

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 IPR2017-01065
Patent 8,046,801 B2

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

KAISER, *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 for *inter partes* review of claims 1–54 of U.S. Patent No. 8,046,801 B2 (Ex. 1001, “the ’801 patent”). Paper 2 (“Pet.”). Patent Owner, Rovi Guides, Inc. (“Rovi”), filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). 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 1–54 of the ’801 patent as unpatentable under 35 U.S.C. § 103(a). Pursuant to § 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 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”). A consolidated oral hearing with related Cases IPR2017-00950, IPR2017-00951, IPR2017-00952, IPR2017-01048, IPR2017-01049, IPR2017-01050, IPR2017-01066, and IPR2017-01143 was held on June 19, 2018, and a transcript of the hearing is included in the record. Paper 34 (“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.¹ 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 31. 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 1–54 of the ’801 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 ’801 patent is involved in the following district court cases:
(1) *Rovi Guides, Inc. v. Comcast Corp.*, No. 2:16-cv-00322 (E.D. Tex.),

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

which has been transferred to the U.S. District Court for the Southern District of New York and is now 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 '801 patent has also 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 (Int’l Trade Comm’n). Pet. 2; Paper 3, 2.

In addition to this Petition, Comcast filed two other petitions challenging the patentability of claims 1–54 of the '801 patent (Cases IPR2017-001066 and IPR2017-01143), as well as petitions challenging related patents. Pet. 3; Paper 3, 2.

B. The '801 Patent

The '801 patent, titled “Interactive Television Program Guide with Remote Access,” issued October 25, 2011, from U.S. Patent Application No. 10/927,814, filed on August 26, 2004. Ex. 1001, at [54], [45], [21], [22]. The '801 patent is a continuation of U.S. Patent Application No. 09/354,344, filed on July 16, 1999. *Id.* at [63]. The '801 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 '801 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 '801 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 '801 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 '801 patent, reproduced below, illustrates a schematic block diagram of the system described in the patent. *Id.* at 5:35–36, 7:15–16.

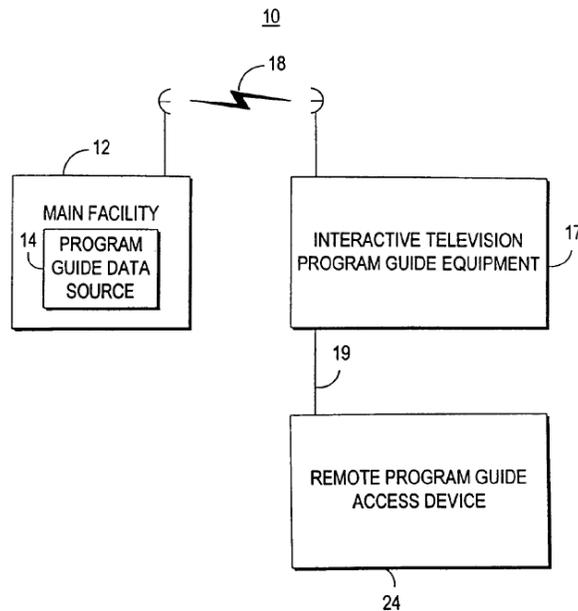


FIG. 1

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 communications link 18. *Id.* at 7:16–19. 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 '801 patent, reproduced below, illustrates one arrangement involving interactive television program guide equipment 17 and remote program guide access device 24. *Id.* at 5:37–40, 7:40–43.

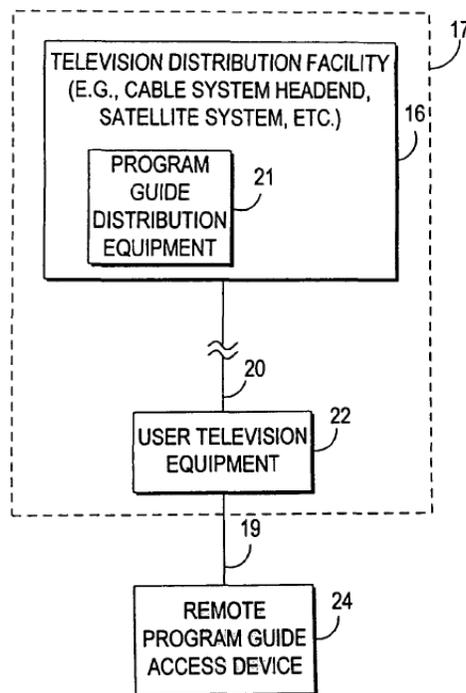


FIG. 2a

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

7:44–53. 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 8:15–26.

