the claimed "remote access interactive television program guide." Pet. 40 (citing Ex. 1202 ¶¶ 146, 147). Comcast also argues that, to the extent Blake does not disclose explicitly that the remote user interface on input device 332 displays a "remote access interactive television program guide," a person of ordinary skill in the art would have found it obvious to

display an interactive guide that includes television program listings on Blake's input device 332 using conventional television interactive program guide features, such as those taught by Blake, Young, or Killian. *Id.* (citing Ex. 1202 ¶¶ 139, 141, 143, 146, 147).

Comcast also contends that Blake teaches "wherein the display of the plurality of program listings is generated based on a user profile stored at a location remote from the remote program guide access device," as recited in independent claim 1, because Blake discloses that a user may customize television program information "[b]y utilizing the user interface . . . [to] sort, mix, and create a special customized line-up of channels within the television schedule guide." Pet. 40 (quoting Ex. 1222, 16:20–22) (citing Ex. 1202 ¶¶ 149, 150). According to Comcast, Blake discloses that a user may filter television program listings by themes, which entails the remote guide generating a list of television programs matching a selected theme by taking into account the user's individual preferences/selections. *Id.* at 41 (citing Ex. 1222, 18:5–10; Ex. 1202 ¶¶ 150, 151). Comcast further argues that Blake discloses that the user's preferences/selections are stored at central processing system 334, which is located remotely from input device 332. *Id.* (citing Ex. 1222, 18:12–14; Ex. 1202 ¶¶ 151, 152).

Alternatively, Comcast contends that, to the extent Blake does not teach the claimed "user profile," Killian teaches this limitation because it discloses software that generates guide displays based on viewer profiles 84 stored on profile database 80 located either locally or remotely. Pet. 42 (citing Ex. 1208, 1:20–41, 7:49–58, 9:10–25, 10:61–66, 11:20–21; Ex. 1202 ¶¶ 154–156).

Comcast asserts that it would have been obvious to one of ordinary skill in the art to implement Killian's viewer profiles in Blake's remote user interface on input device 332 to better track a user's preferences and generate more effective user interfaces that better identify desired/undesired content. *Id.* at 42–43 (citing Ex. 1202 ¶ 157).

Comcast contends that Blake teaches “receiv[ing] a selection of a program listing of the plurality of program listings in the display, wherein the selection identifies a television program corresponding to the selected program listings for recording by the local interactive television program guide,” as recited in independent claim 1, because Blake discloses that the remote user interface on input device 332 displays a remote guide that allows a user to view and navigate television program listings according to themes, make program selections, and control recording device 336 to record a selected program. Pet. 43–44 (citing Ex. 1222, 14:26–32, 16:12–25, 17:8–10, 18:8–10, Fig. 12; Ex. 1202 ¶¶ 138–143, 159–161). Comcast further argues that, once the user makes a selection (e.g., by selecting a basketball game) via the remote user interface on Blake's input device 332, “processing system 334 will activate recording device 336 at the user's home to record the game(s).” *Id.* at 44 (quoting Ex. 1222, 18:12–16).

Comcast contends that Blake teaches “transmit[ting] a communication identifying the television program corresponding to the selected program listing from the remote access interactive television program guide to the local interactive television program guide over the Internet

communications path,” as recited in independent claim 1, because Blake discloses that, after central processing system 334 receives a program recording request from input device 332 over a network, central processing system 334 activates recording device 336 (e.g., VCR 32 illustrated in Figure 1) to record the selected program. Pet. 45 (citing Ex. 1222, 17:13–15, 18:12–16; Ex. 1202 ¶¶ 164–166). Comcast further argues that, consistent with its proposed construction of the claim term “local interactive television program guide,” Blake’s central processing system 334 is part of the local guide because it implements guide functionality, including recording commands, in support of the local guide. *Id.* at 46 (citing Ex. 1202 ¶¶ 168, 169). Consequently, Comcast asserts that Blake’s remote guide sending a recording request to central processing system 334 discloses this “transmitting” limitation because Blake’s central processing system 334 constitutes part of the claimed “local interactive television program guide.” *Id.* (citing Ex. 1202 ¶¶ 168–170).

Lastly, Comcast contends that Blake teaches “wherein the local interactive television program guide receives the communication,” as recited in independent claim 1, because Blake discloses that the recording request sent from the remote guide is received at the home television/guide equipment for recording on recording device 336. Pet. 47–48 (citing Ex. 1222, 16:29–33, 17:1–5, 18:12–16). Comcast also contends that Blake teaches “record[ing] the television program corresponding to the selected program listing responsive to the communication using the local interactive television program guide equipment,” as

recited in independent claim 1, because Blake discloses that, “[i]f a time slot for the time currently indicated by the clock indicates that a program is to be recorded then the channel broadcasting the program is selected and the VCR is controlled to record to the program.” *Id.* (quoting Ex. 1222, 16:31–33) (citing Ex. 1222, 17:18–19, 18:12–16; Ex. 1202 ¶¶ 174–176).

Turning to the rationale to combine, Comcast contends that it would have been obvious to one of ordinary skill in the art to implement Killian’s viewer profiles in the remote user interface on Blake’s input device 332 to better track a user’s preferences and generate more effective user interfaces that better identify desired/undesired content. Pet. 31 (citing Ex. 1202 ¶ 111), 42–43 (citing Ex. 1202 ¶ 157). Comcast argues that combining the teachings of Blake and Killian in this manner would have been nothing more than using known techniques (i.e., Killian’s technique of storing user profile data) to improve a similar device (i.e., Blake’s theme-filtered program interface display) in the same way to produce the predictable result of providing users with better access to desired program listings. *Id.* at 31, 43.

In its Patent Owner Response, Rovi presents a number of arguments that can be grouped as follows: (1) whether Comcast has demonstrated that Blake and Killian, either alone or in combination, account for all the limitations of independent claims 1, 5, 8, 11, 14, and 17; and (2) whether Comcast has demonstrated that a person of ordinary skill in the art would have had a sufficient reason to combine the teachings of Blake and Killian. *See* PO Resp. 19–39. We address these groupings of arguments in turn.

*a. Limitations**i. Blake Teaches Two Interactive Television Program Guides in Communication with Each Other*

Rovi contends that each independent claim requires two interactive television program guides—namely, “a local interactive television program guide” and “a remote access interactive television program guide”—in communication with each other. *See* PO Resp. 19–21. Rovi argues that, although Blake’s television schedule system allows a user to schedule programs for recording remotely, Blake does not use a separate “remote access interactive television program guide” in communication with a “local interactive television program guide” to schedule these remote recordings, as required by the claims. *Id.* at 23 (citing Ex. 2208 ¶¶ 165, 168). Instead, Rovi argues that Blake’s central processing system 334 is responsible for implementing the transmitting and receiving functionalities of both (1) the remote user interface on Blake’s input device 332; and (2) the local guide on central processing system 334. *Id.*

Rovi contends that Comcast’s position that Blake’s central processing system 334 is part of the claimed “local interactive television program guide” does not render the claim obvious because central processing system 334 uses a single guide to present content and functionality to input device 332 so that the user can select television recordings remotely. PO Resp. 24 (citing Ex. 1222, 17:10–18, 17:25–30, 18:10–16, 18:18–29; Ex. 2208 ¶¶ 170–172; Ex. 1232, 9; Ex. 1233, 12; Ex. 1240, 4). That is, Rovi argues that Blake’s central processing system 334 is the source of the information

and functionality presented to the user on Blake's input device 332. *Id.* at 24–25 (citing Ex. 1222, 17:10–18, 17:25–30, 18:10–16, 18:18–29; Ex. 2208 ¶¶ 173, 174; Ex. 1232, 9–10). According to Rovi, Comcast's declarant, Dr. Tjaden, supports this line of reasoning because, during his deposition, he stated that Blake's input device 332 gets “its program guide functionality from” central processing system 334. *Id.* at 25 (quoting Ex. 2207, 139:15–17) (emphasis omitted) (citing Ex. 2207, 139:2–140:8). Consequently, Rovi argues that Blake does not teach two separately identifiable guides because it is central processing system 334—and not input device 332 or a separate remote interactive television program guide—that provides any purported remote guide functionality. *Id.* (citing Ex. 2208 ¶¶ 173, 174). Notably, Rovi asserts that Blake's central processing system 334 is used the same way in Blake's “theme” embodiment. *Id.* at 25–26.

Rovi contends that the prosecution history of the '263 patent supports its argument that Blake only teaches a single guide. PO Resp. 26. Rovi argues that, not only did the applicants explain that Blake does not teach a remote guide, but they also submitted the Declaration of Dr. George T. Ligler during prosecution of a related application that further explains why Blake only teaches a single guide. *Id.* at 26–27 (citing Ex. 1232, 10; Ex. 1233, 12; Ex. 1238 ¶ 40). Rovi argues that the Examiner's reasons for allowance cited to the applicants' explanation that Blake does not teach a system with two guides. *Id.* at 27 (citing Ex. 1234, 18).

Next, Rovi takes issue with the cross-examination testimony of Dr. Tjaden, particularly his testimony that Blake's central processing system 334 is somehow

not part of the claimed “remote access interactive television program guide.” PO Resp. 28 (citing Ex. 2207, 140:2–8). Rovi argues that Dr. Tjaden did not provide any support for this testimony and, according to Rovi, it is contrary to his other cross-examination testimony, arguments presented and developed in the Petition, and his Declaration accompanying the Petition. *Id.* (citing Ex. 2207, 139:15–17; Pet. 46; Ex. 1202 ¶¶ 111, 153, 168). For example, Rovi argues that Dr. Tjaden testifies that Blake’s central processing system 334 implements guide functionality for the local guide and, therefore, is part of the local guide, but when confronted as to whether central processing system 334 implements guide functionality for the remote guide, he testifies that it is somehow not part of the remote guide. *Id.* at 28–29 (citing Ex. 1202 ¶¶ 153, 168, 169; Pet. 46; Ex. 2207, 139:15–17). Rovi argues that it is illogical and internally inconsistent for Comcast and Dr. Tjaden to argue that, when Blake’s central processing system 334 implements functionality for the local guide, it is part of the local guide, but when central processing system 334 implements functionality for the remote guide, it is somehow not part of the remote guide. *Id.* at 29. Rovi then asserts that, because Blake’s central processing system 334 implements both the local and remote guide, and because any testimony from Dr. Tjaden suggesting the contrary is internally inconsistent, Blake does not render obvious the requirement that the claimed “remote access interactive television program guide” be implemented on “a remote program guide access device.” *Id.* at 29–30 (citing Ex. 2208 ¶¶ 178–181).



In its Reply, Comcast contends that Rovi's declarant, Dr. Shamos, readily admits that Blake teaches a separate remote guide that communicates with the local guide. Pet. Reply 3–4. Comcast argues that Dr. Shamos testified at the ITC that a selection made using the remote user interface on Blake's input device 332 is communicated to Blake's local guide. *Id.* at 3 (citing Pet. 47; Ex. 1246, 1138:5–15). Comcast argues that, even though Dr. Shamos admits this testimony is correct in his Declaration accompanying the Patent Owner Response, he argues that the Board mischaracterized his testimony in the Decision on Institution and clarifies that he never testified that Blake's input device implements a remote guide. *Id.* (citing Ex. 2208 ¶ 82). Comcast, however, asserts that the logical conclusion of Dr. Shamos's testimony is that, if it were obvious to one of ordinary skill in the art for the remote user interface on Blake's input device 332 to include a separate guide, then it also would have been obvious to have guide-to-guide communication. *Id.* at 4.

Notwithstanding Dr. Shamos's admission at the ITC, Comcast presents three reasons as to why it disagrees with Rovi's argument that the remote user interface on Blake's input device 332 is not a separate guide. Pet. Reply 5. First, Comcast contends that the remote user interface on Blake's input device 332 performs all the functions of the claimed "remote access interactive television program guide" and, therefore, satisfies the broadest reasonable interpretation of an "interactive television program guide." *Id.* at 5–9. Second, Comcast contends that Rovi ignores certain aspects of the claimed "local/remote

access television program guides” that undermine its arguments. *Id.* at 5, 10–13. In particular, Comcast argues that Blake teaches two guides that interact in the same way as the claimed “local/remote access television program guides.” *Id.* at 5, 12–13 (citing Ex. 1201, 13:35–41; Ex. 1252 ¶ 36). Third, Comcast contends that, in arguing that Blake teaches a single guide, Rovi mischaracterizes the supporting testimony of Comcast’s declarant, Dr. Tjaden, and misunderstands the relevant technology. *Id.* at 5, 14–15.

Based on the record developed during trial, we agree with Comcast that Blake teaches two separately identifiable guides in communication with each other. *See* Pet. 33–47. Beginning with the claimed “local interactive television program guide,” Comcast argues—and we agree—that Blake’s central processing system 334, together with recording device 336, teach the claimed “local interactive television program guide equipment on which a local interactive television program is implemented.” *See id.* at 25–26, 33–36. Figure 12 of Blake illustrates an example of a television schedule guide that provides television schedule information in a grid-like display on a television screen. Ex. 1222, 16:12–14. Blake describes the remote recording capabilities of this television schedule guide with reference to Figure 13. *Id.* at 17:1–2. Figure 13 of Blake illustrates that a user who is away from home employs input device 332 to access and communicably connect to central processing system 334. *Id.* at 17:3–5.

With respect to Blake’s “theme” embodiment, Blake states that processing system 334 “present[s] a list of

[basketball] games to the user, and the user may select one or more games to record.” Ex. 1222, 18:10–12. After the user has made his/her selection, processing system 334 confirms the user’s selection, stores that information upon receiving confirmation from the user, and, at the appropriate time, activates recording device 336 located at the user’s home to record the selected game. *Id.* at 18:12–16. Based on these disclosures in Blake, we find that Blake’s central processing system 334, together with recording device 336, implements the claimed “local interactive television program guide.”

Our finding in this regard is consistent with the plain language of the independent claims of the ’263 patent. These claims delineate the functions of the “local interactive television program guide,” “remote access interactive television program guide,” and “local interactive television program guide equipment.” In particular, it is the responsibility of the “local interactive television program guide” to “receive[ ] the communication and record[ ] the television program . . . using the local interactive television program guide equipment.” Ex. 1201, 28:59–63; *see also id.* at 29:38–44, 30:11–21, 30:49–59, 31:11–19, 31:28–31, 32:7–14, 32:23–27 (reciting similar limitations). Similar to the claimed “local interactive television program guide,” Blake’s central processing system 334 also receives a communication identifying a television program to be recorded and then uses recording device 336 to record the program. Ex. 1222, 18:12–16.

Our finding that Blake’s central processing system 334 implements, in part, the claimed “local interactive

television program guide” also is consistent with our construction of “interactive television program guide.” In our claim construction section above, we determine that the broadest reasonable interpretation of an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *See supra* Section II.A. We clarify that neither the intrinsic or extrinsic record limits the “guide” to a single software application. *See supra* Section II.A. Consequently, when the software on Blake’s central processing system 334 works in conjunction with input device 332 to render a television schedule guide that allows a user to select desired programs for recording according to themes, we find that it effectively operates as part of an “interactive television program guide” because it displays program listings and allows the user to navigate through the listings, make selections, and control recording functions.

Comcast’s declarant, Dr. Tjaden, provides testimony supporting our finding that Blake’s central processing system 334 implements, in part, the claimed “local interactive television program guide.” In his Declaration accompanying the Petition, Dr. Tjaden testifies that “the local guide is implemented at least in part on a server or other device outside the user’s home.” Ex. 1202 ¶¶ 35, 127. Dr. Tjaden further testifies that the “local guide equipment and local guide could include hardware and software of a central data server, such as software that is implemented on central processing system 334 to activate recording a

program on . . . recording device [336].” *Id.* ¶ 127. We credit the aforementioned testimony of Dr. Tjaden because it takes into account the reasonable inferences one of ordinary skill in the art would draw to explain how Blake’s central processing system 334 works in conjunction with input device 332 to render a television schedule guide that allows a user to select desired programs for recording according to themes at recording device 336. *See KSR*, 550 U.S. at 418 (explaining that an obviousness evaluation “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ”).

Turning to the claimed “remote access interactive television program guide,” Comcast argues—and we agree—that the remote user interface on Blake’s input device 332 teaches the claimed “remote access interactive television program guide.” *See* Pet. 27–28, 37–38. With respect to Blake’s “theme” embodiment, the user enters input in the form of theme data into input device 332, which may be, among other things, a personal or laptop computer. Ex. 1222, 17:5–8, 18:1–12, Claims 1, 7. In this embodiment, the user first selects to record a program by themes, then selects sports, then basketball, at which time the user is presented with a list of basketball games, and the user selects the game to be recorded. *Id.* at 18:5–10. Based on these disclosures in Blake, we find that the remote user interface on Blake’s input device 32 implements the claimed “remote access interactive television program guide.”

Our finding in this regard is consistent with the plain language of the independent claims of the '263 patent. As we explain previously, these claims delineate the functions of the “local interactive television program guide,” “remote access interactive television program guide,” and “local interactive television program guide equipment.” In particular, it is the responsibility of the “remote access interactive television program guide” to “generate[] a display of a plurality of program listings for display on the remote program guide access device”; “receive[] a selection of a program listing of the plurality of program listings in the display”; and “transmit[] a communication identifying the television program corresponding to the selected program listing . . . to the local interactive television program guide.” Ex. 1201, 28:44–58, 29:12–37, 29:62–30:15, 30:32–53; *see also id.* at 31:11–21, 32:7–22 (reciting similar limitations). Similar to the claimed “remote access interactive television program guide,” the remote user interface on Blake’s input device 332 also generates a display by rendering a television schedule guide that permits selections according to themes, receives selections within the display, and then transmits those selections to central processing system 334, which, as we explain previously, partially implements the claimed “local interactive television program guide.” Ex. 1222, 18:1–12.

Our finding that the remote user interface on Blake’s input device 332 implements the claimed “remote access interactive television program guide” also is consistent with our construction of “interactive television program guide.” In our claim construction

section above, we determine that the broadest reasonable interpretation of an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *See supra* Section II.A. When the remote user interface on Blake’s input device 332 generates a display by rendering a television schedule guide that allows a user to select desired programs for recording according to themes, we find that it effectively operates as an “interactive television program guide” because it displays program listings and allows the user to navigate through the listings, make selections, and control recording functions.

Comcast’s declarant, Dr. Tjaden, provides testimony supporting our finding that the remote user interface of Blake’s input device 332 implements the claimed “remote access interactive television program guide.” Dr. Tjaden testifies that “[a person of ordinary skill in the art] . . . would have concluded that Blake’s input device 332 implements control software for interactively selecting programs for recording by themes and transmitting program selections.” Ex. 1252 ¶ 32 (citing Ex. 1222, 17:1–8, 18:1–23). Dr. Tjaden further testifies that “[t]his control software, which is implemented on Blake’s remote personal computer (*i.e.*, [Blake’s] input device 332), is separate from the local program guide software on Blake’s control processing system 334 and [recording equipment 336].” *Id.* ¶ 33 (citing Ex. 1222, Fig. 13). We credit the aforementioned testimony of Dr. Tjaden because it takes into account the reasonable inferences

one of ordinary skill in the art would draw to explain how the remote user interface of Blake's input device 332 generates a display by rendering a television schedule guide that permits selections according to themes, receives selections within the display, and then transmits those selections to central processing system 334. *See KSR*, 550 U.S. at 418.

Rovi's declarant from the ITC proceeding, Dr. Shamos, who also happens to be Rovi's declarant in this proceeding, admitted that the user's selection made at Blake's input device 332 is communicated to the local guide. This testimony provides:

Q Doctor - - okay. My question is when a program is chosen for recording at input device 332, that's going to be communicated to central processing system 334; right?

A That's correct.

Q And then that selection at - -that would be at central processing system 334 is going to be communicated to the VCR 32; right?

A Yes.

Q So that selection is going to be communicated to the local interactive program guide in figure 1; right?

A Yes, it is.

Ex. 1246, 1138:5-15.

In his Declaration accompanying the Patent Owner Response, Dr. Shamos acknowledges this testimony at the ITC and admits "[t]hat testimony was correct, and I stand by it." Ex. 2208 ¶ 80. Nevertheless, Dr. Shamos



avers that he did not testify that Blake's "input device 332 implemented a remote [guide]." *Id.* ¶ 82.

Although Dr. Shamos asserts that this testimony is mischaracterized because it does not indicate that input device 332 implements a remote guide, Dr. Shamos still stands by his testimony, which acknowledges that a recording selection made at input device 332 is communicated to the local guide. Ex. 2208 ¶ 80. Dr. Shamos's testimony may not expressly identify that the remote user interface of Blake's input device 332 makes and communicates the recording selection by way of a remote guide, but at the same time Dr. Shamos does not dispute Dr. Tjaden's point that Blake's input device 332, as a remote personal or laptop computer, implements control software for interactively selecting programs for recording by themes. *See* Ex. 1202 ¶¶ 103, 136; Ex. 1252 ¶¶ 32, 33. This control software that is implemented on the remote personal or laptop computer (i.e., the remote user interface of Blake's input device 332) constitutes the remote guide and is separate from the local guide to which the communication is being directed. Ex. 1252 ¶¶ 32, 33. Accordingly, the user's selection referred to in Dr. Shamos's testimony reproduced above is communicated between the remote guide implemented on the remote user interface of Blake's input device 332 (i.e., the control software that is implemented on the remote personal or laptop computer) and a local guide implemented, in part, on Blake's central processing system 334.

If we were to accept Rovi's argument that Blake only teaches a single guide, then it is not clear to us how the user's selection, referred to in Dr. Shamos's

testimony reproduced above, is communicated between the remote user interface of Blake's input device 332 and a local guide implemented, in part, on Blake's central processing system 334. In essence, Dr. Shamos would be testifying that Blake teaches a single guide that communicates with itself. This is illogical. Neither Rovi nor Dr. Shamos adequately explain how or why a single guide would need to communicate a user's selection to itself, unless, as Comcast asserts, Blake teaches two separately identifiable guides in communication with each other.

We do not agree with Rovi's argument that Blake teaches a single guide because input device 332 receives some of its program guide functionality from central processing system 334. *See* PO Resp. 24–26. The specification of the '263 patent does not preclude the remote guide from receiving some of its program guide functionality from the local guide. Indeed, the specification discloses that remote and local guides may be the same guide compiled to run on two different platforms. Ex. 1201, 12:29–32. The specification also discloses that the “remote access interactive television program guide” derives some functionality from the “local television program guide.” For instance, with reference to the steps involved in providing remote access to interactive television program guide features in accordance with the principle of the '263 patent, the specification discloses that “the remote access program guide provides the user with the opportunity to remotely access functions of the interactive program guide over the remote access link.” *Id.* at 20:50–53. These program guide functions include, among other things, “*accessing*

*program guide information.” Id.* at 13:35–41(emphasis added); *see also* Ex. 2208 ¶ 17 (Dr. Shamos testifies that the interactive television program guides of the ’263 patent “allow users to access additional information about television program listings.”) Consequently, the claimed “remote access interactive television program guide” derives some program guide functionality from the claimed “local interactive television program guide,” such as accessing program guide information that is presented to the user remotely. Similarly, the remote guide implemented on the remote user interface on Blake’s input device 332 derives some program guide functionality from the local guide implemented, in part, on central processing system 334 by accessing program guide information that is presented to the user remotely. Ex. 1222, 18:1–23.

We also do not agree with Rovi’s argument that the prosecution history of the ’263 patent supports its argument that Blake only teaches a single guide. *See* PO Resp. 26–27. The applicants prosecuting the ’263 patent did not have the benefit of (1) our construction of the claim terms “local/remote access interactive television program guides,” particularly our clarification that neither the intrinsic or extrinsic record limits the “guide” to a single software application (*see supra* Section II.A); (2) the testimony from Dr. Shamos at the ITC that Blake’s input device 332 communicates the user’s selection to the local guide (Ex. 1246, 1138:5–15); and (3) the supporting testimony of Comcast’s declarant, Dr. Tjaden, who consistently takes the position that Blake teaches two separately identifiable guides in communication with

each other (*see* Ex. 1202 ¶¶ 35, 127; Ex. 1252 ¶¶ 31, 33). In addition, the Examiner's position during prosecution was that Blake disclosed a remote guide, and the Examiner disagreed with the applicants' argument that Blake only disclosed a single guide. Ex. 1239, 4–5.<sup>6</sup> Although the Examiner's Notice of Allowance generally cites back to previous arguments made by the applicants addressing multiple issues (Ex. 1234, 18<sup>7</sup>; Ex. 2204, 10–11), it is not clear to us whether the Examiner changed his mind as to the specific issue of whether Blake disclosed a remote guide. Instead, the Examiner allowed the application over several amendments that included, among other things, that the remote guide generates a display of program listings “based on a user profile stored at a location remote from the remote program guide access device.” Ex. 1234, 8–18.

Lastly, we do not agree with Rovi's arguments that the supporting testimony of Comcast's declarant, Dr. Tjaden, is illogical and internally inconsistent. *See* PO Resp. 27–30. Rovi takes issue with Dr. Tjaden's testimony that Blake's central processing system 334 provides some program guide functionality to the remote user interface on input device 332, but that central processing system 334 itself is not part of the remote guide. Ex. 1202 ¶¶ 111, 153, 168; Ex. 2207, 139:15–17, 140:2–8. We do not view Dr. Tjaden's

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<sup>6</sup> All references to the page numbers of Exhibit 1239 are to the page numbers inserted by Comcast at the bottom center of each page.

<sup>7</sup> All references to the page numbers of Exhibit 1234 are to the page numbers inserted by Comcast at the bottom center of each page.

testimony in this regard as illogical and internally inconsistent. In his Declaration accompanying the Reply, Dr. Tjaden testifies that “Blake’s remote input device 332 would necessarily get its program guide information from the central processing system 334, . . . [b]ut it is Blake’s remote input device 332 that executes the control functionality . . . , and therefore implements the remote guide under the broadest reasonable interpretation.” Ex. 1252 ¶ 35. As we explain above, we credit Dr. Tjaden’s testimony that “Blake’s input device 332 implements control software for interactively selecting programs for recording by themes and transmitting program selections” (*id.* ¶ 32), which “is separate from the local program guide software on Blake’s central processing system 334 and [recording equipment 336]” (*id.* ¶ 33). In other words, we agree with Comcast and Dr. Tjaden that, although Blake’s input device 332 interacts with central processing system 334, the remote user interface of input device 332 implements its own separately identifiable remote guide. Pet. Reply 14. We also agree with Comcast and Dr. Tjaden that the remote user interface of Blake’s input device 332 falls within the broadest reasonable interpretation of the claimed “remote access interactive television program guide,” even if it receives program guide information and some functionality from central processing system 334. *Id.* at 15 (citing Ex. 1252 ¶¶ 40–42).

As we explain above, although the remote user interface on Blake’s input device 332 receives some of its program guide functionality from central processing system 334, we agree with Dr. Tjaden that it is still the remote user interface on Blake’s input

device 332 that implements the remote guide—not central processing system 334. Indeed, the remote guide implemented by the remote user interface on Blake’s input device 332 interacts with the local guide implemented, in part, on central processing system 334 in the same manner as the claimed “local/remote access interactive television program guide” interact with one another because both sets of guides permit the remote guide to access certain functions of the local guide, such as accessing program guide information that is presented to the user remotely. *Compare* Ex. 1222, 17:1–5, 18:1–16, *with* Ex. 1201, 13:35–41, 20:50–53.

*ii. Blake’s Remote User Interface on Input Device 332 Includes Interactive Features*

Rovi contends that, even assuming that the remote user interface on Blake’s input device 332 is a separate guide, and that guide is implemented on input device 332 (and not on central processing system 334), Comcast does not demonstrate that any purported interface on Blake’s input device 332 constitutes an “interactive television program guide,” as claimed. PO Resp. 30. Rovi argues that Blake does not disclose the appearance or content of the remote user interface on input device 332, such as whether the content includes the following: (1) television program listings with channel and start time information; (2) television program listings generated based on a user profile; and (3) the ability of the user to navigate through the television program listings, or otherwise control software functions. *Id.* (citing Ex. 2208 ¶¶ 71–75, 79).

Rovi contends that Blake is devoid of any disclosure with respect to Figure 13 as to how the program guide is displayed on the remote user interface of input device 332. PO Resp. 31 (citing Ex. 2208 ¶¶ 70–72, 169; Pet. 26–28; Ex. 2207, 145:14–146:3). According to Rovi, Comcast never asserts that the television schedule guide illustrated in Blake’s Figure 12, or any guide that resembles it, is displayed in the remote user interface of input device 332 illustrated in Figure 13. *Id.* at 31–32. With respect to Blake’s “theme” embodiment, Rovi argues that this embodiment is silent as to how, and in what form, the television program listing is provided to the user. *Id.* at 32 (citing Ex. 2208 ¶¶ 75, 78, 79, 169, 175, 186). Indeed, Rovi argues that Blake contemplates, when a user dials in by telephone, he/she may be presented with “themes” and make a selection orally. *Id.* (citing Ex. 1222, [57]; Ex. 2208 ¶¶ 70, 75; Ex. 2207, 144:19–145:4).

Rovi further contends that there is no disclosure with respect to Blake’s “theme” embodiment that suggests presenting the user with a display of television program guide information, including things like channel information or television program start times, as would be required by the claimed “interactive television program guide.” PO Resp. 32–33 (citing Ex. 1222, 12:12–23, 18:1–16; Ex. 2208 ¶¶ 78, 79). Rovi further argues that there is also no disclosure that Blake’s “theme” embodiment is capable of generating a display based on a user profile, as opposed to generating a display in response to user input. *Id.* at 33 (citing Ex. 2208 ¶ 186).

Lastly, Rovi asserts that Blake does not teach using a “remote access interactive television program guide.”

PO Resp. 33. Rovi argues that, by choosing not to implement a “remote interactive television program guide” on the remote user interface of input device 332, Blake offers the user greater versatility, including allowing the user to submit requests via telephone or email. *Id.* (citing Ex. 1222, [57], 18:28–30; Ex. 2208 ¶¶ 75, 82, 169, 183). Rovi further argues that most of the embodiments disclosed in Blake are silent as to whether input device 332 has any display at all or, in many instances, these embodiments clearly indicate that input device 332 has no such display. *Id.* As additional support for this argument, Rovi contends that an “interactive television program guide” would be unnecessary for other embodiments disclosed in Blake, such as those where the user enters a predetermined program code or the title of a television program via input device 332. *Id.* at 34 (citing Ex. 2208 ¶ 184).

In its Reply, Comcast contends that the testimony of Dr. Ligler during prosecution of a related application supports its argument that the remote user interface on Blake’s input device 332 displays television program listings. Pet. Reply 4. According to Comcast, Dr. Ligler recognized that the remote user interface on Blake’s input device 332 displays a guide when he testified that Blake “disclose[s] display of program listings on input device 332 (when selecting a program according to themes).” *Id.* (quoting Ex. 1238 ¶ 35).

Notwithstanding Dr. Ligler’s admission during prosecution of a related application, Comcast provides a number of reasons as to why it disagrees with Rovi’s argument that Blake is silent as to the appearance and



content of the remote guide implemented on the remote user interface of Blake's input device 332. Pet. Reply 15. Comcast argues that, beyond displaying a program listing, which is taught by Blake, the claims do not require the appearance or content of the claimed "remote access interactive television program guide." *Id.* at 15–16. According to Comcast, after a basketball theme is selected, the remote guide may include a list of basketball games that may be displayed in time order. *Id.* at 16 (citing Ex. 1222, 12:12–15, 13:3–5, 18:1–16). Comcast acknowledges that, although Blake does not disclose what the remote guide "looks like," a person of ordinary skill in the art still would have understood from Blake's disclosure what content needs to appear and how that content may appear (e.g., how to sort the content). *Id.* (citing Ex. 1252 ¶¶ 25, 26). Comcast then reiterates that Blake clearly teaches using the remote user interface of input device 332 to navigate through program listings using theme selections. *Id.* at 16–17 (citing Pet. 37–40; Ex. 1202 ¶¶ 134–137; Ex. 1252 ¶¶ 25, 32, 39).

Based on the record developed during trial, we agree with Comcast that the remote user interface on Blake's input device 332 generates a display by rendering an interactive television schedule guide (i.e., a guide that is navigable, selectable, and capable of controlling certain functions or settings), similar to the one illustrated in Figure 12. *See* Pet. 37–44. As we explain previously, Figure 12 of Blake illustrates an example of a television schedule guide that provides television schedule information in a grid-like display on a television screen. Ex. 1222, 16:12–14. Blake describes the remote recording capabilities of this

television schedule guide with reference to Figure 13. *Id.* at 17:1–2. With respect to Blake’s “theme” embodiment, the user enters input in the form of theme data into input device 332, which may be, among other things, a personal or laptop computer. *Id.* at 17:5–8, 18:1–12, Claims 1, 7. In this embodiment, the user first selects to record a program by themes, then selects sports, then basketball, at which time the user is presented with a list of basketball games, and the user selects the game to be recorded. *Id.* at 18:5–10. Based on these disclosures in Blake, we find that the remote user interface of input device 332 generates a display by rendering a television schedule guide that allows a user to select desired programs for recording according to themes.

Comcast’s declarant, Dr. Tjaden, provides testimony supporting our finding in this regard. In his Declaration accompanying the Petition, Dr. Tjaden testifies that Blake’s input device 332 includes control software that “allows a user to navigate through the program themes/listings, make theme/program selections, and control functions of the software (e.g., scheduling a recording on . . . local recording device [336]).” Ex. 1202 ¶ 136 (citing Ex. 1222, 17:16–21, 18:1–16). In his Declaration accompanying the Reply, Dr. Tjaden clarifies that “[a person of ordinary skill in the art] would have recognized this user interface as a menu-based guide that allows a user to navigate through a menu structure to access the sorted program listings.” Ex. 1252 ¶ 25 (citing Ex. 1222, 13:1–5, 18:5–10). We credit Dr. Tjaden’s aforementioned testimony because it is consistent with the disclosures in Blake identified above.

Dr. Ligler's testimony submitted during prosecution of a related application also supports our finding that the remote user interface of Blake's input device 332 generates a display by rendering a television schedule guide that allows a user to select desired programs for recording according to themes. *See* Pet. Reply 4. With reference to the embodiments on page 18 of Blake, which includes the "theme" embodiment, Dr. Ligler testifies that Blake "disclose[s] display of program listings on input device 332 (when selecting a program according to themes)." Ex. 1238 ¶ 35. This testimony from Dr. Ligler undermines Rovi's argument that Blake's "theme" embodiment does not present the user with a display of television program guide information, as required by our construction of an "interactive television program guide." *See* Pet. 32–33.

We recognize that, when testifying that Blake's input device 332 displays program listings according to themes, Dr. Ligler immediately follows this testimony by averring that the embodiments on page 18 of Blake "do not disclose the claimed 'two guide' approach." Ex. 1238 ¶ 35. We, however, accord Dr. Ligler's testimony in this regard little, if any, weight because he did not have the benefit of (1) our construction of the claim terms "local/remote access interactive television program guides," particularly our clarification that neither the intrinsic or extrinsic record limits the "guide" to a single software application (*see supra* Section II.A); (2) the testimony from Dr. Shamos at the ITC that Blake's input device 332 communicates the user's selection to the local guide (Ex. 1246, 1138:5–15); and (3) the supporting

testimony of Comcast's declarant, Dr. Tjaden, who consistently takes the position that Blake teaches two separately identifiable guides in communication with each other (*see* Ex. 1202 ¶ 127; Ex. 1252 ¶¶ 31, 33). In addition, there is not a clear indication on this record as to whether the Examiner found this specific testimony by Dr. Ligler to be persuasive.

We do not agree with Rovi's arguments that Blake does not disclose the appearance or content of the remote user interface on input device 332 and, therefore, cannot teach the claimed "remote access interactive television program guide." *See* PO Resp. 30–34. This argument is not commensurate in scope with independent claims 1, 5, 8, 11, 14, and 17 because these claims do not require the claimed "remote access interactive television program guide" to have a specific appearance or to include certain content. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (explaining that limitations not appearing in the claims cannot be relied upon for patentability). Instead, as Comcast correctly notes in its Reply (*see* Pet. Reply 15–16), these claims only require "generat[ing] a display of a plurality of program listings for display on the remote program guide access device" (Ex. 1201, 28:44–58, 29:12–16, 29:62–64, 30:33–35, 31:21–23, 32:16–18), without specifying the appearance of such display or the inclusion of certain content. Consequently, Rovi's attempt to patentably distinguish independent claims 1, 5, 8, 11, 14, and 17 from Blake's television schedule system based on features not required by these claims is misplaced.

To the extent Rovi argues that the remote user interface of Blake's input device 332 does not display a

television schedule guide generated based on a user profile, these arguments either ignore or fail to appreciate Comcast's reliance on the teachings of Killian. *See* PO Resp. 30, 33. As we explain previously, Comcast presents arguments that either Blake or Killian teaches a "user profile," as recited in independent claims 1, 5, 8, 11, 14, and 17. *See* Pet. 29–30, 40–42. Killian, however, more clearly teaches a "user profile" because it explicitly discloses user profile data. In particular, Killian discloses software that generates program guide displays based on viewer profiles 84 stored on profile database 80 located either locally or remotely. Ex. 1208, 9:10–25, 10:61–66. Comcast also provides sufficient reasoning as to why one of ordinary skill in the art would have been prompted to modify Blake's television schedule system to include Killian's viewer profiles, which we discuss below in more detail. *See infra* Section II.B.5.b.

*iii. Remaining Limitations*

In its Patent Owner Response, Rovi does not address separately whether the combined teachings of Blake and Killian account for the remaining limitations of independent claims 1, 5, 8, 11, 14, and 17. *See generally* PO Resp. 19–34. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these remaining limitations, and we agree with and adopt Comcast's analysis. *See* Pet. 12–14, 23–30, 32–48, 51.

*b. Comcast Presents a Sufficient Rationale to Combine the Teachings of Blake and Killian*

Rovi contends that Comcast fails to explain how or why one of ordinary skill in the art would have been

prompted to modify Blake's television schedule system to include Killian's viewer profiles. PO Resp. 35. According to Rovi, Comcast relies on conclusory statements that are insufficient to support a conclusion of obviousness. *Id.* at 35–36 (citing Ex. 2208 ¶¶ 188, 189).

Rovi contends that a person of ordinary skill in the art would not have combined the teachings of Blake and Killian because these references have fundamentally different teachings and purposes. PO Resp. 36. Rovi argues that Blake is directed to scheduling a recording from a remote location using a variety of remote input devices, whereas Killian is directed to offering a viewer an optimized local television program guide with local viewer profiles. *Id.* Rovi further argues that Blake's "theme" embodiment allows a user to narrow programs by categories of interest. *Id.* According to Rovi, Comcast offers no motivation as to why Killian's viewer profiles, which offer an alternative to identify and narrow desired content, would be needed in Blake's television schedule system. *Id.* (citing Ex. 2208 ¶ 190).

Moreover, Rovi contends that Comcast fails to address how a person of ordinary skill in the art would have provided Killian's viewer profiles to Blake's input device 332. PO Resp. 36 (citing Ex. 2208 ¶ 190). Rovi argues that reconfiguring Blake's television schedule system to incorporate Killian's viewer profiles would unnecessarily complicate Blake's system because Blake offers simple remote user interfaces, whereas Killian stores viewer profiles accessed by a "suggest module" on a JAVA-based platform coupled to profile database 80 and "provide[s] more sophisticated

collective displays than were possible using prior systems.” *Id.* at 37 (quoting Ex. 1208, 2:1–11, 5:34–38) (citing Ex. 2208 ¶¶ 89, 188–192).

Next, Rovi contends, that even it were to assume that Comcast clearly explains how a person of ordinary skill in the art would have implemented Killian’s viewer profiles in Blake’s television schedule system, Comcast fails to explain the necessary motivation for doing so. PO Resp. 37 (citing Ex. 2208 ¶¶ 192–194). Rovi argues that Comcast fails to identify the problem in Blake a person of ordinary skill in the art would have been motivated to solve by implementing Killian’s viewer profiles. *Id.* (citing Ex. 2208 ¶ 194). According to Rovi, Killian’s viewer profiles would serve no purpose in most of Blake’s embodiments, such as those where the user enters a predetermined program code or calls via telephone to schedule the recording. *Id.* (citing Ex. 2208 ¶ 192). Rovi argues that Comcast’s rationale to combine the teachings of Blake and Killian depends entirely upon a person of ordinary skill in the art being motivated to modify only a subset of Blake’s user input devices (i.e., those devices capable of rendering a display) for only one of four separately disclosed embodiments (i.e., Blake’s “theme” embodiment). *Id.* at 37–38. Consequently, Rovi asserts that Comcast’s rationale to combine the teachings of Blake and Killian is based on conjecture and, therefore, does not amount to a sufficient motivation to combine. *Id.* at 38.

In its Reply, Comcast maintains that a person of ordinary skill in the art would have recognized that Killian’s viewer profiles would work in Blake’s television schedule system. Pet. Reply 22 (citing Pet.

30–31, 42–43; Ex. 1202 ¶¶ 155–158). Comcast argues that, although Blake’s remote and local guides differ in function, they are similar to the extent that both display and allow user selection of program listings. *Id.* (citing Ex. 1252 ¶¶ 48–52). Comcast, therefore, argues that it would have been obvious to one of ordinary skill in the art to apply Blake’s teachings with respect to the local guide to its remote guide. *Id.* Next, Comcast argues that Blake teaches that its guides present a customized line-up of channels. *Id.* (citing Ex. 1222, 16:20–22; Ex. 1202 ¶¶ 149, 150). Similarly, Comcast argues that Killian’s viewer profiles are used to generate tailored displays of program listings. *Id.* at 22–23 (citing Pet. 30–31, 42–43; Ex. 1202 ¶¶ 155–158). Given these similarities, Comcast asserts that a person of ordinary skill in the art would have found it obvious to use Killian’s viewer profiles to improve Blake’s local and remote guides. *Id.* (citing Ex. 1252 ¶¶ 61–64).

Comcast further contends that Killian’s viewer profiles are complementary to and compatible with Blake’s theme selections. Pet. Reply 23. According to Comcast, Killian’s viewer profiles beneficially “track a user’s preference” to “generate more effective user interfaces.” *Id.* (citing Pet. 31). Comcast then asserts that a person of ordinary skill in the art would have viewed Blake’s theme selections and Killian’s profile-specific listings as complementary techniques, both of which are capable of being employed in Blake’s remote guide. *Id.* at 23–24 (citing Ex. 1252 ¶ 64). Comcast further argues that, because Blake’s remote guide already offered multiple ways to select programs, some of which may have been preferred over others, it would



have been obvious to one of ordinary skill in the art to improve Blake's local and remote guides with Killian's viewer profiles. *Id.* at 24 (citing Ex. 1252 ¶¶ 62–64).

Comcast also disagrees with Rovi's argument that integrating Killian's viewer profiles into Blake's television schedule system would unnecessarily complicate Blake's system. Pet. Reply 23. Comcast argues that, in the scenario where Blake's input device 332 is a laptop computer, it would be well-equipped to implement sophisticated user interfaces, such as those taught by Killian. *Id.* (citing Ex. 1252 ¶ 65).

The Supreme Court has held that an obviousness evaluation "cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents." *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether Comcast has set forth "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. at 418. When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR*, 550 U.S. at 417.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the

art would have had a sufficient reason to implement Killian's viewer profiles in Blake's television schedule system. When, as here, a technique has been used to improve one device (i.e., Killian's technique of generating program guide displays based on viewer profiles), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Killian's technique to Blake's television schedule system, thereby allowing the remote user interface on Blake's input device 332 to generate a display by rendering television program listings based on user preferences), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 30–31, 42–43; Ex. 1202 ¶¶ 111, 155–157. The record includes credible evidence explaining why applying Killian's technique to Blake's television schedule system would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Comcast's declarant, Dr. Tjaden, provides the necessary motivation for doing so—namely, “to better track a user's preferences and generate more effective user interface[s]” in order to “better [identify] . . . desired/undesired content.” Ex. 1202 ¶¶ 111, 157.

We do not agree with Rovi's arguments that Blake and Killian have fundamentally different teachings and purposes. *See* PO Resp. 36–37. As an initial matter, Blake generally relates to a television schedule system with enhanced recording capability. Ex. 1222, 1:17–19. In particular, Blake discloses that a user may select a program for automatic, unattended recording by highlighting and selecting the desired

program in a television schedule guide, such as the one illustrated in Figure 12. *Id.* at 16:12–14, 16:17–19, 16:22–25. Similarly, Killian generally relates to an electronic programming guide that operates on a computing platform using information from the Internet for display on a television. Ex. 1208, 2:1–3, 3:18–23; *see also* Ex. 1202 ¶ 110 (Dr. Tjaden testifies that “[t]he general area of technology of Killian is also the same as Blake; namely, that of interactive electronic program guides . . . , and remote or local access to and use of [interactive electronic program guides] to control end-user video equipment.” (citing Ex. 1208, [54], 1:7–9)). Consequently, we find that Blake and Killian fall in the same field of endeavor.

Dr. Tjaden’s testimony supports our finding that Blake and Killian are not fundamentally different and incompatible. In his Declaration accompanying the Petition, Dr. Tjaden testifies that the remote user interface on Blake’s input device 332 “allows the user to filter program listings according to themes, tracks the user’s selections, and stores that information at [central] processing system 334.” Ex. 1202 ¶ 111 (citing Ex. 1222, 18:1–10, 18:12–14). Dr. Tjaden then testifies that Killian teaches customizing program guides “based on user profile information stored locally or remotely.” *Id.* (citing Ex. 1208, 9:10–25, 11:20–21). Because the systems of Blake and Killian both store information specific to each user, Dr. Tjaden testifies that “[a person of ordinary skill in the art] would have recognized that Killian’s [viewer profiles] could be used to store information about user preferences in Blake[’s television schedule system]. This would be done for the purpose of customizing the remote access

guide (i.e., the ‘remote theme guide’), providing the advantages discussed in Killian.” *Id.* (emphasis omitted). In his Declaration accompanying the Reply, Dr. Tjaden clarifies that “a [person of ordinary skill in the art] would not have had to replace or discard Blake’s theme selections to implement [Killian’s] profile-based selections. The addition of Killian’s profile-based selections would be a usability gain without any tradeoffs for the user.” Ex. 1252 ¶ 63 (citing Ex. 1202 ¶ 157).

We also do not agree with Rovi’s argument that integrating Killian’s viewer profiles into Blake’s television schedule system would unnecessarily complicate Blake’s system. *See* PO Resp. 37. This argument is predicated on the notion Comcast’s proposed combination of Blake and Killian somehow includes the bodily incorporation of Killian’s “suggest module” on a JAVA-based platform. *See id.* Killian’s “suggest module” on a JAVA-based platform, however, is not relevant to Comcast’s ground based on the combined teachings of Blake and Killian—only Killian’s technique of generating program guide displays based on viewer profiles. *See In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) (“Combining the *teachings* of references does not involve an ability to combine their specific structures.”). Stated differently, Comcast does not advocate combining Killian’s “suggest module” on a JAVA-based platform with Blake’s television schedule system. Instead, Comcast argues that applying Killian’s technique of generating program guide displays based on viewer profiles to Blake’s television schedule system would allow the remote user interface on Blake’s input device 332 to

generate a display by rendering television program listings based on user preferences. For the reasons we identify above, the evidence of record supports Comcast's explanation in this regard. *See* Pet. 30–31, 42–43; Ex. 1202 ¶¶ 111, 155–157.

In any event, even if we were to assume that Comcast's proposed combination of Blake and Killian somehow includes the bodily incorporation of Killian's "suggest module" on a JAVA-based platform, which, as we explain above, it does not, Comcast presents supporting testimony from Dr. Tjaden that indicates Blake's input device 332 would be capable of implementing a JAVA-based user interface. In his Declaration accompanying the Reply, Dr. Tjaden testifies that, because Blake discloses a scenario where input device 332 is a laptop computer, "[the laptop computer] would have had no problem implementing Killian's JAVA-based user interfaces if desired." Ex. 1252 ¶ 65 (citing Ex. 1222, 17:5–8). We credit this testimony from Dr. Tjaden because there is no evidence of record to suggest that, in the scenario where Blake's input device 332 is a laptop computer (Ex. 1222, 17:5–8), the laptop computer is anything other than a general purpose computer capable of implementing a variety of software platforms, including one based on JAVA.

In addition, we do not agree with Rovi's arguments that Comcast must identify a problem in Blake that a person of ordinary skill in the art would have been motivated to solve in order to implement Killian's viewer profiles in Blake's television schedule system. *See* PO Resp. 37. If we were to accept this line of argument, it would run contrary to the principles of

law articulated in *KSR*. In *KSR*, the Supreme Court emphasized “an expansive and flexible approach” to an obviousness evaluation. 550 U.S. at 415; *see also Jazz Pharm., Inc. v. Amneal Pharm., LLC*, 895 F.3d 1347, 1363 (Fed. Cir. 2018) (“*KSR* did not impose a rigid requirement to identify . . . a problem to be solved in the art . . .”). The Court stated that, “[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents,” amongst other things, “to determine whether there was apparent reason to combine the known elements in the fashion claimed by the patent at issue.” 550 U.S. at 418. Moreover, the Court explained that, “[u]nder the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420.

Comcast’s analysis is in line with these principles of law. Relying on the supporting testimony of Dr. Tjaden as evidence of the background knowledge of one ordinary skill in the art, Comcast looked to the interrelated teachings of Blake and Killian—specifically, their overlapping teachings with respect to television program guides and storing information specific to each user—to ascertain whether there was a sufficient reason to combine certain aspects of those elements to arrive at the claimed invention. *See* Pet. 30–31, 42–43; Ex. 1202 ¶¶ 111, 155–157. Comcast further explained that using Killian’s user profile data in Blake’s television schedule system would have allowed the system to better track a user’s preferences, generate more effective user interfaces, and better identify desired and undesired content. Pet. 31, 43.

Rovi does not direct us to, nor are we aware of, any persuasive authority that requires a party to demonstrate obviousness by specifically identifying a problem in a first prior art reference that a person of ordinary skill in the art would have been motivated to solve in order to implement the interrelated teachings of a second prior art reference.

Lastly, we do not agree with Rovi's argument that Comcast's rationale to combine the teachings of Blake and Killian is based on conjecture and, therefore, does not amount to sufficient motivation to combine. *See* PO Resp. 37–38. As we explained above, both Comcast and Dr. Tjaden provide sufficient reasoning as to why it would have been obvious to one of ordinary skill in the art to combine the teachings of Blake and Killian. *See* Pet. 30–31, 42–43; Ex. 1202 ¶¶ 111, 155–157. This reasoning is not based on conjecture because it is directed specifically to the subject matter at issue in independent claims 1, 5, 8, 11, 14, and 17, and there is a sufficient basis in the record to support such reasoning. As a result, instead of presenting reasoning that is based on conjecture, as asserted by Rovi, Comcast has articulated sufficient reasoning with rational underpinnings to support a conclusion of obviousness—namely, use of a known technique (i.e., Killian's technique of generating program guide displays based on viewer profiles) to improve similar devices (i.e., Blake's television schedule system) in the same way (i.e., by allowing the remote user interface on Blake's input device 332 to generate a display by rendering television program listings based on user preferences).

*c. Summary*

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of independent claims 1, 5, 8, 11, 14, and 17 would have been obvious over the combined teachings of Blake and Killian.

*6. Claims 2, 4, 6, 9, 12, 15, and 18*

In its Patent Owner Response, Rovi does not address separately whether the combined teachings of Blake and Killian account for the limitations of dependent claims 2, 4, 6, 9, 12, 15, and 18. *See generally* PO Resp. 19–39. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these limitations, as well as its explanations as to how one ordinary skill in the art would have combined the relevant teachings of Blake with those of Killian, and we agree with and adopt Comcast’s analysis. *See* Pet. 12–14, 23–31, 48–51. Comcast, therefore, has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 2, 4, 6, 9, 12, 15, and 18 would have been obvious over the combined teachings of Blake and Killian.

*C. Obviousness Over the Combined Teachings of Blake, Killian, and Lawler*

Comcast contends that claims 3, 7, 10, 13, 16, and 19 of the ’263 patent are unpatentable under § 103(a) over the combined teachings of Blake, Killian, and Lawler. Pet. 52–53. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides



reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1202 ¶¶ 195–198. In its Patent Owner Response, Rovi contends that Comcast does not present sufficient reasoning as to why one of ordinary skill in the art would combine the teachings of Lawler with those of Blake and Killian. PO Resp. 39–40. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2208 ¶¶ 196, 197.

We begin our analysis with a brief overview of Lawler, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

### *1. Lawler Overview*

Lawler generally relates to a system for recording a program on an interactive viewing system and, in particular, to a system that allows a user to identify a program for recording using an interactive program guide and then designate the identified program for automated recording at some later time. Ex. 1209, 1:8–13. According to one aspect of the invention disclosed in Lawler, the recording device is associated with a head end. *Id.* at 2:24–25. At the direction of the head end, the recording device records the selected program and digitally stores it in a memory at the head end. *Id.* at 2:25–27. The recorded program may then be retrieved from the head end by the user for display at a viewer station. *Id.* at 2:27–29. Lawler discloses that this process would allow multiple users to access a single recording of the program, as well as make the

program available to other users who did not set the recording, but nonetheless wish to view the program at some later time. *Id.* at 13:34–38.

*2. Claims 3, 7, 10, 13, 16, and 19*

Dependent claim 3 recites “wherein local interactive television program guide records the television program corresponding to the selected program listing at a television distribution facility.” Ex. 1201, 29:1–4. Dependent claims 7, 10, 13, 16, and 19 each recite a similar limitation. *Id.* at 29:49–52, 30:26–29, 30:64–67, 31:36–39, 32:34–38.

In its Petition, Comcast contends that Lawler teaches recording programs at a central head end (i.e., a television distribution facility) in lieu of recording programs locally. Pet. 52 (citing Ex. 1209, 2:24–29, 13:26–38; Ex. 1202 ¶ 196). Comcast then argues that, as a substitute for recording programs locally, it would have been obvious to modify the Blake and Killian combination to include recording programs at a television distribution facility, as taught by Lawler, because there are certain advantages to recording programs at the television distribution facility, such as making recorded programs available for other subscribers and eliminating the need for a separate recorder. *Id.* (citing Ex. 1209, 2:24–29, 10:56–59, 13:26–38; Ex. 1202 ¶¶ 197, 198). According to Comcast, this proffered combination would be nothing more than using a known technique (i.e., Lawler’s centralized recording at a television distribution facility) to improve a similar system (i.e., the combined Blake and Killian television schedule system), and would produce a predictable result that provides the

stated benefits of Lawler. *Id.* (citing Ex. 1209, 13:33–38; Ex. 1202 ¶ 198).

In its Patent Owner Response, Rovi contends that Comcast’s explanations for combining the teachings of Blake, Killian, and Lawler are conclusory and, therefore, fail to provide a sufficient reason for making the proffered combination. PO Resp. 39. According to Rovi, Comcast fails to explain how or why one of ordinary skill in the art would have incorporated Lawler’s technique for recording programs at a television distribution facility into the combined television schedule system of Blake and Killian. *Id.* In particular, Rovi argues that Comcast does not explain how a person of ordinary skill in the art would have moved the recorder to Lawler’s television distribution facility, while still retaining the operability of the combined television schedule system of Blake and Killian, including the ability for the user to control operation of Blake’s recording device 336 local to the user’s system. *Id.* at 40.

In its Reply, Comcast counters that Lawler’s centralized recording still would allow the user to view recorded content at his/her home using Blake’s television schedule system. Pet. Reply 24. Comcast argues that integrating this teaching in Lawler into the combined television schedule system of Blake and Killian would provide the added advantage of allowing the physical storage of content to occur at Lawler’s television distribution facility, which was, and remains, a well-known method for increasing storage efficiency. *Id.* (citing Ex. 1252 ¶ 66).

As an initial matter, Rovi does not address separately Comcast's explanations and supporting evidence as to how the combined teachings of Blake, Killian, and Lawler account for the limitation of dependent claim 3, and the similar limitations of dependent claims 7, 10, 13, 16, and 19. *See generally* PO. Resp. 39–40. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these limitations, and we agree with and adopt Comcast's analysis. *See* Pet. 52–53.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to modify the combined television schedule system of Blake and Killian to include recording programs at a television distribution facility, as taught by Lawler. When, as here, a technique has been used to improve one device (i.e., Lawler's centralized recording at a television distribution facility), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Lawler's technique to the combined television schedule system of Blake and Killian to make recorded programs available for other subscribers and to eliminate the need for a separate recorder), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 52–53; Ex. 1202 ¶¶ 197, 198. The record includes credible evidence explaining why applying Lawler's technique to the combined television schedule system of Blake and Killian to make recorded programs available to multiple subscribers at a television distribution

facility would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Indeed, Lawler itself provides the necessary motivation for doing so—namely, “[to] allow multiple users to access a single recording of the program.” Ex. 1209, 13:33–35.

We do not agree with Rovi’s argument that Comcast does not explain how a person of ordinary skill in the art would have moved the recorder to Lawler’s television distribution facility, while still retaining the operability of the combined television schedule system of Blake and Killian *See* PO Resp. 40. As Comcast explains in the Petition, modifying the Blake and Killian combination to include recording programs at a television distribution facility, as taught by Lawler, serves as a substitute for the user’s ability to record programs locally on Blake’s recording device 336. *See* Pet. 52. For instance, instead of using Blake’s recording device 336 to record programs, which still remains a viable option, a user would communicate with Lawler’s television distribution facility to record programs via Blake’s central processing system 334. Dr. Tjaden testifies—and we agree—that recording programs at Lawler’s television distribution facility, in lieu of recording programs locally on Blake’s recording device 336, would increase storage efficiency by making these recordings available to other users and it would eliminate the need for each user to maintain a separate recorder. *See* Ex. 1202 ¶ 198; Ex. 1152 ¶ 66.

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 3, 7, 10, 13, 16, and 19 would have

been obvious over the combined teachings of Blake, Killian, and Lawler.

### III. CONCLUSIONS

Comcast has demonstrated by a preponderance of the evidence that (1) claims 1, 2, 4–6, 8, 9, 11, 12, 14, 15, 17, and 18 are unpatentable under § 103(a) over the combined teachings of Blake and Killian; and (2) claims 3, 7, 10, 13, 16, and 19 are unpatentable under § 103(a) over the combined teachings of Blake, Killian, and Lawler.

### IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–19 of the '263 patent are held to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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APPENDIX E  
IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL  
BOARD  
COMCAST CABLE COMMUNICATIONS, LLC,  
*Petitioner,*

v.

ROVI GUIDES, INC.,  
*Patent Owner.*

Case IPR2017-01048  
Patent 8,578,413 B2

Entered: October 16, 2018

Before KEVIN F. TURNER, MICHAEL R. ZECHER,  
and JESSICA C. KAISER, *Administrative Patent*  
*Judges.*

TURNER, *Administrative Patent Judge.*

FINAL WRITTEN DECISION  
*Inter Partes* Review  
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner, Comcast Cable Communications, LLC (“Comcast”), filed a Petition requesting an *inter partes* review of claims 1–18 of U.S. Patent No. 8,578,413 B2 (Ex. 1001, “the ’413 Patent”). Paper 2 (“Pet.”). Patent Owner, Rovi Guides, Inc. (“Rovi”), filed a Preliminary Response. Paper 7. Taking into account the arguments presented in Rovi’s Preliminary Response, we

determined that the information presented in the Petition established that there was a reasonable likelihood that Comcast would prevail in challenging claims 1–18 of the ’413 Patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on October 18, 2017, as to all of the challenged claims, but not all the grounds presented by Comcast in its Petition. Paper 9 (“Dec. on Inst.”).

During the course of trial, Rovi filed a Patent Owner Response (Paper 15, “PO Resp.”), and Comcast filed a Reply to the Patent Owner Response (Paper 26, “Pet. Reply”). A consolidated oral hearing with related Cases IPR2017-00950, IPR2017-00951, IPR2017-00952, IPR2017-01049, IPR2017-01050, IPR2017-01065, IPR2017-01066, and IPR2017-01143 was held on June 19, 2018, and a transcript of the hearing is included in the record. Paper 35 (“Tr.”).

After all substantive briefing was complete, but before the consolidated oral hearing, the United States Supreme Court held that a decision to institute under 35 U.S.C. § 314 may not institute on less than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). Following *SAS*, the U.S. Patent and Trademark Office (“Office”) issued “Guidance on the impact of SAS on AIA trial proceedings,” in which the Office took the policy position that a decision granting institution will institute on all of the challenged claims in the petition



and all the grounds presented in the petition.<sup>1</sup> The U.S. Court of Appeals for the Federal Circuit has since endorsed this Office policy by explaining that “the petitioner’s petition, not the Director’s discretion, is supposed to guide the life of the litigation’ and ‘that the petitioner’s contentions, not the Director’s discretion, define the scope of the litigation all the way from institution through to conclusion.” *Adidas AG v. Nike, Inc.*, 894 F.3d 1256, 1258 (Fed. Cir. 2018) (quoting *SAS*, 138 S. Ct. at 1356–1357). In accordance with *SAS* and Office policy, we issued an Order modifying our Decision on Institution entered on October 18, 2017, to include review of all challenged claims and all grounds presented by Comcast in its Petition. Paper 32. The parties, however, agreed to waive briefing on the grounds we declined to institute in the Decision on Institution. *Id.* The parties also agreed to waive consideration of these previously non-instituted grounds at the consolidated oral hearing. *Id.*

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–18 of the ’413 Patent. For the reasons discussed below, we hold that Comcast has demonstrated by a preponderance of the evidence that these claims are unpatentable under § 103(a).

#### A. *Related Matters*

The ’413 Patent is involved in the following district court cases: (1) *Rovi Guides, Inc. v. Comcast Corp.*, No.

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<sup>1</sup> Available at <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial>.

2:16-cv-00322 (E.D. Tex.), which has been transferred to the U.S. District Court for the Southern District of New York and is pending as *Rovi Guides, Inc. v. Comcast Corp.*, No. 1:16-cv-09826 (S.D.N.Y.); and (2) *Comcast Corp. v. Rovi Corp.*, No. 1:16-cv-03852 (S.D.N.Y.). Pet. 1–2; Paper 3, 2. The '413 Patent also has been asserted against Comcast in a proceeding before the U.S. International Trade Commission (“ITC”) styled *In re Certain Digital Video Receivers and Hardware and Software Components Thereof*, No. 337-TA-1001. Pet. 2; Paper 3, 2.

In addition to this Petition, Comcast filed two other petitions challenging the patentability of claims 1–18 of the '413 Patent (Cases IPR2017-01049 and IPR2017-01050). Pet. 3; Paper 3, 2. Comcast also filed other petitions challenging the patentability of certain subsets of claims in several patents owned by Rovi. Pet. 3.

### *B. The '413 Patent*

The '413 Patent, titled “Interactive Television Program Guide with Remote Access,” issued November 5, 2013, from U.S. Patent Application No. 13/275,565, filed on October 18, 2011. Ex. 1001, [54], [45], [21], [22]. The '413 Patent is a continuation of U.S. Patent Application No. 10/927,814, filed on August 26, 2004, which, in turn, is a continuation of U.S. Patent Application No. 09/354,344, filed on July 16, 1999. *Id.* at [63]. The '413 Patent also claims the benefit of U.S. Provisional Application No. 60/097,527, filed on August 21, 1998, and U.S. Provisional Application No. 60/093,292, filed on July 17, 1998. *Id.* at [60].

The '413 Patent generally relates to interactive television program guide video systems and, in particular, to such systems that provide remote access to program guide functionality. Ex. 1001, 1:16–19. The '413 Patent discloses that conventional interactive television program guide systems typically are implemented on set-top boxes located in the home of a user and, as a result, do not permit the user to perform program guide functions without the user being physically located in the same room as these systems. *Id.* at 1:34–42. Stated differently, conventional interactive television program guide systems require the user to be present in the home to access important program guide features, such as program reminders, parental controls, and program recording. *Id.* at 2:16–19. The '413 Patent purportedly addresses this and other problems by providing an interactive television program guide system that allows a user to access certain features of the program guide remotely and establish settings for those features. *Id.* at 2:20–25.

Figure 1 of the '413 Patent, reproduced below, illustrates a schematic block diagram of the system in accordance with the present invention. Ex. 1001, 7:15–39.

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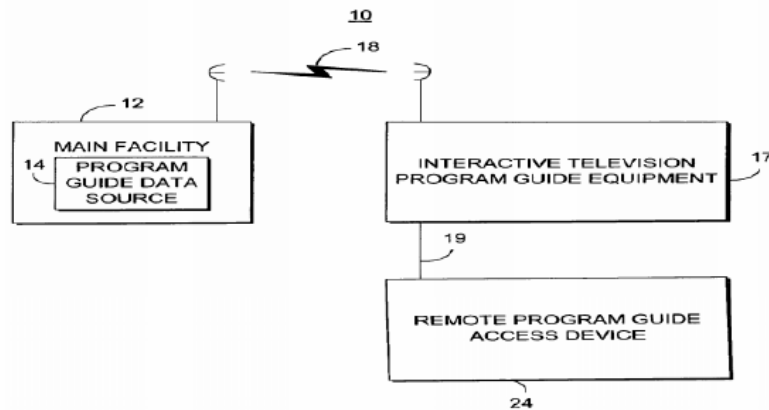


FIG. 1

As shown in Figure 1 reproduced above, system 10 includes main facility 12 that provides interactive television program guide data from program guide data source 14 to interactive television program guide equipment 17 via communication link 18. *Id.* at 7:15–22. Interactive television program guide equipment 17 is connected to at least one remote program guide access device 24 via remote access link 19. *Id.* at 7:33–35.

Figure 2a of the '413 Patent, reproduced below, illustrates one arrangement involving the interactive television program guide equipment 17 and remote program guide access device 24 in accordance with the principles of the present invention. Ex. 1001, 8:16–34.

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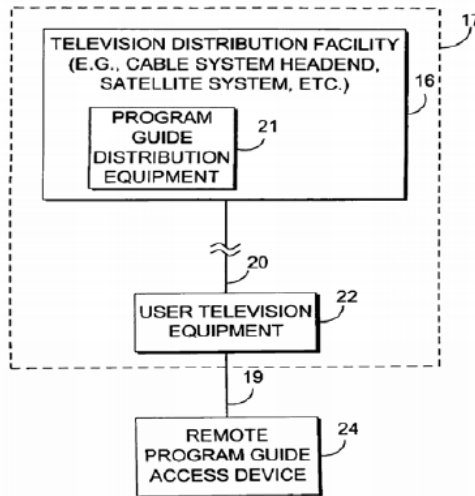


FIG. 2a

As shown in Figure 2a reproduced above, interactive television program guide equipment 17 includes program guide distribution equipment 21 located at television distribution facility 16, which distributes program guide data to user television equipment 22 via communications path 20. *Id.* at 4:57–67. Remote program guide access device 24 receives the program guide data, as well as any additional data necessary to access various functions of the interactive program guide, from user television equipment 22 via remote access link 19. *Id.* at 8:21–26.

In at least one embodiment, the '413 Patent discloses that a remote access interactive television program guide implemented on remote program guide access device 24 communicates with a local interactive television program guide implemented on interactive television program guide equipment 17. *Id.* at 15:9–18.

In one example, the remote access and local interactive television program guides may be two different guides that communicate with each other. *Id.* at 15:20–23; *see also id.* at 25:35–59 (disclosing steps involved with using the remote access interactive television guide to provide program listing information to a user).

The '413 Patent discloses transferring program guide information and settings between remote program guide access device 24 and interactive television program guide equipment 17 using any suitable application layer protocol. Ex. 1001, 15:60–64. For example, if remote access link 19 is an Internet link, program guide functionality may be accessed using Hypertext Transfer Protocol. *Id.* at 15:64–66. Remote program guide access device 24 and interactive television program guide equipment 17 also may transfer program guide information as files using either File Transfer Protocol or Trivial File Transfer Protocol running over a Transmission Control Protocol/Internet Protocol stack. *Id.* at 15:66–16:4. The '413 Patent makes clear that “[a]ny suitable file transfer protocol based on any suitable protocol stack may be used.” *Id.* at 16:4–5.

### *C. Illustrative Claim*

Claims 1 and 10 are independent. Independent claim 1 is directed to a system for selecting television programs over a remote access link that includes an Internet communications path for recording, whereas independent 10 is directed to a method for performing the same. Claims 2–9 depend from independent claim 1, and claims 11–18 depend from independent claim

10. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A system for selecting a television program over a remote access link comprising an Internet communications path for recording, the system comprising:

a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide generates a display of one or more television program listings for display on a display device at a user's home, wherein the local interactive television program guide equipment is located within the user's home and includes user television equipment, wherein a mobile device communicates with the local interactive television program guide equipment, wherein the mobile device, on which a remote access interactive television program guide is implemented, is located outside of the user's home, and wherein the mobile device:

generates a display of the remote access interactive television program guide, the remote access interactive television program guide comprising a plurality of television program listings for display on the mobile device, wherein the display of the remote access interactive television program guide is generated based on a user profile stored at a location remote from the mobile device;

receives a user selection of the television program for recording by the local interactive television program guide, wherein the user selects the television program by selecting a television program listing from the plurality of television program listings displayed, by the remote access interactive television program guide, on the mobile device; and

transmits, to the local interactive television program guide over the Internet communications path, a communication identifying the television program for recording corresponding to the television program listing selected by the user with the remote access interactive television program guide, wherein the local interactive television program guide receives the communication and, responsive to the communication, records the television program corresponding to the selected television program listing using the local interactive television program guide equipment.

Ex. 1001, 40:6–48.

*D. Instituted Grounds of Unpatentability*

We instituted a trial based on the asserted grounds of unpatentability (“grounds”) set forth in the table below. Dec. on Inst. 37; Paper 32.



References	Basis	Challenged Claim(s)
Humpleman <sup>2</sup> and Killian <sup>3</sup>	§ 103(a)	1, 3–10, and 12–18
Humpleman, Killian, and Lawler <sup>4</sup>	§ 103(a)	2 and 11
Kondo, <sup>5</sup> Killian, and Kawamura <sup>6</sup>	§ 103(a)	1, 3–10, and 12–18
Kondo, Killian, and Kawamura, and Lawler	§ 103(a)	2 and 11

## II. ANALYSIS

### A. *Claim Construction*

In an *inter partes* review, claim terms of an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). Under the

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<sup>2</sup> U.S. Patent No. 6,182,094 B1; issued Jan. 30, 2001 (Ex. 1006, “Humpleman”).

<sup>3</sup> U.S. Patent No. 6,163,316, issued Dec. 19, 2000 (Ex. 1008, “Killian”).

<sup>4</sup> U.S. Patent No. 5,805,763, issued Sept. 8, 1998 (Ex. 1009, “Lawler”).

<sup>5</sup> Japanese Pat. App. Pub. No. H10-155131, published June 9, 1998 (Ex. 1011, “Kondo”). Comcast has provided a certified translation of Kondo from Japanese into English (Ex. 1012).

<sup>6</sup> Japanese Pat. App. Pub. No. H9-102827, published Apr. 15, 1997 (Ex. 1013, “Kawamura”). Comcast has provided a certified translation of Kawamura from Japanese into English (Ex. 1014).

broadest reasonable interpretation standard, and absent any special definitions, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision on Institution, we determined that the only claim terms requiring construction are “local/remote access interactive television program guides,” and only to the extent necessary to resolve whether the grounds asserted by Comcast properly accounted for both a “local interactive television program guide” and a “remote access interactive television program guide.” Dec. on Inst. 9 (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy)). Upon reviewing the parties’ preliminary arguments and evidence, we adopted Comcast’s proposed construction that an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *Id.* at 13. We further clarified that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and they are not construed properly as reading on the same interactive television program guide. *Id.*

In its Patent Owner Response, Rovi generally agrees with our initial determination that the only claim terms requiring construction are “local/remote access interactive television program guides.” PO Resp. 11. Rovi, however, proposes that the proper constructions for these claim terms are the following: (1) “local interactive television program guide” is a “guide that allows navigation through television program listings and causes display of program information on user television equipment”; and (2) “remote access interactive television program guide” is a “guide allowing navigation through television program listings using a remote access link.” *Id.* According to Rovi, its proposed constructions for the claim terms “local/remote access interactive television program guides” are consistent with the intrinsic evidence, our preliminary finding that these guides must be distinct guides, and the findings of the ITC in related proceedings. *Id.* at 12–13 (citing Ex. 2001, 193, 198, 409).

Rovi further contends that, any difference between our constructions and the ITC’s constructions of the claim terms “local/remote access interactive television program guides” is not relevant to the grounds at issue in this proceeding because, according to Rovi, each of Comcast’s asserted grounds fails under Rovi’s broader constructions “that do[] not unnecessarily restrict the guides to ‘control software’ that ‘controls functions of the software.’” PO Resp. 13. Rovi asserts that, because it is proposing broader constructions for these claim terms, we need not determine whether the asserted prior art satisfies Comcast’s proposed constructions. *Id.* Rovi then proceeds to explain how our preliminary

constructions and the ITC's constructions are consistent in certain respects because (1) they both require the guides to be interactive (i.e., navigable and selectable); and (2) they both agree that the claims require two separate guides, as properly construed. *Id.* at 13–16.<sup>7</sup>

In its Reply, Comcast contends that Rovi's proposed constructions of the claim terms "local/remote access interactive television program guides" improperly seeks to limit the broadest reasonable interpretation of the claim term "interactive television program guide" to a single software component that generates listings, thereby excluding other software components that assist in providing guide functionality. Pet. Reply 4 (citing PO Resp. 24–25, 34, 36–37; Ex. 2011 ¶ 114). According to Comcast, this exclusion finds no basis in the plain language of the claims and the specification of the '413 Patent. *Id.*

Comcast also contends that Rovi's arguments directed to the claim term "interactive television program guide" contradicts the construction Rovi offered in the related ITC proceeding. Pet. Reply 4. Comcast argues that Rovi expanded the scope of the claim term "local interactive television program guide" in the related ITC proceeding, to capture all software

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<sup>7</sup> At the oral hearing for the first time, Rovi argued that "remote access interactive television program guide" requires "dedicated code at the remote device." *See, e.g.*, Tr. 58:3–7, 60:19–61:14, 66:14–21. We agree with Comcast (*id.* at 96:3–10) that this is a new argument that was not presented and developed in Rovi's briefs and, therefore, we do not consider it. *See* Paper 10, 3 (cautioning Rovi that "any arguments for patentability not raised in the response will be deemed waived").

components related to any local guide functionality, including recording. *Id.* at 4–5 (citing Ex. 2001, 188–99, 222–35; Ex. 1054 ¶¶ 158–160, 169, 170, 371, 376). Comcast argues that Rovi’s expert in the ITC proceeding, Dr. Michael Shamos, who also is Rovi’s expert in this proceeding, provided supporting testimony that the claim term “local interactive television program guide” could be an “extensive collection of hardware and software.” *Id.* at 5 (emphasis omitted) (quoting Ex. 1054 ¶ 169). In this proceeding, however, Comcast argues that Rovi and Dr. Shamos appear to take the erroneous position that the claim term “local interactive television program guide” is a single software application. *Id.* at 6 (*compare* PO Resp. 34 and Ex. 2008 ¶ 116, *with* Ex. 1054 ¶ 371). According to Comcast, we should hold Rovi to the same broad construction of the claim term “local interactive television program guide” in this proceeding that it wielded to exclude others from practicing the claimed invention in the related ITC proceeding. *Id.*

As an initial matter, it is not clear to us whether Rovi actually disputes our preliminary construction of the claim term “interactive television program guide.” On the one hand, Rovi asserts that the ITC’s constructions of local interactive television program guide (i.e., a “guide that allows navigation through television program listings and causes display of program information on user television equipment”) and remote access interactive television program guide (i.e., a “guide allowing navigation through television program listings using a remote access link”) are the proper constructions. PO Resp. 11–12.

On the other hand, Rovi argues that both our constructions and the ITC's constructions "are consistent with respect to the relevant aspects (e.g., navigation and selection)" of a local/remote access interactive television guide. *Id.* at 12. Rovi further contends that "[a]ny differences between the Board's and the ITC's constructions *are not relevant* to [Comcast's] failures of proof regarding the asserted prior art and [g]rounds at issue in this proceeding." *Id.* at 13 (emphasis added); *see also* Ex. 2011 ¶ 25 (Rovi's declarant, Dr. Shamos, testifies that, "regardless of which constructions the Board applies, my opinions remain the same. The asserted prior art references here fail to disclose the claim limitations . . . under either construction.") These arguments make it difficult to ascertain what Rovi actually views as to the proper scope and meaning of claim terms "local/remote access interactive television program guides." Nevertheless, we are charged in this proceeding with determining the broadest reasonable interpretation of these claim terms.

Beginning with the intrinsic record, neither party argues, nor could we find, an explicit definition for the claim term "interactive television program guide" in the specification of the '413 Patent. The specification, however, is replete with descriptions of conventional, local, or remote interactive television program guides. For instance, the specification discloses that conventional interactive television program guides display "various groups of television program [guide] listings . . . in predefined or user-defined categories," and "allow the user to navigate through [the] television program listings" and make a selection

“using a remote control.” Ex. 1001, 1:28–33. For a conventional interactive television program guide, the user must physically be located in the same room as the set-top box on which the interactive television program guide is implemented to select programs for recording or to perform other guide functions. *Id.* at 1:34–42. In the context of discussing the implementation of a remote access interactive television program guide, the specification discloses that such a guide works in conjunction with a remote device to “provide users with the opportunity to remotely access features of the interactive television program guide on the interactive television program guide equipment and to remotely set program guide settings.” *Id.* at 2:64–3:4. The specification goes on to disclose that “[a]ny suitable interactive television program guide function or setting may be accessed,” including, but not limited to, “remotely select[ing] programming for recordings” and “remotely set[ting] and navigat[ing] through favorites (e.g., favorite channels, program categories, services, etc.).” *Id.* at 3:5–15.

Although the aforementioned disclosures provide guidance as to the functionality of an “interactive television program guide” (i.e., navigable, selectable, and capable of controlling certain functions or settings), neither party directs us to, nor can we find, a disclosure in the specification that specifically identifies what element or elements constitute a “guide.” Given the lack of disclosure in this regard, we decline to limit the “guide” to a single software application. Rather, these disclosures support Comcast’s proposed construction that an “interactive

television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.”

We further clarify that, based on the plain language of independent claims 1 and 10, they indicate that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” (alteration in original) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004))). Our determination in this regard is supported by the specification, which includes various embodiments that treat these claim terms as separately identifiable elements capable of communicating with each other. *See, e.g.*, Ex. 1001, 15:20–23 (“In still another suitable approach, the [local interactive television program guide and remote access interactive television program guide] may be different guides that communicate in a manner or manners discussed . . . herein.”), 23:4–7 (“The remote access [interactive television] program guide may . . . send audio, graphical, and text messages to the local interactive [television] program guide for playing or display by user television equipment 22.”). The specification also explains that the “local interactive television program guide” and “remote access interactive television



program guide” may be the same guide, in which case they are separately identifiable elements in that each guide is compiled to run on a different platform. *See id.* at 15:15–18 (“The remote access and local guide may, for example, be the same guide but compiled to run on two different platforms and to communicate in a manner or manners discussed herein.”).

We decline to adopt Rovi’s proposed constructions of the claim terms “local/remote access interactive television program guides” for two reasons. First, we are unable to determine how Rovi’s proposed constructions add any clarity to the scope and meaning of an “interactive television program guide.” That is, we view each of Rovi’s proposed constructions as circular and unhelpful because they define each of the guides as a “*guide* [that allows/allowing] navigation through television program listings.” PO Resp. 11 (emphasis added). Rovi, however, does not actually identify what element or elements specifically constitute the “guide.”

Second, Rovi states that its proposed constructions indicate “where the specific guide resides (i.e., on ‘user television equipment’ or over ‘a remote access link’),” *id.* at 16 (emphasis omitted), but readily admits that “these additions merely restate the language of the broader claim limitation[s].” *Id.* (citing Ex. 1050, 185, 190). It is well settled that the U.S. Court of Appeals for the Federal Circuit disfavors any claim interpretation that renders a claim term or phrase superfluous. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“The Board was correct to not include in its construction of ‘menu’ features of menus that are expressly recited in the

claims. . . . Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.”). If we were to adopt the language in Rovi’s proposed constructions pertaining to where each guide resides, it would render superfluous the language that is already explicitly recited in independent claim 1, and similarly recited in independent claim 10—namely, “over a remote access link” and “a local interactive television program guide equipment on which a local interactive television program guide is implemented, . . . wherein the local interactive television program guide equipment is located within the user’s home and includes user television equipment.”<sup>8</sup>

Turning now to the extrinsic evidence, in Dr. Tjaden’s Declaration accompanying the Petition, he testifies that “the local [interactive television program] guide may be implemented at least in part on a server or other device outside the user’s home.” Ex. 1002 ¶ 36. To support this testimony, he directs us to Rovi’s interpretation of the claim term “local interactive television program guide” in the related ITC proceeding. *Id.* (citing Ex. 1045, 56; Ex. 1046, 43). In Dr. Tjaden’s Declaration accompanying the Reply, he elaborates further on his initial position by testifying that “a [person of ordinary skill in the art] looking at

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<sup>8</sup> During oral argument, in response to a question regarding the ITC’s construction of the “local interactive television program guide” being on user television equipment and its construction that the “remote access television program guide” uses a remote access link, counsel for Rovi stated that “I don’t think where [the guides are] implemented is meaningful because that’s recited in the claim separately.” Tr. 66:22–67:24.

the '413 Patent would have understood that many different arrangements of the software and hardware components comprising an interactive television program guide are possible and acceptable in [the] prior art used to show obviousness." Ex. 1052 ¶ 15. To support this testimony, he directs us to the different arrangements of software and hardware in the '413 Patent. *Id.* ¶¶ 16–18 (citing Ex. 1001, 7:15–19, 33–35, 40–47, 9:36–44, 10:15–16, 29–34, 41–48, Figs. 1, 2a–2d).

Although we recognize that the broadest reasonable interpretation standard governs in this proceeding, whereas the district court claim construction standard governs in an ITC proceeding, Dr. Shamos's testimony in the ITC proceeding is relevant here because it sheds some light on what element or elements he believes constitutes a "guide." In the ITC proceeding, Dr. Shamos testified that the claim term "local interactive television program guide" could be an "extensive collection of hardware and software." Ex. 1054 ¶ 169. He also testified "that the 'local [interactive television program] guide' [should not be construed as] a single software application that must reside on a device in the user's home," and "[n]othing in the claims excludes a 'recording application' from being part of the local [interactive television program] guide." *Id.* ¶ 371. Dr. Shamos's testimony in the ITC proceeding is consistent with Dr. Tjaden's testimony in this proceeding because, like Dr. Tjaden, Dr. Shamos does not limit a "guide" to a single software application, but rather contemplates that the "guide" may constitute different arrangements of software and hardware.

We note that the aforementioned testimony from Dr. Tjaden and Dr. Shamos suggest that the “guide” may include both software and hardware. Rovi likewise argues that its proposed construction is broader than Comcast’s because “it does not unnecessarily restrict the guides to ‘control software.’” PO Resp. 13. We do not find support in the intrinsic record that the “guide” may include hardware. Rather, the ’413 Patent separately refers to the interactive television program guide and the hardware on which it is implemented. *See, e.g.,* Ex. 1001, 1:34–35 (“Interactive television program guides are typically implemented on set-top boxes. . . .”). The aforementioned testimony, however, is consistent with our finding that the “guide” may constitute more than just a single software application.

In summary, upon weighing all the evidence bearing on the construction of the claim term “interactive television program guide,” we maintain that the broadest reasonable interpretation of this claim term is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” We also maintain that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide.

*B. Prior Art Status of Humpleman Provisional*

Additionally, Rovi contends that Humpleman Provisional (U.S. Patent Application No. 60/059,499; Ex. 1007) is not prior art and cannot be used to teach or suggest elements of the challenged claims. PO Resp. 48–51. Rovi argues that (1) Humpleman Provisional is neither a patent nor an application published under 35 U.S.C. § 122(b), and that a provisional application can only qualify as prior art under 35 U.S.C. § 102(e) when the critical disclosures are also present in the corresponding patent; and (2) that the provisional application cannot be relied upon because it has not been properly incorporated by reference into Humpleman. *Id.*

With respect to the first argument, although Rovi is correct about the requirements that determine whether something is valid prior art, standing alone, we are not persuaded that Comcast has relied upon or asserted the Humpleman Provisional absent the Humpleman issued patent in the Petition. Comcast does not assert the former without asserting the latter, at least in terms of the grounds of unpatentability proffered in the Petition. Although Rovi is correct that Comcast has stated that “Humpleman Provisional is prior art both as part of Humpleman and on its own” (Pet. 18), Rovi has not pointed to any other occurrence where Comcast has asserted Humpleman Provisional without also asserting Humpleman. As such, Rovi’s argument is without basis because Comcast has not asserted Humpleman Provisional on its own, apart from its incorporation by reference into Humpleman, discussed below.

Rovi also contends that Humpleman Provisional is not properly incorporated by reference into Humpleman. PO Resp. 50–51. Rovi argues that Humpleman does not identify with particularity the specific material in the provisional applications asserted to be incorporated by reference or clearly indicate where that material is found in the incorporated applications, as required to incorporate material by reference. *Id.* (citing *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000)). We do not agree.

The relevant section of Humpleman is reproduced below:

This patent application claims priority from provisional patent application Ser. No. 60/050,762, filed on Jun. 25, 1997, entitled Home Network, Browser Based, Command and Control and provisional patent application Ser. No. 60/059,499, filed on Sep. 22, 1997, entitled Improved Home Network, Browser Based, Command and Control, *which are incorporated herein by reference.*

Ex. 1006, 1:7–13 (emphasis added). From this cited disclosure, we find the patentee in Humpleman incorporated the entireties of both provisional applications by reference. If the intent was to incorporate only one provisional or just part of one provisional, then we would agree that sufficient particularity has not been supplied. However, a reasonable interpretation of such an incorporation by reference clause is that all of the referenced provisional disclosures are incorporated. Similarly,

there is no need to stipulate where particular material to be incorporated is found when that particular material is all.

Rovi also argues that such an incorporation by reference should include certain words, such as “*in its entirety*” or “[t]he contents of” or “*the disclosure of which*,” in order to properly incorporate a reference’s entire disclosure. PO Resp. 50–51 (citing *Synopsys, Inc. v. Mentor Graphics Corp.*, Case IPR2012-00041, slip op. at 9 (PTAB Feb. 22, 2014) (Paper 16); *WTS Paradigm, LLC v. EdgeAQ LLC*, Case IPR2016-00199, slip op. at 20–21 (PTAB May 22, 2016) (Paper 7); *Sony Corp. v. One-E-Way, Inc.*, Case IPR2016-01639, slip op. at 13 (PTAB Feb. 22, 2017) (Paper 8)).

We are not persuaded that the default rule should be that an incorporator need to specify an entirety of a reference to accomplish incorporation of all of a reference; rather, we are persuaded that limiting statements, if applicable, should be taken as limits on the full incorporation. We find edifying *Zenon Environmental, Inc. v. U.S. Filter Corp.*, 506 F.3d 1370, 1379 (Fed. Cir. 2007), which found “[t]he plain language expressly limits the incorporation to only relevant disclosures of the patents, indicating that the disclosures are not being incorporated in their entirety.” In the instant case of Humpleman, we find no express limits on the incorporation, and, as a result, we determine that the incorporation of Humpleman Provisional into Humpleman involved the entire provisional application.

As such, we are not persuaded, as a matter of law, that Humpleman did not incorporate both provisional

applications into its disclosure. Thus, we are persuaded that Humpleman Provisional can be relied upon for its disclosure, having been properly incorporated by reference according to 37 C.F.R. § 1.57(c) into Humpleman.