In at least one embodiment, the '801 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 15:9–15. 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 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 15:15–18.

The '801 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 '801 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. Challenged Claim

Claims 1, 5, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51 are independent. Claims 1, 5, 19, 23, 37, and 41 recite methods, and claims 10, 15, 28, 33, 46, and 51 recite systems. Claims 2–4 directly depend from independent claim 1; claims 6–9 directly depend from independent claim 5; claims 11–14 directly depend from independent claim 10; claims 16–18 directly depend from independent claim 15; claims 20–22 directly depend from independent claim 19; claims 24–27 directly depend from independent claim 23; claims 29–32 depend directly from independent claim 28; claims 34–36 depend directly from independent claim 33; claims 38–40 depend directly from independent claim 37; claims 42–45 depend directly from independent claim 41; claims 47–50 depend directly from independent claim 46; and claims 52–54 depend directly from independent claim 51.

Claim 1 is illustrative of the subject matter of the challenged claims:

1. A method of enabling a user to perform recordings, the method comprising:

generating, with a remote guide accessible by a user of a remote device, a display comprising a plurality of program listings for display on the remote device, wherein the display is generated by the remote guide based on program guide information received from a local guide implemented on user equipment via the Internet, wherein the user equipment is remote to the remote device, wherein the user equipment is located at a user site, and wherein the local guide generates a display of one or more program listings for display on a display device at the user site;

receiving, with the remote guide, a user selection of a program listing from the plurality of program listings, wherein the user selection identifies a program corresponding to the selected program listing for recording by the local guide;

transmitting, with the remote guide, a communication to the local guide identifying the program corresponding to the selected program listing via the Internet;

receiving the communication with the local guide; and

responsive to the communication, scheduling, with the local guide, the program corresponding to the selected program listing for recording by the user equipment.

Id. at 40:6–30.

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. 32; Paper 31.

References	Basis	Challenged Claims
Humpleman ² and Killian ³	§ 103(a)	1–54
Kondo, ⁴ Killian, and Kawamura ⁵	§ 103(a)	1–54

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

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

⁴ 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).

⁵ Japanese Pat. App. Pub. No. H9-102827, published April 15, 1997 (Ex. 1013, “Kawamura”). Comcast has provided a certified translation of Kawamura from Japanese into English (Ex. 1014).

II. DISCUSSION

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 “guide” and “electronic program guide,” and only to the extent necessary to resolve whether the grounds asserted by Comcast properly accounted for both a “guide” and “electronic program guide.” Dec. on Inst. 9; *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 determined that the broadest reasonable interpretation of the claim terms “guide” and “electronic program guide” in the context of the challenged claims is “software operative at least in part to generate a display of television program listings,” and we agreed with Comcast that the terms “guide” and “electronic program guide” are not limited to interactive guides. *Id.* at 10–11. We further clarified that the claim terms “local guide” and “remote guide” are separately identifiable

elements, and are not construed properly as reading on the same guide. *Id.* at 11–12.

We have reviewed the parties’ arguments and evidence as to the proper construction of “guide” as recited in the challenged claims, and we are not persuaded to change our preliminary construction to require that such guides be construed as “interactive” guides, as Rovi contends. We note, however, that at the oral hearing, Comcast contended that this distinction does not make a difference because it has shown interactive guides are taught by the references. Tr. 8:25–9:13. Thus, we discuss below the construction of “guide” and “electronic program guide,” but we also consider, in the context of Comcast’s challenges, whether Comcast has adequately supported its challenges if the recited guides were limited to interactive guides.

In its Patent Owner Response, Rovi contends that “the proper construction for ‘guide’ should be an *interactive* program guide as claimed in related patents, Nos. 8,006,263 (the “263 patent”) and 8,578,413 (the “413 patent”).” PO Resp. 10. Rovi does not appear to otherwise dispute our preliminary construction in the Decision on Institution.⁶

As to interactivity, Rovi contends such a construction is consistent with the intrinsic evidence, including the language of independent claim 1

⁶ For the first time at the oral hearing, Rovi argued that “remote 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”).