*C. Obviousness Over the Combined Teachings of Humpleman and Killian*

Comcast contends that claims 1, 3–10, and 12–18 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Humpleman and Killian. Pet. 20–47. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1002 ¶¶ 95–192. In its Patent Owner Response, Rovi presents a number of arguments as to why the combined teachings of Humpleman and Killian do not render the limitations of independent claims 1 and 10 obvious. PO Resp. 16–51. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2011 ¶¶ 27–47, 85–96, 99–130.

We begin our analysis with the principles of law that generally apply to a ground based on obviousness, followed by an assessment of the level of skill in the art, proceeded by brief overviews of Humpleman and Killian, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.



### *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 non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze this asserted ground based on obviousness with the principles identified above in mind.

### *2. Level of Skill in the Art*

There is evidence in the record before us that enables us to determine the knowledge level of a person of ordinary skill in the art. Relying on the testimony of its declarant, Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art as of July 17, 1998, which is the earliest priority date on the face of the '413 Patent, would be an individual who possesses the following:

- a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and two years of experience with interactive program guides, set-top boxes, mobile computer devices, and techniques for

delivering content or program guides over communication networks, such as a cable system, a local-area network, and the Internet.

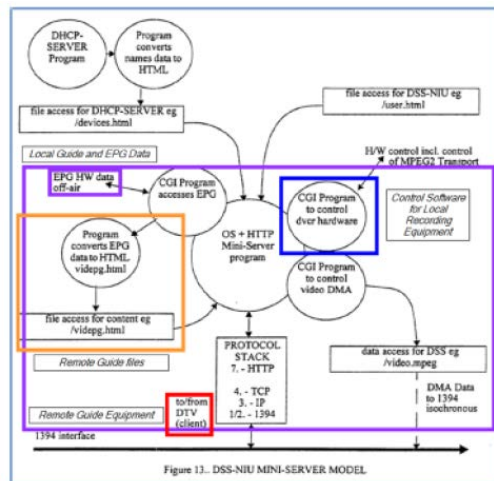
Pet. 12–13 (quoting Ex. 1002 ¶ 28). Alternatively, once again relying on the testimony of Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art “could have had equivalent experience in industry or research, such as designing, developing, evaluating, testing, or implementing the aforementioned technologies.” *Id.* at 13 (quoting Ex. 1002 ¶ 28). Conversely, Rovi’s declarant, Dr. Shamos, does not offer an assessment of the level of skill in the art as of July 1998, nor does he explicitly state his intent to adopt Dr. Tjaden’s assessment. *See generally* Ex. 2011. Given Dr. Shamos’s lack of testimony on this matter, we adopt Dr. Tjaden’s assessment because it is consistent with the ’413 Patent and the asserted prior art, and apply it to our obviousness evaluation below.

### 3. Humpleman Overview

Humpleman generally relates to the field of networks and, in particular, to home networks that have multi-media devices connected thereto. Ex. 1006, 1:16–18. One objective of Humpleman’s invention is to provide a method for controlling a plurality of devices connected to a home network, where at least one of these devices is a multi-media device, and for generating a program guide from the information provided by the multi-media device on a second device connected to the home network. *Id.* at 2:23–28. The generated program guide may be a Hypertext Markup Language (“HTML”) page that allows for selection of a specific program for recording on local equipment. *Id.*

at 20:31–51. That HTML version is generated by a digital satellite services interface device (“DSS”) that also displays a conventional electronic program guide. *Id.* at 22:21–59.

Humpleman claims priority to and incorporates by reference (*id.* at. 1:7–13) a provisional patent application (60/059,499; Ex. 1007), and provides further insight into the software structures disclosed. An annotated version of Figure 13 of that provisional patent application is reproduced below:



This annotated version of Figure 13 illustrates portions that Comcast argues correspond to different claimed portions, with the local guide software and its data in purple, remote guide files in orange, control software for local recording equipment in blue, and referencing remote guide equipment in red. Pet. 21–22. The provisional application also makes clear that a message is sent to the DSS control application by the remote device over the Internet based on a selection by

the user in the HTML program guide, instructing it to control hardware to record the selected program. Ex. 1007, 2–3.

According to Humpleman, a user may customize the programming information that is displayed by the program guide. Ex. 1006, 22:41–43. For instance, if a user prefers not to display the schedule for a particular channel because it contains inappropriate content, the user may request that the channel be removed from the program guide. *Id.* at 22:43–46. In addition, according to Humpleman, a user can remotely control devices connected to the home network. *Id.* at 20:42–47. “For example, if a user is required to work late and is therefore unable to watch the Monday night football game, the user can program a [digital video cassette recorder (‘DVCR’)] connected to their home network via the Internet, in order to record the particular event.” *Id.* at 20:47–51.

#### 4. Killian Overview

Killian discloses an electronic programming guide (“EPG”) that operates on a JAVA-based computing platform associated with a television and a video recorder. Ex. 1008, [57], 3:6–12, Fig. 1. A collection of application programming interfaces (“APIs”) allow the platform to support JAVA applets or applications that provide interactive television programming. *Id.* at 3:18–27. In one embodiment, the platform supports an EPG JAVA applet or application “that allows viewers to more intelligently select, schedule, and record viewing opportunities according to viewer profiles” and other information received via the Internet. *Id.* at 3:27–33. The EPG can use other platform components

to cause the video recorder to record programs. *Id.* at 15:5–18.

### 5. *Claims 1 and 10*<sup>9</sup>

In its Petition, Comcast contends that the person of ordinary skill in the art would have found it obvious to include interactive selection and control features in Humpleman’s guide software on the DSS, with some of those associated functionalities already disclosed in the ’413 Patent. Pet. 22–23 (citing Ex. 1001, 1:24–33). Comcast also argues that such functionalities are disclosed in Killian, and those aspects would have been implemented in Humpleman’s system for several reasons. *Id.* at 23–25.

First, Comcast argues that Humpleman expressly teaches that its home control system is interoperable with conventional hardware, and that a DSS loaded with Killian’s guide could and would be utilized in Humpleman’s system, because Humpleman was designed to be layered on top of existing hardware and software installations. *Id.* at 24 (citing Ex. 1002 ¶ 103). Second, Comcast argues that Killian expressly teaches that the EPG modules implementing the recording control APIs could be integral to the functioning of external devices other than the receiver, which would have provided greater utility to Humpleman’s network of remote devices. *Id.* (citing Ex. 1008, 15:53–16:7; Ex. 1002 ¶ 104). Lastly, Comcast argues that combining Killian with Humpleman would be nothing more than

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<sup>9</sup> Comcast contends that independent claims 1 and 10 stand or fall together. Pet. 9–10. Rovi does not dispute Comcast’s assertion in this regard. *Accord* PO Resp. 23–52 (treating independent claims 1 and 10 as standing or falling together).

using known techniques to improve similar devices and a simple substitution of one known, closely-related element for another that produces predictable results. *Id.* at 25 (citing Ex. 1002 ¶¶ 105, 106).

For added clarity, we highlight certain arguments presented by Comcast for each limitation recited in independent claim 1. We note that there is no dispute between the parties as to whether the limitations of independent claim 10 are essentially the same as the limitations of independent claim 1. *Compare* Pet. 9–10, 26, *with* PO Resp. 23–32.

Beginning with the preamble of independent claim 1, Comcast contends that Humpleman teaches “a system for selecting a television program over a remote access link comprising an Internet communications path for recording” because Humpleman discloses selecting programs for recording remotely via the Internet. Pet. 26 (citing Ex. 1006, 20:42–51; Ex. 1002 ¶¶ 110, 111). To support this argument, Comcast directs us to Humpleman’s disclosure that, “[f]or example, if a user is required to work late and is therefore unable to watch the Monday night football game, the user can program a DVCR connected to their home network via the Internet, in order to record the particular event.” *Id.* (quoting Ex. 1006, 20:42–51).

Comcast contends that Humpleman teaches “local interactive television program guide equipment on which a local interactive television program guide is implemented,” as recited in independent claim 1, because Humpleman discloses that one controlled home device is a DSS including a vendor-supplied

control application through which the DSS can retrieve and display a guide. *Id.* at 26–27 (citing Ex. 1006, 1:21–36, 19:46–55, 22:31–47; Ex. 1002 ¶¶ 113, 114).

Comcast also contends that that one of ordinary skill in the art would have understood that “typical program guides on set-top boxes at the time of invention provided interactive features,” where Comcast contends that the ’413 Patent admits as much. *Id.* at 27 (citing Ex. 1001, 1:24–35; Ex. 1002 ¶¶ 113–115). Comcast further contends that, to the extent Humpleman does not disclose expressly that the local guide allows a user to navigate through television program listings, make selections, and controls functions of the software, one of ordinary skill in the art would have found it obvious to implement an interactive guide on Humpleman’s DSS at least because of the interactive guide software disclosed in Killian. *Id.* (citing Ex. 1008; Ex. 1002 ¶ 115).

Comcast contends that Killian discloses a receiver with a locally installed guide application, where that guide displays program schedules, allows for navigation through program listings, and controls the recording of selected programs. *Id.* at 27–28 (citing Ex. 1008, 3:7–33, 4:7–13, 6:32–56, 7:8–16, 7:49–61, 8:5–56, 13:12–21, 15:53–16:7; Ex. 1002 ¶¶ 116–118). Comcast asserts that it would have been obvious to one of ordinary skill in the art to implement Killian’s local programming guide into Humpleman’s system to provide “users with expected and typical control functionality,” where the combination of the references would have been motivated by the express teachings of both Humpleman and Killian. *Id.* at 28 (citing Ex.

1006, 6:55–64, 19:46–55, 22:47–59; Ex. 1008, 15:53–16:7; Ex. 1002 ¶¶ 119–122). Comcast further asserts that the combination would have been nothing more than the use of known techniques to improve similar devices and a simple substitution of known elements to obtain predictable results—namely, to “allow[] viewers to more intelligently select, schedule, and record their viewing opportunities.” *Id.* (quoting Ex. 1008, 1:20–23; citing Ex. 1002 ¶ 120).

Comcast also contends that Humpleman teaches “wherein the local interactive television program guide generates a display of one or more program listing for display on a display device at a user’s home,” “and includes user television equipment,” as recited in independent claim 1, because Humpleman discloses that its DSS equipment is “found in the home.” *Id.* at 29 (quoting Ex. 1006, 1:21–31) (citing Ex. 1006, 1:21–36, 2:31–39, 22:30–46). Comcast further argues that Humpleman teaches wherein “the local interactive television program guide generates a display of one or more programs listings for display on a display device at the user’s home,” as recited in independent claim 1, because Humpleman discloses that the “EPG displays a list of available programs and the specific time in which the programs can be viewed through the service.” *Id.* (quoting Ex. 1006, 22:30–46) (citing Ex. 1002 ¶¶ 124–128).

Comcast contends that Humpleman teaches “wherein a mobile device communicates with the local interactive television program guide equipment,” as recited in independent claim 1, because Humpleman discloses that a digital television or personal computer (“PC”) accesses HTML control pages to allow for



remote access, such that a user at work uses his/her work PC to access the HTML control pages to select a particular event for recording by devices on his/her home network. *Id.* at 29–30 (citing Ex. 1006, 1:21–36, 7:25–35, 20:42–51; Ex. 1007, 3 ¶ 3, 14 ¶¶ 1–4; Ex. 1002 ¶¶ 131–138). Comcast also asserts that, to the extent Humpleman does not disclose expressly using a remote guide to allow a remote user to selecting programs for recording on his/her own Personal Computer, a person of ordinary skill in the art would have “understood the advantages associated with providing an IPG user interface to allow users to select a program for recording via a user-friendly interface,” and implementing those through Killian would have required the use of known techniques to improve a similar device and obtaining predictable results. *Id.* at 31 (citing Ex. 1008, 3:20–33, 4:7–13, 7:8–16, 13:12–21, Fig. 5; Ex. 1002 ¶¶ 134–136). Additionally, Comcast contends that Humpleman teaches “wherein the remote program guide access device is a mobile device,” because Humpleman discloses that the controlling device may be a laptop computer. *Id.* at 30 (citing Ex. 1006, 1:21–36, 7:25–35; Ex. 1002 ¶ 137).

Comcast also contends that Humpleman teaches “generat[ing] a display of the remote access interactive television program guide, the remote access interactive television program guide comprising a plurality of television program listings for display on the mobile device,” as recited in independent claim 1, because Humpleman generates a remote access HTML program guide based on EPG data underlying the EPG displayed by the DSS, where the HTML guide may be displayed on any browser-equipped device. *Id.* at 32

(citing Ex. 1006, 7:25–35, 20:40–52, 22:30–59; Ex. 1007, 21, Fig. 13; Ex. 1002 ¶ 13943). Comcast further contends that, although Humpleman and Humpleman Provisional each disclose an example where the client device is a digital television, they also disclose that the client device may be a computer outside the home, such as the user’s work PC. *Id.* at 33 (citing Ex. 1007, 3, ¶3; Ex. 1006, 20:42–52; Ex. 1002 ¶ 143).

Comcast contends that Humpleman teaches “wherein the display of the remote access interactive television program guide is generated based on a user profile stored at a location remote from the mobile device,” as recited in independent claim 1, because Humpleman discloses that “the user can customize the displayed HTML program guide to view only a particular set of the available information,” with Humpleman Provisional illustrating that a user interface can allow the user to view favorite channels. *Id.* at 33 (citing Ex. 1006, 22:47–59, 22:30–59; Ex. 1007, 7, Fig. 5). Comcast also contends that, to the extent that the claim term “user profiles” is narrowly limited, Killian also discloses “building a filtered guide based on a user profile data” and it would have been obvious to employ the conventional listing filtering techniques disclosed in Killian. *Id.* at 34–35 (citing Ex. 1008, 1:20–41, 7:49–61, 9:10–25, 11:20–21; Ex. 1002 ¶¶ 149–152). Comcast also asserts that it would have been obvious to utilize Killian’s user profile data stored locally or remotely to implement the customized HTML program guides of Humpleman because this would have allowed the system to better track a user’s preferences and generate more effective user interfaces, and would have entailed the use of a known

technique to improve a similar feature to produce a predictable result. *Id.* at 35–36 (citing Ex. 1006, 2:31–39, 22:47–59; Ex. 1008, 9:10–25, 11:20–21; Ex. 1002 ¶¶ 145, 149–153).

Comcast also contends that Humpleman teaches “receiv[ing] a user selection of the television program for recording by the local interactive television program guide, wherein the user selects the television program by selecting a television program listing from the plurality of television program listings displayed, by the remote access interactive television program guide, on the mobile device,” as recited in independent claim 1, because Humpleman discloses that once a selection is made via the HTML guide, “button ‘click’” information is provided which the interface receives and passes along to the VCR to accomplish a recording of the selected program. *Id.* at 36–37 (citing Ex. 1006, 14:5–14, 22:30–59; Ex. 1007, 2 ¶ 2, 4 ¶ 2; 6 ¶ 6, 10, 14 ¶ 4, Fig. 2; Ex. 1002 ¶¶ 155–158).

Comcast contends that Humpleman teaches “transmit[ting], to the local interactive television program guide over the Internet communications path, a communication identifying the television program for recording corresponding to the television program listing selected by the user with the remote access interactive television program guide,” as recited in independent claim 1, because Humpleman discloses that a message is sent to the DSS control application by the remote device over the Internet in response to the user making a selection in a displayed HTML program guide, instructing it to control DVCR hardware to record the selected program. *Id.* at 37–38

(citing Ex. 1006, 20:42–51; Ex. 1007, 14 ¶¶ 1–4, 12 ¶ 1, Fig. 9; Ex. 1002 ¶¶ 161–165).

Lastly, Comcast contends that Humpleman teaches “wherein the local interactive television program guide receives the communication and, responsive to the communication, records the television program corresponding to the selected program listing using the local interactive television program guide equipment,” as recited in independent claim 1, because Humpleman discloses that a user is allowed to schedule a recording for an event on local equipment from a remote location via the Internet. *Id.* at 40 (citing Ex. 1006, 20:42–51; Ex. 1002 ¶ 171). Comcast further argues that the Humpleman Provisional explains that it is desirable to allow users to set recordings solely through the DSS interface, rather than requiring the user to schedule a channel time on the DSS and then schedule a separate recording operation on the VCR. *Id.* (citing Ex. 1007, 12 ¶ 1, 14 ¶¶ 1–4; Ex. 1002 ¶ 171).

In its Patent Owner Response, Rovi presents a number of arguments that can be grouped as follows: (1) whether Comcast has demonstrated that Humpleman and Killian, either alone or in combination, account for all the limitations of independent claims 1 and 10; and (2) whether Comcast has demonstrated that a person of ordinary skill in the art would have had a sufficient reason to combine the teachings of Humpleman and Killian. *See* PO Resp. 23–48. We address these groupings of arguments in turn.

*a. Limitations**i. Humpleman Teaches Two Interactive Television Program Guides in Communication with Each Other*

Rovi contends that Humpleman “fails to disclose two guides, let alone two **interactive** program guides.” PO Resp. 24 (emphasis in original). Rovi points out that “the claims do not allow for the remote access guide to bypass the Local IPG by communicating directly with the local interactive television program guide equipment,” which Rovi alleges that Humpleman’s system does. *See id.* at 24–26. Further, Rovi argues that, even assuming the two guides are present in Humpleman, the two guides are not in communication because Humpleman’s disclosed HTML guide “communicates with a different software application on the DSS (the HTTP Mini-Server program) **and not** the alleged Local IPG.” *Id.* at 25 (emphasis in original). Rovi also argues that the alleged remote guide in Humpleman does not transmit the recording request and the “dss server” is not part of the alleged local guide. *Id.* at 35–36 (citing Ex. 2011 ¶¶ 114, 120).

In its Reply, Comcast contends that “Humpleman has a local guide and a remote guide, that the guides would be made interactive in view of Killian, and that the guides would communicate to schedule recordings.” Pet. Reply 7. Additionally, Comcast asserts that the “dss server,” referred to in Humpleman, is the full “DSS-NIU Mini-Server,” and has been conflated by Rovi to merely encompass the “HTTP Mini-Server program.” *Id.* at 7–8. Comcast also

argues that the DSS-NIU Mini-Server must have additional control software to provide the specialized functionality of the One Touch Record feature of Humpleman Provisional, which would be inapplicable to other servers that do have record functions, such as DVD 108. *Id.* at 8–9 (citing Ex. 1052 ¶ 29; Ex. 1006, 6:31–37).

Comcast further argues, when the “dss server” is properly understood, Humpleman teaches that “the HTML user interfaces would be supplemental to the native user interfaces (such as the local EPG),” and uses would remain for the native user interfaces because they are more convenient and provide advanced functionality. *Id.* at 20.

Based on the record developed during trial, we disagree that DSS control application, or local guide of Humpleman, is confined to the HTTP Mini-Server program. *See* Dec. on Inst. 22. For this determination, we look to our construction of the claim term “interactive television program guide” above and, in particular, to Dr. Shamos’s testimony in the related ITC proceedings. *See supra* Section II.A. By Dr. Shamos’s own testimony, “the local interactive television guide . . . can comprise an extensive collection of hardware and software located both near the user and at the cable headend, or at other locations.” Ex. 1054 ¶ 169.

When critical to a findings of fact, it is in the interest of justice to consider sworn inconsistent testimony on an identical issue when minimal burden for do so. *Ultratec, Inc. v. CaptionCall, LLC*, 872 F.3d 1267, 1275 (Fed. Cir. 2017) (holding that the Board

abused its discretion during an *inter partes* review when it refused to admit and consider an expert's inconsistent trial testimony from a relevant district court case). Therefore, when applying the proper construction of an "interactive television program guide," we agree with Comcast that the local guide may extend beyond just the software application on a HTTP Mini-Server program in Humpleman.

Additionally, Rovi contends that Humpleman teaches a single HTML program that does not communicate with any other program guide. PO Resp. 17–18, 24–25. We have previously decided, and Rovi does not appear to dispute, that Humpleman Provisional discloses communication between two guides. *See* Dec. on Inst. 22 (citing Ex. 1007, 2–3); discussion *supra* regarding "transmit" element of independent claim 1. As such, we are persuaded that the DSS control application and HTML program guide displayed on the remote device disclose a local guide and remote guide, respectively, in communication with each other.

Rovi also argues that Comcast's expert, Dr. Tjaden, cannot identify what he considers the local IPG within Humpleman, and suggests that this apparent confusion demonstrates that Comcast has not been clear about what portions of Humpleman constitute the local IPG. PO Resp. 26–31. Regardless of any apparent confusion at Dr. Tjaden's deposition, we remain persuaded that Comcast's analysis in the Petition is clear as to what portions of Humpleman are equivalent to the local and remote guides. *See* Pet. 20–23 ("Humpleman Provisional discloses that a message is sent to the DSS control application (i.e., the local

guide) by the remote device over the Internet responsive to the user making a selection in a displayed HTML program guide (i.e., the remote guide), instructing it to control DVCR hardware to record the selected program. (Ex-1007, p. 14, ¶4; Ex-1002, ¶97”).

Rovi also contends that Humpleman fails to disclose a conventional EPG because merely providing data to build the HTML program guide does not require a conventional EPG as recited in the claims. PO Resp. 32. Further, Rovi asserts that Humpleman does not disclose a conventional EPG because the language “[m]ost digital satellite services provide programming information through an Electronic Programming Guide (EPG)” says nothing about Humpleman’s specific limitations. *Id.* at 31–32.

Although we agree with Rovi that the cited paragraph speaks to the general field of EPGs, this argument is not detrimental in consideration of Humpleman, as a whole. As Comcast points out, Humpleman Provisional describes software to access the off-air EPG hardware and system. Pet. Reply 12–13 (citing Ex. 1007, 22). We are persuaded that the off-air EPG hardware and system would function through the Humpleman system where televisions are offline or using specialized services such as pay-per-view. *See* Tr. 23:1–13; Pet. Reply 20. Further, we agree with Comcast that “nothing in Humpleman supports the conclusion that Humpleman’s system would suppress the conventional EPG that it relies on to build its HTML program guide.” Pet. Reply 13 (citing Ex. 1052 ¶¶ 30, 43). Additionally, under the rubric of obviousness, one of ordinary skill would have



considered the disclosed, conventional EPG, even if its specific use in the system of Humpleman was not disclosed. “The use of patents as references is not limited to what the patentees describe as their own inventions or to the problems with which they are concerned. They are part of the literature of the art, relevant for all they contain.” *In re Heck*, 699 F.2d 1331, 1332–33 (Fed. Cir. 1983) (quoting *In re Lemelson*, 397 F.2d 1006, 1009 (CCPA 1968)).

Alternatively, Comcast argued at the Oral Hearing that “[w]e’ve used Humpleman and Killian in combination to show the local EPG.” Tr. 24:6–20. We agree that the Petition supports this assertion. We are mindful, however, that considering arguments raised at oral argument may deprive a patent owner from substantively and properly responding to those arguments, which our reviewing Court has emphasized.

This case is distinct from circumstances previously considered by the Federal Circuit in which the Court found that new arguments or evidence introduced for the first time at an oral hearing may deprive the patent owner of its right to respond. *See In re Nuvasive*, 841 F.3d 966, 972–73 (Fed. Cir. 2016) (finding the Board’s refusal to permit the patentee to file a motion for strike, a sur-reply, or present the new arguments during the final oral hearing violated the patent owner’s due process and Administrative Procedure Act rights); *Dell Inc. v. Accelaron, LLC*, 818 F.3d 1293, 1301 (Fed. Cir. 2016) (holding the “Board denied [patent owner of] its procedural rights by relying in its decision on a factual assertion introduced into the proceeding only at oral argument, after

[patent owner] could meaningfully respond”). While these cases provide circumstances in which a petitioner asserted new evidence in the reply or oral hearing, Comcast put the Rovi on notice of this argument in the Petition itself:

It would have been obvious to incorporate the features of Killian’s local IPG into Humpleman’s local guide. A [person of ordinary skill in the art] would readily implement the conventional interactive features of Killian in Humpleman’s local guide to provide users with expected and typical television control functionality through a local IPG. (Ex-1002, ¶¶ 119).

Pet. 28.

Thus, Comcast argues—and we agree—that Humpleman in view of Killian also teaches a local EPG. We determine that one of ordinary skill in the art would have sought to implement the interactive guide features taught by Killian, on both the remote guide, as well as the local guide, where Killian illustrates the display of a local electronic program guide on a television, i.e., a local guide. *See* Ex. 1008, 10:66–11:21, Fig. 5. As such, even if we were to assume that the specific system of Humpleman, as implemented, would not have had an electronic program guide like conventional digital satellite services, it would have been obvious to implement such a local electronic program guide in the combined system based on the disclosure of Killian.

To be clear, on either basis, i.e., relying on Humpleman’s disclosure alone, i.e., Humpleman’s

teaching of a local EPG through its DSS, or in combination with Killian, such that the local EPG is rendered obvious in view of the combination of Humpleman and Killian, we determine that the resulting system would have a local EPG that would be distinct from the remote guide, and would meet the requirements of the claimed “local interactive television program guide.”

*ii. Remaining Limitations*

In its Patent Owner Response, Rovi does not address separately whether the combined teaching of Humpleman and Killian account for the remaining limitations of independent claims 1 and 10. *See generally* PO Resp. 16–37. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these remaining limitations, and we agree with and adopt Comcast’s analysis. *See* Pet. 10–12, 20–47.

*b. Comcast Presents a Sufficient Rationale to Combine the Teachings of Humpleman and Killian*

Rovi contends that Comcast fails to explain how or why one of ordinary skill in the art would have been prompted to modify Humpleman’s television schedule system to include Killian’s viewer profiles. PO Resp. 38–39. Rovi further contends that a person of ordinary skill would not have modified either of Humpleman’s alleged guides by incorporating features of Killian. *Id.* at 39. Rovi argues that “the very purpose of Humpleman is to eliminate any need to rely on conventional device-control interfaces and instead utilize the common HTML pages across all devices.”

*Id.* at 40 (citing Ex. 2011 ¶¶ 119–121) (emphasis omitted).

Rovi also relies on Dr. Shamos’s testimony, that such a modification would be unnecessary, if not inapposite, in view of Humpleman’s express purpose of replacing conventional EPGs with HTML guides, as showing that one of ordinary skill in the art would not have combined Humpleman and Killian. *Id.* at 39 (citing Ex. 2011 ¶¶ 119–121). Rovi further asserts that a person of ordinary skill in the art would not have looked to Killian because use of its device-specific guide is contrary to Humpleman’s goal of utilizing a common HTML interface. *Id.* at 44. According to Rovi, Killian discloses a locally installed and implemented IPG, whereas Humpleman’s HTML guides operate a client/server interface. *Id.* at 45–46. Thus, Rovi concludes that Killian’s architecture “is fundamentally different from Humpleman’s system and would discourage [a person having ordinary skill in the art] from implementing Killian’s interactive features in Humpleman.” *Id.* at 45.

In its Reply, Comcast emphasizes that Killian is cited for limited features and would have been nothing more than using known techniques to improve similar devices in a similar manner, achieving the predictable result of a local guide that “allows viewers to more intelligently select, schedule, and record their viewing opportunities.” Pet. Reply 19 (citing Pet. 25; Ex. 1008, 1:20–23; Ex. 1002, ¶¶ 105–106). Comcast also contends that a person of ordinary skill in the art would have readily integrated Killian’s JAVA-based interactive program guide features into Humpleman’s system. *Id.* at 21–22 (citing Ex. 1052 ¶ 44). To support

this argument, Comcast asserts that Humpleman explicitly suggests JAVA-based systems could be implemented for presenting client interfaces. *Id.* (citing Ex. 1006, 4:4–11). Comcast also contends that adding interactive features to either guide in Humpleman would have no impact on the principles of operation of Humpleman’s system. *Id.* at 20 (citing Ex. 1052 ¶ 47).

The Supreme Court has held that an obviousness evaluation “cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.” *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether Comcast has set forth “some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. at 418. When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to implement Killian’s enhancements in Humpleman’s system. When, as here, a technique has been used to improve one device (i.e., Killian’s interactive features), and one

of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Killian's interactive features to Humpleman's system, thereby allowing viewers to more intelligently select, schedule, and record their viewing opportunities), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 23–25; Ex. 1002 ¶¶ 102–106. The record includes credible evidence explaining why applying Killian's features to Blake's system would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Comcast declarant, Dr. Tjaden, provides the necessary motivation for doing so—namely, “allowing viewers to more intelligently select, schedule, and record their viewing opportunities.” Ex. 1002 ¶ 106.

Also based on the record developed during trial, we are persuaded by Comcast that a person having ordinary skill in the art would have known that a JAVA-based system, such as the one taught by Killian, could be used to implement a client interface because Humpleman explicitly instructs a person having ordinary skill in the art to do so. Comcast points out the relevant section of Humpleman, which is reproduced below:

In an exemplary embodiment of the present invention, a browser based home network uses Internet technology to control and command home devices that are connected to a home network. Each home device contains interface data (e.g. . . . JAVA . . . or any other format useful for the intended purpose) that provides an

interface for the commanding and controlling of  
the home device over the home network.

*See* Pet. Reply 21 (citing Ex. 1006, 4:4–11) (emphasis added). Contrary to Rovi’s argument that “the very purpose of Humpleman is to eliminate any need to rely on conventional device control interfaces and instead utilize the common HTML pages across all devices” (PO Resp. 40), Humpleman explicitly contemplates an embodiment in which the interface utilizes JAVA to provide the client interface. *See* Ex. 1006, 4:4–11.

Further, Rovi argues that a person of ordinary skill in the art would not have modified Humpleman’s HTML pages to incorporate Killian’s interactive features. PO Resp. 41. According to Rovi, “[t]he HTML guide approach ‘neatly solves the [graphical user interface] problem by making the DTV a rendering browser and no interface command set is needed for human control of the home network device,’” and that Humpleman implements a session manager to access HTML pages. *Id.* at 42–44 (citing Ex. 1007, 16). In its Reply, Comcast argues that “there is no reason to conclude that Humpleman’s HTML user interfaces would replace every native user interface on household devices.” Pet. Reply 20 (citing Ex. 1052 ¶¶ 11, 30, 43). Comcast also argues that “the session manager would still require each client to generate a rendered interface to facilitate [an] interaction.” *Id.* at 22 (citing Ex. 1052 ¶¶ 45–47).

Based on the record developed during trial, we are persuaded by Comcast that it would have been obvious to implement Humpleman’s session manager using Killian’s interactive features. Comcast declarant, Dr.

Tjaden, provides the necessary motivation for implementing Killian's interactive features—namely, “Humbleman expressly teaches the use of JAVA and JAVASCRIPT programming languages to implement functionality on its devices, as each device requires an interface of some kind in order to facilitate interaction with a user and/or other devices.” Ex. 1052 ¶ 44. As such, we are persuaded that one of ordinary skill in the art would have found it obvious to improve the guides of Humbleman with the interactive features of Killian because it would have been obvious to one of ordinary skill in the art to incorporate Killian's explicitly interactive program guides into Humbleman system that allows for remote and local programming of connected devices. *See* Pet. 24–25.

*c. Summary*

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of independent claims 1 and 10 would have been obvious over the combined teachings of Humbleman and Killian.

*6. Claims 3–9 and 12–18*

In its Patent Owner Response, Rovi does not address separately whether the combined teaching of Humbleman and Killian account for the limitations of dependent claims 3–9 and 12–18. *See generally* PO Resp. 23–47. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these limitations, as well as its explanations as to how one ordinary skill in the art would have combined the relevant teachings of Humbleman with those of Killian, and we agree with



and adopt Comcast's analysis. *See* Pet. 41–47. Comcast, therefore, has demonstrated a by a preponderance of the evidence that the subject matter of dependent claims 3–9 and 12–18 would have been obvious over the combined teachings of Humpleman and Killian.

*D. Obviousness Over the Combined Teachings of Humpleman, Killian, and Lawler*

Comcast contends that claims 2 and 11 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Humpleman, Killian, and Lawler. Pet. 47–48. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1002 ¶¶ 200–204. In its Patent Owner Response, Rovi contends that Comcast does not present sufficient reasoning as to why one of ordinary skill in the art would combine the teachings of Lawler with those of Humpleman and Killian. PO Resp. 47–48. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2011 ¶¶ 124–130.

We begin our analysis with a brief overview of Lawler, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

### 1. *Lawler Overview*

Lawler generally relates to a system for recording a program on an interactive viewing system and, in particular, to a system that allows a user to identify a program for recording using an interactive program guide and then designate the identified program for automated recording at some later time. Ex. 1009, 1:8–13. According to one aspect of the invention disclosed in Lawler, the recording device is associated with a head end. *Id.* at 2:24–25. At the direction of the head end, the recording device records the selected program and digitally stores it in a memory at the head end. *Id.* at 2:25–27. The recorded program may then be retrieved from the head end by the user for display at a viewer station. *Id.* at 2:27–29. Lawler discloses that this process would allow multiple users to access a single recording of the program, as well as make the program available to other users who did not set the recording, but nonetheless wish to view the program at some later time. *Id.* at 13:34–38.

### 2. *Claims 2 and 11*

Dependent claim 2 recites “wherein local interactive television program guide records the television program corresponding to the selected television program listing at a television distribution facility.” Ex. 1001, 40:48–51. Dependent claim 11 also recites a similar limitation. *Id.* at 42:12–15.

In its Petition, Comcast contends that Lawler teaches recording programs at a central head end (i.e., a television distribution facility) in lieu of recording programs locally. Pet. 48 (citing Ex. 1009, 2:25–29, 13:26–38; Ex. 1002 ¶¶ 202–203). Comcast then argues

that, as a substitute for recording programs locally, it would have been obvious to modify Humpleman and Killian combination to include recording programs at a television distribution facility, as taught by Lawler, because there are certain advantages to recording programs at the television distribution facility, such as making recorded programs available for other subscribers and eliminating the need for a separate recorder. *Id.* at 48 (citing Ex. 1002 ¶¶ 203–204). According to Comcast, this proffered combination would be nothing more than using a known technique (i.e., Lawler’s centralized recording at a television distribution facility) to improve a similar system (i.e., the combined Humpleman and Killian television schedule system), and would produce a predictable result that provides the stated benefits of Lawler. *Id.*

In its Patent Owner Response, Rovi contends that Lawler’s recording of programs at a television distribution facility would undermine Humpleman’s stated goals by eliminating the user’s ability to identify all available content on the home network. PO Resp. 47. Rovi argues that Humpleman discloses the creation of HTML guides for each home device that stores multimedia materials, and that Comcast’s proposed combination (i.e., moving the recording device to a remote location) would eliminate the home network’s ability to identify watchable content. *Id.* at 47–48 (citing Ex. 1006, 2:19–22, 22:60–23:10; Ex. 2011 ¶¶ 124–130).

In its Reply, Comcast counters that Rovi has identified only one object of Humpleman, among many others, and that the content material, which is “*associated with* a home device *connected to* the home

network,” need not be located within the home or even on the home network. Pet. Reply 23–24 (citing Ex. 1006, 15:25–32, 14:19–59). Comcast argues that Humpleman identifies program listings for content originating from broadcast sources, and the physical storage of content at a television distribution facility would not preclude the content from being accessible and viewable within the home. *Id.* at 24 (citing Ex. 1052 ¶¶ 48–49).

As an initial matter, Rovi does not address separately Comcast’s explanations and supporting evidence as to how the combined teachings of Humpleman, Killian, and Lawler account for the limitations of dependent claims 2 and 11. *See generally* PO. Resp. 47–48. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these limitations, and we agree with and adopt Comcast’s analysis. *See* Pet. 47–48.

Based on the record developed during trial, we agree with Comcast that that one of ordinary skill in the art would have had a sufficient reason to modify the combined television schedule system of Humpleman and Killian to include recording programs at a television distribution facility, as taught by Lawler. When, as here, a technique has been used to improve one device (i.e., Lawler’s centralized recording at a television distribution facility), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Lawler’s technique to the combined television schedule system of Humpleman and Killian to make recorded programs available for other subscribers and

to eliminate the need for a separate recorder), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 47–48; Ex. 1002 ¶¶ 200–204. The record includes credible evidence explaining why applying Lawler’s technique to the combined television schedule system of Humpleman and Killian to make recorded programs available to multiple subscribers at a television distribution facility would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Indeed, Lawler itself provides the necessary motivation for doing so—namely, “[to] allow multiple users to access a single recording of the program.” Ex. 1009, 13:33–35.

We do not agree with Rovi’s argument that Lawler’s recording of programs at a television distribution facility would undermine Humpleman’s stated goals by eliminating the user’s ability to identify all available content on the home network. Although Rovi posits that moving the recording device to a remote location would eliminate the home network’s ability to identify watchable content, the combined system could still identify all the watchable content, even if the content is not stored locally. In other words, the watchable material associated with a home device need not reside on that home device, similarly to the way that pay-per-view material need not reside on the local device, although it can be associated with that local device. As Dr. Tjaden testifies—and we agree—Humpleman’s home program guide would not logically exclude content external to the home network, as Rovi proposes, because it

includes content delivered by broadcast sources (i.e., external to the home network). *See* Ex. 1052 ¶ 48.

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 2 and 11 would have been obvious over the combined teachings of Humpleman, Killian, and Lawler.

*E. Obviousness Over the Combined Teachings of Kondo, Killian, and Kawamura*

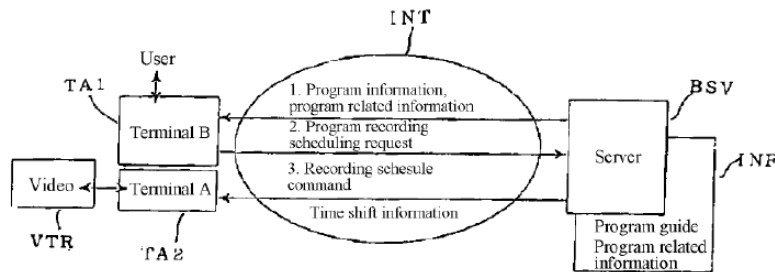
Comcast contends that claims 1, 3–10, and 12–18 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, and Kawamura. Pet. 49–72. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1002 ¶¶ 210–294. As we explain in our Introduction section above, the parties waived briefing on this ground, as well as consideration of this ground at the consolidated oral hearing. *See supra* Section I. For the reasons discussed below, we are not persuaded that Comcast sufficiently demonstrates that the combined teachings of Kondo, Killian, and Kawamura teach or suggest all of the limitations of independent claims 1 and 10.

We begin our analysis with brief overviews of Kondo and Kawamura, and then we address whether Comcast demonstrates that the teachings of Kondo,

Killian, and Kawamura teach or suggest all of the limitations of the independent claims.

### 1. Kondo Overview

Kondo describes a network service system that allows a user to schedule television program recordings on the user's home video recorder over the Internet using a communication terminal connected to a server. Ex. 1012, [57], ¶ 8. Figure 1 of Kondo, reproduced below, illustrates an embodiment of the network service system disclosed in Kondo.

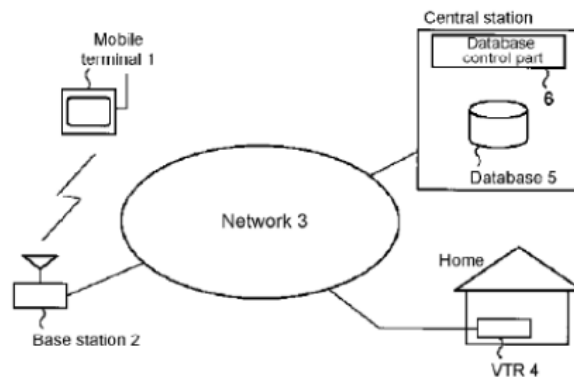


As shown in Figure 1 reproduced above, Kondo's system includes first communication terminal TA1 (also labeled "Terminal B") and second communication terminal TA2 (also labeled "Terminal A"), both of which communicate with server BSV via network INT. *Id.* ¶¶ 10, 12. Communication terminal TA1 is a "general communication terminal," and communication terminal TA2 connects to videotape recorder VTR. *Id.* ¶¶ 10, 11. To schedule video recording, a user may use terminal TA1 to access server BSV via network INT to acquire a broadcast program guide stored on server BSV and select a program for recording. *Id.* ¶ 12. When a user selects a

program for recording from terminal TA1, server BSV sends a recording command to terminal TA2 to schedule a recording on videotape recorder VTR. *Id.* ¶¶ 13, 14. A user also can use terminal TA2 to acquire a broadcast program guide from server BSV and then select a program for recording on videotape recorder VTR. *Id.* ¶¶ 12, 13.

## 2. Kawamura Overview

Kawamura describes a remote control system that allows a user to control a videotape recorder (“VTR”) in the user’s home by operating a remote mobile terminal. Ex. 1014 ¶¶ 1, 23. Figure 1 of Kawamura, reproduced below, illustrates one embodiment of the remote control system described in Kawamura.



As shown in Figure 1 reproduced above, Kawamura’s system includes mobile terminal 1 connected to network 3 by way of base station 2. *Id.* ¶ 24. Database 5 contains a listing of television broadcast programs, or information relating to the content of each program, and is connected to network 3. *Id.* ¶ 27. When a user who is away from home wishes



to schedule a program recording on VTR 4, but does not know the channel or time of the program, the user can use mobile terminal 1 to access database 5 by way of network 3. *Id.* ¶¶ 30–31. Mobile terminal 1 displays program listing information obtained from database 5. *Id.* ¶ 32. The user refers to the displayed program listing and schedules a recording of the desired program by transmitting the broadcast channel, starting time, and other confirmed information to VTR 4. *Id.* ¶ 33.

### 3. Claims 1 and 10

Comcast generally relies on Kondo for teaching the system of independent claim 1. Pet. 43–45. Comcast also cites Killian and Kawamura for teaching certain details regarding the claimed “local interactive television program guide” and “remote access interactive television program guide,” respectively. *Id.* at 49–51.

Of particular importance to this ground, independent claim 1 recites, in relevant part, that the mobile device “transmits, *to the local* interactive television program guide over the Internet communications path, a communication identifying the television program for recording corresponding to the television program listing *selected* by the user *with the remote access* interactive television program guide.” Ex. 1001, 40:37–42 (emphases added). Similar limitations are also found in independent claim 10.

With respect to this limitation, Comcast argues that, in Kondo, a recording request for a program is transmitted from terminal TA1 to server BSV to schedule a reservation, wherein server BSV then

sends a reservation command to local terminal TA2 to schedule a recording on a connected videotape recorder VTR. Pet. 65 (citing Ex. 1012 ¶¶ 12–14). As discussed in our Decision on Institution, it is not clear to us whether Kondo teaches two guides in communication with each other, nor is it clear that Comcast has demonstrated, by a preponderance of the evidence, that Comcast's citation of one terminal communicating with another, via server BSV, meets the communications between two guides required by independent claim 1. *See* Dec. on Inst. 33–34.

Kondo makes clear that a user may use either communication terminal, TA1 or TA2, to access the broadcast program guide and request scheduling of a specific program recording. Ex. 1012 ¶ 12. If the user is at terminal TA2, the recording request is locally routed to a connected VTR, i.e., independent claim 1 would not be satisfied. *Id.* ¶ 13. If the user is at terminal TA1, the request is sent to terminal TA2 for subsequent recording. *Id.* However, Kondo only specifies the acquisition of the broadcast program guide or the information related to the broadcast programs to the terminal that the user is at. There is no apparent disclosure of any guide being acquired by the unattended terminal. Thus, if the user is at terminal TA1, with a guide thereon, there would be no need for terminal TA2 to have the same or similar guide connected to the VTR. As such, both terminals TA1 and TA2 would not need to have guides resident at each, and, therefore, there would be no way for such guides to transmit or receive a communication over an Internet communication path to each other.

In addition, given the nature of the recording request, there would be no need for the receiving terminal, TA2, to necessarily have a program guide, interactive or not. Terminal TA2 could process the recording request without the need for a broadcast programming guide. Additionally, even if users were at both terminals TA1 and TA2, requesting recordings, i.e., so that both terminals would have guides implemented thereon, there would be no reason that a recording request received from a remote terminal would be processed by the local guide and not merely some other portion of the terminal.

As well, the additional disclosures of Killian and Kawamura, with their additional details about interactive guide features, would not require the presence of a guide at each terminal, nor do they teach or suggest communication between two separate guides. Comcast has also failed to provide any suggestion or motivation for each terminal in Kondo possessing its own guide, with those guides themselves exchanging communications.

In summary, Comcast has not presented sufficient argument or evidence to support its position that the combined teachings of Kondo, Killian, and Kawamura teach or suggest all of the limitations of independent claims 1 and 10. Accordingly, Comcast has not demonstrated by a preponderance of the evidence that the subject matter of independent claims 1 and 10 would have been obvious over the combined teachings of Kondo, Killian, and Kawamura.

#### 4. *Claims 3–9 and 12–18*

Because we determine that Comcast has not demonstrated that the teachings of Kondo, Killian, and Kawamura account for all of the limitations of independent claims 1 and 10, Comcast has also not demonstrated a reasonable likelihood that it would prevail on its assertion that the subject matter of dependent claims 3–9 and 12–18 would have been obvious over the combined teachings of Kondo, Killian, and Kawamura.

#### *F. Remaining Obviousness Ground Based on the Teachings of Kondo, Killian, Kawamura, and Lawler*

Comcast also contends that claims 2 and 11 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, Kawamura, and Lawler. Pet. 72–73. Because we determine that Comcast has not demonstrated that the teachings of Kondo, Killian, and Kawamura account for all of the limitations of independent claims 1 and 10, as discussed above, Comcast has not demonstrated by a preponderance of the evidence that the subject matter of dependent claims 2 and 11 would have been obvious over the combined teachings of Kondo, Killian, Kawamura, and Lawler.

### III. CONCLUSIONS

Comcast has demonstrated by a preponderance of the evidence that (1) claims 1, 3–10, and 12–18 are unpatentable under § 103(a) over the combined teachings of Humpleman and Killian; and (2) claims 2 and 11 are unpatentable under § 103(a) over the combined teachings of Humpleman, Killian, and

Lawler. Comcast, however, has not demonstrated by a preponderance of the evidence that (1) claims 1, 3–10, and 12–18 are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, and Kawamura; and (2) claims 2 and 11 are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, Kawamura, and Lawler.

#### IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–18 of the '413 Patent are held to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

309a

APPENDIX F  
IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL  
BOARD  
COMCAST CABLE COMMUNICATIONS, LLC,  
*Petitioner,*

v.

ROVI GUIDES, INC.,  
*Patent Owner.*

Case IPR2017-01049  
Patent 8,578,413 B2

Entered: October 16, 2018

Before KEVIN F. TURNER, MICHAEL R. ZECHER,  
and JESSICA C. KAISER, *Administrative Patent*  
*Judges.*

TURNER, *Administrative Patent Judge.*

FINAL WRITTEN DECISION  
*Inter Partes* Review  
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner, Comcast Cable Communications, LLC (“Comcast”), filed a Petition requesting an *inter partes* review of claims 1–18 of U.S. Patent No. 8,578,413 B2 (Ex. 1101, “the ’413 Patent”). Paper 2 (“Pet.”). Patent Owner, Rovi Guides, Inc. (“Rovi”), filed a Preliminary Response. Paper 7. Taking into account the arguments presented in Rovi’s Preliminary Response, we

determined that the information presented in the Petition established that there was a reasonable likelihood that Comcast would prevail in challenging claims 1–18 of the '413 Patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on October 18, 2017, as to all of the challenged claims, but not all the grounds presented by Comcast in its Petition. Paper 9 (“Dec. on Inst.”).

During the course of trial, Rovi filed a Patent Owner Response (Paper 15, “PO Resp.”), and Comcast filed a Reply to the Patent Owner Response (Paper 26, “Pet. Reply”). A consolidated oral hearing with related Cases IPR2017-00950, IPR2017-00951, IPR2017-00952, IPR2017-01048, IPR2017-01050, IPR2017-01065, IPR2017-01066, and IPR2017-01143 was held on June 19, 2018, and a transcript of the hearing is included in the record. Paper 35 (“Tr.”).

After all substantive briefing was complete, but before the consolidated oral hearing, the United States Supreme Court held that a decision to institute under 35 U.S.C. § 314 may not institute on less than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). Following *SAS*, the U.S. Patent and Trademark Office (“Office”) issued “Guidance on the impact of SAS on AIA trial proceedings,” in which the Office took the policy position that a decision granting institution will institute on all of the challenged claims in the petition

and all the grounds presented in the petition.<sup>1</sup> The U.S. Court of Appeals for the Federal Circuit has since endorsed this Office policy by explaining that “the petitioner’s petition, not the Director’s discretion, is supposed to guide the life of the litigation’ and ‘that the petitioner’s contentions, not the Director’s discretion define the scope of the litigation all the way from institution through to conclusion.” *Adidas AG v. Nike, Inc.*, 894 F.3d 1256, 1258 (Fed. Cir. 2018) (quoting *SAS*, 138 S. Ct. at 1356–1357). In accordance with *SAS* and Office policy, we issued an Order modifying our Decision on Institution entered on October 18, 2017, to include review of all challenged claims and all grounds presented by Comcast in its Petition. Paper 32. The parties, however, agreed to waive briefing on the grounds we declined to institute in the Decision on Institution. *Id.* The parties also agreed to waive consideration of these previously non-instituted grounds at the consolidated oral hearing. *Id.*

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–18 of the ’413 Patent. For the reasons discussed below, we hold that Comcast has demonstrated by a preponderance of the evidence that these claims are unpatentable under § 103(a).

#### A. *Related Matters*

The ’413 Patent is involved in the following district court cases: (1) *Rovi Guides, Inc. v. Comcast Corp.*, No.

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<sup>1</sup> Available at <https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/guidance-impact-sas-aia-trial>.



2:16-cv-00322 (E.D. Tex.), which has been transferred to the U.S. District Court for the Southern District of New York and is pending as *Rovi Guides, Inc. v. Comcast Corp.*, No. 1:16-cv-09826 (S.D.N.Y.); and (2) *Comcast Corp. v. Rovi Corp.*, No. 1:16-cv-03852 (S.D.N.Y.). Pet. 1–2; Paper 3, 2. The '413 Patent also has been asserted against Comcast in a proceeding before the U.S. International Trade Commission (“ITC”) styled *In re Certain Digital Video Receivers and Hardware and Software Components Thereof*, No. 337-TA-1001. Pet. 2; Paper 3, 2.

In addition to this Petition, Comcast filed two other petitions challenging the patentability of claims 1–18 of the '413 Patent (Cases IPR2017-01048 and IPR2017-01050). Pet. 3; Paper 3, 2. Comcast also filed other petitions challenging the patentability of certain subsets of claims in several patents owned by Rovi. Pet. 3.

### *B. The '413 Patent*

The '413 Patent, titled “Interactive Television Program Guide with Remote Access,” issued November 5, 2013, from U.S. Patent Application No. 13/275,565, filed on October 18, 2011. Ex. 1101, [54], [45], [21], [22]. The '413 Patent is a continuation of U.S. Patent Application No. 10/927,814, filed on August 26, 2004, which, in turn, is a continuation of U.S. Patent Application No. 09/354,344, filed on July 16, 1999. *Id.* at [63]. The '413 Patent also claims the benefit of U.S. Provisional Application No. 60/097,527, filed on August 21, 1998, and U.S. Provisional Application No. 60/093,292, filed on July 17, 1998. *Id.* at [60].

The '413 Patent generally relates to interactive television program guide video systems and, in particular, to such systems that provide remote access to program guide functionality. Ex. 1101, 1:16–19. The '413 Patent discloses that conventional interactive television program guide systems typically are implemented on set-top boxes located in the home of a user and, as a result, do not permit the user to perform program guide functions without the user being physically located in the same room as these systems. *Id.* at 1:34–42. Stated differently, conventional interactive television program guide systems require the user to be present in the home to access important program guide features, such as program reminders, parental controls, and program recording. *Id.* at 2:16–19. The '413 Patent purportedly addresses this and other problems by providing an interactive television program guide system that allows a user to access certain features of the program guide remotely and establish settings for those features. *Id.* at 2:20–25.

Figure 1 of the '413 Patent, reproduced below, illustrates a schematic block diagram of the system in accordance with the present invention. Ex. 1101, 7:15–39.

314a

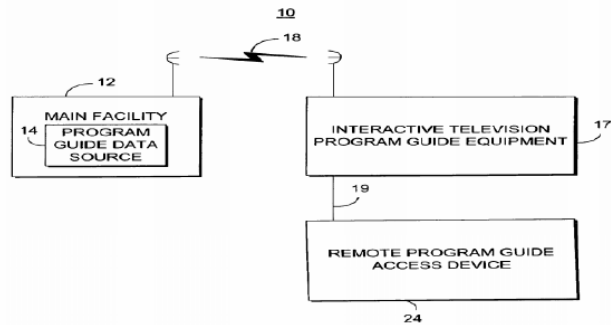


FIG. 1

As shown in Figure 1 reproduced above, system 10 includes main facility 12 that provides interactive television program guide data from program guide data source 14 to interactive television program guide equipment 17 via communication link 18. *Id.* at 7:15–22. Interactive television program guide equipment 17 is connected to at least one remote program guide access device 24 via remote access link 19. *Id.* at 7:33–35.

Figure 2a of the '413 Patent, reproduced below, illustrates one arrangement involving the interactive television program guide equipment 17 and remote program guide access device 24 in accordance with the principles of the present invention. Ex. 1101, 8:16–34.

315a

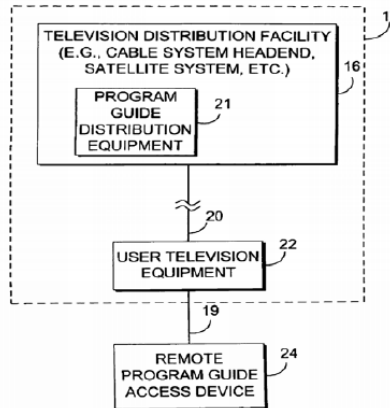


FIG. 2a

As shown in Figure 2a reproduced above, interactive television program guide equipment 17 includes program guide distribution equipment 21 located at television distribution facility 16, which distributes program guide data to user television equipment 22 via communications path 20. *Id.* at 4:57–67. Remote program guide access device 24 receives the program guide data, as well as any additional data necessary to access various functions of the interactive program guide, from user television equipment 22 via remote access link 19. *Id.* at 8:21–26.

In at least one embodiment, the '413 Patent discloses that a remote access interactive television program guide implemented on remote program guide access device 24 communicates with a local interactive television program guide implemented on interactive television program guide equipment 17. *Id.* at 15:9–18. In one example, the remote access and local interactive television program guides may be two different guides that communicate with each other. *Id.* at 15:20–23;

*see also id.* at 25:35–59 (disclosing steps involved with using the remote access interactive television guide to provide program listing information to a user).

The '413 Patent discloses transferring program guide information and settings between remote program guide access device 24 and interactive television program guide equipment 17 using any suitable application layer protocol. Ex. 1101, 15:60–64. For example, if remote access link 19 is an Internet link, program guide functionality may be accessed using Hypertext Transfer Protocol. *Id.* at 15:64–66. Remote program guide access device 24 and interactive television program guide equipment 17 also may transfer program guide information as files using either File Transfer Protocol or Trivial File Transfer Protocol running over a Transmission Control Protocol/Internet Protocol stack. *Id.* at 15:66–16:4. The '413 Patent makes clear that “[a]ny suitable file transfer protocol based on any suitable protocol stack may be used.” *Id.* at 16:4–5.

### *C. Illustrative Claim*

Claims 1 and 10 are independent. Independent claim 1 is directed to a system for selecting television programs over a remote access link that includes an Internet communications path for recording, whereas independent 10 is directed to a method for performing the same. Claims 2–9 depend from independent claim 1, and claims 11–18 depend from independent claim 10. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A system for selecting a television program over a remote access link comprising

an Internet communications path for recording, the system comprising:

a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide generates a display of one or more television program listings for display on a display device at a user's home, wherein the local interactive television program guide equipment is located within the user's home and includes user television equipment, wherein a mobile device communicates with the local interactive television program guide equipment, wherein the mobile device, on which a remote access interactive television program guide is implemented, is located outside of the user's home, and wherein the mobile device:

generates a display of the remote access interactive television program guide, the remote access interactive television program guide comprising a plurality of television program listings for display on the mobile device, wherein the display of the remote access interactive television program guide is generated based on a user profile stored at a location remote from the mobile device;

receives a user selection of the television program for recording by the local interactive television program guide, wherein the user selects the television program by selecting a television program listing from the plurality of

television program listings displayed, by the remote access interactive television program guide, on the mobile device; and

transmits, to the local interactive television program guide over the Internet communications path, a communication identifying the television program for recording corresponding to the television program listing selected by the user with the remote access interactive television program guide,

wherein the local interactive television program guide receives the communication and, responsive to the communication, records the television program corresponding to the selected television program listing using the local interactive television program guide equipment.

Ex. 1101, 40:6–48.

*D. Instituted Grounds of Unpatentability*

We instituted a trial based on the asserted grounds of unpatentability (“grounds”) set forth in the table below. Dec. on Inst. 40; Paper 32.

References	Basis	Challenged Claims
Sato <sup>2</sup> and Humpleman <sup>3</sup>	§ 103(a)	1, 3–10, and 12–18
Sato, Humpleman, and Lawler <sup>4</sup>	§ 103(a)	2 and 11
Woo, <sup>5</sup> Mizuno, <sup>6</sup> and Rzeszewski <sup>7</sup>	§ 103(a)	1, 3–10, and 12–18
Woo, Mizuno, Rzeszewski, and Lawler	§ 103(a)	2 and 11

## II. ANALYSIS

### A. Claim Construction

In an *inter partes* review proceeding, claim terms of an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R.

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<sup>2</sup> U.S. Patent No. 6,408,435 B1; issued June 18, 2002 (Ex. 1115, “Sato”).

<sup>3</sup> U.S. Patent No. 6,182,094 B1; issued Jan. 30, 2001 (Ex. 1106, “Humpleman”). U.S. Patent No. 6,182,094 B1; issued Jan. 30, 2001 (Ex. 1106, “Humpleman”).

<sup>4</sup> U.S. Patent No. 5,805,763, issued Sept. 8, 1998 (Ex. 1109, “Lawler”).

<sup>5</sup> U.S. Patent No. 5,485,219, issued Jan. 16, 1996 (Ex. 1116, “Woo”).

<sup>6</sup> PCT Int’l Pub. No. WO 97/18636, published May 22, 1997 (Ex. 1117, “Mizuno”).

<sup>7</sup> U.S. Patent No. 5,699,125, issued Dec. 16, 1997 (Ex. 1118, “Rzeszewski”).



§ 42.100(b). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision on Institution, we determined that the only claim terms requiring construction are “local/remote access interactive television program guides,” and only to the extent necessary to resolve whether the grounds asserted by Comcast properly accounted for both a “local interactive television program guide” and a “remote access interactive television program guide.” Dec. on Inst. 9 (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy)). Upon reviewing the parties’ preliminary arguments and evidence, we adopted Comcast’s proposed construction that an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *Id.* at 13. We further clarified that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide. *Id.*

In its Patent Owner Response, Rovi generally agrees with our initial determination that the only claim terms requiring construction are “local/remote access interactive television program guides.” PO Resp. 8–9. Rovi, however, proposes that the proper constructions for these claim terms are the following: (1) “local interactive television program guide” is a “guide that allows navigation through television program listings and causes display of program information on user television equipment”; and (2) “remote access interactive television program guide” is a “guide allowing navigation through television program listings using a remote access link.” *Id.* at 9. According to Rovi, its proposed constructions for the claim terms “local/remote access interactive television program guides” are consistent with the intrinsic evidence, our preliminary finding that these guides must be distinct guides, and the findings of the ITC in related proceedings. *Id.* at 9–10 (citing Ex. 2101, 193, 198, 409).

Rovi further contends that any difference between our constructions and the ITC’s constructions of the claim terms “local/remote access interactive television program guides” is not relevant to the grounds at issue in this proceeding because, according to Rovi, all of Comcast’s asserted grounds fail under Rovi’s broader constructions “that do[] not unnecessarily restrict the guides to ‘control software’ that ‘controls functions of the software.’” PO Resp. 10–11. Rovi asserts that, because Comcast’s asserted grounds fail under broader constructions for these claim terms, we need not determine whether the asserted prior art satisfies Comcast’s proposed constructions. *Id.* at 11. Rovi then

proceeds to explain how our preliminary constructions and the ITC's constructions are consistent in certain respects because (1) they both require the guides to be interactive (i.e., navigable and selectable); and (2) they both agree that the claims require two separate guides, as properly construed. *Id.* at 11–13.<sup>8</sup>

In its Reply, Comcast contends that Rovi's proposed constructions of the claim terms “local/remote access interactive television program guides” improperly seek to limit the broadest reasonable interpretation of the claim term “interactive television program guide” to a single software component that generates listings, thereby excluding other software components that assist in providing guide functionality. Pet. Reply 4 (citing PO Resp. 30–34; Ex. 2011 ¶¶ 134–135, 144–148). According to Comcast, this exclusion finds no basis in the plain language of the claims and the specification of the '413 Patent. *Id.* at 4–5 (citing Ex. 1152 ¶¶ 10–14).

Comcast also contends that Rovi's arguments directed to the claim term “interactive television program guide” contradict the construction Rovi offered in the related ITC proceeding. Pet. Reply 5. Comcast argues that Rovi expanded the scope of the claim term “local interactive television program guide”

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<sup>8</sup> For the first time at the oral hearing, Rovi argued that “remote access interactive television program guide” requires “dedicated code at the remote device.” *See, e.g.*, Tr. 58:3–7, 60:19–61:14, 66:14–21. We agree with Comcast (*id.* at 96:3–10) that this is a new argument that was not presented and developed in Rovi's briefs and, therefore, we do not consider it. *See* Paper 10, 3 (cautioning Rovi that “any arguments for patentability not raised in the response will be deemed waived”).

in the related ITC proceeding, to capture all software components related to any local guide functionality, including recording. *Id.* (citing Ex. 2101, 188–199, 222–236; Ex. 1154 ¶¶ 158–160, 169, 170, 371, 376). Comcast argues that Rovi’s expert in the ITC proceeding, Dr. Michael Shamos, who also is Rovi’s expert in this proceeding, provided supporting testimony that the claim term “local interactive television program guide” could be an “extensive collection of hardware and software.” *Id.* (emphasis omitted) (quoting Ex. 1154 ¶ 169). In this proceeding, however, Comcast argues that Rovi and Dr. Shamos appear to take the erroneous position that the claim term “local interactive television program guide” is a single software application. *Id.* at 5–6 (*compare* PO Resp. 32 and Ex. 2111 ¶ 147, *with* Ex. 1154 ¶¶ 169, 376, 371). According to Comcast, we should hold Rovi to the same broad construction of the claim term “local interactive television program guide” in this proceeding that it wielded to exclude others from practicing in the related ITC proceeding. *Id.* at 6.

As an initial matter, it is not clear to us whether Rovi actually disputes our preliminary construction of the claim term “interactive television program guide.” On the one hand, Rovi asserts that the ITC’s constructions of local interactive television program guide (i.e., a “guide that allows navigation through television program listings and causes display of program information on user television equipment”) and remote access interactive television program guide (i.e., a “guide allowing navigation through television program listings using a remote access link”) are the proper constructions. PO Resp. 9. On the

other hand, Rovi argues that both our constructions and the ITC's constructions "are consistent with respect to the relevant aspects (e.g., navigation and selection)" of a local/remote access interactive television program guide. *Id.* at 9–10. Rovi further contends that "[a]ny differences between the Board's and the ITC's constructions *are not relevant* to [Comcast's] failures of proof regarding the asserted prior art and [g]rounds at issue in the proceeding." *Id.* at 10–11 (emphasis added); *see also* Ex. 2111 ¶ 25 (Rovi's declarant, Dr. Shamos, testifies that, "regardless of which constructions the Board applies, my opinions remain the same. The asserted prior art references here fail to disclose the claim limitations . . . under either construction."). These arguments make it difficult to ascertain what Rovi actually views as the proper scope and meaning of the claim terms "local/remote access interactive television program guides." Nevertheless, we are charged in this proceeding with determining the broadest reasonable interpretation of these claim terms.

Beginning with the intrinsic record, neither party argues, nor could we find, an explicit definition for the claim term "interactive television program guide" in the specification of the '413 Patent. The specification, however, is replete with descriptions of conventional, local, or remote interactive television program guides. For instance, the specification discloses that conventional interactive television program guides display "various groups of television program [guide] listings . . . in predefined or user-defined categories," and "allow the user to navigate through [the] television program listings" and make a selection

“using a remote control.” Ex. 1101, 1:28–33. For a conventional interactive television program guide, the user must physically be located in the same room as the set-top box on which the interactive television program guide is implemented to select programs for recording or to perform other guide functions. *Id.* at 1:34–42. In the context of discussing the implementation of a remote access interactive television program guide, the specification discloses that such a guide works in conjunction with a remote device to “provide users with the opportunity to remotely access features of the interactive television program guide on the interactive television program guide equipment and to remotely set program guide settings.” *Id.* at 2:64–3:4. The specification goes on to disclose that “[a]ny suitable interactive television program guide function or setting may be accessed,” including, but not limited to, “remotely select[ing] programming for recordings” and “remotely set[ting] and navigat[ing] through favorites (e.g., favorite channels, program categories, services, etc.).” *Id.* at 3:5–15.

Although the aforementioned disclosures provide guidance as to the functionality of an “interactive television program guide” (i.e., navigable, selectable, and capable of controlling certain functions or settings), neither party directs us to, nor can we find, a disclosure in the specification that specifically identifies what element or elements constitute a “guide.” Given the lack of disclosure in this regard, we decline to limit the “guide” to a single software application. Rather, these disclosures support Comcast’s proposed construction that an “interactive

television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.”

We further clarify that the plain language of independent claims 1 and 10 indicates that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” (alteration in original) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004))). Our determination in this regard is supported by the specification, which includes various embodiments that treat these claim terms as separately identifiable elements capable of communicating with each other. *See, e.g.*, Ex. 1101, 15:20–23 (“In still another suitable approach, the [local interactive television program guide and remote access interactive television program guide] may be different guides that communicate in a manner or manners discussed . . . herein.”), 23:4–7 (“The remote access [interactive television] program guide may . . . send audio, graphical, and text messages to the local interactive [television] program guide for playing or display by user television equipment 22.”). The specification also explains that the “local interactive television program guide” and “remote access interactive television program guide” may be the same

guide, in which case they are separately identifiable elements in that each guide is compiled to run on a different platform. *See id.* at 15:15–18 (“The remote access and local guide may, for example, be the same guide but compiled to run on two different platforms and to communicate in a manner or manners discussed herein.”).

We decline to adopt Rovi’s proposed constructions of the claim terms “local/remote access interactive television program guides” for two reasons. First, we are unable to determine how Rovi’s proposed constructions add any clarity to the scope and meaning of an “interactive television program guide.” That is, we view each of Rovi’s proposed constructions as circular and unhelpful because they define each of the guides as a “*guide* [that allows/allowing] navigation through television program listings.” PO Resp. 9 (emphasis added). Rovi, however, does not actually identify what element or elements specifically constitute the “guide.”

Second, Rovi states that its proposed constructions indicate “where the specific guide resides (i.e., on ‘user television equipment’ or over ‘a remote access link’),” but readily admits that “these additions merely restate the language of the broader claim limitation[s].” PO Resp. 13–14 (emphasis omitted) (citing Ex. 2101, 193, 198, 409). It is well settled that the Federal Circuit disfavors any claim interpretation that renders a claim term or phrase superfluous. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“The Board was correct to not include in its construction of ‘menu’ features of menus that are expressly recited in the claims. . . . Construing a claim



term to include features of that term already recited in the claims would make those expressly recited features redundant.”). If we were to adopt the language in Rovi’s proposed constructions pertaining to where each guide resides, it would render superfluous the language that is already explicitly recited in independent claim 1, and similarly recited in independent claim 10—namely, “over a remote access link” and “a local interactive television program guide equipment on which a local interactive television program guide is implemented, ... wherein the local interactive television program guide equipment is located within the user’s home and includes user television equipment.”<sup>9</sup>

Turning now to the extrinsic evidence, in Dr. Tjaden’s Declaration accompanying the Petition, he testifies that “the local [interactive television program] guide may be implemented at least in part on a server or other device outside the user’s home.” Ex. 1102 ¶ 36. To support this testimony, he directs us to Rovi’s interpretation of the claim term “local interactive television program guide” in the related ITC proceeding. *Id.* (citing Ex. 1145, 56; Ex. 1146, 43). In Dr. Tjaden’s Declaration accompanying the Reply, he elaborates further on his initial position by testifying that “a [person of ordinary skill in the art] looking at

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<sup>9</sup> During oral argument, in response to a question regarding the ITC’s construction of the “local interactive television program guide” being on user television equipment and its construction that the “remote access television program guide” uses a remote access link, counsel for Rovi stated that “I don’t think where [the guides are] implemented is meaningful because that’s recited in the claim separately.” Tr. 66:22–67:24.

the '413 Patent would have understood that many different arrangements of the software and hardware components comprising an interactive television program guide are possible and acceptable in [the] prior art used to show obviousness." Ex. 1152 ¶ 11. To support this testimony, he directs us to the different arrangements of software and hardware in the '413 Patent. *Id.* ¶¶ 16–18 (citing Ex. 1101, 7:15–19, 33–35, 40–47, 9:36–44, 10:15–16, 29–34, 41–48, Figs. 1, 2a–2d).

Comcast also directs us to Dr. Shamos's Declaration in the ITC proceeding as further evidence as to what element or elements constitute a "guide." Although we recognize that the broadest reasonable interpretation standard governs in this proceeding, whereas the district court claim construction standard governs in an ITC proceeding, Dr. Shamos's testimony in the ITC proceeding is relevant here because it sheds some light on what element or elements he believes constitute a "guide." In the ITC proceeding, Dr. Shamos testified that the claim term "local interactive television program guide" could be an "extensive collection of hardware and software." Ex. 1154 ¶ 169. He also testified "that the 'local [interactive television program] guide' [should not be construed as] a single software application that must reside on a device in the user's home," and "[n]othing in the claims exclude a 'recording application' from being part of the local [interactive television program] guide." *Id.* ¶ 371. Dr. Shamos's testimony in the ITC proceeding is consistent with Dr. Tjaden's testimony in this proceeding because, like Dr. Tjaden, Dr. Shamos does not limit a "guide" to a single software application, but

rather contemplates that the “guide” may constitute different arrangements of software and hardware.

We note that the aforementioned testimony from Dr. Tjaden and Dr. Shamos suggests that the “guide” may include both software and hardware. Rovi likewise argues that its proposed construction is broader than Comcast’s because it “does not unnecessarily restrict the guides to ‘control software.’” PO Resp. 11. We do not find support in the intrinsic record that the “guide” may include hardware. Rather, the ’413 Patent separately refers to the interactive television program guide and the hardware on which it is implemented. *See, e.g.*, Ex. 1101, 1:34–35 (“Interactive television program guides are typically implemented on set-top boxes . . . .”). The aforementioned testimony, however, is consistent with our conclusion that the “guide” may constitute more than just a single software application.

In summary, upon weighing all the evidence bearing on the construction of the claim term “interactive television program guide,” we maintain that the broadest reasonable interpretation of this claim term is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” We also maintain that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide.

*B. Obviousness Over the Combined Teachings of Sato and Humpleman*

Comcast contends that claims 1, 3–10, and 12–18 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Sato and Humpleman. Pet. 20–41. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1102 ¶¶ 97–169. In its Patent Owner Response, Rovi presents a number of arguments as to why the combined teachings of Sato and Humpleman do not render the limitations of independent claims 1 and 10 obvious. PO Resp. 20–41. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2111 ¶¶ 97–157.

We begin our analysis with the principles of law that generally apply to a ground based on obviousness, followed by an assessment of the level of skill in the art, proceeded by brief overviews of Sato and Humpleman, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

*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 non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze this asserted ground based on obviousness with the principles identified above in mind.

## 2. *Level of Skill in the Art*

There is evidence in the record before us that enables us to determine the knowledge level of a person of ordinary skill in the art. Relying on the testimony of its declarant, Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art as of July 17, 1998, which is the earliest priority date on the face of the '413 Patent, would be an individual who possesses the following:

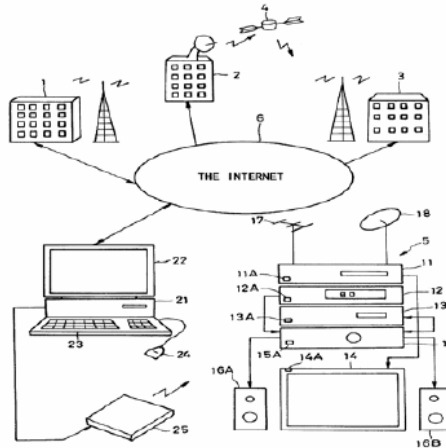
a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and two years of experience with interactive program guides, set-top boxes, mobile computer devices, and techniques for delivering content or program guides over communication networks, such as a cable system, a local-area network, and the Internet.

Pet. 13 (quoting Ex. 1102 ¶ 28). Alternatively, once again relying on the testimony of Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art “could

have had equivalent experience in industry or research, such as designing, developing, evaluating, testing, or implementing the aforementioned technologies.” *Id.* (quoting Ex. 1102 ¶ 28). Conversely, Rovi’s declarant, Dr. Shamos, does not offer an assessment of the level of skill in the art as of July 1998, nor does he explicitly state his intent to adopt Dr. Tjaden’s assessment. *See generally* Ex. 2111. Because Dr. Shamos’s testimony does not address this matter, we adopt Dr. Tjaden’s assessment because it is consistent with the ’413 Patent and the asserted prior art, and apply it to our obviousness evaluation below.

### 3. *Sato Overview*

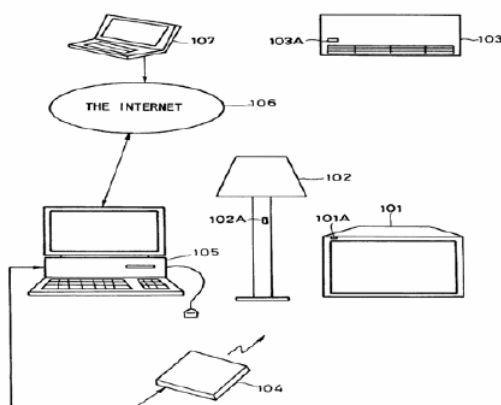
Sato generally relates to a remote controller suitable for use in operating audio/visual devices and, in particular, one that is suitable for use in a system for transmitting broadcast program reservation tables through a computer network. Ex. 1115, 1:7–12. Figure 1, reproduced below, illustrates a block diagram of the network system used in Sato. *Id.* at 2:61–62, 3:49–51.

**Fig. 1**

The network system illustrated in Figure 1 reproduced above includes surface wave television (“TV”) broadcasting station 1, satellite TV broadcasting station 2, and frequency modulation (“FM”) radio broadcasting station 3 that broadcast TV programs and/or FM radio programs to audio/visual equipment 5. *Id.* at 3:51–4:1. Audio/video equipment 5 includes, among other things, video tape recorder/player (“VTR”) 11 and TV receiver 14, each of which is capable of being controlled remotely by infrared signals. *Id.* at 4:1–9. The network system further includes personal computer 21 connected to Internet 6. *Id.* at 4:46–47. Personal computer 21 sends commands to interface box 25, which, in turn, uses infrared signals to communicate desired modes of operation to VTR 11 and TV receiver 14. *Id.* at 4:52–59.

Figure 17, reproduced below, illustrates one embodiment in accordance with the present invention. Ex. 1115, 3:44–45, 9:29–30.

*Fig. 17*



The embodiment illustrated in Figure 17 reproduced above includes TV receiver 101 that is capable of being set to a desired mode of operation using infrared signals from interface box 104 connected to personal computer 105. *Id.* at 9:30–36. This embodiment further includes external portable computer 107, which connects to personal computer 105 through Internet 106 to control TV receiver 101. *Id.* at 9:51–54. For instance, external portable computer 107 generates hypertext commands for setting TV receiver 101 to a desired mode operation. *Id.* at 9:56–59. The hypertext commands are sent from external portable computer 107 to personal computer 105 through Internet 106. *Id.* at 9:56–61. When interface box 104 receives the hypertext commands from personal computer 105, it issues an infrared signal corresponding to the command contained in the hypertext and, subsequently, sets TV receiver 101 to the desired mode of operation. *Id.* at 9:61–65.



#### 4. *Humpleman Overview*

Humpleman generally relates to the field of networks and, in particular, to home networks that have multimedia devices connected thereto. Ex. 1106, 1:16–18. One objective of Humpleman’s invention is to provide a method for controlling a plurality of devices connected to a home network, where at least one of these devices is a multimedia device, and for generating a program guide from the information provided by the multi-media device on a second device connected to the home network. *Id.* at 2:23–28. According to Humpleman, a user may customize the programming information that is displayed by the program guide. *Id.* at 22:41–43. For instance, if a user prefers not to display the schedule for a particular channel because it contains inappropriate content, the user may request that the channel be removed from the program guide. *Id.* at 22:43–46.

#### 5. *Claims 1 and 10*<sup>10</sup>

In its Petition, Comcast contends that Sato’s program guide system accounts for most of the limitations recited in independent claims 1 and 10, except “user profiles” used to generate the “remote access interactive television program guide.” Pet. 20–24 (citing Ex. 1115, 4:41–59, 5:18–25, 45–54, 9:8–17, 51–65, Figs. 1, 2, 17; Ex. 1102 ¶¶ 97–100); *see also id.* at 27–35 (arguing the same). Comcast turns to

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<sup>10</sup> Comcast contends that independent claims 1 and 10 stand or fall together, along with their dependent claims. Pet. 9–10. Rovi does not dispute Comcast’s assertion in this regard. *Accord* PO Resp. 20–41 (treating independent claims 1 and 10 as standing or falling together).

Humpleman’s generation of local customized program guides to teach this particular limitation. *Id.* at 24–25 (citing Ex. 1106, 22:30–46; Ex. 1102 ¶ 102); *see also id.* at 31–32 (arguing the same).

For added clarity, we identify the arguments presented by Comcast for all the limitations of independent claim 1. We note that there is no dispute between the parties as to whether the limitations of independent claim 10 are essentially the same as the limitations of independent claim 1. *Compare* Pet. 9–10, 26–35, *with* PO Resp. 20–41. Beginning with the preamble of independent claim 1, Comcast contends that Sato teaches “[a] system for selecting a television program over a remote access link comprising an Internet communications path for recording” because Sato discloses that external portable computer 107 allows a remote user to communicate with personal computer 105 over Internet 106 to control devices within the user’s home. Pet. 27 (citing Ex. 1115, 9:51–65). According to Comcast, Sato’s methods of controlling TV receiver 101 and VTR 11 involve the use of program guide webpages to schedule recordings. *Id.* (citing Ex. 1115, 5:18–25, 5:45–54, Fig. 2; Ex. 1102 ¶¶ 112–114). Comcast argues that, because Sato’s external portable computer 107 also is described as being capable of controlling these same home electronic devices, a person of ordinary skill in the art would have understood that external portable computer 107 presents a program guide that allows the remote user to select a program for recording, as this is how Sato’s program guide system receives selections of programs. *Id.* at 27–28.

Comcast contends that Sato teaches “local interactive television program guide equipment on which a local interactive television program guide is implemented,” as recited in independent claim 1, because Sato discloses that a family may connect its home personal computer to the Internet to access HTML program guides provided by the TV stations. Pet. 28 (citing Ex. 1115, 4:46–54, 9:29–37, Fig. 17; Ex. 1102 ¶¶ 117–118). Comcast argues that Sato’s browser, when presenting the program guide web page, constitutes the claimed “interactive television program guide” because it is control software that is operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software (e.g., schedule a recording on local equipment). *Id.* (citing Ex. 1115, 5:8–25).

Comcast contends that Sato teaches “wherein the local interactive television program guide equipment is located within the user’s home and includes user television equipment,” as recited in independent claim 1, because TV receiver 101 and VTR 11 are components of an audio/visual system located in a user’s home. Pet. 29 (citing Ex. 1115, 4:1–9, 4:46–59, 4:60–5:2, Fig. 5; Ex. 1102 ¶¶ 119–120). Comcast argues that Sato teaches wherein “the local interactive television program guide generates a display of one or more television program listings for display on a display device at a user’s home,” as recited in independent claim 1, because users access the program guide webpage using their local personal computer (i.e., personal computer 105), and a browser

that runs on the local personal computer generates a program guide display, such as one illustrated in Sato's Figure 2. *Id.* at 29 (citing Ex. 1115, 4:46–59, Figs. 2, 5; Ex. 1102 ¶ 121).

Comcast contends that Sato teaches “wherein the mobile device, on which a remote access interactive television program guide is implemented, is located outside of the user's home,” as recited in independent claim 1, because external portable computer 107 is described as being capable of controlling the same home electronic devices as personal computer 105. Pet. 29 (citing Ex. 1115, 9:51–65, Fig. 17; Ex. 1102 ¶¶ 122–128). According to Comcast, a person of ordinary skill in the art would have understood that Sato's external portable computer 107 presents a program guide display that allows the remote user to select a program for recording because this is how Sato's program guide system receives program selections. *Id.* at 29–30 (citing Ex. 1102 ¶¶ 123–125). Comcast also argues that, to the extent Sato's personal computer 105 (Figure 17) and personal computer 21 (Figure 1) are not described as the same element, it would have been obvious to a person of ordinary skill in the art to allow external portable computer 107 to control personal computer 21 because external portable computer 107 is described as capable of controlling any electronic device in the user's home. *Id.* at 30 (citing Ex. 1115, 9:51–65; Ex. 1102 ¶ 127). Comcast further argues that Sato teaches “wherein a mobile device communicates with the local interactive television program guide equipment,” as recited in independent claim 1, because external portable computer 107 is a portable,

computer-based device (i.e., mobile device). *Id.* at 29 (citing Ex. 1102 ¶ 124).

Comcast contends that Sato's remote guide "generates a display of the remote access interactive television program guide, the remote access interactive television program guide comprising a plurality of television program listings for display on the mobile device," as recited in independent claim 1, because Sato discloses methods for certain home electronic devices (e.g., TV receiver 101 or VTR 11) that involve using program guide webpages to schedule recordings. Pet. 30 (citing Ex. 1115, 5:45–54, Fig. 2). Comcast argues that a person of ordinary skill in the art would have understood that Sato's external portable computer 107 presents a program guide webpage to a remote user, which, in turn, allows the remote user to select a program for recording, because this is how Sato's program guide system receives selections for programs. *Id.* at 30–31 (citing Ex. 1115, 5:3–7, 5:18–25, 5:45–54; Ex. 1102 ¶¶ 130, 131). Comcast further argues that Sato makes clear that its methods use "hypertexts" rendered for display by a browser on an accessing computer, and this display includes a plurality of program listings from which a remote user may select a program for recording. *Id.* at 31 (citing Ex. 1115, Fig. 2).

Comcast also contends that, to the extent Sato does not teach "wherein the display of the remote access interactive television program guide is generated based on a user profile stored at a location remote from the mobile device," as recited in independent claim 1, it would have been obvious to one of ordinary skill in the art to generate customized program guides, as

taught by Humpleman, for display at Sato's external portable computer 107. Pet. 31 (citing Ex. 1102 ¶¶ 135–139). To support this argument, Comcast directs us to various teachings in Humpleman that pertain to generating local customized guides that are capable of being displayed on any browser- equipped device, including a remote personal computer. *Id.* (citing Ex. 1106, 2:31–39, 7:25–35, 20:47–51, 20:58–21:3, 22:30–59). Comcast argues that it would have been obvious to a person of ordinary skill in the art to improve Sato's web-based program guides with Humpleman's generation of local customized guides for display by a remote device to provide the user operating Sato's external portable computer 107 with better access to the content he/she desires. *Id.* at 32 (citing Ex. 1102 ¶¶ 131–139, 142–145).

Comcast contends that Sato's remote guide "receives a user selection of the television program for recording by the local interactive television program guide, wherein the user selects the television program by selecting a television program listing from the plurality of television program listings displayed, by the remote access interactive television program guide, on the mobile device," as recited in independent claim 1 because Sato discloses that a user may click on the title of a desired program displayed in the program guide webpage, thereby causing Sato's program guide system to send a record command to local hardware. Pet. 33–34 (citing Ex. 1115, 5:8–17, 5:18–25, 9:8–17, 9:56–65; Ex. 1102 ¶¶ 147, 148). Comcast argues that, although Sato's program guide is discussed with respect to local personal computers 21 and 105, Sato's external portable computer 107 also is capable of

controlling any home electronic device, which one of ordinary skill in the art would have understood to include personal TV receiver 101 or VTR 11 illustrated in Figure 1. *Id.* at 34 (citing Ex. 1115, 5:8–17, 5:45–54, Fig. 2; Ex. 1102 ¶ 147).

Comcast contends that Sato's remote guide "transmits, to the local interactive television program guide over the Internet communications path, a communication identifying the television program for recording corresponding to the television program listing selected by the user with the remote access interactive television program guide," as recited in independent claim 1, because, when the user selects an operation (e.g., a program to be recorded), Sato's external portal computer 107 sends a hypertext command to personal computer 105. Pet. 34 (citing Ex. 1115, 6:10–17, 9:56–65; Ex. 1102 ¶¶ 149–151). Comcast argues that, in the case of a scheduled recording, this command includes a representation of a "G code" that is associated with the selected program. *Id.* (citing Ex. 1115, 6:10–17).

Lastly, Comcast contends that Sato teaches "wherein the local interactive television program guide receives the communication and, responsive to the communication, records the television program corresponding to the selected television program listing using the local interactive television program guide equipment," as recited in independent claim 1, because control software on personal computer 105, which also includes a browser, receives the hypertext command from external portal computer 107 and issues appropriate commands to local hardware. Pet. 35 (citing Ex. 1115, 5:18–25, 9:56–65; Ex. 1102

¶¶ 152–154). In the case of a recording command, Comcast argues that interface box 25 outputs an infrared signal instructing VTR 11 to record the program at the indicated time. *Id.* at 35 (citing Ex. 1115, 5:18–25); *see also id.* at 9:29–65 (disclosing the same communication process with respect to Figure 17—namely, interface box 104 outputs an infrared signal that sets TV receiver 101 to a desired mode of operation).

Turning to the rationale to combine, Comcast contends that it would have been obvious to one of ordinary skill in the art to incorporate Humpleman’s generation of local customized program guides for display by a remote device into Sato’s program guide system for at least the following three reasons: (1) it would have been nothing more than using known techniques (i.e., Humpleman’s remote display of local customized program guide webpages) to improve a similar device (i.e., Sato’s program guide system) in the same way; (2) it would have been a simple substitution of Humpleman’s generation of local customized program guides for Sato’s webpages to produce the predictable result of preventing the display of disfavored channels or content; and (3) using Humpleman’s generation of local customized program guides to improve Sato’s program guide system—specifically, its webpages—would provide a complete picture of the content available on the user’s local television receiver. *Id.* at 24–26 (citing Ex. 1106, 2:23–28, 22:30–46, 22:60–65; Ex. 1115, 4:60–5:2, 9:51–65; Ex. 1102 ¶¶ 102–108); *see also id.* at 32–33 (arguing the same).



In its Patent Owner Response, Rovi presents a number of arguments that can be grouped as follows: (1) whether Comcast has demonstrated that Sato and Humpleman, either alone or in combination, account for all the limitations of independent claims 1 and 10; and (2) whether Comcast has demonstrated that a person of ordinary skill in the art would have had sufficient reasons to combine the teachings of Sato and Humpleman. PO Resp. 20–41. We address these groupings of arguments in turn.