(“requiring that the guide be capable of receiving a user selection, transmitting a communication, and scheduling a program for recording”), the ’801 patent’s title (“Interactive Television Program Guide with Remote Access”), and the specification’s references to “interactive” guides that “allow navigation through program listings and cause display of program listings.” *Id.* at 10–11.

As we discussed in our Decision on Institution, we are not persuaded that reading “interactive” into the claims is consistent with the intrinsic evidence. First and foremost, we start with the language of the claims. *See In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998) (“the name of the game is the claim”). The term “interactive” does not appear in the claims of the ’801 patent. Instead, those claims use the terms “remote guide,” “local guide,” and “electronic program guide.” While we agree with Rovi that certain interactive features are recited in the claims, we need not construe “remote guide,” “local guide,” and “electronic program guide” to take those recitations into account because they are already recited in the claims themselves. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1237 (Fed. Cir. 2016) (“Construing a claim term to include features of that term already recited in the claims would make those expressly recited features redundant.”). In addition, we determine that recitations of some interactive features in the claims do not counsel in favor of reading in other unrecited aspects of interactivity.

Rovi also relies on the ’801 patent specification. PO Resp. 10–11. Specifically, Rovi points to the title (“Interactive Television Program Guide with Remote Access”) and descriptions of “interactive” guides in the specification. *Id.* (citing Ex. 1001, at [57], 1:16–19, 1:28–30, 2:20–22,

2:26–29, 2:57–66, 3:16–22, 4:1–5, 4:8–10, 6:1–4, 7:19–22, 7:40–41, 9:49–52, 15:11–15, 16:62–17:2, 23:13–15, Figs. 2a–2d, 12–23). Rovi further contends that in reaching our preliminary construction, we considered only the specification’s description of “on-line guides” in the Background of the Invention section without fully addressing “the Fig[ure] 6c disclosure of an ‘on-line program guide’ with the interactive features of the invention.” *Id.* at 11–12 (citing Ex. 1001, 14:48–66); *see also id.* at 12 (citing Ex. 2006 ¶¶ 23–29).

We agree that the specification describes “interactive” guides. Rovi, however, does not explain why any of these descriptions is limiting (including the description of Figure 6c which is referred to as “another illustrative arrangement,” Ex. 1001, 14:48), particularly in light of the claim drafter’s choice to omit the term “interactive” from the ’801 patent’s claims. We agree with Comcast that, “[b]y seeking to construe the plain term ‘guide’ to mean ‘interactive television program guide,’ Patent Owner improperly seeks to import limitations from the specification into the claims.” Pet. Reply 5 (citing Dec. on Inst. 10–11); *see SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004) (“Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim.”).

Rovi also supports its proposed “interactive” limitation with (1) agreed constructions in the International Trade Commission (“ITC”) and

the ITC's order (PO Resp. 11 (citing Ex. 2001, 187–188⁷), 13–15), and (2) filings in related cases before the Board involving the '263 patent (*id.* at 12–14). Regarding the parties' arguments and the Board's findings in related cases (e.g., Case IPR2017-00950), Rovi acknowledges the claims in those cases recite an “interactive television program guide.” PO Resp. 13. In contrast, the claims here omit the term “interactive.”

Regarding the ITC proceedings, we observe that the agreed constructions (“local guide” and “remote guide”) to which Rovi cites are for the '263 patent, not the '801 patent. Ex. 2001, 186. We further observe that the '263 patent's claims use “the local guide” to refer back to “a local interactive television program guide” and do not appear to use the term “remote guide.” *See* Ex. 2008, claim 14. In its Patent Owner Response, Rovi does not specifically address how agreed constructions as to the '263 patent relate to the constructions of those terms in the '801 patent. *See* PO Resp. 11. Patent Owner also points to “the ITC's findings on related terms.” *Id.* (citing Ex. 2001, 292). From the ITC's discussion of the term “recording by the local guide,” however, it does not appear that the ITC was directly presented with the issue of whether the “local guide,” as recited in the '801 patent claims, must be interactive. *See* Ex. 2001, 289–292 (noting that the parties' arguments were commingled with other disputed phrases and focused on proposed causal and geographic limitations).

We emphasize that the issue here is not whether the “guide” and “electronic program guide” include any interactive features; in the Decision

⁷ We refer to the page numbers added by Comcast in the lower right corner of Exhibit 2001.

on Institution, we agreed with Rovi that the challenged claims recite certain interactive features (Dec. on Inst. 10). Instead, the issue is whether we should read “interactive” into the construction of “guide” and “electronic program guide,” such that those terms include additional *unrecited* interactive functionality. For the reasons discussed above, we conclude that we should not, and thus, we do not read any requirements for interactivity into those terms beyond those recited in the claims.

Other than its arguments regarding whether the claimed “guide[s]” must be interactive, Rovi agrees with the Board’s preliminary determination that the claims require two separate guides. PO Resp. 15–16. Rovi also acknowledges that stating where the specific guide resides is unnecessary in construing these terms because such “additions merely restate the language of the broader claim limitation.” *Id.* at 16. We agree. *See Apple, Inc.*, 842 F.3d at 1237 (“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.”).⁸

Beyond our discussion of interactivity above, 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

⁸ During oral argument, in response to a question regarding the ITC’s construction of the “local guide” being on user television equipment and its construction that the “remote 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.

disclosure in this regard, we decline to limit the “guide” to a single software application.

We further clarify that the plain language of independent claims 1, 5, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51 indicates that the claim terms “local guide” and “remote 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 guide and remote guide] may be different guides that communicate in a manner or manners discussed . . . herein.”), 23:4–7 (“The remote [] guide may . . . send audio, graphical, and text messages to the local [] guide for playing or displaying by user television equipment **22**.”). The specification also explains that the local and remote guides 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.”).

Turning to the extrinsic evidence, in Dr. Tjaden’s Declaration accompanying the Petition, he testifies that “the local guide may be implemented at least in part on a server or other device outside the user’s

home.” Ex. 1002 ¶ 36. 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 ’801 Patent would have understood that many different arrangements of the software and hardware components comprising a 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 ’801 patent. *Id.* ¶¶ 16–19 (citing Ex. 1001, 7:15–19, 7:33–35, 7:40–47, 9:36–44, 10:15–16, 10:29–34, 10:41–48).

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.” *See* Pet. Reply 7–8 (citing Ex. 1054). 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 local guide could be an “extensive collection of hardware and software.” Ex. 1054 ¶ 169. He also testifies “that the ‘local 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 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. We do not find support in the intrinsic record that the “guide” may include hardware. Rather, the ’801 patent separately refers to the 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 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 terms “guide” and “electronic program guide,” we maintain that the broadest reasonable interpretation of these claim terms is “software operative at least in part to generate a display of television program listings,”⁹ and we do not read any requirements for interactivity

⁹ In the Decision on Institution, we did not include “control” in our preliminary construction. Comcast also omitted that term from its proposed construction in this case. Pet. 14. We observe, however, that “control” appears in the construction of related terms in Cases IPR2017-00950, IPR2017-00951, and IPR2017-00952 adopted by the Board. *E.g.*, Case IPR2017-00950, Paper 42, at 20 (PTAB Sept. 19, 2018). The challenged patent at issue in those cases (i.e., the ’263 patent) issued from a continuation of the application that issued as the ’801 patent (in other words, they share a common specification). Ex. 1001, at [21]; Ex. 2008, at [63]. The parties addressed the recited guides being “control software” extensively at the oral hearing. *See, e.g.*, Tr. 18:4–11, 20:20–21:4, 27:3–9, 30:24–25, 31:24–33:14, 81:23–82:11, 82:23–83:6. Because neither party addresses the omission of “control” in this proceeding, we find it unnecessary to add it to our construction, but note that doing so would not affect our analysis of the unpatentability grounds discussed below.

into those terms beyond those recited in the claims. We also maintain that the claim terms “local guide” and “remote guide” are separately identifiable elements, and are not construed properly as reading on the same guide.

B. Prior Art Status of Humpleman Provisional

Rovi contends that Humpleman Provisional (U.S. Provisional 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. 47–50. 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 Humpleman Provisional 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 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. 49–50. 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. 49–50 (citing *Synopsys, Inc. v. Mentor Graphics Corp.*, Case IPR2012-00041, slip op. at 9 (PTAB Feb. 22, 2013) (Paper 16); *WTS Paradigm, LLC v. EdgeAQ LLC*, Case IPR2016-00199, slip op. at 20–21 (PTAB May 11, 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. Asserted Obviousness over Humpleman and Killian

Comcast contends that claims 1–54 of the ’801 patent are unpatentable under 35 U.S.C. § 103(a) as obvious over Humpleman and Killian. Pet. 19–38. 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 ¶¶ 93–173. 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 claim 1 obvious. PO Resp. 17–46. Rovi relies upon the Declaration of Dr. Shamos to support his positions. Ex. 2006 ¶¶ 30–50, 88–94, 98–124.