*a. Limitations*

*i. Two Interactive Television Program Guides*

Rovi contends that each independent claim requires two interactive television program guides—namely, “a local interactive television program guide” and “a remote access interactive television program guide.” See PO Resp. 20–22. Rovi argues that Sato does not teach two interactive television program guides because it is directed to a rudimentary system for controlling home peripherals through a network using infrared signals. *Id.* at 22–23. In particular, Rovi argues that Comcast improperly relies on the embodiment illustrated in Sato’s Figure 17 to teach two interactive television program guides because there is no disclosure of an interactive television program guide in association with this figure, let alone a disclosure of both a local interactive television program guide and a remote access interactive television program guide. *Id.* at 23 (citing Ex. 1115, 9:51–55, Fig. 17; Ex. 2111 ¶¶ 131–134).

Next, Rovi contends that, although Sato discloses passing hypertext commands for devices such as TV

receiver 101, illuminator 102, or air conditioner 103 from external portable computer 107 to personal computer 105, Sato is silent with respect to what information is displayed on external portable computer 107, how the display is generated, and whether a user is able to schedule a recording. PO Resp. 24 (citing Ex. 1115, 9:56–65). Indeed, Rovi asserts that a browser program for displaying television listings would not be suitable for devices like Sato's illuminator 102 or air conditioner 103. *Id.* (citing Ex. 2111 ¶ 132). Rovi further argues that, with respect to the embodiment illustrated in Sato's Figure 17, Sato does not disclose any source of program guide information for external portable computer 107 that would be necessary for that computer to display television listings, nor does Sato disclose what is displayed on any browser of personal computer 105. *Id.* at 24–25 (citing Ex. 2111 ¶ 133; Ex. 2110, 116:16–117:8).

Rovi then contends that, to overcome the failures of proof with respect to the embodiment illustrated in Sato's Figure 17, Comcast improperly relies on the teachings of the embodiment illustrated in Sato's Figure 1 and mistakenly asserts that a guide must exist in the embodiment associated with Figure 17 because "that is how Sato's system receives selections of programs." PO Resp. 25 (quoting Pet. 23). Rovi also argues that Comcast improperly relies on the program listing screen illustrated in Sato's Figure 2 as teaching an interactive television program guide because this figure is not discussed in connection with external portable computer 107 illustrated in Sato's Figure 17, nor is it discussed with respect to any purported

remote interactive television program guide. *Id.* (citing Ex. 1102 ¶¶ 112, 119). Indeed, Rovi argues that the program listing screen illustrated in Sato's Figure 2 would not be suitable for controlling illuminator 102 or air conditioner 103 because these devices would not use program listings. *Id.* (citing Ex. 2111 ¶¶ 136–138). Rovi further argues that a person of ordinary skill in the art would not have been motivated to combine the embodiments illustrated in Sato's Figures 1, 2, and 17 because they are different embodiments for different purposes, and the embodiment in Figure 17 is a separate, complete system that would not be understood to work in conjunction with any other embodiments. *Id.* at 26–27 (citing *Jackel Int'l Ltd. v. Mayborn USA, Inc.*, Case IPR2015-00979, slip op. at 4 (PTAB May 20, 2016) (Paper 21); Ex. 1115, 3:44–45, 9:30–31; Ex. 2111 ¶ 137).

Lastly, Rovi contends that modifying the teachings of Sato with those of Humpleman would not produce the claimed two interactive television program guides. PO Resp. 28. Relying on the Humpleman provisional (Ex. 1107), Rovi argues that the DirecTV Satellite System (“DSS”) server observes a request from the DSS's Hypertext Markup Language (“HTML”) page, retrieves the necessary information, and then passes it along to the digital video cassette record's HTML page. *Id.* at 28–29 (citing Ex. 1107, 14; Ex. 2111 ¶¶ 113, 114). Rovi asserts that Humpleman's DSS server is not guide software that is capable of handling recording requests and, therefore, inserting Humpleman's HTML program guides into the embodiment illustrated in Sato's Figure 17 would not

yield the claimed two interactive program guides. *Id.* at 30.

In its Reply, Comcast counters that Rovi's arguments attempt to "erect an artificial wall" between the embodiment illustrated in Sato's Figure 17 and Sato's teachings of program guide webpages. Pet. Reply 8. According to Comcast, a person of ordinary skill in the art would not have read the embodiment illustrated in Sato's Figure 17 in isolation from the rest of the teachings in Sato. *Id.* at 9. Comcast argues that, because Sato explicitly discloses that "TV receiver 101 . . . or any other electronic device can be controlled through the external portable computer 107," a person of ordinary skill in the art would have understood that "any other electronic device" includes VTR 11 illustrated in Sato's Figure 1, and that VTR 11 could be instructed "to record the program at the indicated time" responsive to a remote user selecting a program on external portable computer 107. *Id.* at 9–10 (quoting Ex. 1115, 9:51–55, 5:18–25) (citing Ex. 1152 ¶¶ 9, 20, 27, 28).

Next, Comcast argues that Sato provides extensive disclosures of program guide webpages for scheduling recordings. Pet. Reply 10 (citing Ex. 1115, 5:18–25, 5:45–54, Fig. 2). Comcast then asserts that, based on these disclosures, a person of ordinary skill in the art would have understood that using Sato's personal computer 105 or external portable computer 107 to control VTR 11 for purposes of recording a TV program would have been done using the same program guide webpages in the same way that is taught with respect to Sato's personal computer 21. *Id.* (citing Ex. 1115, 4:60–5:25, Figs. 1, 2, 16; Ex. 1152 ¶¶ 21–23). Comcast

argues that Sato's Figures 1 and 17 have a number of common components and the different purpose for which Sato's Figure 17 refers to is allowing external portable computer 107 to control home electronic devices remotely. *Id.* (citing Ex. 1152 ¶ 27).

Comcast further contends that there is no support for Rovi's assertion that Sato's Figure 17 illustrates an embodiment that would or could not use program guide information. Pet. Reply 10. Indeed, Comcast argues that the similarities between Sato's Figures 1 and 17 "do[] not require a leap of inventiveness" to support its assertion that external portable computer 107 illustrated in Figure 17 is capable of controlling VTR 11 or TV receiver 101 using the same program guide webpages used for controlling VTR 11 and TV receiver 14 illustrated in Figure 1. *Id.* at 10–11 (quoting *Boston Scientific Scimed, Inc. v. Cordis Corp.*, 554 F.3d 982, 991 (Fed Cir. 2009)). Comcast further argues that Rovi's arguments presume that one of ordinary skill in the art lacked any amount of creativity as to what information is capable of being displayed on Sato's external portable computer 107 and essentially denies such a person the ability to consider Sato, as a whole. *Id.* at 11.

Comcast takes issue with Rovi's argument that Sato's program guide webpages would not be suitable for controlling illuminator 102 or air conditioner 103 because these devices would not use program listings. Pet. Reply 12 (citing PO Resp. 24–25, 27). Relying on the supporting testimony of Dr. Tjaden, Comcast asserts that different commands and interfaces would be used for different devices. *Id.* (citing Ex. 1152 ¶ 23). For instance, Comcast argues that Sato discloses

controls to maintain “an optimum value of the cooling effect by the air conditioner 103” that would not be suitable for controlling TV receiver 101. *Id.* (quoting Ex. 1115, 9:39–41). Stated differently, Comcast argues that there is no requirement in Sato that a single universal user interface must be used to control all home electronic devices. *Id.*

Comcast also contends that Rovi’s reliance on the discussion of combining two different embodiments in the Board’s Decision on Request for Rehearing in *Jackel International Ltd. v. Mayborn USA, Inc.*, Case IPR2015-00979 (PTAB May 20, 2016) (Paper 21) (“*Jackel Int’l*”) is misplaced. Pet. Reply 11. Comcast asserts that *Jackel Int’l* is distinguishable from this case because the Petitioner in *Jackel Int’l* argued that combining two different embodiments was obvious merely because “it’s the same reference,” whereas here Comcast has provided detailed reasoning as to why one of ordinary skill in the art would have been motivated to use Sato’s external portable computer 107 illustrated in Figure 17 to control VTR 11 or TV receiver 101 using the same program guide webpages used to control VTR 11 or TV receiver 14 illustrated in Figure 1. *Id.* (quoting *Jackel Int’l*, slip op. at 4) (citing Pet. 20–23).

Lastly, Comcast contends that it only relies on the teachings of Humpleman in connection with the “user profiles” used to generate the “remote access interactive television program guide,” as claimed. Pet. Reply 18. Comcast asserts that, even though Humpleman teaches communication between two interactive television program guides, Comcast relies

on Sato's teachings on this point. *Id.* (citing Pet. 31–33; Ex. 1152 ¶¶ 31–33).

When evaluating claims for obviousness, it is well settled that “the prior art as a whole must be considered.” *In re Hedges*, 783 F.2d 1038, 1041 (Fed. Cir. 1986); *see also In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (explaining that a reference “must be read, not in isolation, but for what it fairly teaches in combination with the prior art as a whole”). “It is impermissible within the framework of section 103 to pick and choose [teachings] from any one reference . . . to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.” *Hedges*, 783 F.2d at 1041 (quoting *In re Wesslau*, 353 F.2d 238, 241 (CCPA 1965)). In the same vein, “[a] reference must be considered for everything that it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect.” *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985).

Based on the record developed during trial, we agree with Comcast that Sato renders the claimed “local interactive television program guide” obvious because Sato teaches or fairly suggests that a remote user may access a program guide webpage, such as the one illustrated in Figure 2, using a browser that runs on personal computer 105 illustrated in Figure 17. *See* Pet. 28–30. With reference to Figure 17, Sato discloses that external portable computer 107 sends hypertext commands to personal computer 105 through Internet 106. Ex. 1115, 9:56–61. After personal computer 105 receives these hypertext commands, they are then sent

to interface box 104, which, in turn, generates infrared signals responsive to the commands that are used to control a number of home electronic devices (e.g., TV receiver 101, illuminator 102, air conditioner 103, or any other electronic device, such as VTR 11 illustrated in Figure 1). *Id.* at 9:45–55, 9:61–65.

Although the corresponding description of Sato's Figure 17 is silent with respect to how personal computer 105 receives and displays hypertext commands from external portable computer 107, other disclosures in Sato provide a full appreciation as to how personal computer 105 operates in this regard. For instance, and as discussed in more detail below, after reading Sato in its entirety, one of ordinary skill in the art would have recognized that there is a corollary between personal computer 21 illustrated in Figure 1 and personal computer 105 illustrated in Figure 17. Sato discloses that personal computer 21 operates browser 41 that, when rendering a webpage that includes a program guide display such as the one illustrated in Figure 2, allows a user to record desired programs. Ex. 1115, 4:60–5:17, 5:45–54, Figs. 2, 5. Using mouse 24, the user may click on the desired program and, in response, interface box 25 sends an infrared signal to VTR 11 to record the selected program. *Id.* at 5:18–25. Given these disclosures regarding personal computer 21 illustrated in Figure 1, we find that one of ordinary skill in the art would have understood that personal computer 105 illustrated in Figure 17 operates a browser to access a program guide webpage, such as the one illustrated in Figure 2, in the same way as personal computer 21



operates a browser to access the same program guide webpage.

Comcast's declarant, Dr. Tjaden, provides testimony that supports our finding that one of ordinary skill in the art would have understood that Sato's personal computer 105 operates a browser that, when rendering a webpage that includes a program guide display such as the one illustrated in Figure 2, allows a user to record desired programs. In his Declaration accompanying the Petition, Dr. Tjaden clarifies that "[o]ne of ordinary skill in the art would [have understood] that . . . browser software operates to receive user input and execute instructions included in the HTML code of the [webpage] (such as Sato's recording links)." Ex. 1102 ¶ 100 (citing Ex. 1115, 9:51–65). In his Reply Declaration, Dr. Tjaden testifies that "a [person of ordinary skill in the art] would have understood that the computers depicted in [Figure] 17 would be implemented using the same browsers disclosed in [Figures] 1 and 2." Ex. 1152 ¶ 24. We credit the aforementioned testimony of Dr. Tjaden because it is consistent with reading Sato, as whole, without viewing the corresponding description of Sato's Figure 17 at the exclusion of other teachings in Sato that provide a full appreciation as to how personal computer 105 uses a browser to receive and display hypertext commands.

Our finding in this regard also comports with our construction of "interactive television program guide." In our claim construction section above, we determine that the broadest reasonable interpretation of an "interactive television program guide" is "control software operative at least in part to generate a

display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *See supra* Section II.A. When the browser operating on Sato’s personal computer 105 renders a webpage that includes a program guide display and allows a user to select desired programs for recording, we find that it effectively operates as part of an “interactive television program guide” because it displays program listings and allows the user to navigate through the listings, make selections, and control recording functions.

Based on the record developed during trial, we also agree with Comcast that Sato renders the claimed “remote access interactive television program guide” obvious because Sato teaches or fairly suggests that external portable computer 107 uses a browser to present a program guide webpage that allows the remote user to select a program for recording. *See* Pet. 29–30. As we explained above with respect to Sato’s Figure 17, when external portable computer 107 is connected to personal computer 105 through Internet 106, it is capable of controlling TV receiver 101, illuminator 102, air conditioner 103, and any other electronic device, such as VTR 11 illustrated in Figure 1. Ex. 1115, 9:51–55; *see also id.* at 4:1–5, 5:18–25 (disclosing that audio/visual system 5 that each family owns includes, among other things, VTR 11 that records programs).<sup>11</sup>

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<sup>11</sup> Rovi does not argue that Sato’s disclosure of “any other electronic device[s]” (Ex. 1115, 9:53–54) does not include VTR 11 illustrated in Figure 1. Instead, Rovi argues that Sato’s Figure 17 embodiment does not teach any interactive television program

Although Sato discloses that external portable computer 107 sends hypertext commands for controlling these home electronic devices to personal computer 105 (Ex. 1115, 9:59–61), the corresponding description of Sato’s Figure 17 is silent as to what is displayed on external portable computer 107 and how the hypertext commands are sent to personal computer 105. Nonetheless, after reading Sato in its entirety, there are other disclosures in Sato that provide one of ordinary skill in the art with a full appreciation as to how external portable computer 107 operates to perform this function. For instance, Sato suggests that external portable computer 107 uses a browser to send hypertext commands to personal computer 105 because Sato discloses that a hypertext command is a key underlying concept of a webpage displayed by a browser. *See, e.g., id.* at 5:30–31 (disclosing that “the [world wide web] page shown in FIG. 2 contains a description in [the] form of a hypertext as shown in FIG. 3”), Figs. 2, 3 (illustrating web pages with hypertext commands). In addition, apart from being described as both external and portable, there is nothing in Sato that suggests that external portable computer 107 is anything other than a general purpose computer that uses a browser to render a webpage in the same way that both personal computer 21 illustrated in Figure 1 and personal computer 105 illustrated in Figure 17 use a browser to render a webpage.

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guide for controlling such a VTR, and that it would not have been obvious to combine Sato’s Figure 17 embodiment with the separate embodiments of Figures 1 and 2. *See* PO Resp. 22–28.

Comcast's declarant, Dr. Tjaden, provides testimony that supports our finding that one of ordinary skill in the art would have understood that Sato's personal computer 107 operates a browser that, when rendering a webpage that includes a program guide display such as the one illustrated in Figure 2, allows a user to record desired programs. In his Declaration accompanying the Petition, Dr. Tjaden testifies that a person of ordinary skill in the art would have understood that:

“external portable computer 107” could and would access the HTML program guide [illustrated in Figure 2] using a browser to implement a similar interactive television program guide as described for the “personal computer 105,” because this is how Sato describes effecting the recording features and both devices are computers described as operating to set the user television equipment to a desired mode of operation.

Ex. 1102 ¶ 125 (citing Ex. 1115, 5:3–7, 9:51–61); *see also* Ex. 1152 ¶ 23 (Dr. Tjaden testifies that “external portable computer 107 could and would display television program listings like those described with respect to [Sato's Figures] 1 and 2 using Sato's WWW [world wide web] client-server teachings.”).

Dr. Tjaden also testifies that, to the extent Sato does not disclose explicitly how external portable computer 107 operates, “a [person of ordinary skill in the art] would be motivated to look elsewhere in the Sato disclosure to determine how to configure the ‘external personal computer 107.’” Ex. 1102 ¶ 126.

According to Dr. Tjaden, “[w]hen doing so, a [person of ordinary skill in the art] would [have recognized] that both the ‘external personal computer 107’ and the ‘personal computer[s] 21 and 105’ are similar in that they are personal computers [that] control audio/visual equipment over the Internet via use of WWW pages.” *Id.* We credit the aforementioned testimony of Dr. Tjaden because it is consistent with reading Sato, as whole, without viewing the corresponding description of Sato’s Figure 17 at the exclusion of other teachings in Sato that provide a full appreciation as to how external portable computer 107 uses a browser to display and send hypertext commands.

Similar to our analysis above, our finding in this regard also comports with our construction of “interactive television program guide.” In our claim construction section above, we determine that the broadest reasonable interpretation of an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *See supra* Section II.A. When the browser operating on Sato’s external portable computer 107 renders a webpage that includes a program guide display and allows a user to select desired programs for recording, as in Sato’s Figure 2, we find that it effectively operates as part of an “interactive television program guide” because it displays program listings and allows the user to navigate through the listings, make selections, and control recording functions. Moreover, Sato’s external

portable computer 107 is a different platform than personal computer 105 such that the interactive television program guides that run on each of these devices are separately identifiable. *See supra* Section II.A (citing Ex. 1101, 15:15–18)

Rovi's arguments that the program guide display illustrated in Figure 2 of Sato would not be suitable for controlling illuminator 102 or air conditioner 103 because these devices would not use program listings is misplaced. *See* PO Resp. 24. There is no requirement in Sato that a single universal user interface, such as the program guide webpage illustrated in Figure 2, must be used to control all home electronic devices (i.e., TV receiver 101, illuminator 102, air conditioner 103, VTR 11, etc.). Separate commands for controlling Sato's illuminator 102 and air conditioner 103 are not present in Figure 2 because there is no illuminator or air conditioner being controlled in that embodiment. Comcast's declarant, Dr. Tjaden, testifies—and we agree—that “[a person of ordinary skill in the art] would . . . have understood that different devices around the home would require different commands and interfaces.” Ex. 1152 ¶ 23 (citing Ex. 1115, 9:39–44, 9:51–65). Based on the teachings of Sato identified above and Dr. Tjaden's supporting testimony, we find that one of ordinary skill in the art would have appreciated the controls suitable for illuminator 102 and air conditioner 103 differ in certain respects from the controls suitable for TV receiver 101 and VTR 11. Stated differently, one of ordinary skill in the art would have recognized that the program guide webpage is capable of being equipped with the

commands that correspond to the actual electronic devices that are being controlled.

We do not agree with Rovi's argument that a person of ordinary skill in the art would not have been motivated to combine the embodiments illustrated in Sato's Figures 1, 2, and 17 because they are different embodiments for different purposes, and the embodiment in Figure 17 is a separate, complete system that would not be understood to work in conjunction with any other embodiments. See PO Resp. 26–27. Although Sato discloses that Figure 17 illustrates “an example of a system used for a different purpose” (Ex. 1115, 9:29–30), Sato's Figures 1 and 17 also share a number of common components (i.e., interface boxes 24 and 104, personal computer 21 and 105, TV receiver 14 and 101, Internet 6 and 106, etc.). Given the similarities between these figures, it is incumbent upon us in an obviousness evaluation to look to the corresponding description of Figure 1 to get a full appreciation as to what that figure fairly suggests to one of ordinary skill in the art with respect to the components it shares with Figure 17. See *In re Burckel*, 592 F.2d 1175, 1179 (CCPA 1979) (“Under 35 U.S.C. § 103, a reference must be considered not only for what it expressly teaches, but also for what it fairly suggests.”).

To the extent Sato's Figure 17 is directed to a different purpose than Sato's Figure 1, Comcast's declarant, Dr. Tjaden, explains that “a [person of ordinary skill in the art] would have understood that the ‘different purpose’ of [Figure] 17 is to control [home electronic] devices remotely, including devices for recording television programs.” Ex. 1152 ¶ 27 (citing

Ex. 1115, 9:51–65). Notwithstanding this difference (or any other differences including the additional electronic devices being controlled), the embodiment of Sato’s Figure 17 describes the same functionality of the embodiment of Sato’s Figure 1 with respect to controlling a TV receiver and other electronic devices using a computer and infrared signals. *Compare* Ex. 1115, 4:41–59, *with id.* at 9:51–65. One of ordinary skill in the art would have known to combine the embodiment of Sato’s Figure 17 with elements of Sato’s Figures 1 and 2 to achieve the same functions described in relation to Figure 17. *See Tyco Healthcare Grp. LP v. Ethicon Endo-Surgery, Inc.*, 774 F.3d 968, 978 (Fed. Cir. 2014) (“[O]ne of ordinary skill is also one of ‘ordinary creativity’ that knows how to combine familiar prior art elements to achieve the same functions.”); *Boston Sci. Scimed*, 554 F.3d at 991 (“Combining two embodiments disclosed adjacent to each other in a prior art patent does not require a leap of inventiveness.”). Accordingly, we agree with Dr. Tjaden that a person of ordinary skill in the art would have looked to Sato’s Figures 1 and 2 for a teaching as to how the system illustrated in Sato’s Figure 17 controls electronic devices, such as a VTR for scheduling program recordings. Ex. 1152 ¶¶ 27, 28.

We agree with Comcast that Rovi’s reliance on the discussion of combining two different embodiments in the Board’s Decision on Request for Rehearing in *Jackel Int’l* is misplaced. *See* Pet. Reply 11. As an initial matter, the Board’s Decision on Request for Rehearing in *Jackel Int’l* is not precedential and is not binding on this panel. Nevertheless, we have reviewed this Decision on Request for Rehearing. Our review of



this Decision, however, reveals that it is distinguishable from arguments and evidence presented by Comcast in this case.

In *Jackel Int'l*, the Board explained that the petitioners challenged claims 6 and 13 of U.S. Patent No. 8,695,841 B2 (“the ’841 patent”) as unpatentable § 103(a) over the combined teachings of Mutti, Kano, and Suffa. *Jackel Int'l*, slip op. at 4. The Board then explained that the petitioners relied on Mutti’s Figure 6 to account for the limitations of independent claim 1 of the ’841 patent, and then relied on Mutti’s Figures 1–5 to account for the limitations of claim 6 of the ’841 patent, which depends from independent claim 1. *Id.* The Board explained that the petitioners’ rationale for doing so was that “the ‘motivation to combine the teachings of Mutti in one embodiment with the teachings of Mutti in another embodiment is entirely obvious—it’s the same reference.’” *Id.* The Board, however, explained that this rationale was not presented and developed in the petition itself, but rather was presented in the first instance in the request for rehearing. *Id.* slip op. at 5. The Board further found that there was no motivation to combine the embodiments where the modification involved adding a feature from Figure 1 to perform a function that was already being performed in Figure 6. *See id.*

In contrast, Comcast does not advocate that the motivation to combine the teachings of the embodiment illustrated in Sato’s Figure 17 with the teachings of the embodiments illustrated in Sato’s Figures 1 and 2 is obvious simply because these figures are in the same reference. Unlike in *Jackel Int'l*, Comcast sets forth a motivation to combine the

embodiments in Sato's Figures 1 and 17 in the Petition itself, which has a rational basis. In particular, Comcast explains that the combination results in the remote guide having a useful user interface allowing users to select programs, as is done on the local device. Pet. 23. Moreover, as we explained above, the evidence of record provides a number of reasons as to why one of ordinary skill in the art would have read Sato, as a whole, to get a full appreciation of the embodiment illustrated in Sato's Figure 17, including, but not limited to: (1) Sato's Figure 1 and 17 share common components; (2) the supporting testimony of Dr. Tjaden makes clear that certain aspects of Sato's Figure 17, specifically how personal computer 105 and external portable computer 107 operate browsers that render webpages including hypertext commands for controlling home electronic devices, are described in more detail with respect to Sato's Figures 1 and 2; and (3) one of ordinary skill in the art would have known to combine the embodiment of Sato's Figure 17 with certain elements of Figures 1 and 2 to achieve the same functions described in relation to Figure 17.

Lastly, contrary to Rovi's argument, Comcast does not seek to modify the teachings of Sato with those of Humpleman to account for the claimed two interactive television program guides. *See* PO Resp. 28–30. As we explain above, Comcast's asserted ground based on the combined teachings of Sato and Humpleman relies on both Sato's personal computer 105 and external portable computer 107 operating browsers, each of which renders webpages that include the program guide display such as the one illustrated in Figure 2, to account for the "local/remote access interactive

television program guides,” as claimed. *See* Pet. 23, 28–30, 35. Comcast turns to Humpleman to teach the “user profiles” used to generate the “remote access interactive television program guide,” as claimed. *See id.* at 24–26, 30–33.

*ii. Guide-to-Guide Communication*

Rovi contends that each independent claim requires communication between two interactive television program guides. *See* PO Resp. 20–22, 30. Rovi argues that Comcast does not take the position that the browsers operating on Sato’s external portable computer 107 and personal computer 105 communicate with each other, but rather Comcast only argues that these two computers can communicate with each other. *Id.* at 30–31 (citing Pet. 33–34). Relying on the testimony of its declarant, Dr. Shamos, Rovi argues that any browsers in Sato do not communicate with each other as the claims require. *Id.* at 31 (citing Ex. 2111 ¶ 134). At most, Rovi argues that Comcast identifies communications between the alleged browser operating on Sato’s external portable computer 107 and hardware (i.e., personal computer 105 and interface box 104), which improperly conflates hardware and software, and does not comport with our preliminary construction of “guide” that requires “control software”—not hardware. *Id.*

Rovi further contends that Comcast does not identify any evidence that Sato’s external portable computer 107 sends hypertext commands to the browser operating on personal computer 105. PO Resp. 31. According to Rovi, this hypertext command passes through personal computer 105 to interface box 104,

but there is no disclosure that any browser operating on personal computer 105 actually receives the hypertext command. *Id.* (citing Ex. 2111 ¶¶ 146, 147). Rovi argues that Comcast's declarant, Dr. Tjaden, does not provide any additional support for this position because he fails to identify any disclosure in Sato that the browsers operating on external portable computer 107 and personal computer 105 communicate with each other. *Id.* Indeed, Rovi asserts that Dr. Tjaden conceded at his deposition that the hypertext command is "probably not" sent to any browser on Sato's personal computer 105, and that Sato does not disclose what software on personal computer 105 handles the hypertext command. *Id.* at 31–32 (citing Ex. 2110, 116:17–22); *see also id.* at 32 (arguing the same).

Next, Rovi contends that Sato does not teach that browsers operating on external portable computer 107 and personal computer 105 communicate with each other because Sato discloses the hypertext commands are sent to the home electronic devices from external portable computer 107 to interface box 104 through personal computer 105. PO Resp. 32. To support this argument, Rovi argues that Sato explicitly discloses, "[i]n receipt of the hypertext, the interface box 104 issues an infrared signal corresponding to the command in the hypertext." *Id.* (quoting Ex. 1115, 9:61–63).

Rovi then contends that Sato does not disclose the browser operating on personal computer 105 receives hypertext commands, or that the browser operating on external portable computer 107 transmits hypertext commands to a browser on personal computer 105. PO

Resp. 32–33. According to Rovi, Sato’s alleged browsers cannot communicate with each other because there is no corresponding browser communications protocol. *Id.* at 33 (citing Ex. 2111 ¶¶ 147, 148). Instead, Rovi argues that Sato’s personal computer 105 would act like a server that receives hypertext commands and passes those commands to interface box 104, without necessarily invoking any browser. *Id.* (citing Ex. 1115, 6:28–39).

Lastly, Rovi contends Comcast improperly relies on inherency arguments to demonstrate that Sato discloses guide-to-guide communication. PO Resp. 33. Relying on its declarant, Dr. Shamos, Rovi argues that not only does Sato’s browsers lack a communication protocol for communicating with each other, but Sato’s external portable computer 107 sends hypertext commands to personal computer 105—not any browser operating on that computer. *Id.* at 34 (citing Ex. 2111 ¶ 148). Rovi asserts that Comcast fails to show that Sato’s Figure 17 requires a browser operating on personal computer 105 that receives hypertext commands, but rather Sato only discloses that personal computer 105 passes those commands to interface box 104. *Id.* (citing Ex. 1115, 9:44–65).

In its Reply, Comcast counters that Rovi mischaracterizes its position as relying on just the browser operating on personal computer 105 to teach the claimed “local interactive television program guide” Pet. Reply 13. Instead, Comcast argues that it relies on the control software on Sato’s personal computer 105—not just the browser—to account for this limitation. *Id.* (citing Pet. 34–35; Dec. on Inst. 21). Relying on the testimony of its declarant, Dr. Tjaden,

Comcast asserts that a person of ordinary skill in the art would have understood that Sato's external portable computer 107 sends a hypertext command to communications software on personal computer 105. *Id.* (citing Ex. 1152 ¶¶ 29, 30, 36, 37). Comcast argues that Rovi's argument that the browsers on these two computers do not communicate directly with each other overlooks that, under the broadest reasonable interpretation standard, the communications software on Sato's personal computer 105 is part of the claimed "local interactive television program guide." *Id.* (citing Ex. 1152 ¶¶ 34, 25, 54, 55).

Comcast disagrees with Rovi's argument that the communications from Sato's external portable computer 107 are handled solely by hardware of personal computer 105 or interface box 104 because this argument ignores the actual skill in the relevant art. Pet. Reply 13. Relying on the testimony of Dr. Tjaden, Comcast argues that a person of ordinary skill in the art would have understood that control software of Sato's personal computer 105 would process the received hypertext commands and issue appropriate commands to local devices. *Id.* at 14 (citing Ex. 1102 ¶¶ 152, 153; Ex. 1152 ¶¶ 36–40; Ex. 1115, 9:56–65, Fig. 17). Comcast clarifies that it never argued in the Petition that Sato's browsers communicate directly with each other. *Id.* at 15. To demonstrate that it did not present this line of argument, Comcast directs us to the supporting testimony of Dr. Tjaden in his Declaration accompanying the Petition. *Id.* (quoting Ex. 1102 ¶ 153). Comcast reiterates that control software of Sato's personal computer 105 is considered properly to be part of the claimed "local interactive

television program guide.” *Id.* (citing Ex. 1152 ¶¶ 34, 35, 49–51).

Comcast also disagrees with Rovi’s characterization of Sato’s personal computer 105 as merely a conduit that receives hypertext commands for external portable computer 107 and passes those commands to interface box 104. Pet. Reply 15 (citing PO Resp. 32–33; Ex. 2111 ¶ 147). Comcast argues that Rovi fails to appreciate that the control software on Sato’s personal computer 105 would need to receive the hypertext commands for external portable computer 107 and generate an appropriate command to send to interface box 104. *Id.* (citing Ex. 1152 ¶ 39). Comcast further argues that the hypertext commands themselves are not suitable for direct conversion to infrared signals, and that some processing is required by Sato’s personal computer 105 in receipt of those commands. *Id.* Consequently, Comcast asserts that control software on Sato’s personal computer 105 receives and processes the hypertext commands, and controls interface box 104 to generate a suitable infrared signal. *Id.* at 16.

In response to the argument presented by Rovi’s declarant, Dr. Shamos, that Sato’s personal computer 105 would be configured to use server software to receive and forward hypertext commands, but would not use a browser, Comcast contends that just because Sato’s personal computer 105 supports external access does not mean that it cannot allow users to control home electronic devices using a browser. Pet. Reply 16 (citing PO Resp. 33; Ex. 2111 ¶¶ 134–136, 147). Relying on the testimony of Dr. Tjaden, Comcast argues that a person of ordinary skill in the art would

have understood that Sato's personal computer 105 includes a browser that allows it to control home electronic devices, as well as a server component that allows it to receive hypertext commands from external portable computer 107 and execute those commands. *Id.* (citing Ex. 1152 ¶¶ 35, 49–53). Comcast, once again, reiterates that control software on Sato's personal computer 105, collectively with the browser that renders a webpage of a program guide display, is considered properly as part of the extensive arrangement of software that makes up the claimed "local interactive television program guide." *Id.* at 16–17 (emphasis omitted) (citing Ex. 1152 ¶¶ 54, 55; Ex. 1154 ¶ 169).

As we explained previously, a proper obviousness evaluation requires reading Sato, as a whole. *See Hedges*, 783 F.2d at 1041. Indeed, it would be improper for us to focus solely on Sato's Figure 17 and its corresponding description at the exclusion of other disclosures in Sato that are necessary to fully appreciate what Sato suggests to one of ordinary skill in the art about certain components in this figure, such as personal computer 105. *See id.*

Upon reading Sato, as a whole, we agree with Comcast that Sato renders communication between the claimed "local/remote access interactive television program guides" obvious because control software operating on Sato's personal computer 105, which also includes a browser operating thereon, receives hypertext commands from external portable computer 107 and issues appropriate commands to local hardware. *See* Pet. 35. In our previous analysis, we noted that Sato's Figure 17 and its corresponding



description indicate that external portable computer 107 sends hypertext commands to personal computer 105 through Internet 106. Ex. 1115, 9:56–61. After personal computer 105 receives these hypertext commands, they are then sent to interface box 104, which, in turn, generates infrared signals responsive to the commands that are used to control a number of home electronic devices (e.g., TV receiver 101, illuminator 102, air conditioner 113, or any other electronic device, such as VTR 11). *Id.* at 9:45–55, 9:61–65.

Although the corresponding description of Sato's Figure 17 is silent with respect to how personal computer 105 receives hypertext commands from external portable computer 107 and issues appropriate commands to local hardware, other disclosures in Sato provide a full appreciation as to how personal computer 105 operates in this regard. For instance, after reading Sato in its entirety, one of ordinary skill in the art would have recognized that there is a corollary between personal computer 21 illustrated in Figure 1 and personal computer 105 illustrated in Figure 17. Sato discloses that, when personal computer 21 is connected to Internet 6, it receives hypertext commands for determining the behavior of home electronic devices through input/output ("I/O") interface 40. Ex. 1115, 5:45–49, Fig. 5. Browser 41 operating on personal computer 21 "deals with the hypertext [commands] to link text [to] data," which entails moving image data, audio data, and so forth to form a multimedia picture. *Id.* at 5:50–53, Fig. 5. When a user selects a hypertext command in the multimedia picture using a mouse or keyboard, that

command is transmitted from command transmitter 44 to interface box 25. *Id.* at 6:5–9. Given these disclosures regarding personal computer 21 illustrated in Figure 1, we find that one of ordinary skill in the art would have understood that personal computer 105 illustrated in Figure 17 receives hypertext commands via an I/O interface (i.e., control software) and then transmits a selected command via a command transmitter to local hardware in the same way that personal computer 21 receives hypertext commands via I/O interface 40 and transmits a selected command via command transmitter 44 to local hardware.

Comcast’s declarant, Dr. Tjaden, provides testimony that supports our finding that one of ordinary skill in the art would have understood that an I/O interface (i.e., control software) operating on Sato’s personal computer 105 receives hypertext commands from external portable computer 107 and issues appropriate commands to local hardware. In his Declaration accompanying the Petition, Dr. Tjaden testifies that Sato’s external portable computer 107 and personal computer 105 communicate with each other because “control software on the [personal computer 105] would operate to receive the commands from the external portable computer [107] over the Internet [106], process the received commands and output them from the interface box [104] to local hardware.” Ex. 1102 ¶ 153 (citing Ex. 1115, 5:19–22, 9:51–65); Ex. 1152 ¶ 35 (testifying the same). We credit the aforementioned testimony of Dr. Tjaden because it is consistent with reading Sato, as a whole, without viewing the corresponding description of Sato’s Figure 17 at the exclusion of other teachings in

Sato that provide a full appreciation as to how personal computer 105 uses an I/O interface to receive hypertext commands from external portable 107.

Our finding in this regard also comports with our construction of “interactive television program guide.” In our claim construction section above, we determine that the broadest reasonable interpretation of an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *See supra* Section II.A. We clarify that neither the intrinsic nor extrinsic record limits the “guide” to a single software application. *See supra* Section II.A. Consequently, we find that the I/O interface (i.e., control software) operating on Sato’s personal computer 105 that receives hypertext commands from external portable computer 107, together with the browser operating on Sato’s personal computer 105 that renders a webpage of a program guide display, collectively teaches a “local interactive television program guide” because (1) these software applications work together to display program listings and allow the user to navigate through the listings, make selections, and control recording functions; and (2) more than one software application may constitute a “guide.”

We do not agree with Rovi’s arguments that Comcast only relies on communication between browsers operating on external portable computer 107 and personal computer 105 to account for communication between two interactive television program guides because they do not characterize

Comcast's position with respect to this limitation accurately. *See* PO Resp. 30–33. As we explain above, Comcast contends—and we agree—that control software for receiving hypertext commands on Sato's personal computer 105, together with the browser that renders a webpage of a program guide display, falls within a permissible arrangement of software that constitutes the claimed “local interactive television program guide.” *See* Pet. 35; Pet. Reply 13–17. That is, we find that one of ordinary skill in the art would have understood that Sato's personal computer 105 includes both an I/O interface (i.e., control software) and a browser application. Together, these software applications constitute the “local interactive television program guide” because they (1) receive hypertext communication from the “remote access interactive television program guide” (i.e., the browser operating on Sato's personal computer 107 that, when rendering a webpage that includes a program guide display such as the one illustrated in Figure 2, allows a user to record desired programs); and (2) work together to display program listings and allow the user to navigate through the listings, make selections, and control recording functions.<sup>12</sup>

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<sup>12</sup> We recognize that, in our Decision on Institution, we stated that we were persuaded that Comcast had presented “sufficient evidence that would support a finding that Sato's browsers operating on personal computer 105 and external portable computer 107 communicate with each other in the manner required by the independent claims.” Dec. on Inst. 21–22. We note that the Petition contends that, in Sato, “[c]ontrol software on [personal computer 105] (which includes the browser–local guide) receives the hypertext command from the external portable computer [107] and issues appropriate commands to local

We also do not agree with Rovi's characterization of Sato's personal computer 105 as merely a conduit that receives hypertext commands for external portable computer 107 and passes those commands to interface box 104, without any processing by personal computer 105 itself. *See* PO Resp. 32–33. Sato discloses that personal computer 21 does not just receive hypertext commands through I/O interface 40 and pass them to interface box 25, without any additional processing. Instead, upon receipt of the hypertext commands through I/O interface 40, browser 41 formulates the commands into a webpage for display to the user and, once a selection is made, command transmitter 44 transmits the selected command to interface box 25. Ex. 1115, 5:45–53; 6:5–9, Fig. 5. Given that one of ordinary skill in the art would have understood that Sato's personal computer 21 and personal computer 105 include similar components that possess the same capabilities and functionalities, we find that, when personal computer 105 receives a hypertext command from external portable computer 107, that command is processed at least through an I/O interface prior to being transmitted to interface box 104 via a command transmitter.

In his Reply Declaration, Dr. Tjaden reinforces that a certain level of processing occurs in Sato's personal

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hardware.” Pet. 35 (citing Ex. 1115, 9:56–65; Ex. 1102 ¶¶ 152–154). Comcast addressed this point extensively in its Petitioner Reply (Pet. Reply 13–18), and Rovi did not request a sur-reply. Comcast also made this point at the oral hearing (Hearing Tr. 37:5–10), and Rovi had ample opportunity to address it at the oral hearing (*id.* at 78:18–80:6).

computer 105 prior to interface box 104 outputting an infrared signal to local hardware. Dr. Tjaden testifies that

[personal computer 105] would process the hypertext command prior to transmission to the interface box [104] as the hypertext commands themselves would not be suitable for direct conversion to infrared signal. Thus, control software of [personal computer 105] would receive and process the hypertext commands so as to be able to control the . . . interface box [104].

Ex. 1152 ¶ 39. The processing identified in Dr. Tjaden's testimony is consistent with our understanding that, when Sato's personal computer 105 receives a hypertext command from external portable computer 107, that command is processed at least through an I/O interface prior to being transmitted to interface box 104 via a command transmitter.

Rovi's declarant, Dr. Shamos, also acknowledges that some level of processing occurs at Sato's personal computer 105 prior to interface box 104 outputting an infrared signal to local hardware. Dr. Shamos testifies that "personal computer 105 acts like a server to receive external hypertext commands, convert them to device code and pass them to infrared interface box 104. . . . Such operations would not be conducted by a browser." Ex. 2111 ¶ 147. Dr. Shamos's testimony that personal computer 105 "converts" the hypertext commands, along with his testimony that the conversion operation "would not be conducted by a

browser,” also is consistent with our understanding that, when Sato’s personal computer 105 receives a hypertext command from external portable computer 107, that command is processed at least through an I/O interface prior to being transmitted to interface box 104 via a command transmitter.

Lastly, we do not agree with Rovi’s arguments that Comcast relies solely on inherency arguments to account for communication between two interactive television program guides for two reasons. *See* PO Resp. 32–33. First, Rovi’s arguments are predicated, in part, on the notion that the browsers operating on Sato’s personal computer 105 and external portable computer 107 communicate directly with each other. As we explain above, Sato’s external portable computer 107 sends hypertext commands to an I/O interface (i.e., control software) operating on personal computer 105—not the browser operating on this computer. Second, when addressing this particular issue in the Decision on Institution, we recognized that Dr. Tjaden testifies that “[personal computer 105] *would necessarily include* control software that operate[s] to access and display the program guide pages, such as a browser.” Dec. on Inst. 22 (citing Ex. 1102 ¶ 53). In our view, this cited portion of Dr. Tjaden’s testimony is directed to whether the browser operating on personal computer 105 would necessarily access and display program guide webpage—not whether personal computer 105 includes an I/O interface (i.e. control software) for receiving hypertext commands from external portable computer 107. As we explain above, we find that one of ordinary skill in the art would have understood that Sato’s personal

computer 105 receives hypertext commands via I/O interface (i.e., control software) from external portable computer 107 in the same way that personal computer 21 receives hypertext commands via I/O interface 40.

*iii. Remaining Limitations*

In its Patent Owner Response, Rovi does not address separately whether the combined teachings of Sato and Humpleman account for the remaining limitations recited in independent claims 1 and 10. *See generally* PO Resp. 20–34. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these remaining limitations, and we agree with and adopt Comcast’s analysis. *See* Pet. 9–10, 27–35.

*b. Comcast Presents a Sufficient Rationale to Combine the Teachings of Sato and Humpleman*

Rovi contends that Comcast relies on disparate portions of Sato and Humpleman without explaining how or why one of ordinary skill in the art would have combined these disparate portions, much less how that proffered combination would have worked. PO Resp. 35 (citing Ex. 2111 ¶¶ 149–157). Rovi then presents three arguments as to why one of ordinary skill in the art would not have had sufficient reasons to combine the teachings of Sato with those of Humpleman.

First, Rovi contends that a person of ordinary skill in the art would not have been motivated to combine the teachings of Sato and Humpleman because these references are fundamentally different and incompatible. PO Resp. 35. On the one hand, Rovi argues that Humpleman is directed to a home network



that creates HTML pages for each peripheral device using information stored in those devices, and uses a separate “Mini-Server” application to create an interface. *Id.* Rovi asserts that Humpleman describes the peripherals as “home devices,” but explicitly excludes personal computers. *Id.* (citing Ex. 1106, 1:21–25). On the other hand, Rovi argues that Sato is directed to an “[I]nternet downloaded programmable remote control” that uses a browser on a computer and infrared box to control peripherals based on the transmission of hypertext commands. *Id.* at 35–36 (citing Ex. 2111 ¶¶ 48–49, 152). In addition, Rovi argues that Humpleman discuss problems with remote controls that “use static control and command logic,” whereas Sato’s system uses a static control and command device. *Id.* at 36 (quoting Ex. 1106, 1:45–67) (citing Ex. 1106, 1:58–67; Ex. 1115, 6:40–51, 6:62–7:54, 8:41–49). Consequently, Rovi asserts that Sato’s interface box 104 is a remote control that can “only control and command those home devices for which it includes the necessary control and command logic,” which is something that Humpleman sought to avoid. *Id.* at 36–37 (quoting Ex. 1106, 1:55–58) (citing Ex. 2111 ¶¶ 28, 151).