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 the asserted grounds 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 '801 patent, would be an individual who possesses the following:

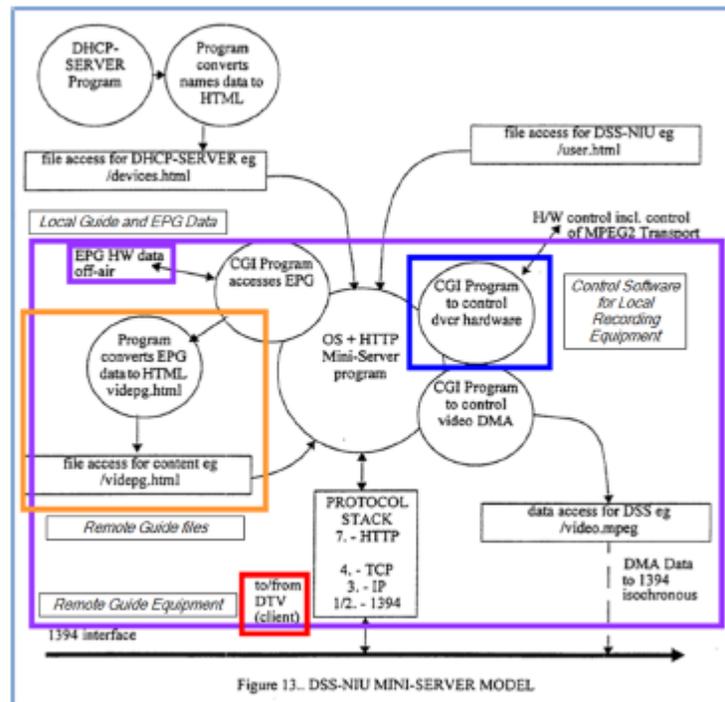
a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and two years of experience with interactive program guides, set-top boxes, mobile computer devices, and techniques for delivering content or program guides over communication networks, such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

Pet. 13 (citing Ex. 1002 ¶¶ 27–29). 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.* (citing Ex. 1002 ¶¶ 27–29). 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. 2006. Because Dr. Shamos's testimony does not address this matter, we adopt Dr. Tjaden's assessment because it is consistent with the '801 patent and the asserted prior art, and apply it to our obviousness evaluation below.

3. *Overview of Humpleman*

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.

As discussed above, Humpleman claims priority to and incorporates by reference (*id.* at 1:7–13) Humpleman Provisional (Ex. 1007), which provides further insight into the software structures disclosed. An annotated version of Figure 13 of that provisional patent application is reproduced below:



The annotated version of the figure illustrates portions that Comcast argues correspond to different claimed portions, with the show 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. Humpleman Provisional 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 DVCR connected to their home network via the Internet, in order to record the particular event.” *Id.* at 20:47–51.

4. Overview of Killian

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

5. Analysis

In its Petition, Comcast contends that a person of ordinary skill in the art would have found it obvious to include interactive selection and control features in the guide software in Humpleman’s local and remote guides, with some of those associated functionalities already admitted as known in the ’801 patent. Pet. 22 (citing Ex. 1001, 1:33–42). 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 22–25.

Comcast argues first 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 23–24 (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 (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 devices and a simple substitution of one known, closely-related element for another that produces predictable results. *Id.* at 24–25 (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, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51 are essentially the same as the limitations of independent claim 1. *Compare* Pet. 8–11, 58–77, *with* PO Resp. 17–46.

Beginning with the preamble of independent claim 1, Comcast contends that Humpleman teaches a “method of enabling a user to perform recordings.” Pet. 25 (citing Ex. 1006, 20:42–51; Ex. 1002 ¶¶ 109–110). In support, 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 also contends that Humpleman teaches “generating, with a remote guide accessible by a user of a remote device, a display comprising a plurality of program listings for display on the remote device,” as recited in independent claim 1, because Humpleman generates a remote access HTML program guide based on guide data underlying the guide displayed by the DSS, where the HTML guide may be displayed on any browser-equipped device. *Id.* at 26 (citing Ex. 1006, 7:25–35, 22:33–59; Ex. 1007, 21, Fig. 13; Ex. 1002 ¶ 115). 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 remotely located computer. *Id.* at 27 (citing Ex. 1007, 3, ¶ 3; Ex. 1006, 20:42–52; Ex. 1002 ¶ 115).