Second, Rovi contends that, because Humpleman and Sato have different principles of operation, a person of ordinary skill in the art would not have looked to combine their teachings. PO Resp. 37 (citing Ex. 2111 ¶ 152). Rovi argues that Humpleman’s principle of operation is a browser-based home network where each home electronic device connected to the network contains one or more HTML pages that provide for command and control of the home

electronic device, whereas Sato's principle of operation is the control of home electronic devices using an infrared remote control of the type that was criticized in Humpleman. *Id.* (citing Ex. 1106, 1:45–67, 23:46–49). Rovi also argues that Humpleman is directed to generating HTML pages for each home electronic device by using information stored in memory installed on those devices. *Id.* By contrast, Rovi argues that the embodiment illustrated in Sato's Figure 17 does not access information about a home electronic device directly from that device. *Id.* at 37–38 (citing Ex. 2110, 123:18–124:10). As a result, Rovi asserts that implementing Humpleman's customized HTML pages in Sato's program guide system would change Sato's principle of operation. *Id.* (citing *In re Ratti*, 270 F.2d 810, 813 (CCPA 1959); *Plas-Pak Indus. Inc. v. Sulzer Mixpac AG*, 600 F. App'x 755, 757–59 (Fed. Cir. 2015)).

Third, Rovi contends that each of Comcast's three reasons as to why one of ordinary skill in the art would have combined the teachings of Sato with those of Humpleman do not withstand scrutiny. PO Resp. 38–39. Turning to Comcast's argument that the combination would have been nothing more than using a known technique to improve a similar device in the same way, Rovi argues that Comcast does not explain how using Humpleman's HTML program guides would offer “better access to desired information,” when Sato already discloses television listings and allows the use of G codes to control home electronic devices. *Id.* Indeed, Rovi asserts that adding Humpleman's method of customizing HTML pages could require more data, hardware, and steps because it would

involve generating an HTML page for each of Sato's home electronic devices using information stored in memory on each device. *Id.* at 39 (citing Ex. 1106, 2:40–63).

In Reply, Comcast maintains that a person of ordinary skill in the art would have had sufficient reasons to combine the teachings of Sato and Humpleman. Pet. Reply 18–19 (citing Pet. 24–26, 32–33). Beginning with Rovi's argument that Sato and Humpleman are fundamentally different and incompatible, Comcast disagrees with this argument because both references are directed to systems operable to control devices from an external computer over the Internet using program guide webpages. *Id.* at 19. Comcast also does not agree with Rovi's argument that it relies on disparate portions of Sato and Humpleman without explaining how or why a person of ordinary skill in the art would have combined their teachings, nor does Comcast agree with Rovi's argument that it has not explained how the proffered combination would work. *Id.* Comcast counters that Rovi ignores the detailed rationales to combine set forth in the Petition and the supporting testimony of Dr. Tjaden. *Id.* (citing Pet. 24–26; Ex. 1102 ¶¶ 104–108; Ex. 1152 ¶¶ 44–46). Comcast then reiterates that a person of ordinary skill in the art would have incorporated Humpleman's local generation of customized program guides for display by a remote device in Sato's program guide system to allow a user to avoid viewing a display that includes a disfavored channel or content, and to provide the user with improved access to his/her desired content. *Id.*

(citing Ex. 1106, 22:43–46; Ex. 1102 ¶ 105; Ex. 1152 ¶¶ 15–16).

Comcast does not agree with Rovi's argument that Sato's program guide system involves static control and command logic that is disparaged in Humpleman's "Background of the Invention" section. Pet. Reply 20. According to Comcast, Rovi's argument in this regard incorrectly characterizes Sato as based on a single component—namely, the infrared interface (i.e., interface box 25 or 104)—without considering the other components disclosed in Sato. *Id.* Comcast argues that, even if each of Sato's interface boxes 25 and 104 could be considered a static control and command system, Rovi's incorrect characterization oversimplifies and overlooks significant portions of Sato's disclosure, such as Sato's Internet-enabled program guide system for setting recordings on local equipment. *Id.* (citing Ex. 1115, 4:41–46, 9:8–17; Ex. 1102 ¶ 97; Ex. 1152 ¶¶ 17–19). Comcast also argues that Rovi mischaracterizes Dr. Tjaden's supporting testimony as purportedly admitting that Sato's interface boxes 25 and 104 use static control and command logic. *Id.* at 20–21 (citing PO Resp. 36). Contrary to Rovi's characterization of this testimony, Comcast asserts that Dr. Tjaden never conceded that he incorrectly read Sato, but rather only indicated that adding new electronic devices to Sato's program guide system would require Sato's interface boxes 25 and 104 to be modified such that their code storage portions 52 would include additional infrared signal codes. *Id.* at 21 (citing Ex. 2111, 128:1–130:10; Ex. 1115, 8:35–40). Indeed, Comcast argues that modifying Sato's program guide system in this way

meshes well with Humpleman's stated goals of improving coverage for different types and models of home electronic devices. *Id.* (citing Ex. 1152 ¶¶ 44–45).

Lastly, Comcast does not agree with Rovi's argument that modifying Sato's program guide system with Humpleman's local generation of customized program guides for display by a remote device would change Sato's principle of operation. Pet. Reply 21. Relying on Federal Circuit precedent, Comcast argues that modifying Sato with the teachings of Humpleman would not destroy the high level ability of Sato's program guide system. *Id.* at 21–22 (citing *In re Mouttet*, 686 F.3d, 1322, 1332 (Fed. Cir. 2012)). In addition, Comcast argues that Sato's descriptions of interface boxes 25 and 104 controlling home electronic devices is not a principle of operation as that term has been used by the Federal Circuit. *Id.* Instead, following the guidance laid out in *Mouttet*, Comcast asserts that Sato's principle of operation would be more appropriately characterized as setting recordings on a multimedia system using a program guide system connected to the Internet. *Id.* at 22 (citing Ex. 1152 ¶¶ 41–42).

The Supreme Court has held that an obviousness evaluation "cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents." *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether Comcast has set forth "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir.

2006), *cited with approval in KSR*, 550 U.S. at 418. When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, “if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to combine Sato’s program guide system with Humpleman’s local generation of customized program guides for display by a remote device. Humpleman discloses that a user may customize the programming information that is displayed by the program guide based on user preferences. Ex. 1106, 22:41–43. For instance, if a user prefers not to display the schedule for a particular channel because it contains inappropriate content, the user may request that the channel be removed from the program guide. *Id.* at 22:43–46. Humpleman makes clear that any device that employs a browser may access the customized HTML guide, including one located remotely from the home network via the Internet. *Id.* at 5:55–67, 6:1–18, 20:32–51; *see also* Ex. 1102 ¶ 102 (testifying the same).

With these disclosures from Humpleman in mind, we agree with Comcast that, when, as here, a technique has been used to improve one device (i.e., Humpleman’s local generation of a customized program guide for display by a remote device), and one of ordinary skill in the art would have recognized that

it would improve similar devices in the same way (i.e., applying Humpleman's technique to Sato's program guide system to render a customized program guide as a webpage on the browser operating on Sato's external portable computer 107), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 24–26; Ex. 1102 ¶ 106. The record includes credible evidence explaining why applying Humpleman's technique to Sato's program guide system to render a customized program guide as a webpage on the browser operating on Sato's external portable computer 107 would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Indeed, Humpleman itself provides the necessary motivation for doing so—namely, to allow a user to avoid viewing a display that includes a disfavored channel or content, and to provide the user with improved access to his/her desired content. Ex. 1106, 22:43–46.

We do not agree with Rovi's argument that Sato and Humpleman are fundamentally different and incompatible. *See* PO Resp. 35–36. As an initial matter, Sato generally relates to a remote control that operates home electronic devices, including one that is capable of receiving a program guide webpage through a computer network. Ex. 1115, [54], 1:8–13, 2:6–16. Similarly, Humpleman generally relates to controlling a plurality of home electronic devices connected to a home network. Ex. 1106, [54], 1:16–18, 2:15–28. Consequently, we find that Sato and Humpleman fall in the same field of endeavor

Dr. Tjaden's testimony supports our finding that Sato and Humpleman are not fundamentally different

and incompatible. In his Declaration accompanying the Petition, Dr. Tjaden testifies that “it would have been obvious to one of ordinary skill in the art to incorporate Humpleman’s system for locally generating customized HTML guides for display by a remote device in Sato’s remote control system to provide users with improved access to their desired content.” Ex. 1102 ¶ 105. In his Declaration accompanying the Reply, Dr. Tjaden clarifies that combining the teachings of Sato and Humpleman in this manner “would improve Sato’s [stated objective] of ‘provid[ing] a remote control device easily operated for reservations, etc. of programs and flexibly coping with changes to schedule of programs.” Ex. 1152 ¶ 46 (quoting Ex. 1115, 2:6–9).

Contrary to Rovi’s arguments, we do not agree that Sato’s program guide system uses a static control and command logic device that is disparaged in Humpleman’s “Background of the Invention” section. *See* PO Resp. 36–37. Rovi’s argument in this regard focuses on Sato’s interface boxes 25 and 104. When taking a closer look at Humpleman’s “Background of the Invention” section, it criticizes the use of a single remote control that “allows a homeowner to control and command several different home [electronic] devices using a single interface.” Ex. 1106, 1:47–49. Humpleman discloses that such a remote control “[would] not be able to control and command . . . new home [electronic] devices that require control and command logic that was not known at the time the remote control . . . was developed.” *Id.* at 1:62–67. These disclosures in Humpleman, however, do not mention, much less criticize, using an interface box



that stores code data, which it then uses to generate infrared signals for transmission to home electronic devices, as taught by Sato.

Even if we were to assume that Sato's interface boxes 25 and 104 have some relevance to the "static" single remote control with the single user interface that is disparaged in Humpleman's "Background of the Invention" section, there is sufficient evidence of record to support a finding that one of ordinary skill in the art would have understood that code storage portions 52 of Sato's infrared interface 25 and 104 are not static, but rather configured to introduce and store new code data for transmission to new home electronic devices. Sato discloses that interface box 25 includes code storage portion 52, which "stores all code data of all devices of different manufacturers." Ex. 1115, 6:40–51, Figs. 8, 9; *see also id.* at 8:32–33 (disclosing the same). Sato recognizes that "infrared signal codes may be changed" and, therefore, discloses that "code storage portion [52] maybe configured to do both reading and writing so as to introduce code data entered from the exterior as a leaning [sic] remote controller." *Id.* at 8:36–39. These disclosures would have been equally applicable to interface box 104.

During his deposition, Dr. Tjaden was asked whether code storage portion 52 of Sato's infrared boxes 25 and 104 are capable of storing new code data for new home electronic devices. The relevant exchange is reproduced below:

"Q So for the Sato IR box to send a new command, the Sato IR box would have to be modified so that the

code storage portion stored a new code corresponding to that command. Correct?

A That is correct.”

Ex. 2110, 130:6–10. In his Declaration accompanying the Reply, Dr. Tjaden testifies that the aforementioned cross-examination testimony confirms that he never used the word “static” and, instead, “affirm[s] that Sato does not use ‘static control and command logic.’” Ex. 1152 ¶ 45. Dr. Tjaden further testifies that, because “Sato teaches that the IR box is modified to send new commands, . . . it is necessarily not ‘static.’” *Id.* We credit this testimony from Dr. Tjaden because it is consistent with Sato’s disclosure that new code data may be written to code storage portions 52 of interface boxes 25 and 104. Neither Rovi nor its declarant, Dr. Shamos, provide credible evidence that undermines Dr. Tjaden’s position that Sato’s interface boxes 25 and 104 are not “static” because their respective code storage portions 52 are configured to accept and store new code data for new home electronic devices.

We also do not agree with Rovi’s argument that modifying Sato’s program guide system with Humpleman’s local generation of customized program guides for display on a remote device would change Sato’s principle of operation. *See* PO Resp. 37–38. Rovi’s argument is, once again, predicated on the notion that Sato’s infrared boxes 25 and 105 are the type of “static” remote control devices disparaged in Humpleman’s “Background of the Invention” section. For the same reasons set forth above, we do not agree that Sato’s infrared boxes 25 and 105 are the type of

“static” devices disparaged in Humpleman’s “Background of the Invention” section, but rather the evidence of record suggests that these infrared boxes are configured to accept and store new code data for new electronic devices.

There are two additional reasons that we do not agree with Rovi’s argument that modifying Sato’s program guide system with Humpleman’s local generation of customized program guides for display by a remote device would change Sato’s principle of operation. First, as we explain at length above, Comcast proposes applying Humpleman’s local generation of a customized program guide for display by a remote device to Sato’s program guide system to render a customized program guide as a webpage on the browser operating on Sato’s external portable computer 107. In our view, combining the teachings of Sato and Humpleman in this way would have little, if any, bearing on the code data stored in code storage portions 52 of Sato’s interface boxes 25 and 104 that are used to generate infrared signals for transmission to home electronic devices. Even if combining the teachings of Sato and Humpleman in the manner asserted by Comcast would affect Sato’s interface boxes 25 and 104, there is sufficient evidence of record suggesting that their respective code storage portions 52 are not “static,” but rather configured so as to accept and store new code data for new home electronic devices.

Second, Rovi’s reliance on *Ratti* to support its change in principle of operation argument is misplaced. *See* PO Resp. 38. *Ratti* stands for the proposition that, if the combination of references

would change the principle of operation of the prior art, then the teachings cannot suffice to render claims obvious. 270 F.2d at 813. *Ratti*, however, is inapplicable where the modified system still operates “on the same principles as before.” *In re Umbarger*, 407 F.2d 425, 430–31 (CCPA 1969). In this case, modifying Sato’s program guide system with Humpleman’s local generation of customized program guides for display by a remote device only affects how the customized program guide webpage is generated and displayed at Sato’s external portable computer 107. This does not affect Sato’s overall principle of operation of a remote control that operates home electronic devices, including one that is capable of receiving a program guide webpage through a computer network. Ex. 1115, [54], 1:8–13, 2:6–16.

*c. Summary*

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of independent claims 1 and 10 would have been obvious over the combined teachings of Sato and Humpleman.

*6. Claims 3–9 and 12–18*

In its Patent Owner Response, Rovi does not address separately whether the combined teachings of Sato and Humpleman account for the remaining limitations recited in dependent claims 3–9 and 12–18. *See generally* PO Resp. 20–41. We have reviewed Comcast’s explanations and supporting evidence as to how this proffered combination teaches these limitations, as well as its explanations as to how one of ordinary skill in the art would have combined the

relevant teachings of Sato with those of Humpleman, and we agree with and adopt Comcast's analysis. *See* Pet. 9–10, 35–41. Comcast, therefore, has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 3–9 and 12–18 would have been obvious over the combined teachings of Sato and Humpleman.

*C. Obviousness Over the Combined Teachings of Sato, Humpleman, and Lawler*

Comcast contends that claims 2 and 11 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Sato, Humpleman, and Lawler. Pet. 41–42. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1102 ¶¶ 177–181. In its Patent Owner Response, Rovi contends that (1) Lawler does not account for the claimed “local/remote access interactive television guides” in communication with each other and, therefore, Lawler does not remedy the purported deficiencies in the combined teachings of Sato and Humpleman; and (2) Comcast does not present sufficient reasoning as to why one of ordinary skill in the art would combine the teachings of Lawler with those of Sato and Humpleman. PO Resp. 41–43. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2111 ¶¶ 158–160.

We begin our analysis with a brief overview of Lawler, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

### *1. Lawler Overview*

Lawler generally relates to a system for recording a program on an interactive viewing system and, in particular, to a system that allows a user to identify a program for recording using an interactive program guide and then designate the identified program for automated recording at some later time. Ex. 1109, 1:8–13. According to one aspect of the invention disclosed in Lawler, the recording device is associated with a head end. *Id.* at 2:24–25. At the direction of the head end, the recording device records the selected program and digitally stores it in a memory at the head end. *Id.* at 2:25–27. The recorded program may then be retrieved from the head end by the user for display at a viewer station. *Id.* at 2:27–29. Lawler discloses that this process would allow multiple users to access a single recording of the program, as well as make the program available to other users who did not set the recording, but nonetheless wish to view the program at some later time. *Id.* at 13:34–38.

### *2. Claims 2 and 11*

Dependent claim 2 recites “wherein the local interactive television program guide records the television program corresponding to the selected television program listing at a television distribution facility.” Ex. 1101, 40:48–51. Dependent claim 11 recites a similar limitation. *Id.* at 42:12–15.

In its Petition, Comcast contends that Lawler teaches recording programs at a head end (i.e., a television distribution facility) in lieu of recording programs locally. Pet. 41–42 (citing Ex. 1109, 2:24–29, 13:26–38; Ex. 1102 ¶¶ 179–180). Comcast then argues that it would have been obvious to modify the Sato and Humpleman combination to include recording programs at a television distribution facility, as taught by Lawler, because there are certain advantages to recording programs at the television distribution facility, such as making recorded programs available for other subscribers and eliminating the need for a separate recorder. *Id.* at 42 (citing Ex. 1102 ¶ 181). According to Comcast, this proffered combination would be nothing more than using a known technique (i.e., Lawler’s centralized recording at a television distribution facility) to improve a similar system (i.e., the combined Sato and Humpleman remote access system), and would produce a predictable result that provides the stated benefits of Lawler. *Id.*

In its Patent Owner Response, Rovi contends that Lawler does not account for the claimed “local/remote access interactive television guides” in communication with each other and, therefore, Lawler does not remedy the purported deficiencies in the combined teachings of Sato and Humpleman. PO Resp. 41–42 (citing Ex. 1109, 5:38–42, 6:37–41, 7:3–5). We do not agree with this argument because, as we explain previously in our analysis of the ground based on the combined teachings of Sato and Humpleman, Sato teaches the claimed “local/remote access interactive television guides” in communication with each other. *See supra* Section II.B.5.a.i–ii. Consequently, there are

no deficiencies in the combined teachings of Sato and Humpleman for Lawler to remedy.

Next, Rovi contends that Comcast's explanations for combining the teachings of Sato, Humpleman, and Lawler are conclusory and fail to provide a sufficient reason for making the proffered combination. PO Resp. 42 (citing Ex. 2111 ¶¶ 158–160). According to Rovi, Comcast fails to explain how or why one of ordinary skill in the art would have incorporated Lawler's technique for recording programs at a television distribution facility into the combined program guide system of Sato and Humpleman. *Id.* In particular, Rovi argues that Comcast does not explain how a person of ordinary skill in the art would have moved the recorder to Lawler's television distribution facility, while still maintaining the operability of the combined program guide system of Sato and Humpleman, including the ability for the user to control operations of Sato's VTR 11 using interface box 25, both of which are local to the user's system. *Id.* at 43. Rovi further argues that Comcast does not explain how the combined program guide system of Sato and Humpleman would be modified to send hypertext commands to Lawler's television distribution facility. *Id.*

In its Reply, Comcast counters that Lawler's centralized recording still would allow the user to view recorded content at his/her home using the combined program guide system of Sato and Humpleman. Pet. Reply 23. Comcast argues that integrating this teaching in Lawler into the combined program guide system of Sato and Humpleman would provide the added advantage of allowing the physical storage of



content to occur at Lawler's television distribution facility, which was, and remains, a well-known method for increasing storage efficiency. *Id.* (citing Ex. 1152 ¶ 47).

As an initial matter, Rovi does not address separately Comcast's explanations and supporting evidence as to how the combined teachings of Sato, Humpleman, and Lawler account for the limitations of dependent claims 2 and 11. *See generally* PO Resp. 41–44. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these limitations, and we agree with and adopt Comcast's analysis. *See* Pet. 41–42.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to modify the combined program guide system of Sato and Humpleman to include recording programs at a television distribution facility, as taught by Lawler. When, as here, a technique has been used to improve one device (i.e., Lawler's centralized recording at a television distribution facility), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Lawler's technique to the combined program guide system of Sato and Humpleman to make recorded programs available for other subscribers and to eliminate the need for a separate recorder), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 36–37; Ex. 1102 ¶¶ 177–181. The record includes credible evidence explaining why applying Lawler's technique to the combined program guide

system of Sato and Humpleman to make recorded programs available to multiple subscribers at a television distribution facility would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Indeed, Lawler itself provides the necessary motivation for doing so—namely, “[to] allow multiple users to access a single recording of the program.” Ex. 1109, 13:33–35.

We do not agree with Rovi’s argument that Comcast does not explain how a person of ordinary skill in the art would have moved the recorder to Lawler’s television distribution facility, while still maintaining the operability of the combined program guide system of Sato and Humpleman. PO Resp. 43. As Comcast explains in the Petition, modifying the Sato and Humpleman combination to include recording programs at a television distribution facility, as taught by Lawler, serves as a substitute for the user’s ability to record programs locally on Sato’s VTR 11 using interface boxes 25 or 104. *See* Pet. 42. For instance, instead of using interface boxes 25 or 104 to instruct Sato’s VTR 11 to record programs, which still remains a viable option, a user would communicate with Lawler’s television distribution facility to record programs via Sato’s external portable computer 107 or personal computer 105. Dr. Tjaden testifies—and we agree—that recording programs at Lawler’s television distribution facility, in lieu of recording programs locally on Sato’s VTR 11, would increase storage efficiency by making these recordings available to other users and it would eliminate the need for each user to maintain a separate recorder. *See* Ex. 1102 ¶ 181; Ex. 1152 ¶ 47.

We also do not agree with Rovi's argument that Comcast does not explain how the combined program guide system of Sato and Humpleman would be modified to send commands to Lawler's television distribution facility. *See* PO Resp. 43. Instead, the evidence of record supports that Lawler's television distribution facility would be capable of receiving commands from the combined program guide system of Sato and Humpleman. In particular, Dr. Tjaden testifies that "[o]ne of ordinary skill in the art would readily recognize that [the] arrangement [disclosed in Lawler] is typical of cable or satellite systems such as those disclosed in Sato and Humpleman." Ex. 1102 ¶ 179. Moreover, Rovi seeks a particular explanation as to "what specific component would be used to make the communication and the format of that communication." PO Resp. 43. Lawler, however, does not restrict the network by which the viewer stations and television distribution facility communicate to any particular type of network. Ex. 1109, 5:29–36. Similarly, the '413 Patent does not restrict how program guide information may be communicated between remote program guide access device 24 and interactive television program guide equipment 17. Ex. 1101, 15:63–16:4 (disclosing that program guide information may be communicated using "any suitable application layer protocol"). Because neither Lawler nor the '413 Patent limits the means of communication, we find that a person of ordinary skill in the art would have understood that the combined program guide system of Sato and Humpleman would have been capable of communicating commands to Lawler's television distribution facility via a network,

such as Sato's Internet 106, for the purpose of recording programs at the television distribution facility.

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 2 and 11 would have been obvious over the combined teachings of Sato, Humpleman, and Lawler.

*D. Obviousness Over the Combined Teachings of Woo, Mizuno, and Rzeszewski*

Comcast contends that claims 1, 3–10, and 12–18 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, and Rzeszewski. Pet. 42–71. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1102 ¶¶ 188–270. As we explain in our Introduction section above, the parties waived both briefing on this ground, as well as consideration of this ground at the consolidated oral hearing. *See supra* Section I.

We begin our analysis with brief overviews of Woo, Mizuno, and Rzeszewski, and then we address whether Comcast provides a sufficient rationale for combining the teachings of Woo and Mizuno.

### 1. Woo Overview

Woo generally relates to controlling a recording device that receives commercial broadcasts and, in particular, to eliminating commercials from recorded TV broadcasts. Ex. 1116, 1:7–11. According to Woo, a user selects a desired TV program for recording from a menu, and selects whether to record the program commercial-free. *Id.* at 1:43–45. One feature offered by Woo allows a user who has not selected a particular channel for recording to call in by telephone to a control station, which, based on the direction of the user, enters appropriate data into the user's processor in order to record a desired program. *Id.* at 2:17–21.

Figure 1 of Woo, reproduced below, illustrates an embodiment of the broadcast recording control system in accordance with the present invention. Ex. 1116, 2:39–41, 2:55–57.

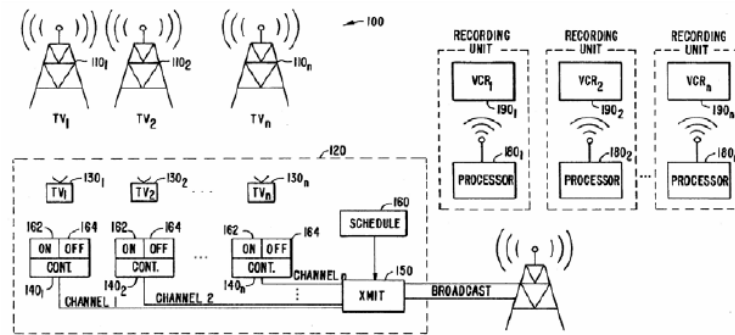


FIG. 1

As shown in Figure 1 reproduced above, system 100 includes control station 120 with a plurality of TV monitors 130, a plurality of controllers 140, transmitter 150, and scheduler 160. *Id.* at 2:59–62.

Scheduler 160 develops a TV program schedule table of future TV broadcasts. *Id.* at 3:8–10. The TV program schedule table identifies TV broadcasts by name, channel, and day of the week. *Id.* at 3:10–12. System 100 also includes a plurality of processors 180, each of which is associated with one of a plurality of video cassette recorders (“VCRs”) 190. *Id.* at 3:28–30.

Figure 4 of Woo, reproduced below, illustrates the display of processor 180 depicted in Figure 1 of Woo. Ex. 1116, 2:46, 6:51–53.

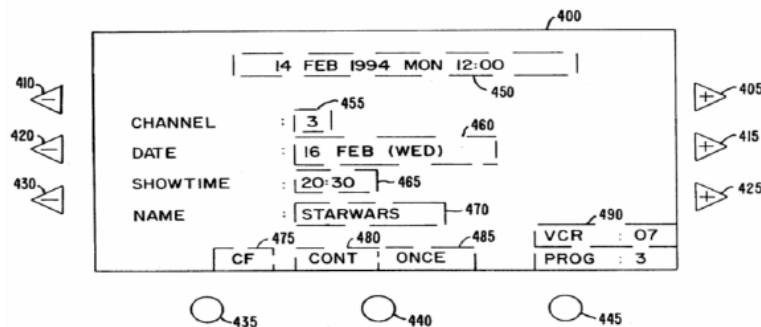


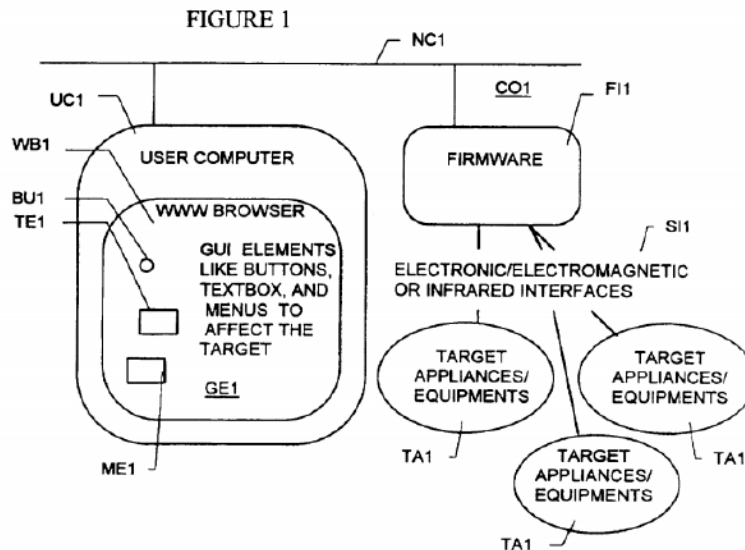
FIG. 4.

As shown in Figure 4 reproduced above, display 400 includes, among other things, date/time field 450 to display the present date and time. *Id.* at 6:62–63. Display 400 also includes a number of fields for accessing the TV program schedule table, such as channel field 455, date field 460, “showtime” field 465, and “showname” field 470. *Id.* at 6:63–7:10.

## 2. Mizuno Overview

Mizuno generally relates to controlling remote devices at remote locations via the Internet, preferably using hypertext transfer protocol. Ex. 1117, 1:4–8. In

one embodiment, Mizuno discloses a controller that serves HTML pages to remote user computers for controlling a number of devices located in a home, such as TVs and VCRs. *Id.* at 1:24–2:12. Figure 1 of Mizuno, reproduced below, illustrates a block diagram of the system architecture used to implement this embodiment.



As shown in Figure 1 above, user computer UC1 uses ethernet network connection NC1 to connect to controller CO1 composed of firmware FI1, which, in turn, connects to a number of target appliances/equipment (e.g., TVs, VCRs, etc.). *Id.* at 3:7–10. User computer UC1 includes WWW browser WB1 that includes graphical interface elements GE1, such as buttons BU1, textbox TE1, and menus ME1 that may be used to control the target appliances/equipment TA1. *Id.* at 3:15–18. Controller

CO1 creates a web page of TV listings, which, when served to user computer UC1 via WWW browser WB1, allows the user to control target appliances/equipment TA1 (e.g., by programming a VCR to record a future TV program). *Id.* at 9:20–10:4.

### 3. *Rzeszewski Overview*

Rzeszewski generally relates to electronic program guides for TV receivers and, in particular, to an improved electronic TV program guide that offers flexibility, versatility, and cost savings over conventional electronic TV program guides. Ex. 1118, 1:6–10. One feature offered by Rzeszewski's improved electronic TV guide is a "Favorite Station" feature that stores certain channels pre-selected by a user. *Id.* at 5:38–45.

### 4. *Claims 1 and 10*

In its Petition, Comcast contends that Woo's broadcast recording control system accounts for most of the limitations recited in independent claims 1 and 10, except a "remote program guide access device" that provides a "remote access interactive television guide," and "user profiles" used to generate the "remote access interactive television program guide." Pet. 43–49 (citing Ex. 1116, 1:42–50, 2:9–30, 3:7–18, 6:50–7:1, 7:50–65, 8:25–32, 9:56–63, Figs. 1, 4; Ex. 1102 ¶¶ 188–192). Comcast turns to Mizuno's remote access guide web pages displayed on user computer UC1 to teach a "remote program guide access device" that provides a "remote access interactive television guide." *Id.* at 45–46 (citing Ex. 1117, 1:24–2:12, 5:19–22, 9:20–10:8, 10:18–11:3, Fig. 1; Ex. 1102 ¶ 193). Comcast turns to Rzeszewski's "favorite station" feature to teach "user



profiles” used to generate the “remote access interactive television program guide.” *Id.* at 48–49 (citing Ex. 1118, 1:6–10, 5:32–45; Ex. 1102 ¶¶ 195–198, 203).

Of particular importance to this ground is Comcast’s argument that it would have been obvious to one of ordinary skill in the art to automate Woo’s manual call-in scheduling process by using Mizuno’s remote access guide web pages. Pet. 47–48. According to Comcast, there are at least three reasons as to why one of ordinary skill in the art would have combined the teachings of Woo and Mizuno in this manner. Those reasons are listed as follows: (1) supplementing Woo’s manual call-in scheduling process with Mizuno’s remote access guide web pages is nothing more than automating a manual process, which has long been recognized as insufficient to distinguish over prior art systems; (2) using Mizuno’s remote access guide web pages to improve Woo’s manual call-in scheduling process would be nothing more than using known techniques to improve similar devices to obtain a predictable result; and (3) it would have been a simple substitution of Mizuno’s remote access guide web pages for Mizuno’s human operator for the manual call-in process to obtain a predictable result. *Id.* (citing Ex. 1102 ¶¶ 197–199).

We do not agree that Comcast or Dr. Tjaden provides sufficient reasoning as to how or why one of ordinary skill in the art would have replaced Woo’s manual call-in scheduling process with Mizuno’s remote access guide web pages to arrive at the claimed invention. As an initial matter, we do not view supplementing Woo’s manual call-in scheduling

process with Mizuno's remote access guide web pages as simply automating a manual process. Comcast's proffered combination requires the wholesale insertion of a new component—in this case, Mizuno's user computer UC1 that displays remote access guide web pages—in Woo's broadcast recording control system. In our view, this goes beyond simply automating a manual process, but rather requires a significant modification to the structure and operations of Woo's broadcast recording control system. For instance, Comcast does not explain how Woo's controller 120, which uses transmitter 150 to broadcast control and programming information (Ex. 1116, 3:20–28), is capable of connecting to the Internet such that it could serve HTML pages to Mizuno's user computer UC1.

Nor do we agree that combining the teachings of Woo and Mizuno in the manner proposed by Comcast is nothing more than using known techniques to improve a similar device in the same way, or is a simple substitution of one known element for another to obtain a predictable result. Comcast's assertions in this regard are predicated on the benefits associated with automation. *See* Pet. 47 (stating “[t]his would obtain the predictable benefits associated with automation described above”), 48 (stating the same); Ex. 1102 ¶¶ 198–199 (stating the same). As we explain above, supplementing Woo's manual call-in scheduling process with Mizuno's remote access guide web pages goes beyond simply automating a manual process—it requires significant modifications to the structure and operations of Woo's broadcast recording control system. Moreover, by simply providing generic reasons for combining the teachings of Woo and Mizuno, such

as using “known techniques to improve similar devices” (Pet. 47) and “simple substitution” (*id.* at 48), Comcast does not adequately address the issue of rationale to combine in this ground because it fails to explain how one of ordinary skill in the art would have modified Woo’s broadcast recording control system to include Mizuno’s remote access guide web pages. *See Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan . . . *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”).<sup>13</sup>

In summary, Comcast has not demonstrated a reasonable likelihood that it will prevail on its assertion that the subject matter of independent claims 1 and 10 would have been obvious over the combined teachings of Woo, Mizuno, and Rzeszewski.

#### 5. Claims 3–9 and 12–18

Because we determine that Comcast does not provide sufficient reasoning for combining the teachings of Woo and Mizuno, Comcast has not demonstrated a reasonable likelihood that it would prevail on its assertion that the subject matter of dependent claims 3–9 and 12–18 would have been obvious over the combined teachings of Woo, Mizuno, and Rzeszewski.

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<sup>13</sup> Because we determine that Comcast does not provide sufficient reasoning for combining the teachings of Woo and Mizuno, we need not reach whether Comcast also provides sufficient reasoning for combining the teachings of Rzeszewski with those of Woo and Mizuno.

*E. Obviousness Over the Combined Teachings of Woo, Mizuno, Rzeszewski, and Lawler*

Comcast also contends that claims 2 and 11 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, Rzeszewski, and Lawler. Pet. 71–72. This ground relies upon Comcast's argument that it would have been obvious to one of ordinary skill in the art to automate Woo's manual call-in scheduling process by using Mizuno's remote access guide web pages. *Id.* at 47–48 (citing Ex. 1102 ¶¶ 197–199). Because we determine that Comcast does not provide sufficient reasoning for combining the teachings of Woo and Mizuno, Comcast has not demonstrated a reasonable likelihood that it would prevail on its assertion that the subject matter of dependent claims 2 and 11 would have been obvious over the combined teachings of Woo, Mizuno, Rzeszewski, and Lawler.

### III. CONCLUSIONS

Comcast has demonstrated by a preponderance of the evidence that (1) claims 1, 3–10, and 12–18 are unpatentable under § 103(a) over the combined teachings of Sato and Humpleman; and (2) claims 2 and 11 are unpatentable under § 103(a) over the combined teachings of Sato, Humpleman, and Lawler. Comcast, however, has not demonstrated by a preponderance of the evidence that (1) claims 1, 3–10, and 12–18 are unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, and Rzeszewski; and (2) claims 2 and 11 are unpatentable under § 103(a) over the combined teachings of Woo, Mizuno, Rzeszewski, and Lawler.

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#### IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–18 of the '413 Patent are held to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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APPENDIX G  
IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE  
BEFORE THE PATENT TRIAL AND APPEAL  
BOARD  
COMCAST CABLE COMMUNICATIONS, LLC,  
*Petitioner,*

v.

ROVI GUIDES, INC.,  
*Patent Owner.*

Case IPR2017-01050  
Patent 8,578,413 B2

Entered: October 16, 2018

Before KEVIN F. TURNER, MICHAEL R. ZECHER,  
and JESSICA C. KAISER, *Administrative Patent*  
*Judges.*

TURNER, *Administrative Patent Judge.*

FINAL WRITTEN DECISION  
*Inter Partes* Review  
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Petitioner, Comcast Cable Communications, LLC (“Comcast”), filed a Petition requesting an *inter partes* review of claims 1–18 of U.S. Patent No. 8,578,413 B2 (Ex. 1201, “the ’413 Patent”). Paper 2 (“Pet.”). Patent Owner, Rovi Guides, Inc. (“Rovi”), filed a Preliminary Response. Paper 6. Taking into account the arguments presented in Rovi’s Preliminary Response, we

determined that the information presented in the Petition established that there was a reasonable likelihood that Comcast would prevail in challenging claims 1–18 of the ’413 Patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to 35 U.S.C. § 314, we instituted this *inter partes* review on October 18, 2017, as to all of the challenged claims and all the grounds presented the Petition. Paper 8 (“Dec. on Inst.”).

During the course of trial, Rovi filed a Patent Owner Response (Paper 14, “PO Resp.”), and Comcast filed a Reply to the Patent Owner Response (Paper 25, “Pet. Reply”). Consolidated oral hearing with related Cases IPR2017-00950, IPR2017-00951, IPR2017-00952, IPR2017-01048, IPR2017-01049, IPR2017-01065, IPR2017-01066, and IPR2017-01143 was held on June 19, 2018, and a transcript of the hearing is included in the record. Paper 35 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This decision is a Final Written Decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–18 of the ’413 Patent. For the reasons discussed below, we hold that Comcast has demonstrated by a preponderance of the evidence that these claims are unpatentable under § 103(a).

#### A. *Related Matters*

The ’413 Patent is involved in the following district court cases: (1) *Rovi Guides, Inc. v. Comcast Corp.*, No. 2:16-cv-00322 (E.D. Tex.), which has been transferred to the U.S. District Court for the Southern District of New York and is pending as *Rovi Guides, Inc. v. Comcast Corp.*, No. 1:16-cv-09826 (S.D.N.Y); and (2) *Comcast Corp. v. Rovi Corp.*, No. 1:16-cv-03852

(S.D.N.Y.). Pet. 1–2; Paper 3, 2. The '413 Patent also has been asserted against Comcast in a proceeding before the U.S. International Trade Commission (“ITC”) styled *In re Certain Digital Video Receivers and Hardware and Software Components Thereof*, No. 337-TA-1001. Pet. 2; Paper 3, 2.

In addition to this Petition, Comcast filed two other petitions challenging the patentability of claims 1–18 of the '413 Patent (Cases IPR2017-01048 and IPR2017-01049). Pet. 3; Paper 3, 2. Comcast also filed other petitions challenging the patentability of certain subsets of claims in several patents owned by Rovi. Pet. 3.

#### *B. The '413 Patent*

The '413 Patent, titled “Interactive Television Program Guide with Remote Access,” issued November 5, 2013, from U.S. Patent Application No. 13/275,565, filed on October 18, 2011. Ex. 1201, [54], [45], [21], [22]. The '413 Patent is a continuation of U.S. Patent Application No. 10/927,814, filed on August 26, 2004, which, in turn, is a continuation of U.S. Patent Application No. 09/354,344, filed on July 16, 1999. *Id.* at [63]. The '413 patent also claims the benefit of U.S. Provisional Application No. 60/097,527, filed on August 21, 1998, and U.S. Provisional Application No. 60/093,292, filed on July 17, 1998. *Id.* at [60].

The '413 Patent generally relates to interactive television program guide video systems and, in particular, to such systems that provide remote access to program guide functionality. Ex. 1201, 1:16–19. The '413 Patent discloses that conventional interactive



television program guide systems typically are implemented on set-top boxes located in the home of a user and, as a result, do not permit the user to perform program guide functions without the user being physically located in the same room as these systems. *Id.* at 1:34–42. Stated differently, conventional interactive television program guide systems require the user to be present in the home to access important program guide features, such as program reminders, parental controls, and program recording. *Id.* at 2:16–19. The '413 Patent purportedly addresses this and other problems by providing an interactive television program guide system that allows a user to access certain features of the program guide remotely and establish settings for those features. *Id.* at 2:20–25.

Figure 1 of the '413 Patent, reproduced below, illustrates a schematic block diagram of the system in accordance with the present invention. Ex. 1201, 7:15–39.

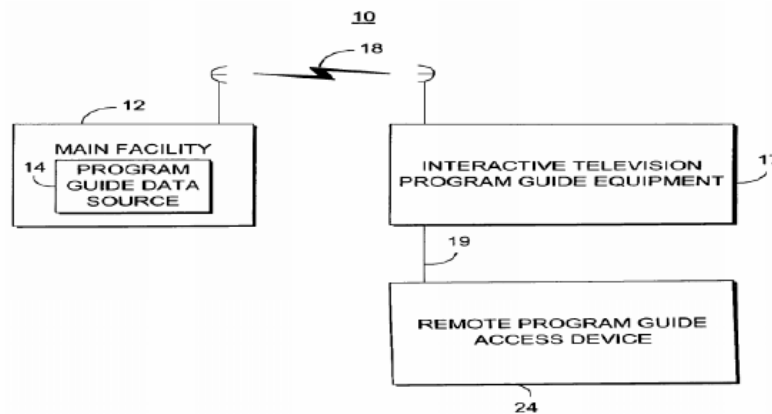


FIG. 1

As shown in Figure 1 reproduced above, system 10 includes main facility 12 that provides interactive television program guide data from program guide data source 14 to interactive television program guide equipment 17 via communication link 18. *Id.* at 7:15–22. Interactive television program guide equipment 17 is connected to at least one remote program guide access device 24 via remote access link 19. *Id.* at 7:33–35.

Figure 2a of the '413 Patent, reproduced below, illustrates one arrangement involving the interactive television program guide equipment 17 and remote program guide access device 24 in accordance with the principles of the present invention. Ex. 1201, 8:16–34.

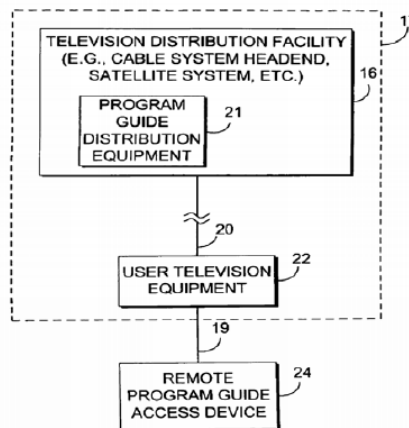


FIG. 2a

As shown in Figure 2a reproduced above, interactive television program guide equipment 17 includes program guide distribution equipment 21 located at television distribution facility 16, which distributes program guide data to user television equipment 22

via communications path 20. *Id.* at 4:57–67. Remote program guide access device 24 receives the program guide data, as well as any additional data necessary to access various functions of the interactive program guide, from user television equipment 22 via remote access link 19. *Id.* at 8:21–26.

In at least one embodiment, the '413 Patent discloses that a remote access interactive television program guide implemented on remote program guide access device 24 communicates with a local interactive television program guide implemented on interactive television program guide equipment 17. Ex. 1201, 15:9–18. In one example, the remote access and local interactive television program guides may be two different guides that communicate with each other. *Id.* at 15:20–23; *see also id.* at 25:35–59 (disclosing steps involved with using the remote access interactive television guide to provide program listing information to a user).

The '413 Patent discloses transferring program guide information and settings between remote program guide access device 24 and interactive television program guide equipment 17 using any suitable application layer protocol. Ex. 1201, 15:60–64. For example, if remote access link 19 is an Internet link, program guide functionality may be accessed using Hypertext Transfer Protocol. *Id.* at 15:64–66. Remote program guide access device 24 and interactive television program guide equipment 17 also may transfer program guide information as files using either File Transfer Protocol or Trivial File Transfer Protocol running over a Transmission Control Protocol/Internet Protocol stack. *Id.* at 15:66–

16:4. The '413 Patent makes clear that “[a]ny suitable file transfer protocol based on any suitable protocol stack may be used.” *Id.* at 16:4–5.

*C. Illustrative Claim*

Claims 1 and 10 are independent. Independent claim 1 is directed to a system for selecting television programs over a remote access link that includes an Internet communications path for recording, whereas independent claim 10 is directed to a method for performing the same. Claims 2–9 depend from independent claim 1, and claims 11–18 depend from independent claim 10. Independent claim 1 is illustrative of the challenged claims and is reproduced below:

1. A system for selecting a television program over a remote access link comprising an Internet communications path for recording, the system comprising:

- a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide generates a display of one or more television program listings for display on a display device at a user's home, wherein the local interactive television program guide equipment is located within the user's home and includes user television equipment, wherein a mobile device communicates with the local interactive television program guide equipment, wherein the mobile device, on which a remote access interactive television program

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guide is implemented, is located outside of the user's home, and wherein the mobile device:

generates a display of the remote access interactive television program guide, the remote access interactive television program guide comprising a plurality of television program listings for display on the mobile device, wherein the display of the remote access interactive television program guide is generated based on a user profile stored at a location remote from the mobile device;

receives a user selection of the television program for recording by the local interactive television program guide, wherein the user selects the television program by selecting a television program listing from the plurality of television program listings displayed, by the remote access interactive television program guide, on the mobile device; and

transmits, to the local interactive television program guide over the Internet communications path, a communication identifying the television program for recording corresponding to the television program listing selected by the user with the remote access interactive television program guide,

wherein the local interactive television program guide receives the communication and, responsive to the communication, records the television program corresponding to the selected television program listing using the

local interactive television program guide equipment.

Ex. 1201, 40:6–48.

*D. Instituted Grounds of Unpatentability*

We instituted a trial based on the asserted grounds of unpatentability (“grounds”) set forth in the table below. Dec. on Inst. 35.

References	Basis	Challenged Claims
Blake <sup>1</sup> , <sup>2</sup> and Killian <sup>3</sup>	§ 103(a)	1, 3–10, and 12–18
Blake, Killian, and Lawler <sup>4</sup>	§ 103(a)	2 and 11

## II. ANALYSIS

### A. Claim Construction

In an *inter partes* review, claim terms of an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). Under the broadest reasonable interpretation standard, and absent any special definitions, claim terms are

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<sup>1</sup> PCT Int’l Pub. No. WO 98/10589; filed Sept. 2, 1997, published Mar. 12, 1998 (Ex. 1222, “Blake”).

<sup>2</sup> Blake incorporates by reference U.S. Patent No. 4,706,121 (Ex. 1223, “Young”).

<sup>3</sup> U.S. Patent No. 6,163,316; issued Dec. 19, 2000 (Ex. 1208, “Killian”). U.S. Patent No. 6,163,316; issued Dec. 19, 2000 (Ex. 1208, “Killian”).

<sup>4</sup> U.S. Patent No. 5,805,763, issued Sept. 8, 1998 (Ex. 1209, “Lawler”).

generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art, in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In the Decision on Institution, we determined that the only claim terms requiring construction are “local/remote access interactive television program guides,” and only to the extent necessary to resolve whether the grounds asserted by Comcast properly accounted for both a “local interactive television program guide” and a “remote access interactive television program guide.” Dec. on Inst. 9 (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (explaining that only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy)). Upon reviewing the parties’ preliminary arguments and evidence, we adopted Comcast’s proposed construction that an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *Id.* at 13. We further clarified that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide. *Id.*

In its Patent Owner Response, Rovi generally agrees with our initial determination that the only claim terms requiring construction are “local/remote

access interactive television program guides.” PO Resp. 9. Rovi, however, proposes that the proper constructions for these claims terms are the following: (1) “local interactive television program guide” is a “guide that allows navigation through television program listings and causes display of program information on user television equipment”; and (2) “remote access interactive television program guide” is a “guide allowing navigation through television program listings using a remote access link.” *Id.* at 10. According to Rovi, its proposed constructions for the claim terms “local/remote access interactive television program guides” are consistent with the intrinsic evidence, our preliminary finding that these guides must be distinct guides, and the findings of the ITC in related proceedings. *Id.* at 10–11 (citing Ex. 2201, 193, 198, 409).

Rovi further contends that any difference between our constructions and the ITC’s constructions of the claim terms “local/remote access interactive television program guides” is not relevant to the grounds at issue in this proceeding because, according to Rovi, each of Comcast’s asserted grounds fails under Rovi’s broader constructions “that do[] not unnecessarily restrict the guides to ‘control software’ that ‘controls functions of the software.’” PO Resp. 11. Rovi asserts that, because each of Comcast’s asserted grounds fails under broader constructions for these claim terms, we need not determine whether the asserted prior art satisfies Comcast’s proposed constructions. *Id.* Rovi then proceeds to explain how our preliminary constructions and the ITC’s constructions are consistent in certain respects because (1) they both require the guides to be



interactive (i.e., navigable and selectable); and (2) they both agree that the claims require two separate guides, as properly construed. *Id.* at 11–14.<sup>5</sup>

In its Reply, Comcast counters with the following: (1) its arguments apply the broadest reasonable interpretation standard; (2) it relies on Rovi’s arguments from the related ITC proceeding regarding the proper scope and meaning of the claim terms “local/remote access interactive television program guides” as evidence of the broadest reasonable interpretation of these claims terms in this proceeding; and (3) it disagrees with Rovi’s proposed constructions both in this proceeding and in the ITC proceeding. Pet. Reply 1 n.1.

As an initial matter, it is not clear to us whether Rovi actually disputes our preliminary construction of the claim term “interactive television program guide.” On the one hand, Rovi asserts that the ITC’s constructions of local interactive television program guide (i.e., a “guide that allows navigation through television program listings and causes display of program information on user television equipment”) and remote access interactive television program guide (i.e., a “guide allowing navigation through

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<sup>5</sup> For the first time at the oral hearing, Rovi argued that “remote access interactive television program guide” requires “dedicated code at the remote device.” *See, e.g.*, Tr. 58:3–7, 60:19–61:14, 66:14–21. We agree with Comcast (*id.* at 96:3–10) that this is a new argument that was not presented and developed in Rovi’s briefs and, therefore, we do not consider it. *See* Paper 9, 3 (cautioning Rovi that “any arguments for patentability not raised in the response will be deemed waived”).

television program listings using a remote access link”) are the proper constructions. PO Resp. 10. On the other hand, Rovi argues that both our constructions and the ITC’s constructions “are consistent with respect to the relevant aspects (e.g., navigation and selection)” of a local/remote access interactive television program guide. *Id.* at 11. Rovi further contends that “[a]ny differences between the Board’s and the ITC’s constructions *are not relevant* to [Comcast’s] failures of proof regarding the asserted prior art and [g]rounds at issue in the proceeding.” *Id.* (emphasis added); *see also* Ex. 2211 ¶ 25 (Rovi’s declarant, Dr. Shamos, testifies that, “regardless of which constructions the Board applies, my opinions remain the same. The asserted prior art references here fail to disclose the claim limitations . . . under either construction.”). These arguments make it difficult to ascertain what Rovi actually views as the proper scope and meaning of the claim terms “local/remote access interactive television program guides.” Nevertheless, we are charged in this proceeding with determining the broadest reasonable interpretation of these claim terms.

Beginning with the intrinsic record, neither party argues, nor could we find, an explicit definition for the claim term “interactive television program guide” in the specification of the ’413 Patent. The specification, however, is replete with descriptions of conventional, local, or remote interactive television program guides. For instance, the specification discloses that conventional interactive television program guides display “various groups of television program [guide] listings . . . in predefined or user-defined categories,”

and “allow the user to navigate through [the] television program listings” and make a selection “using a remote control.” Ex. 1201, 1:28–33. For a conventional interactive television program guide, the user must physically be located in the same room as the set-top box on which the interactive television program guide is implemented to select programs for recording or to perform other guide functions. *Id.* at 1:34–42. In the context of discussing the implementation of a remote access interactive television program guide, the specification discloses that such a guide works in conjunction with a remote device to “provide users with the opportunity to remotely access features of the interactive television program guide on the interactive television program guide equipment and to remotely set program guide settings.” *Id.* at 2:64–3:4. The specification goes on to disclose that “[a]ny suitable interactive television program guide function or setting may be accessed,” including, but not limited to, “remotely select[ing] programming for recordings” and “remotely set[ting] and navigat[ing] through favorites (e.g., favorite channels, program categories, services, etc.).” *Id.* at 3:5–15.

Although the aforementioned disclosures provide guidance as to the functionality of an “interactive television program guide” (i.e., navigable, selectable, and capable of controlling certain functions or settings), neither party directs us to, nor can we find, a disclosure in the specification that specifically identifies what element or elements constitute a “guide.” Given the lack of disclosure in this regard, we decline to limit the “guide” to a single software

application. Rather, these disclosures support Comcast's proposed construction that an "interactive television program guide" is "control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software."

We further clarify that the plain language of independent claims 1 and 10 indicates that the claim terms "local interactive television program guide" and "remote access interactive television program guide" are separately identifiable elements. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) ("Where a claim lists elements separately, 'the clear implication of the claim language' is that those elements are 'distinct component[s]' of the patented invention." (alteration in original) (quoting *Gaus v. Conair Corp.*, 363 F.3d 1284, 1288 (Fed. Cir. 2004))). Our determination in this regard is supported by the specification, which includes various embodiments that treat these claim terms as separately identifiable elements capable of communicating with each other. *See, e.g.,* Ex. 1201, 12:20–23 ("In still another suitable approach, the [local interactive television program guide and remote access interactive television program guide] may be different guides that communicate in a manner or manners discussed . . . herein."), 23:4–7 ("The remote access [interactive television] program guide may . . . send audio, graphical, and text messages to the local interactive [television] program guide for playing or display by user television equipment 22."). The specification also explains that the "local interactive

television program guide” and “remote access interactive television program guide” may be the same guide, in which case they are separately identifiable elements in that each guide is compiled to run on a different platform. *See id.* at 15:15–18 (“The remote access and local guide may, for example, be the same guide but compiled to run on two different platforms and to communicate in a manner or manners discussed herein.”).

We decline to adopt Rovi’s proposed constructions of the claim terms “local/remote access interactive television program guides” for two reasons. First, we are unable to determine how Rovi’s proposed constructions add any clarity to the scope and meaning of an “interactive television program guide.” That is, we view each of Rovi’s proposed constructions as circular and unhelpful because they define each of the guides as a “*guide* [that allows/allowing] navigation through television program listings.” PO Resp. 9 (emphasis added). Rovi, however, does not actually identify what element or elements specifically constitute the “guide.”

Second, Rovi states that its proposed constructions indicate “where the specific guide resides (i.e., on ‘user television equipment’ or over ‘a remote access link’),” but readily admits that “these additions merely restate the language of the broader claim limitation[s].” PO Resp. 14 (citing Ex. 2201, 193, 198, 409). It is well settled that the U.S. Court of Appeals for the Federal Circuit disfavors any claim interpretation that renders a claim term or phrase superfluous. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“The Board was

correct to not include in its construction of ‘menu’ features of menus that are expressly recited in the claims. . . . Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.”). If we were to adopt the language in Rovi’s proposed constructions pertaining to where each guide resides, it would render superfluous the language that is already explicitly recited in independent claim 1, and similarly recited in independent claim 10—namely, “over a remote access link” and “a local interactive television program guide equipment on which a local interactive television program guide is implemented, wherein the local interactive television program guide equipment includes user television equipment.”<sup>6</sup>

Turning now to the extrinsic evidence, in Dr. Tjaden’s Declaration accompanying the Petition, he testifies that “the ‘local’ [interactive television program] guide may be implemented at least in part on a server or other device outside the user’s home.” Ex. 1202 ¶ 36. To support this testimony, he directs us to Rovi’s interpretation of the claim term “local interactive television program guide” in the related ITC proceeding. *Id.* (citing Ex. 1245, 56; Ex. 1246, 43). In Dr. Tjaden’s Declaration accompanying the Reply, he elaborates further on his initial position by

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<sup>6</sup> During oral argument, in response to a question regarding the ITC’s construction of the “local interactive television program guide” being on user television equipment and its construction that the “remote access television program guide” uses a remote access link, counsel for Rovi stated that “I don’t think where [the guides are] implemented is meaningful because that’s recited in the claim separately.” Tr. 66:22–67:24.

testifying that “a [person of ordinary skill in the art] looking at the ’413 Patent would have understood that many different arrangements of the software and hardware components comprising an interactive television program guide are possible and acceptable in [the] prior art used to show obviousness.” Ex. 1252 ¶ 15. To support this testimony, he directs us to the different arrangements of software and hardware in the ’413 Patent. *Id.* (citing Ex. 1201, 7:16–19, 33–35, 43–47, 9:36–38, 10:41–48, Figs. 1, 2a–2d).

Dr. Shamos’s Declaration in the ITC proceeding serves as further evidence as to what element or elements constitute a “guide.” Although we recognize that the broadest reasonable interpretation standard governs in this proceeding, whereas the district court claim construction standard governs in an ITC proceeding, Dr. Shamos’s testimony in the ITC proceeding is relevant here because it sheds some light on what element or elements he believes constitutes a “guide.” In the ITC proceeding, Dr. Shamos testifies that the claim term “local interactive television program guide” could be an “extensive collection of hardware and software.” Ex. 1254 ¶ 169. He also testifies “that the ‘local [interactive television program] guide’ [should not be construed as] a single software application that must reside on a device in the user’s home,” and “[n]othing in the claims exclude a ‘recording application’ from being part of the local [interactive television program] guide.” *Id.* ¶ 371. Dr. Shamos’s testimony in the ITC proceeding is consistent with Dr. Tjaden’s testimony in this proceeding because, like Dr. Tjaden, Dr. Shamos does not limit a “guide” to a single software application, but

rather contemplates that the “guide” may constitute different arrangements of software and hardware.

We note that the aforementioned testimony from Dr. Tjaden and Dr. Shamos suggests that the “guide” may include both software and hardware. Rovi likewise argues that its proposed construction is broader than Comcast’s because “[it] does not unnecessarily restrict the guides to ‘control software.’” PO Resp. 11. We do not find support in the intrinsic record that the “guide” may include hardware. Rather, the ’413 Patent separately refers to the interactive television program guide and the hardware on which it is implemented. *See, e.g.*, Ex. 1201, 1:34–35 (“Interactive television program guides are typically implemented on set-top boxes . . . .”). The aforementioned testimony, however, is consistent with our finding that the “guide” may constitute more than just a single software application.

In summary, upon weighing all the evidence bearing on the construction of the claim term “interactive television program guide,” we maintain that the broadest reasonable interpretation of this claim term is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” We also maintain that the claim terms “local interactive television program guide” and “remote access interactive television program guide” are separately identifiable elements, and are not construed properly as reading on the same interactive television program guide.



*B. Obviousness Over the Combined Teachings of  
Blake and Killian*

Comcast contends that claims 1, 3–10, and 12–18 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Blake and Killian. Pet. 21–59. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1202 ¶¶ 94–212. In its Patent Owner Response, Rovi presents a number of arguments as to why the combined teachings of Blake and Killian do not render the limitations of independent claims 1 and 10 obvious. PO Resp. 20–41. Rovi relies upon the Declaration of Dr. Shamos to support its positions. Ex. 2211 ¶¶ 97–99, 161–191.

We begin our analysis with the principles of law that generally apply to a ground based on obviousness, followed by an assessment of the level of skill in the art, followed by brief overviews of Blake and Killian, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

*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 non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). We analyze this asserted ground based on obviousness with the principles identified above in mind.

## 2. *Level of Skill in the Art*

There is evidence in the record before us that enables us to determine the knowledge level of a person of ordinary skill in the art. Relying on the testimony of its declarant, Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art as of July 17, 1998, which is the earliest priority date on the face of the '413 Patent, would be an individual who possesses the following:

a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and two years of experience with interactive program guides, set-top boxes, mobile computer devices, and techniques for delivering content or program guides over communication networks, such as a cable system, a local-area network, and the Internet.

Pet. 14–15 (quoting Ex. 1202 ¶ 28). Alternatively, once again relying on the testimony of Dr. Tjaden, Comcast asserts that a person of ordinary skill in the art “could have had equivalent experience in industry or

research, such as designing, developing, evaluating, testing, or implementing [these] technologies.” *Id.* at 15 (quoting Ex. 1202 ¶ 28). Conversely, Rovi’s declarant, Dr. Shamos, does not offer an assessment of the level of skill in the art as of July 1998, nor does he explicitly state his intent to adopt Dr. Tjaden’s assessment. *See generally* Ex. 2211. Given Dr. Shamos’s silence on this matter, we adopt Dr. Tjaden’s assessment because it is consistent with the ’413 Patent and the asserted prior art, and apply it to our obviousness evaluation below.

### 3. Blake Overview

Blake generally relates to a television schedule system with enhanced recording capability. Ex. 1222, 1:17–19. Blake specifically describes the enhanced recording capability with reference to Figures 12 and 13. *Id.* at 16:11–18:29.

Figure 12 of Blake is reproduced below:

	11:00 AM	11:30 AM	12:00 PM
2	JUDGE (PART 1)	JUDGE (PART 2)	AT NOON
4	GOLDEN GIRLS	NEWS	INSIDE EDITION
5	YOUNG & RESTLESS		NEWS
7	PERFECT STRA	LOVING	ALL MY CHILD
9	SESAME STREET		
13	ALL MY CHILDREN		NEWS
44	EVERYDAY		MOVIE
A&E	LORNE GREEN'S WORLD OF S		FUGITIVE
CNN	NEWS		NEWS →
DIS	WALT DISNEY PRESENTS		LUNCH BOX
LIF	JANE WALLACE		FRUGAL GOURM
TNT →	MOVIE		
CH 2	KNTV-FOX	CBL 2	11:25A TUE APR 3

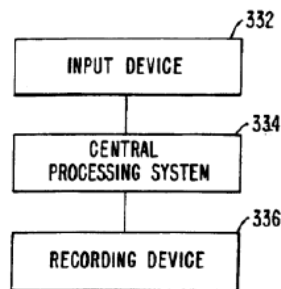
FIG. 12.

Figure 12 of Blake illustrates an example of a television schedule guide that provides television schedule information in a grid-like display on a

television screen. Ex. 1222, 16:12–14. Through a user interface, a user may scroll through the television schedule information and may tune to a program by highlighting and selecting a program displayed in the guide. *Id.* at 16:17–19. Also, the user may select one or more programs for automatic, unattended recording. *Id.* at 16:17–19, 16:22–25. Peripheral devices—which may be televisions, video cassette recorders (“VCRs”), or set-top boxes—store time and channel information entries for programs to be recorded. *Id.* at 4:28–30, 16:26–28.

Blake incorporates by reference the entirety of Young. Ex. 1222, 2:3–5. Blake presents Young as background information and describes it in similar terms to that of Figure 12—namely, Blake explains that Young discloses a system that provides television schedule information on a user’s television screen, and allows for user selection of programs and the automatic, unattended recording of programs that are listed in the television schedule information. *Id.* at 1:23–24, 1:27–30.

Figure 13 of Blake is reproduced below:



**FIG. 13.**

Figure 13 of Blake illustrates an arrangement for scheduling recordings from a remote location. Ex. 1222, 4:5–6. According to Blake, the user’s ability to schedule recordings from a remote location enhances the recording capability of the schedule guide. *Id.* at 17:1–2. In Figure 13, a user who is away from home employs input device 332 to access and communicably connect to central processing system 334. *Id.* at 17:3–5. Input device 332 may be any device capable of transmitting data from a remote location, including a personal or laptop computer or cellular telephone. *Id.* at 17:5–8. Recording device 336 may be a VCR or any device with video and/or audio recording capabilities. *Id.* at 17:19–21.

Input device 332 transmits user input in one of several forms, including: a code; channel, date, time, and length information; the title; or theme data. Ex. 1222, Claims 4–7, 17:8–10, 17:15–16, 17:25–26, 18:1–2. Where the input information is theme data, the user first chooses to select a program to record by themes. *Id.* at 18:5–7. For example, if the user wishes to record the Chicago Bulls v. Los Angeles Lakers game, the user selects sports when presented with a list of theme selections, and further selects basketball. *Id.* at 18:5–8. The user is presented with a list of basketball games that are either being played or are scheduled to be played, and then selects the Bulls v. Lakers game. *Id.* at 18:8–10. Alternatively, the user may enter “Bulls,” and processing system 334 will present a list of Bulls games, and the user may select one or more of the games to record. *Id.* at 18:10–12. The input data are received by processing system 334, which stores the

information and activates recording device 336 to record the program at the appropriate time. *Id.* at Claim 1, 17:10–19, 17:29–30, 18:12–16.

#### 4. *Killian Overview*

Killian generally relates to an electronic programming guide that operates on a computing platform using information from the Internet for display on a television. Ex. 1208, 2:1–3, 3:18–23. Killian uses viewer profiles to generate a preferred programming schedule that allows viewers to more intelligently select programs that may be desirable for viewing or recording. *Id.* at 10:61–66. Each viewer associated with a television receiver may generate a viewer profile for storage in a database, and the database may include an arrangement of information at one or more locations that are integral to or separate from the television receiver. *Id.* at 9:10–25. The preferred schedule that is generated according to the user profile indicates the desirability of a particular program relative to other programs. *Id.* at 2:11–12.

#### 5. *Claims 1 and 10*<sup>7</sup>

In its Petition, Comcast contends that Blake’s television schedule system accounts for each of the limitations recited in independent claims 1 and 10. Pet. 21–50 (citing Ex. 1222, 4:24–30, 17:1–21, 18:1–16, Figs. 12–13; Ex. 1202 ¶¶ 71–78, 86–88, 94–109, 114–117, 120–180); *id.* at 30–31 (showing correspondence

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<sup>7</sup> Comcast contends that independent claims 1 and 10 stand or fall together. Pet. 11–12. Rovi does not dispute Comcast’s assertion in this regard. *Accord* PO Resp. 20–41 (treating independent claims 1 and 10 as standing or falling together).

among the limitations in the independent claims). For instance, Comcast relies on Blake's illustration of a television schedule guide in Figure 12 as an example of a display generated by a "local interactive television program guide." *Id.* at 23–24. Comcast also relies on Blake's input device 332 as a "mobile device" (*id.* at 27, 39), and the ability of the user in Blake to select a program to record according to themes, which allows for navigating program listings and making program selections, as establishing a "remote access interactive television program guide" (*id.* at 25–26).

To the extent Blake does not disclose certain limitations, Comcast presents alternative arguments. Pet. 36–38 ("remote access interactive television program guide"); *id.* at 28–30 ("user profile"); *id.* at 32 ("Internet communications path"); *id.* at 47–49 ("local interactive television program guide"). Of particular importance to this case, Comcast relies on Killian's viewer profiles (i.e., user profile data) to teach the claimed "user profile." *Id.* at 28–30. Here, Comcast argues that it would have been obvious to one of ordinary skill in the art to implement Killian's viewer profiles in the remote user interface on Blake's input device 332 to better track a user's preferences and generate more effective user interfaces that better identify desired/undesired content. *Id.*

For added clarity, we highlight certain arguments presented by Comcast for each limitation recited in independent claim 1. We note that there is no dispute between the parties as to whether the limitations of independent claim 10 are essentially the same as the limitations of independent claim 1. *Compare* Pet. 11–12, *with* PO Resp. 20–41. Beginning with the preamble

of independent claim 1, Comcast contends that Blake teaches “[a] system for selecting television programs over a remote access link comprising an Internet communications path for recording” because Blake discloses selecting programs for recording using a remote user interface on input device 332. Pet. 31 (citing Ex. 1222, 18:1–10; Ex. 1202 ¶¶ 114, 115). According to Comcast, these selections are sent to central processing system 334, which, in turn, stores program selections made remotely and activates recording device 336 to record the selected program. *Id.* (citing Ex. 1222, 17:13–15, 18:12–16; Ex. 1202 ¶ 114).

Comcast further argues that, to the extent Blake does not disclose “a remote access link comprising an Internet communications pathway,” this limitation would have been obvious in light of Blake’s system. Pet. 31–32 (citing Ex. 1202 ¶ 115). Comcast argues that Blake discloses that input device 332 “transmit[s] data from a remote location,” and the Internet was a common way of transmitting data from a remote location, as evidenced by Killian. *Id.* at 32 (quoting Ex. 1222, 17:5–8) (citing Ex. 1208, 3:18–20, 3:38–43; Ex. 1202 ¶¶ 116, 117). Comcast asserts that a person of ordinary skill in the art would have found it obvious to try using the Internet to transmit Blake’s program guide information because Internet transmission was well-known as an identified, predictable solution to data transmission that provides predictable benefits. *Id.* (citing Ex. 1202 ¶¶ 116, 117).

Comcast contends that Blake teaches “local interactive television program guide equipment on which a local interactive television program is



implemented,” as recited in independent claim 1, because Blake discloses television equipment within a user’s home that includes software that uses television schedule information to generate a local guide. Pet. 32–33 (citing Ex. 1222, 4:10–16, 4:26–30, 5:1–3, Fig. 12; Ex. 1202 ¶ 120). Comcast argues that Blake discloses a local guide that displays television program listing information to a user on a television or monitor, and allows the user to interact with the local guide via a remote control or other interface to schedule program recordings. *Id.* at 33 (citing Ex. 1222, 6:18–20, 15:3–5, 16:12–16, 16:26–33, Fig. 12; Ex. 1202 ¶¶ 121–122). Comcast argues that Young, which Blake incorporates by reference in its entirety, further discloses a local guide with interactive features that users may personalize based on user preferences, such as themes. *Id.* (citing Ex. 1222, 2:8–9; Ex. 1223, 10:13–18, 10:45–47, 11:26–28, 12:46–54, 13:1–5, 13:61–63; Ex. 1202 ¶ 124).

Comcast argues that Blake teaches “wherein the local interactive television program guide generates a display of one or more programs listings for display on a display device at the user’s home,” as recited in independent claim 1, because Blake’s local guide generates and displays television schedule information in a grid-like display on the television screen. Pet. 33–34 (citing Ex. 1222, 1:20–31, 6:5–13, 6:18–19, 15:29–30, 16:12–16, Fig. 12). Comcast further contends that Blake teaches “wherein the local interactive television program guide equipment includes user television equipment located within a user’s home and includes user television equipment,” as recited in independent claim 1, because Blake

implements a portion of the local guide on television equipment in a user's home, which may include devices such as set-top boxes, personal computers, personal computer televisions, and VCRs. *Id.* at 35 (citing Ex. 1222, 4:24–26, 4:28–32, 5:2–6, Fig. 1). Comcast argues that Blake's central processing system 334 also constitutes part of the claimed "local interactive television program guide equipment" because it provides program guide functionality on equipment in the user's home, such as the scheduling of recordings. *Id.* (citing Ex. 1222, 17:1–5, 18:5–16; Ex. 1202 ¶ 130). Notably, Comcast argues that, when applying the broadest reasonable interpretation standard, the claimed "local interactive television program guide" is not limited to an implementation solely on equipment within the user's home and, therefore, Comcast asserts that Blake's central processing system 334 properly constitutes part of the claimed "local interactive television program guide equipment." *Id.* (citing Ex. 1202 ¶¶ 36, 130).

Comcast argues that Blake teaches "wherein a mobile device communicates with the local interactive television program guide equipment," as recited in independent claim 1, because Blake's input device 332 may be a "laptop computer" or "cellular telephone," both of which are mobile devices. Pet. 36 (quoting Ex. 1222, 17:5–8) (citing Ex. 1202 ¶ 131). Comcast further contends that Blake teaches "wherein the mobile device, on which a remote access interactive television program guide is implemented, is located outside of the user's home," as recited in independent claim 1, because Blake's input device 332 allows "a user who is away from home to record a program remotely by . . .

access[ing] and communicably connect[ing] to central processing system 334.” *Id.* at 38 (quoting Ex. 1222, 17:3–5) (citing Ex. 1202 ¶¶ 131–136). Comcast further argues that the remote user interface on Blake’s input device 332 constitutes software that allows the user to view and navigate television program listings, make program selections, and control recording device 336 to record a selected program. *Id.* at 36 (citing Ex. 1222, 17:1–15, 18:1–16, 18:18–27; Ex. 1202 ¶¶ 132). Comcast asserts that, because the remote user interface on Blake’s input device 332 presents television program listings and receives selections of programs for recording, a person of ordinary skill in the art would have understood that it constitutes the claimed “remote access interactive television program guide.” *Id.* at 38 (citing Ex. 1202 ¶¶ 135, 136).

Comcast contends that Blake teaches “generat[ing] a display of the remote access interactive television program guide, the remote access interactive television program guide comprising a plurality of television program listings for display on the mobile device,” as recited in independent claim 1, because, when applying the broadest reasonable interpretation standard, a person of ordinary skill in the art would have understood that the remote user interface on Blake’s input device 332 constitutes the claimed “remote access interactive television program guide.” Pet. 39 (citing Ex. 1222, 18:8–10, 17:22–24; Ex. 1202 ¶¶ 140, 141). Comcast also argues that, to the extent Blake does not disclose explicitly that the remote user interface on input device 332 displays a “remote access interactive television program guide,” a person of ordinary skill in the art would have found it obvious to

display an interactive guide that includes television program listings on Blake's input device 332 using conventional television interactive program guide features, such as those taught by Blake, Young, or Killian. *Id.* at 40–41 (citing Ex. 1202 ¶¶ 86–89, 146–148).

Comcast also contends that Blake teaches “wherein the display of the remote access interactive television program guide is generated based on a user profile stored at a location remote from the mobile device,” as recited in independent claim 1, because Blake discloses that a user may customize television program information “[b]y utilizing the user interface . . . [to] sort, mix, and create a special customized lineup of channels within the television schedule guide.” Pet. 41–42 (quoting Ex. 1222, 16:20–22) (citing Ex. 1202 ¶¶ 153, 154). According to Comcast, Blake discloses that a user may filter television program listings by themes, which entails the remote guide generating a list of television programs matching a selected theme by taking into account the user's individual preferences/selections. *Id.* at 42 (citing Ex. 1222, 18:5–10; Ex. 1202 ¶¶ 153–157). Comcast further argues that Blake discloses that the user's preferences/selections are stored at central processing system 334, which is located remotely from input device 332. *Id.* (citing Ex. 1222, 18:12–14; Ex. 1202 ¶¶ 156, 157).

Alternatively, Comcast contends that, to the extent Blake does not teach the claimed “user profile,” Killian teaches this limitation because it discloses software that generates guide displays based on viewer profiles 84 stored on profile database 80 located either locally

or remotely. Pet. 43 (citing Ex. 1208, 1:20–41, 7:49–61, 9:10–25, 10:61–66, 11:20–21; Ex. 1202 ¶¶ 158–161). Comcast asserts that it would have been obvious to one of ordinary skill in the art to implement Killian’s viewer profiles in Blake’s remote user interface on input device 332 to better track a user’s preferences and generate more effective user interfaces that better identify desired/undesired content. *Id.* at 44 (citing Ex. 1202 ¶ 161).

Comcast contends that Blake teaches “receiv[ing] a user selection of the television program for recording by the local interactive television program guide, wherein the user selects the television program by selecting a television program listing from the plurality of television program listings displayed, by the remote access interactive television program guide, on the mobile device,” as recited in independent claim 1, because Blake discloses that the remote user interface on input device 332 displays a remote guide that allows a user to view and navigate television program listings according to themes, make program selections, and control recording device 336 to record a selected program. Pet. 45 (citing Ex. 1222, 14:26–32, 16:12–25, 17:8–18, 18:1–23, Fig. 12; Ex. 1202 ¶¶ 163–165). Comcast further argues that, once the user makes a selection (e.g., by selecting a basketball game) via the remote user interface on Blake’s input device 332, processing system 334 will activate recording device 336 at the user’s home to record the games. *Id.* (citing Ex. 1222, 18:1–10).

Comcast contends that Blake teaches “transmit[ting], to the local interactive television program guide over the Internet communications

path, a communication identifying the television program for recording corresponding to the television program listing selected by the user with the remote access interactive television program guide,” as recited in independent claim 1, because Blake discloses that, after central processing system 334 receives a program recording request from input device 332 over a network, central processing system 334 activates recording device 336 (e.g., VCR 32 illustrated in Figure 1) to record the selected program. Pet. 46–47 (citing Ex. 1222, 17:13–15, 18:12–16; Ex. 1202 ¶¶ 168–171). Comcast further argues that, consistent with its proposed construction of the claim term “local interactive television program guide,” Blake’s central processing system 334 is part of the local guide because it implements guide functionality, including recording commands, in support of the local guide. *Id.* at 47 (citing Ex. 1202 ¶¶ 175, 176). Consequently, Comcast asserts that Blake’s remote guide sending a recording request to central processing system 334 discloses this “transmitting” limitation because Blake’s central processing system 334 constitutes part of the claimed “local interactive television program guide.” *Id.* (citing Ex. 1202 ¶¶ 171–174).

Lastly, Comcast contends that Blake teaches “wherein the local interactive television program guide receives the communication,” as recited in independent claim 1, because Blake discloses that the recording request sent from the remote guide is received at the home television/guide equipment for recording on recording device 336. Pet. 49 (citing Ex. 1222, 16:29–33, 17:1–5, 18:12–16). Comcast also contends that Blake teaches, “responsive to the

communication, record[ing] the television program corresponding to the selected television program listing using the local interactive television program guide equipment,” as recited in independent claim 1, because Blake discloses that, “[i]f a time slot for the time currently indicated by the clock indicates that a program is to be recorded then the channel broadcasting the program is selected and the VCR is controlled to record to the program.” *Id.* at 49–50 (quoting Ex. 1222, 16:31–33) (citing Ex. 1222, 17:18–19, 18:10–16, 18:23–26; Ex. 1202 ¶ 178).

Turning to the rationale to combine, Comcast contends that it would have been obvious to one of ordinary skill in the art to implement Killian’s viewer profiles in the remote user interface on Blake’s input device 332 to better track a user’s preferences and generate more effective user interfaces that better identify desired/undesired content. Pet. 29 (citing Ex. 1202 ¶ 109), 42 (citing Ex. 1202 ¶ 155). Comcast argues that combining the teachings of Blake and Killian in this manner would have been nothing more than using known techniques (i.e., Killian’s technique of storing user profile data) to improve a similar device (i.e., Blake’s theme-filtered program interface display) in the same way to produce the predictable result of providing users with better access to desired program listings. *Id.* at 29, 42.

In its Patent Owner Response, Rovi presents a number of arguments that can be grouped as follows: (1) whether Comcast has demonstrated that Blake and Killian, either alone or in combination, account for all the limitations of independent claims 1 and 10; and (2) whether Comcast has demonstrated that a person of

ordinary skill in the art would have had a sufficient reason to combine the teachings of Blake and Killian. *See* PO Resp. 20–41. We address these groupings of arguments in turn.

*a. Limitations*

*i. Blake Teaches Two Interactive Television Program Guides in Communication with Each Other*

Rovi contends that each independent claim requires two interactive television program guides—namely, “a local interactive television program guide” and “a remote access interactive television program guide”—in communication with each other. *See* PO Resp. 20–22. Rovi argues that, although Blake’s television schedule system allows a user to schedule programs for recording remotely, Blake does not use a separate “remote access interactive television program guide” in communication with a “local interactive television program guide” to schedule these remote recordings, as required by the claims. *Id.* at 24 (citing Ex. 2211 ¶¶ 97–99, 161–164). Instead, Rovi argues that Blake’s central processing system 334 is responsible for implementing the transmitting and receiving functionalities of both (1) the remote user interface on Blake’s input device 332; and (2) the local guide on central processing system 334. *Id.*

Rovi contends that Comcast’s position that Blake’s central processing system 334 is part of the claimed “local interactive television program guide” does not render the claim obvious because central processing system 334 uses a single guide to present content and functionality to input device 332 so that the user can select television recordings remotely. PO Resp. 25



(citing Ex. 1222, 17:10–18, 17:25–30, 18:10–16, 18:18–29; Ex. 2211 ¶¶ 166–168; Ex. 2204, 8–9; Ex. 2205, 18–19). That is, Rovi argues that Blake’s central processing system 334 is the source of the information and functionality presented to the user on Blake’s input device 332. *Id.* at 25–26 (citing Ex. 1222, 17:10–18, 17:25–30, 18:10–16, 18:18–29; Ex. 2204, 8, 9; Ex. 2211 ¶¶ 169–170). According to Rovi, Comcast’s declarant, Dr. Tjaden, supports this line of reasoning because, during his deposition, he stated that Blake’s input device 332 gets “its program guide functionality from” central processing system 334. *Id.* at 26 (quoting Ex. 2210, 139:15–17) (emphasis omitted) (citing *id.* at 139:2–140:8). Consequently, Rovi argues that Blake does not teach two separately identifiable guides because it is central processing system 334—and not input device 332 or a separate remote interactive television program guide—that provides any purported remote guide functionality. *Id.* at 26–27 (citing Ex. 2211 ¶¶ 169, 170). Notably, Rovi asserts that Blake’s central processing system 334 is used the same way in Blake’s “theme” embodiment. *Id.* at 27.

Rovi contends that the prosecution history of the ’413 Patent supports its argument that Blake only teaches a single guide. PO Resp. 28. Rovi argues that, not only did the applicants explain that Blake does not teach a remote guide, but they also submitted the Declaration of Dr. George T. Ligler during prosecution of a related application that further explains why Blake only teaches a single guide. *Id.* (citing Ex. 2204, 8–9; Ex. 2205, 18–19; Ex. 1234 ¶ 40). Rovi argues that the Examiner subsequently allowed the claims. *Id.* (citing Ex. 2206).

Next, Rovi takes issue with the cross-examination testimony of Dr. Tjaden, particularly his testimony that Blake's central processing system 334 is somehow not part of the claimed "remote access interactive television program guide." PO Resp. 29–30 (citing Ex. 2210, 140:2–8). Rovi argues that Dr. Tjaden did not provide any support for this testimony and, according to Rovi, it is contrary to his other cross-examination testimony, arguments presented and developed in the Petition, and his Declaration accompanying the Petition. *Id.* at 30 (citing Ex. 2210, 139:15–17; Pet. 35; Ex. 1202 ¶¶ 109, 157, 172). For example, Rovi argues that Dr. Tjaden testifies that Blake's central processing system 334 implements guide functionality for the local guide and, therefore, is part of the local guide, but when confronted as to whether central processing system 334 implements guide functionality for the remote guide, he testifies that it is somehow not part of the remote guide. *Id.* (citing Ex. 1202 ¶¶ 157; Ex. 2210, 139:15–17). Rovi argues that it is illogical and internally inconsistent for Comcast and Dr. Tjaden to argue that, when Blake's central processing system 334 implements functionality for the local guide, it is part of the local guide, but when central processing system 334 implements functionality for the remote guide, it is somehow not part of the remote guide. *Id.* at 31. Rovi then asserts that, because Blake's central processing system 334 implements both the local and remote guide, and because any testimony from Dr. Tjaden suggesting the contrary is internally inconsistent, Blake does not render obvious the requirement that the claimed "remote access interactive television program guide" be implemented

on “a remote program guide access device.” *Id.* (citing Ex. 2211 ¶¶ 174–177).

In its Reply, Comcast contends that Rovi’s declarant, Dr. Shamos, readily admits that Blake teaches a separate remote guide that communicates with the local guide. Pet. Reply 3–4. Comcast argues that Dr. Shamos testified at the ITC that a selection made using the remote user interface on Blake’s input device 332 is communicated to Blake’s local guide. *Id.* (citing Pet. 48; Ex. 1246, 1138:5–15). Comcast argues that, even though Dr. Shamos admits this testimony is correct in his Declaration accompanying the Patent Owner Response, he argues that the Board mischaracterized his testimony in the Decision on Institution and clarifies that he never testified that Blake’s input device implements a remote guide. *Id.* at 4 (citing Ex. 2211 ¶¶ 80–82). Comcast, however, asserts that the logical conclusion of Dr. Shamos’s testimony is that, if it were obvious to one of ordinary skill in the art for the remote user interface on Blake’s input device 332 to include a separate guide, then it also would have been obvious to have guide-to-guide communication. *Id.*

Notwithstanding Dr. Shamos’s admission at the ITC, Comcast presents three reasons as to why it disagrees with Rovi’s argument that the remote user interface on Blake’s input device 332 is not a separate guide. Pet. Reply 5. First, Comcast contends that the remote user interface on Blake’s input device 332 performs all the functions of the claimed “remote access interactive television program guide” and, therefore, satisfies the broadest reasonable interpretation of an “interactive television program

guide.” *Id.* at 5–9. Second, Comcast contends that Rovi ignores certain aspects of the claimed “local/remote access television program guides” that undermine its arguments. *Id.* at 5, 9–13. In particular, Comcast argues that Blake teaches two guides that interact in the same way as the claimed “local/remote access television program guides.” *Id.* at 5, 12–13 (citing Ex. 1201, 16:20–26; Ex. 1252 ¶ 36). Third, Comcast contends that, in arguing that Blake teaches a single guide, Rovi mischaracterizes the supporting testimony of Comcast’s declarant, Dr. Tjaden, and misunderstands the relevant technology. *Id.* at 5–6, 14–15.

Based on the record developed during trial, we agree with Comcast that Blake teaches two separately identifiable guides in communication with each other. *See* Pet. 32–50. Beginning with the claimed “local interactive television program guide,” Comcast argues—and we agree—that Blake’s central processing system 334, together with recording device 336, teach the claimed “local interactive television program guide equipment on which a local interactive television program is implemented.” *See id.* at 23–24, 32–38. Figure 12 of Blake illustrates an example of a television schedule guide that provides television schedule information in a grid-like display on a television screen. Ex. 1222, 16:12–14. Blake describes the remote recording capabilities of this television schedule guide with reference to Figure 13. *Id.* at 17:1–2. Figure 13 of Blake illustrates that a user who is away from home employs input device 332 to access and communicably connect to central processing system 334. *Id.* at 17:3–5.

With respect to Blake's "theme" embodiment, Blake states that processing system 334 "present[s] a list of [basketball] games to the user, and the user may select one or more games to record." Ex. 1222, 18:10–12. After the user has made his/her selection, processing system 334 confirms the user's selection, stores that information upon receiving confirmation from the user, and, at the appropriate time, activates recording device 336 located at the user's home to record the selected game. *Id.* at 18:12–16. Based on these disclosures in Blake, we find that Blake's central processing system 334, together with recording device 336, implements the claimed "local interactive television program guide."

Our finding in this regard is consistent with the plain language of the independent claims of the '413 Patent. These claims delineate the functions of the "local interactive television program guide," "remote access interactive television program guide," and "local interactive television program guide equipment." In particular, it is the responsibility of the "local interactive television program guide" to "receive[ ] the communication and responsive to the communication record[ ] the television program . . . using the local interactive television program guide equipment." Ex. 1201, 40:43–47; *see also id.* at 42:6–11 (reciting similar limitations). Similar to the claimed "local interactive television program guide," Blake's central processing system 334 also receives a communication identifying a television program to be recorded and then uses recording device 336 to record the program. Ex. 1222, 18:12–16.

Our finding that Blake's central processing system 334 implements, in part, the claimed "local interactive television program guide" also is consistent with our construction of "interactive television program guide." In our claim construction section above, we determine that the broadest reasonable interpretation of an "interactive television program guide" is "control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software." *See supra* Section II.A. We clarify that neither the intrinsic or extrinsic record limits the "guide" to a single software application. *See supra* Section II.A. Consequently, when the software on Blake's central processing system 334 works in conjunction with input device 332 to render a television schedule guide that allows a user to select desired programs for recording according to themes, we find that it effectively operates as part of an "interactive television program guide" because it displays program listings and allows the user to navigate through the listings, make selections, and control recording functions.