Comcast further contends “wherein the display is generated by the remote guide based on program guide information received from a local guide implemented on user equipment via the Internet,” as recited in independent claim 1, because Humpleman generates the remote HTML guide (i.e., the “remote guide”) based on the same “EPG information” (i.e., “program guide information”) underlying the local guide stored by the DSS (i.e., the program guide information is “from a local guide”). *Id.* at 27–28 (citing Ex. 1006, 22:34–39; Ex. 1007, 21, Fig. 13; Ex. 1002 ¶¶ 121, 122). Comcast further contends that Humpleman’s remote HTML guide can be customized based on user preference information (also “program guide

information”) by the DSS. *Id.* at 28 (citing Ex. 1006, 22:41–46; Ex. 1002 ¶ 122).

Comcast also contends Humpleman teaches “wherein the user equipment is remote to the remote device” and wherein “the user equipment is located at a user site,” as recited in independent claim 1. *Id.* (citing Ex. 1006, 1:21–36, 2:31–39, 20:42–51, 22:31–47; Ex. 1007, 3, ¶ 3; Ex. 1002 ¶¶ 124–126). Comcast contends Humpleman teaches “wherein the local guide generates a display of one or more program listings for display on a display device at the user site,” as recited in independent claim 1, because Humpleman’s “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, 22:31–47) (citing Ex. 1002 ¶¶ 127–129).

Comcast contends Humpleman teaches both a local guide and a remote guide, but argues that if “guide” is construed to require “interactive selection and control features generally associated with interactive television program guides,” a person of ordinary skill in the art would have found it obvious to implement Humpleman’s guides using well-known interactive program guide techniques, such as those taught in Killian. *Id.* at 28–29 (citing Ex. 1002 ¶¶ 116, 130). In particular, Comcast contends Killian’s interactive program guide “generates displays of programming information and receives user input to, for example, navigate through program listings, select programs for recording, and control functions of the receiver.” *Id.* at 29 (citing Ex. 1008, Fig. 5, 3:20–33, 4:7–13, 7:8–16, 13:12–21; Ex. 1002 ¶ 117). According to Comcast, using the interactive program guide features in Killian with Humpleman’s local and remote guides would have been use of a known technique (Killian’s interactive features) to improve a similar

device (Humbleman's remote HTML guide on the work personal computer and local EPG output by the DSS) to obtain a predictable result: "allowing viewers to more intelligently select, schedule, and record their viewing opportunities." *Id.* at 29–30 (quoting Ex. 1008, 1:20–23) (citing Ex. 1002 ¶¶ 118, 134, 135).

Comcast also contends that Humbleman teaches "receiving, with the remote guide, a user selection of a program listing from the plurality of program listings" and "wherein the user selection identifies a program corresponding to the selected program listing for recording by the local guide," as recited in independent claim 1, because Humbleman discloses that, once a selection is made via the HTML guide, identification of the program is provided which the interface receives and passes along to the VCR to accomplish a recording of the selected program. *Id.* at 31–32 (citing Ex. 1006, 14:5–14, 20:42–51, 22:22–60; Ex. 1007, 2 ¶ 2, 4 ¶ 2, 6 ¶ 6, 10, 14 ¶¶ 1–4, 12 ¶ 1, Figs. 2, 9; Ex. 1002 ¶¶ 137–142).

Comcast contends that Humbleman teaches "transmitting, with the remote guide, a communication to the local guide identifying the program corresponding to the selected program listing via the Internet," as recited in independent claim 1, because Humbleman 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 32 (citing Ex. 1006, 20:42–51; Ex. 1007, 14 ¶¶ 1–4, 12 ¶ 1, Fig. 9; Ex. 1002 ¶¶ 143–147).

Comcast contends Humpleman teaches “receiving the communication with the local guide,” as recited in independent claim 1, because Humpleman’s DSS software (i.e., “local guide”) receives the communication transmitted from the remote device responsive to the user making a selection in a displayed HTML program guide (i.e., “remote guide”). *Id.* at 35 (citing Ex. 1006, 20:42–51; Ex. 1007, 14 ¶ 4; Ex. 1002 ¶ 152). Comcast also contends Humpleman teaches, “responsive to the communication, scheduling, with the local guide, the program corresponding to the selected program listing for recording by the user 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.* (citing Ex. 1006, 20:42–51). Comcast further argues that 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, 14 ¶¶ 1–4).