Comcast's declarant, Dr. Tjaden, provides testimony supporting our finding that Blake's central processing system 334 implements, in part, the claimed "local interactive television program guide." In his Declaration accompanying the Petition, Dr. Tjaden testifies that "the local guide may also be implemented at least in part on a server or other device outside the user's home." Ex. 1202 ¶¶ 36, 130. Dr. Tjaden further testifies that the "local guide equipment and local guide could include hardware and

software of a central data server, such as software that is implemented on central processing system 334 to activate recording a program on . . . recording device [336].” *Id.* ¶ 130. We credit the aforementioned testimony of Dr. Tjaden because it takes into account the reasonable inferences one of ordinary skill in the art would draw to explain how Blake’s central processing system 334 works in conjunction with input device 332 to render a television schedule guide that allows a user to select desired programs for recording according to themes at recording device 336. *See KSR*, 550 U.S. at 418 (explaining that an obviousness evaluation “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ”).

Turning to the claimed “remote access interactive television program guide,” Comcast argues—and we agree—that the remote user interface on Blake’s input device 332 teaches the claimed “remote access interactive television program guide.” *See* Pet. 25–26, 38–40. With respect to Blake’s “theme” embodiment, the user enters input in the form of theme data into input device 332, which may be, among other things, a personal or laptop computer. Ex. 1222, 17:5–8, 18:1–12, Claims 1, 7. In this embodiment, the user first selects to record a program by themes, then selects sports, then basketball, at which time the user is presented with a list of basketball games, and the user selects the game to be recorded. *Id.* at 18:5–10. Based on these disclosures in Blake, we conclude that the remote user interface on Blake’s input device 32

implements the claimed “remote access interactive television program guide.”

Our finding in this regard is consistent with the plain language of the independent claims of the ’413 Patent. As we explain previously, these claims delineate the functions of the “local interactive television program guide,” “remote access interactive television program guide,” and “local interactive television program guide equipment.” In particular, it is the responsibility of the “remote access interactive television program guide” to “generate[] a display . . . comprising a plurality of program listings for display on the mobile device”; “receive[] a user selection of the television program for recording”; and “transmit[] . . . a communication identifying the television program for recording” to the local interactive television program guide. Ex. 1201, 40:22–42; *see also id.* at 41:21–42:11 (reciting similar limitations). Similar to the claimed “remote access interactive television program guide,” the remote user interface on Blake’s input device 332 also generates a display by rendering a television schedule guide that permits selections according to themes, receives selections within the display, and then transmits those selections to central processing system 334, which, as we explain previously, partially implements the claimed “local interactive television program guide.” Ex. 1222, 18:1–12.

Our finding that the remote user interface on Blake’s input device 332 implements the claimed “remote access interactive television program guide” also is consistent with our construction of “interactive television program guide.” In our claim construction



section above, we determine that the broadest reasonable interpretation of an “interactive television program guide” is “control software operative at least in part to generate a display of television program listings and allow a user to navigate through the listings, make selections, and control functions of the software.” *See supra* Section II.A. When the remote user interface on Blake’s input device 332 generates a display by rendering a television schedule guide that allows a user to select desired programs for recording according to themes, we find that it effectively operates as an “interactive television program guide” because it displays program listings and allows the user to navigate through the listings, make selections, and control recording functions.

Comcast’s declarant, Dr. Tjaden, provides testimony supporting our finding that the remote user interface of Blake’s input device 332 implements the claimed “remote access interactive television program guide.” Dr. Tjaden testifies that “[a person of ordinary skill in the art] . . . would have concluded that Blake’s input device 332 implements control software for interactively selecting programs for recording by themes and transmitting program selections.” Ex. 1252 ¶ 32 (citing Ex. 1222, 17:1–8, 18:1–23). Dr. Tjaden further testifies that “[t]his control software, which is implemented on Blake’s remote personal computer (*i.e.*, [Blake’s] input device 332), is separate from the local program guide software on Blake’s central processing system 334 and [recording equipment 336].” *Id.* ¶ 33 (citing Ex. 1222, Fig. 13). We credit the aforementioned testimony of Dr. Tjaden because it takes into account the reasonable inferences

one of ordinary skill in the art would draw to explain how the remote user interface of Blake's input device 332 generates a display by rendering a television schedule guide that permits selections according to themes, receives selections within the display, and then transmits those selections to central processing system 334. *See KSR*, 550 U.S. at 418.

Rovi's declarant from the ITC proceeding, Dr. Shamos, who is also Rovi's declarant in this proceeding, admitted that the user's selection made at Blake's input device 332 is communicated to the local guide. This testimony provides:

Q Doctor - - okay. My question is when a program is chosen for recording at input device 332, that's going to be communicated to central processing system 334; right?

A That's correct.

Q And then that selection at - -that would be at central processing system 334 is going to be communicated to the VCR 32; right?

A Yes.

Q So that selection is going to be communicated to the local interactive program guide in figure 1; right?

A Yes, it is.

Ex. 1246, 1138:5-15.

In his Declaration accompanying the Patent Owner Response, Dr. Shamos acknowledges this testimony at the ITC and admits "[t]hat testimony was correct, and I stand by it." Ex. 2211 ¶ 80. Nevertheless, Dr. Shamos

avers that he did not testify that Blake's "input device 332 implemented a remote [guide]." *Id.* ¶ 82.

Although Dr. Shamos asserts that this testimony is mischaracterized because it does not indicate that input device 332 implements a remote guide, Dr. Shamos still stands by his testimony, which acknowledges that a recording selection made at input device 332 is communicated to the local guide. Ex. 2211 ¶ 80. Dr. Shamos's testimony may not expressly identify that the remote user interface of Blake's input device 332 makes and communicates the recording selection by way of a remote guide, but at the same time Dr. Shamos does not dispute Dr. Tjaden's point that Blake's input device 332, as a remote personal or laptop computer, implements control software for interactively selecting programs for recording by themes. *See* Ex. 1202 ¶¶ 101, 144; Ex. 1252 ¶¶ 32, 33. This control software that is implemented on the remote personal or laptop computer (i.e., the remote user interface of Blake's input device 332) constitutes the remote guide and is separate from the local guide to which the communication is being directed. Ex. 1252 ¶¶ 32, 33. Accordingly, the user's selection referred to in Dr. Shamos's testimony reproduced above is communicated between the remote guide implemented on the remote user interface of Blake's input device 332 (i.e., the control software that is implemented on the remote personal or laptop computer) and a local guide implemented, in part, on Blake's central processing system 334.

If we were to accept Rovi's argument that Blake only teaches a single guide, then it is not clear to us how the user's selection, referred to in Dr. Shamos's

testimony reproduced above, is communicated between the remote user interface of Blake's input device 332 and a local guide implemented, in part, on Blake's central processing system 334. In essence, Dr. Shamos would be testifying that Blake teaches a single guide that communicates with itself. This is illogical. Neither Rovi nor Dr. Shamos adequately explain how or why a single guide would need to communicate a user's selection to itself, unless, as Comcast asserts, Blake teaches two separately identifiable guides in communication with each other.

We do not agree with Rovi's argument that Blake teaches a single guide because input device 332 receives some of its program guide functionality from central processing system 334. *See* PO Resp. 25–27. The specification of the '413 Patent does not preclude the remote guide from receiving some of its program guide functionality from the local guide. Indeed, the specification discloses that remote and local guides may be the same guide compiled to run on two different platforms. Ex. 1201, 15:15–18. The specification also discloses that the “remote access interactive television program guide” derives some functionality from the “local television program guide.” For instance, with reference to the steps involved in providing remote access to interactive television program guide features in accordance with the principle of the '413 Patent, the specification discloses that “the remote access program guide provides the user with the opportunity to remotely access functions of the interactive program guide over the remote access link.” *Id.* at 23:36–39. These program guide functions include, among other things, “*accessing*

*program guide information.” Id. at 16:20–26 (emphasis added); see also Ex. 2211 ¶ 17 (Dr. Shamos testifies that the interactive television program guides of the ’413 Patent “allow users to access additional information about television program listings”). Consequently, the claimed “remote access interactive television program guide” derives some program guide functionality from the claimed “local interactive television program guide,” such as accessing program guide information that is presented to the user remotely. Similarly, the remote guide implemented on the remote user interface on Blake’s input device 332 derives some program guide functionality from the local guide implemented, in part, on central processing system 334 by accessing program guide information that is presented to the user remotely. Ex. 1222, 18:1–23.*

We also do not agree with Rovi’s argument that the prosecution history of the ’413 Patent supports its argument that Blake only teaches a single guide. *See* PO Resp. 25–26. The applicants prosecuting the ’413 Patent did not have the benefit of (1) our construction of the claim terms “local/remote access interactive television program guides,” particularly our clarification that neither the intrinsic or extrinsic record limits the “guide” to a single software application (*see supra* Section II.A); (2) the testimony from Dr. Shamos at the ITC that Blake’s input device 332 communicates the user’s selection to the local guide (Ex. 1246, 1138:5–15); and (3) the supporting testimony of Comcast’s declarant, Dr. Tjaden, who consistently takes the position that Blake teaches two separately identifiable guides in communication with

each other (*see* Ex. 1202 ¶¶ 36, 130; Ex. 1252 ¶¶ 31, 33). In addition, the Examiner's position during prosecution was that Blake disclosed a remote guide, and the Examiner disagreed with the applicants' argument that Blake only disclosed a single guide. Case IPR2017-00952, Ex. 1239, 4–5.<sup>8</sup> Although the Examiner's Notice of Allowance generally cites back to previous arguments made by the applicants addressing multiple issues (Case IPR2017-00952, Ex. 1234, 18<sup>9</sup>; *see also* Ex. 2204, 7–11 (arguing that Blake only discloses a single guide)), it is not clear to us whether the Examiner changed his mind as to the specific issue of whether Blake disclosed a remote guide. Instead, the Examiner allowed the application over several amendments that included, among other things, that the remote guide generates a display of program listings “based on a user profile stored at a location remote from the remote program guide access device.” Case IPR2017-00952, Ex. 1234, 8–18.

Lastly, we do not agree with Rovi's arguments that the supporting testimony of Comcast's declarant, Dr. Tjaden, is illogical and internally inconsistent. *See* PO Resp. 29–31. Rovi takes issue with Dr. Tjaden's testimony that Blake's central processing system 334

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<sup>8</sup> All references to the page numbers of Exhibit 1239 are to the page numbers inserted by Comcast at the bottom center of each page (from a related case; filing omitted from this proceeding). Although not filed as an exhibit in this proceeding, the prosecution history as to related U.S. Patent No. 8,006,263 B2 is a public record, and we properly consider it here.

<sup>9</sup> All references to the page numbers of Exhibit 1234 are to the page numbers inserted by Comcast at the bottom center of each page.

provides some program guide functionality to the remote user interface on input device 332, but that central processing system 334 itself is not part of the remote guide. Ex. 1202 ¶¶ 109, 157, 172; Ex. 2210, 139:15–17, 140:2–8. We do not view Dr. Tjaden’s testimony in this regard as illogical and internally inconsistent. In his Declaration accompanying the Reply, Dr. Tjaden testifies that “Blake’s remote input device 332 would necessarily get its program guide information from the central processing system 334, . . . [b]ut it is Blake’s remote input device 332 that executes the control functionality . . . , and therefore implements the remote guide under the broadest reasonable interpretation.” Ex. 1252 ¶ 35. As we explain above, we credit Dr. Tjaden’s testimony that “Blake’s input device 332 implements control software for interactively selecting programs for recording by themes and transmitting program selections” (*id.* ¶ 32), which “is separate from the local program guide software on Blake’s central processing system 334 and [recording equipment 336]” (*id.* ¶ 33). In other words, we agree with Comcast and Dr. Tjaden that, although Blake’s input device 332 interacts with central processing system 334, the remote user interface of input device 332 implements its own separately identifiable remote guide. Pet. Reply 14. We also agree with Comcast and Dr. Tjaden that the remote user interface of Blake’s input device 332 falls within the broadest reasonable interpretation of the claimed “remote access interactive television program guide,” even if it receives program guide information and some functionality from central processing system 334. *Id.* at 15 (citing Ex. 1252 ¶¶ 40–42).

As we explain above, although the remote user interface on Blake's input device 332 receives some of its program guide functionality from central processing system 334, we agree with Dr. Tjaden that it is still the remote user interface on Blake's input device 332 that implements the remote guide—not central processing system 334. Indeed, the remote guide implemented by the remote user interface on Blake's input device 332 interacts with the local guide implemented, in part, on central processing system 334 in the same manner as the claimed "local/remote access interactive television program guide" interact with one another because both sets of guides permit the remote guide to access certain functions of the local guide, such as accessing program guide information that is presented to the user remotely. *Compare* Ex. 1222, 17:1–5, 18:1–16, *with* Ex. 1201, 16:20–26, 23:36–39.

*ii. Blake's Remote User Interface on Input Device 332  
Includes Interactive Features*

Rovi contends that, even assuming that the remote user interface on Blake's input device 332 is a separate guide, and that guide is implemented on input device 332 (and not on central processing system 334), Comcast does not demonstrate that any purported interface on Blake's input device 332 constitutes an "interactive television program guide," as claimed. PO Resp. 31–32. Rovi argues that Blake does not disclose the appearance or content of the remote user interface on input device 332, such as whether the content includes the following: (1) television program listings with channel and start time information; (2) television program listings generated based on a user profile;



and (3) the ability of the user to navigate through the television program listings, or otherwise control software functions. *Id.* at 32 (citing Ex. 2211 ¶¶ 71–75, 79).

Rovi contends that Blake is devoid of any disclosure with respect to Figure 13 as to how the program guide is displayed on the remote user interface of input device 332. PO Resp. 33 (citing Ex. 2211 ¶¶ 70–72, 165; Pet. 26–28; Ex. 2210, 145:14–146:3). According to Rovi, Comcast never asserts that the television schedule guide illustrated in Blake’s Figure 12, or any guide that resembles it, is displayed in the remote user interface of input device 332 illustrated in Figure 13. *Id.* With respect to Blake’s “theme” embodiment, Rovi argues that this embodiment is silent as to how, and in what form, the television program listing is provided to the user. *Id.* at 33–34 (citing Ex. 2211 ¶¶ 75, 78, 79, 165, 171, 182). Indeed, Rovi argues that Blake contemplates, when a user dials in by telephone, he/she may be presented with “themes” and make a selection orally. *Id.* at 34 (citing Ex. 1222, [57]; Ex. 2211 ¶¶ 70, 75; Ex. 2210, 144:19–145:4).

Rovi further contends that there is no disclosure with respect to Blake’s “theme” embodiment that suggests presenting the user with a display of television program guide information, including things like channel information or television program start times, as would be required by the claimed “interactive television program guide.” PO Resp. 34 (citing Ex. 1222, 12:12–23, 18:1–16; Ex. 2211 ¶¶ 78, 79). Rovi further argues that there is also no disclosure that Blake’s “theme” embodiment is capable of generating a display based on a user profile, as

opposed to generating a display in response to user input. *Id.* (citing Ex. 2211 ¶ 182).

Lastly, Rovi asserts that Blake does not teach using a “remote access interactive television program guide.” PO Resp. 35. Rovi argues that, by choosing not to implement a “remote interactive television program guide” on the remote user interface of input device 332, Blake offers the user greater versatility, including allowing the user to submit requests via telephone or email. *Id.* (citing Ex. 1222, [57], 18:28–30; Ex. 2211 ¶¶ 75, 82, 165, 179). Rovi further argues that most of the embodiments disclosed in Blake are silent as to whether input device 332 has any display at all or, in many instances, these embodiments clearly indicate that input device 332 has no such display. *Id.* As additional support for this argument, Rovi contends that an “interactive television program guide” would be unnecessary for other embodiments disclosed in Blake, such as those where the user enters a predetermined program code or the title of a television program via input device 332. *Id.* (citing Ex. 2211 ¶ 180).

In its Reply, Comcast contends that the testimony of Dr. Ligler during prosecution of a related application supports its argument that the remote user interface on Blake’s input device 332 displays television program listings. Pet. Reply 4. According to Comcast, Dr. Ligler recognized that the remote user interface on Blake’s input device 332 displays a guide when he testified that Blake “disclose[s] display of program listings on input device 332 (when selecting a program according to themes).” *Id.* at 4–5 (quoting Ex. 1234 ¶ 35).

Notwithstanding Dr. Ligler's admission during prosecution of a related application, Comcast provides a number of reasons as to why it disagrees with Rovi's argument that Blake is silent as to the appearance and content of the remote guide implemented on the remote user interface of Blake's input device 332. Pet. Reply 15. Comcast argues that, beyond displaying a program listing, which is taught by Blake, the claims do not require the appearance or content of the claimed "remote access interactive television program guide." *Id.* at 15–16. According to Comcast, after a basketball theme is selected, the remote guide may include a list of basketball games that may be displayed in time order. *Id.* at 16 (citing Ex. 1222, 12:12–15, 13:3–5, 18:1–16). Comcast acknowledges that, although Blake does not disclose what the remote guide "looks like," a person of ordinary skill in the art still would have understood from Blake's disclosure what content needs to appear and how that content may appear (e.g., how to sort the content). *Id.* (citing Ex. 1252 ¶¶ 25, 26). Comcast then reiterates that Blake clearly teaches using the remote user interface of input device 332 to navigate through program listings using theme selections. *Id.* at 16–17 (citing Pet. 38–40; Ex. 1202 ¶¶ 141–145; Ex. 1252 ¶¶ 25, 32, 39).

Based on the record developed during trial, we agree with Comcast that the remote user interface on Blake's input device 332 generates a display by rendering an interactive television schedule guide (i.e., a guide that is navigable, selectable, and capable of controlling certain functions or settings), similar to the one illustrated in Figure 12. *See* Pet. 38–49. As we explain previously, Figure 12 of Blake illustrates an

example of a television schedule guide that provides television schedule information in a grid-like display on a television screen. Ex. 1222, 16:12–14. Blake describes the remote recording capabilities of this television schedule guide with reference to Figure 13. *Id.* at 17:1–5. With respect to Blake’s “theme” embodiment, the user enters input in the form of theme data into input device 332, which may be, among other things, a personal or laptop computer. *Id.* at 17:5–8, 18:1–12, Claims 1, 7. In this embodiment, the user first selects to record a program by themes, then selects sports, then basketball, at which time the user is presented with a list of basketball games, and the user selects the game to be recorded. *Id.* at 18:5–10. Based on these disclosures in Blake, we find that the remote user interface of input device 332 generates a display by rendering a television schedule guide that allows a user to select desired programs for recording according to themes.

Comcast’s declarant, Dr. Tjaden, provides testimony supporting our finding in this regard. In his Declaration accompanying the Petition, Dr. Tjaden testifies that Blake’s input device 332 includes control software that “allows a user to navigate through the program themes/listings, make theme/program selections, and control functions of the software (e.g., scheduling a recording on . . . local recording device [336]).” Ex. 1202 ¶ 144 (citing Ex. 1222, 17:16–24, 18:1–16). In his Declaration accompanying the Reply, Dr. Tjaden clarifies that “[a person of ordinary skill in the art] would have recognized this user interface as a menu-based guide that allows a user to navigate through a menu structure to access the sorted program

listings.” Ex. 1252 ¶ 25 (citing Ex. 1222, 13:1–5, 18:5–10). We credit Dr. Tjaden’s aforementioned testimony because it is consistent with the disclosures in Blake identified above.

Dr. Ligler’s testimony submitted during prosecution of a related application also supports our finding that the remote user interface of Blake’s input device 332 generates a display by rendering a television schedule guide that allows a user to select desired programs for recording according to themes. *See* Pet. Reply 4. With reference to the embodiments on page 18 of Blake, which includes the “theme” embodiment, Dr. Ligler testifies that Blake “disclose[s] display of program listings on input device 332 (when selecting a program according to themes).” Ex. 1234 ¶ 35. This testimony from Dr. Ligler undermines Rovi’s argument that Blake’s “theme” embodiment does not present the user with a display of television program guide information, as required by our construction of an “interactive television program guide.” *See* Pet. 31–32.

We recognize that, when testifying that Blake’s input device 332 displays program listings according to themes, Dr. Ligler immediately follows this testimony by averring that the embodiments on page 18 of Blake “do not disclose the claimed ‘two guide’ approach.” Ex. 1234 ¶ 35. We, however, accord Dr. Ligler’s testimony in this regard little, if any, weight because he did not have the benefit of (1) our construction of the claim terms “local/remote access interactive television program guides,” particularly our clarification that neither the intrinsic or extrinsic record limits the “guide” to a single software

application (*see supra* Section II.A); (2) the testimony from Dr. Shamos at the ITC that Blake's input device 332 communicates the user's selection to the local guide (Ex. 1246, 1138:5–15); and (3) the supporting testimony of Comcast's declarant, Dr. Tjaden, who consistently takes the position that Blake teaches two separately identifiable guides in communication with each other (*see* Ex. 1202 ¶ 130; Ex. 1252 ¶¶ 31, 33). In addition, there is not a clear indication on this record as to whether the Examiner found this specific testimony by Dr. Ligler to be persuasive.

We do not agree with Rovi's arguments that Blake does not disclose the appearance or content of the remote user interface on input device 332 and, therefore, cannot teach the claimed "remote access interactive television program guide." *See* PO Resp. 31–36. This argument is not commensurate in scope with independent claims 1 and 10 because these claims do not require the claimed "remote access interactive television program guide" to have a specific appearance or to include certain content. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (explaining that limitations not appearing in the claims cannot be relied upon for patentability). Instead, as Comcast correctly notes in its Reply (*see* Pet. Reply 15–16), these claims only require that the system "generates a display of the remote access interactive television program guide, the remote access interactive television program guide comprising a plurality of television program listings for display on the mobile device" (Ex. 1201, 40:22–25, 41:21–24), without specifying the appearance of such display or the inclusion of certain content. Consequently, Rovi's

attempt to patentably distinguish independent claims 1 and 10 from Blake's television schedule system based on features not required by these claims is misplaced.

To the extent Rovi argues that the remote user interface of Blake's input device 332 does not display a television schedule guide generated based on a user profile, these arguments either ignore or fail to appreciate Comcast's reliance on the teachings of Killian. *See* PO Resp. 32, 35. As we explain previously, Comcast presents arguments that either Blake or Killian teaches a "user profile," as recited in independent claims 1 and 10. *See* Pet. 27–28, 41–44. Killian, however, more clearly teaches a "user profile" because it explicitly discloses user profile data. In particular, Killian discloses software that generates program guide displays based on viewer profiles 84 stored on profile database 80 located either locally or remotely. Ex. 1208, 9:10–25, 10:61–66. Comcast also provides sufficient reasoning as to why one of ordinary skill in the art would have been prompted to modify Blake's television schedule system to include Killian's viewer profiles, which we discuss below in more detail. *See infra* Section II.B.5.b.

### *iii. Remaining Limitations*

In its Patent Owner Response, Rovi does not address separately whether the combined teachings of Blake and Killian account for the remaining limitations of independent claims 1 and 10. *See generally* PO Resp. 20–36. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these

remaining limitations, and we agree with and adopt Comcast's analysis. *See* Pet. 11–12, 21–59.

*b. Comcast Presents a Sufficient Rationale to  
Combine the Teachings of Blake and Killian*

Rovi contends that Comcast fails to explain how or why one of ordinary skill in the art would have been prompted to modify Blake's television schedule system to include Killian's viewer profiles. PO Resp. 37. According to Rovi, Comcast relies on conclusory statements that are insufficient to support a conclusion of obviousness. *Id.* (citing Ex. 2211 ¶¶ 184, 185).

Rovi contends that a person of ordinary skill in the art would not have combined the teachings of Blake and Killian because these references have fundamentally different teachings and purposes. PO Resp. 38. Rovi argues that Blake is directed to scheduling a recording from a remote location using a variety of remote input devices, whereas Killian is directed to offering a viewer an optimized local television program guide with local viewer profiles. *Id.* Rovi further argues that Blake's "theme" embodiment allows a user to narrow programs by categories of interest. *Id.* According to Rovi, Comcast offers no motivation as to why Killian's viewer profiles, which offer an alternative to identify and narrow desired content, would be needed in Blake's television schedule system. *Id.* (citing Ex. 2211 ¶ 186).

Moreover, Rovi contends that Comcast fails to address how a person of ordinary skill in the art would have provided Killian's viewer profiles to Blake's input device 332. PO Resp. 38 (citing Ex. 2211 ¶ 186). Rovi



argues that reconfiguring Blake's television schedule system to incorporate Killian's viewer profiles would unnecessarily complicate Blake's system because Blake offers simple remote user interfaces, whereas Killian stores viewer profiles accessed by a "suggest module" on a JAVA-based platform coupled to profile database 80 and "provide[s] more sophisticated collective displays than were possible using prior systems." *Id.* at 38–39 (quoting Ex. 1208, 2:1–11, 5:34–38) (citing Ex. 2211 ¶¶ 89, 184–188).

Next, Rovi contends, that even if it were to assume that Comcast clearly explains how a person of ordinary skill in the art would have implemented Killian's viewer profiles in Blake's television schedule system, Comcast fails to explain the necessary motivation for doing so. PO Resp. 39 (citing Ex. 2211 ¶¶ 188–190). Rovi argues that Comcast fails to identify the problem in Blake a person of ordinary skill in the art would have been motivated to solve by implementing Killian's viewer profiles. *Id.* (citing Ex. 2211 ¶ 190). According to Rovi, Killian's viewer profiles would serve no purpose in most of Blake's embodiments, such as those where the user enters a predetermined program code or calls via telephone to schedule the recording. *Id.* (citing Ex. 2211 ¶ 188). Rovi argues that Comcast's rationale to combine the teachings of Blake and Killian depends entirely upon a person of ordinary skill in the art being motivated to modify only a subset of Blake's user input devices (i.e., those devices capable of rendering a display) for only one of four separately disclosed embodiments (i.e., Blake's "theme" embodiment). *Id.* Consequently, Rovi asserts that Comcast's rationale to combine the teachings of Blake

and Killian is based on conjecture and, therefore, does not amount to a sufficient motivation to combine. *Id.* at 39–40.

In its Reply, Comcast maintains that a person of ordinary skill in the art would have recognized that Killian’s viewer profiles would work in Blake’s television schedule system. Pet. Reply 22–23 (citing Pet. 28–30, 43–44; Ex. 1202 ¶¶ 158–162). Comcast argues that, although Blake’s remote and local guides differ in function, they are similar to the extent that both display and allow user selection of program listings. *Id.* at 23 (citing Ex. 1252 ¶¶ 48–52). Comcast, therefore, argues that it would have been obvious to one of ordinary skill in the art to apply Blake’s teachings with respect to the local guide to its remote guide. *Id.* Next, Comcast argues that Blake teaches that its guides present a customized line-up of channels. *Id.* (citing Ex. 1222, 16:20–22; Ex. 1202 ¶¶ 154, 155). Similarly, Comcast argues that Killian’s viewer profiles are used to generate tailored displays of program listings. *Id.* (citing Pet. 28–30, 43–44; Ex. 1202 ¶¶ 158–162). Given these similarities, Comcast asserts that a person of ordinary skill in the art would have found it obvious to use Killian’s viewer profiles to improve Blake’s local and remote guides. *Id.* (citing Ex. 1252 ¶¶ 61–64).

Comcast further contends that Killian’s viewer profiles are complementary to and compatible with Blake’s theme selections. Pet. Reply 23. According to Comcast, Killian’s viewer profiles beneficially “track a user’s preference” to “generate more effective user interfaces.” *Id.* at 24 (citing Pet. 29–30). Comcast then asserts that a person of ordinary skill in the art would

have viewed Blake's theme selections and Killian's profile-specific listings as complementary techniques, both of which are capable of being employed in Blake's remote guide. *Id.* (citing Ex. 1252 ¶ 64). Comcast further argues that, because Blake's remote guide already offered multiple ways to select programs, some of which may have been preferred over others, it would have been obvious to one of ordinary skill in the art to improve Blake's local and remote guides with Killian's viewer profiles. *Id.* (citing Ex. 1252 ¶¶ 62–64).

Comcast also disagrees with Rovi's argument that integrating Killian's viewer profiles into Blake's television schedule system would unnecessarily complicate Blake's system. Pet. Reply 23. Comcast argues that, in the scenario where Blake's input device 332 is a laptop computer, it would be well-equipped to implement sophisticated user interfaces, such as those taught by Killian. *Id.* (citing Ex. 1252 ¶ 65).

The Supreme Court has held that an obviousness evaluation "cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents." *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether Comcast has set forth "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. at 418. When describing examples of what may constitute a sufficient rationale to combine, the Supreme Court elaborated that, "if a technique has been used to improve one device, and a person of ordinary skill in

the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR*, 550 U.S. at 417.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to implement Killian’s viewer profiles in Blake’s television schedule system. When, as here, a technique has been used to improve one device (i.e., Killian’s technique of generating program guide displays based on viewer profiles), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Killian’s technique to Blake’s television schedule system, thereby allowing the remote user interface on Blake’s input device 332 to generate a display by rendering television program listings based on user preferences), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 28–30, 44; Ex. 1202 ¶¶ 109, 159–161. The record includes credible evidence explaining why applying Killian’s technique to Blake’s television schedule system would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Comcast’s declarant, Dr. Tjaden, provides the necessary motivation for doing so—namely, “to better track a user’s preferences and generate more effective user interface[s]” in order to “better [identify] . . . desired/undesired content.” Ex. 1202 ¶¶ 109, 161.

We do not agree with Rovi’s arguments that Blake and Killian have fundamentally different teachings

and purposes. *See* PO Resp. 38–39. As an initial matter, Blake generally relates to a television schedule system with enhanced recording capability. Ex. 1222, 1:17–19. In particular, Blake discloses that a user may select a program for automatic, unattended recording by highlighting and selecting the desired program in a television schedule guide, such as the one illustrated in Figure 12. *Id.* at 16:12–14, 16:17–19, 16:22–25. Similarly, Killian generally relates to an electronic programming guide that operates on a computing platform using information from the Internet for display on a television. Ex. 1208, 2:1–3, 3:18–23; *see also* Ex. 1202 ¶ 108 (Dr. Tjaden testifies that “[t]he general area of technology of Killian is also the same as Blake; namely, that of interactive electronic program guides . . . , and remote or local access to and use of [interactive electronic program guides] to control end-user video equipment.” (citing Ex. 1208, [54], 1:7–9)). Consequently, we find that Blake and Killian fall in the same field of endeavor.

Dr. Tjaden’s testimony supports our finding that Blake and Killian are not fundamentally different and incompatible. In his Declaration accompanying the Petition, Dr. Tjaden testifies that the remote user interface on Blake’s input device 332 “allows the user to filter program listings according to themes, tracks the user’s selections, and stores that information at [central] processing system 334.” Ex. 1202 ¶ 109 (citing Ex. 1222, 18:1–10, 18:12–14). Dr. Tjaden then testifies that Killian teaches customizing program guides “based on user profile information stored locally or remotely.” *Id.* (citing Ex. 1208, 9:10–25, 11:20–21). Because the systems of Blake and Killian both store

information specific to each user, Dr. Tjaden testifies that “[a person of ordinary skill in the art] would have recognized that Killian’s [viewer profiles] could be used to store information about user preferences in Blake[’s television schedule system]. This would be done for the purpose of customizing the remote access guide (i.e., the ‘remote theme guide’), providing the advantages discussed in Killian.” *Id.* (emphasis omitted). In his Declaration accompanying the Reply, Dr. Tjaden clarifies that “a [person of ordinary skill in the art] would not have had to replace or discard Blake’s theme selections to implement [Killian’s] profile-based selections. The addition of Killian’s profile-based selections would be a usability gain without any tradeoffs for the user.” Ex. 1252 ¶ 63 (citing Ex. 1202 ¶ 161).

We also do not agree with Rovi’s argument that integrating Killian’s viewer profiles into Blake’s television schedule system would unnecessarily complicate Blake’s system. *See* PO Resp. 38–39. This argument is predicated on the notion Comcast’s proposed combination of Blake and Killian somehow includes the bodily incorporation of Killian’s “suggest module” on a JAVA-based platform. *See id.* Killian’s “suggest module” on a JAVA-based platform, however, is not relevant to Comcast’s ground based on the combined teachings of Blake and Killian—only Killian’s technique of generating program guide displays based on viewer profiles. *See In re Nievelt*, 482 F.2d 965, 968 (CCPA 1973) (“Combining the *teachings* of references does not involve an ability to combine their specific structures.”). Stated differently, Comcast does not advocate combining Killian’s “suggest

module” on a JAVA-based platform with Blake’s television schedule system. Instead, Comcast argues that applying Killian’s technique of generating program guide displays based on viewer profiles to Blake’s television schedule system would allow the remote user interface on Blake’s input device 332 to generate a display by rendering television program listings based on user preferences. For the reasons we identify above, the evidence of record supports Comcast’s explanation in this regard. *See* Pet. 28–30, 44; Ex. 1202 ¶¶ 109, 159–161.

In any event, even if we were to assume that Comcast’s proposed combination of Blake and Killian somehow includes the bodily incorporation of Killian’s “suggest module” on a JAVA-based platform, which, as we explain above, it does not, Comcast presents supporting testimony from Dr. Tjaden that indicates Blake’s input device 332 would be capable of implementing a JAVA-based user interface. In his Declaration accompanying the Reply, Dr. Tjaden testifies that, because Blake discloses a scenario where input device 332 is a laptop computer, “[the laptop computer] would have had no problem implementing Killian’s JAVA-based user interfaces if desired.” Ex. 1252 ¶ 65 (citing Ex. 1222, 17:5–8). We credit this testimony from Dr. Tjaden because there is no evidence of record to suggest that, in the scenario where Blake’s input device 332 is a laptop computer (Ex. 1222, 17:5–8), the laptop computer is anything other than a general purpose computer capable of implementing a variety of software platforms, including one based on JAVA.

In addition, we do not agree with Rovi's arguments that Comcast must identify a problem in Blake that a person of ordinary skill in the art would have been motivated to solve in order to implement Killian's viewer profiles in Blake's television schedule system. *See* PO Resp. 39. If we were to accept this line of argument, it would run contrary to the principles of law articulated in *KSR*. In *KSR*, the Supreme Court emphasized "an expansive and flexible approach" to an obviousness evaluation. 550 U.S. at 415; *see also Jazz Pharm., Inc. v. Amneal Pharm., LLC*, 895 F.3d 1347, 1363 (Fed. Cir. 2018) ("*KSR* did not impose a rigid requirement to identify . . . a problem to be solved in the art"). The Court stated that, "[o]ften, it will be necessary for a court to look to interrelated teachings of multiple patents," amongst other things, "to determine whether there was apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418. Moreover, the Court explained that, "[u]nder the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed." *Id.* at 420.

Comcast's analysis is in line with these principles of law. Relying on the supporting testimony of Dr. Tjaden as evidence of the background knowledge of one ordinary skill in the art, Comcast looked to the interrelated teachings of Blake and Killian—specifically, their overlapping teachings with respect to television program guides and storing information specific to each user—to ascertain whether there was a sufficient reason to combine certain aspects of those



elements to arrive at the claimed invention. *See* Pet. 28–30, 44; Ex. 1202 ¶¶ 109, 159–161. Comcast further explained that using Killian’s user profile data in Blake’s television schedule system would have allowed the system to better track a user’s preferences, generate more effective user interfaces, and better identify desired and undesired content. Pet. 29, 44. Rovi does not direct us to, nor are we aware of, any persuasive authority that requires a party to demonstrate obviousness by specifically identifying a problem in a first prior art reference that a person of ordinary skill in the art would have been motivated to solve in order to implement the interrelated teachings of a second prior art reference.

Lastly, we do not agree with Rovi’s argument that Comcast’s rationale to combine the teachings of Blake and Killian is based on conjecture and, therefore, does not amount to sufficient motivation to combine. *See* PO Resp. 39–40. As we explained above, both Comcast and Dr. Tjaden provide sufficient reasoning as to why it would have been obvious to one of ordinary skill in the art to combine the teachings of Blake and Killian. *See* Pet. 28–30, 44; Ex. 1202 ¶¶ 109, 159–161. This reasoning is not based on conjecture because it is directed specifically to the subject matter at issue in independent claims 1 and 10, and there is a sufficient basis in the record to support such reasoning. As a result, instead of presenting reasoning that is based on conjecture, as asserted by Rovi, Comcast has articulated sufficient reasoning with rational underpinnings to support a conclusion of obviousness—namely, use of a known technique (i.e., Killian’s technique of generating program guide

displays based on viewer profiles) to improve similar devices (i.e., Blake's television schedule system) in the same way (i.e., by allowing the remote user interface on Blake's input device 332 to generate a display by rendering television program listings based on user preferences).

*c. Summary*

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter of independent claims 1 and 10 would have been obvious over the combined teachings of Blake and Killian.

*6. Claims 3–9 and 12–18*

In its Patent Owner Response, Rovi does not address separately whether the combined teachings of Blake and Killian account for the limitations of dependent claims 3–9 and 12–18. *See generally* PO Resp. 20–41. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these limitations, as well as its explanations as to how one ordinary skill in the art would have combined the relevant teachings of Blake with those of Killian, and we agree with and adopt Comcast's analysis. *See* Pet. 50–59. Comcast, therefore, has demonstrated by a preponderance of the evidence that the subject matter of dependent claims 3–9 and 12–18 would have been obvious over the combined teachings of Blake and Killian.

*C. Obviousness Over the Combined Teachings of  
Blake, Killian, and Lawler*

Comcast contends that claims 2 and 11 of the '413 Patent are unpatentable under § 103(a) over the combined teachings of Blake, Killian, and Lawler. Pet. 59–61. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why one of ordinary skill in the art would have been prompted to modify or combine the references' respective teachings. *Id.* Comcast also relies upon the Declaration of Dr. Tjaden to support its positions. Ex. 1202 ¶¶ 216–222. In its Patent Owner Response, Rovi contends that Comcast does not present sufficient reasoning as to why one of ordinary skill in the art would combine the teachings of Lawler with those of Blake and Killian. PO Resp. 41.

We begin our analysis with a brief overview of Lawler, and then we address the parties' contentions with respect to the claims at issue in this asserted ground.

*1. Lawler Overview*

Lawler generally relates to a system for recording a program on an interactive viewing system and, in particular, to a system that allows a user to identify a program for recording using an interactive program guide and then designate the identified program for automated recording at some later time. Ex. 1209, 1:8–13. According to one aspect of the invention disclosed in Lawler, the recording device is associated with a head end. *Id.* at 2:24–25. At the direction of the head end, the recording device records the selected program

and digitally stores it in a memory at the head end. *Id.* at 2:25–27. The recorded program may then be retrieved from the head end by the user for display at a viewer station. *Id.* at 2:27–29. Lawler discloses that this process would allow multiple users to access a single recording of the program, as well as make the program available to other users who did not set the recording, but nonetheless wish to view the program at some later time. *Id.* at 13:34–38.

## 2. Claims 2 and 11

Dependent claim 2 recites “wherein the local interactive television program guide records the television program corresponding to the selected television program listing at a television distribution facility.” Ex. 1201, 40:48–51. Dependent claim 11 recites a similar limitation. *Id.* at 42:12–15.

In its Petition, Comcast contends that Lawler teaches recording programs at a central head end (i.e., a television distribution facility) in lieu of recording programs locally. Pet. 60 (citing Ex. 1209, 2:24–29, 13:26–38; Ex. 1202 ¶¶ 217, 218). Comcast then argues that, as a substitute for recording programs locally, it would have been obvious to modify the Blake and Killian combination to include recording programs at a television distribution facility, as taught by Lawler, because there are certain advantages to recording programs at the television distribution facility, such as making recorded programs available for other subscribers and eliminating the need for a separate recorder. *Id.* (citing Ex. 1209, 2:24–29, 10:56–59, 13:26–38; Ex. 1202 ¶¶ 218, 219). According to Comcast, this proffered combination would be nothing

more than using a known technique (i.e., Lawler's centralized recording at a television distribution facility) to improve a similar system (i.e., the combined Blake and Killian television schedule system), and would produce a predictable result that provides the stated benefits of Lawler. *Id.* at 60–61 (citing Ex. 1209, 13:33–38; Ex. 1202 ¶ 219).

In its Patent Owner Response, Rovi contends that Comcast's explanations for combining the teachings of Blake, Killian, and Lawler are conclusory and, therefore, fail to provide a sufficient reason for making the proffered combination. PO Resp. 41. According to Rovi, Comcast fails to explain how or why one of ordinary skill in the art would have incorporated Lawler's technique for recording programs at a television distribution facility into the combined television schedule system of Blake and Killian. *Id.* In particular, Rovi argues that Comcast does not explain how a person of ordinary skill in the art would have moved the recorder to Lawler's television distribution facility, while still retaining the operability of the combined television schedule system of Blake and Killian, including the ability for the user to control operation of Blake's recording device 336 local to the user's system. *Id.*

In its Reply, Comcast counters that Lawler's centralized recording still would allow the user to view recorded content at his/her home using Blake's television schedule system. Pet. Reply 25. Comcast argues that integrating this teaching in Lawler into the combined television schedule system of Blake and Killian would provide the added advantage of allowing the physical storage of content to occur at Lawler's

television distribution facility, which was, and remains, a well-known method for increasing storage efficiency. *Id.* (citing Ex. 1252 ¶ 66).

As an initial matter, Rovi does not address separately Comcast's explanations and supporting evidence as to how the combined teachings of Blake, Killian, and Lawler account for the limitations of dependent claims 2 and 11. *See generally* PO. Resp. 41. We have reviewed Comcast's explanations and supporting evidence as to how this proffered combination teaches these limitations, and we agree with and adopt Comcast's analysis. *See* Pet. 59–61.

Based on the record developed during trial, we agree with Comcast that one of ordinary skill in the art would have had a sufficient reason to modify the combined television schedule system of Blake and Killian to include recording programs at a television distribution facility, as taught by Lawler. When, as here, a technique has been used to improve one device (i.e., Lawler's centralized recording at a television distribution facility), and one of ordinary skill in the art would have recognized that it would improve similar devices in the same way (i.e., applying Lawler's technique to the combined television schedule system of Blake and Killian to make recorded programs available for other subscribers and to eliminate the need for a separate recorder), using the technique is obvious unless its actual application is beyond the skill level of an ordinary skilled artisan. *See* Pet. 59–61; Ex. 1202 ¶¶ 216–219. The record includes credible evidence explaining why applying Lawler's technique to the combined television schedule system of Blake and Killian to make recorded programs available to

multiple subscribers at a television distribution facility would not have been uniquely challenging or otherwise beyond the skill level of an ordinary skilled artisan. Indeed, Lawler itself provides the necessary motivation for doing so—namely, “[to] allow multiple users to access a single recording of the program.” Ex. 1209, 13:33–35.

We do not agree with Rovi’s argument that Comcast does not explain how a person of ordinary skill in the art would have moved the recorder to Lawler’s television distribution facility, while still retaining the operability of the combined television schedule system of Blake and Killian *See* PO Resp. 41. As Comcast explains in the Petition, modifying the Blake and Killian combination to include recording programs at a television distribution facility, as taught by Lawler, serves as a substitute for the user’s ability to record programs locally on Blake’s recording device 336. *See* Pet. 60. For instance, instead of using Blake’s recording device 336 to record programs, which still remains a viable option, a user would communicate with Lawler’s television distribution facility to record programs via Blake’s central processing system 334. Dr. Tjaden testifies—and we agree—that recording programs at Lawler’s television distribution facility, in lieu of recording programs locally on Blake’s recording device 336, would increase storage efficiency by making these recordings available to other users and it would eliminate the need for each user to maintain a separate recorder. *See* Ex. 1202 ¶ 2019; Ex. 1252 ¶ 66.

In summary, Comcast has demonstrated by a preponderance of the evidence that the subject matter

of dependent claims 2 and 11 would have been obvious over the combined teachings of Blake, Killian, and Lawler.

### III. CONCLUSIONS

Comcast has demonstrated by a preponderance of the evidence that (1) claims 1, 3–10, and 12–18 are unpatentable under § 103(a) over the combined teachings of Blake and Killian; and (2) claims 2 and 11 are unpatentable under § 103(a) over the combined teachings of Blake, Killian, and Lawler.

### IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 1–18 of the '413 Patent are held to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to this proceeding seeking judicial review of our decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.