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 recited in independent claim 1; and (2) whether Comcast has demonstrated that a person of ordinary skill in the art would have combined the teachings of Humpleman and Killian. PO Resp. 17–47. 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 “does not disclose two guides.” PO Resp. 25. Rovi points out that “the claims do not allow for the remote access guide to bypass the local guide by communicating directly with the local interactive television program guide equipment,” which Rovi alleges that Humpleman’s system does. *See id.* at 24–25. 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 guide.” *Id.* at 25–26 (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. 2006 ¶¶ 112, 118).

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 they would communicate to schedule recordings.” Pet. Reply 9. 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 9–10. 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 11 (citing Ex. 1052 ¶ 29; Ex. 1006, 6:31–37; Ex. 1007, 14).

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 22.

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. 20–21. For this determination, we look to our construction of the claim term “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 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 findings of fact, it is in the interest of justice to consider sworn inconsistent testimony on an identical issue when there is a minimal burden to 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 a “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, 25–26. We have previously decided, and Rovi does not appear to dispute, that Humpleman Provisional discloses communication between two

guides. *See* Dec. on Inst. 20 (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 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 guide. 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, in response to the user making a selection in an HTML program guide (i.e., the ‘remote guide’), the remote device sends a message over the Internet to the DSS control application (i.e., the ‘local guide’) instructing the DVCR hardware to record the selected program. (Ex-1007, p.14, ¶4; Ex-1002, ¶97).”) (emphasis omitted).

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. 31–32. 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.*

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's DSS includes control software components to provide functionality associated with program guides, such as scheduling recordings using the One Touch Recording feature. Pet. Reply 16 (citing Ex. 1052 ¶¶ 29, 41; Ex. 1007, 14). 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. 11. 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 15 (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 Inc.*, 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 Rovi on notice of this argument in the Petition itself: “A [person of ordinary skill in the art] would have implemented Humpleman’s remote guide and local guide using the IPG features of Killian to provide users with conventional television control functionality.” Pet. 29 (citing Ex. 1002 ¶¶ 118, 133, 134).

Thus, Comcast argues—and we agree—that Humpleman in view of Killian also teaches a local guide. 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, as implemented, would not have had a local guide like conventional digital satellite services, it would have been obvious to implement such a local 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 guide through its DSS, or in combination with Killian, such that the local guide is rendered obvious in view of the combination of Humpleman and Killian, we determine that the resulting system would have a local guide that would be distinct from the remote guide, and would meet the requirements of the claimed “local guide.”¹⁰

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, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51. *See generally* PO Resp. 17–37. 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. 8, 11–12, 25–36, 58–77.

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

Rovi further contends that a person of ordinary skill would not have modified either of Humpleman’s alleged guides by incorporating features of Killian. PO Resp. 39. Rovi argues that “the very purpose of Humpleman is to eliminate any need to rely on conventional device-control interfaces and

¹⁰ We note this remains true even if the recited “guides” were required to be “interactive” guides because Comcast has shown the combination of Humpleman and Killian teaches guides that displays program listings and allows the user to navigate through the listings, make selections, and control recording functions. *See, e.g.*, Pet. 22–25.

instead utilize the common HTML pages across all devices.” *Id.* at 40 (citing Ex. 2006 ¶¶ 117–119).

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 39–41 (citing Ex. 2006 ¶¶ 117–119). 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 44–45. 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 “allow[s] viewers to more intelligently select, schedule, and record their viewing opportunities.” Pet. Reply 20–21 (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 24 (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 22–23 (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. 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’s 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 (quoting Ex. 1008, 1:20–23).

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.

Ex. 1006, 4:4–11 (cited at Pet. Reply 24) (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 22 (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 24 (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 language[s] 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 for the reasons discussed above. *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, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51 would have been obvious over the combined teachings of Humpleman and Killian.

6. Dependent claims

In its Patent Owner Response, Rovi does not address separately whether the combined teaching of Humpleman and Killian account for the limitations of the dependent claims. *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 Humpleman with those of Killian, and we agree with and adopt Comcast’s analysis. *See* Pet. 36–38, 58–77. Comcast, therefore, has demonstrated a by a preponderance of the evidence that the subject matter of the dependent claims would have been obvious over the combined teachings of Humpleman and Killian.

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

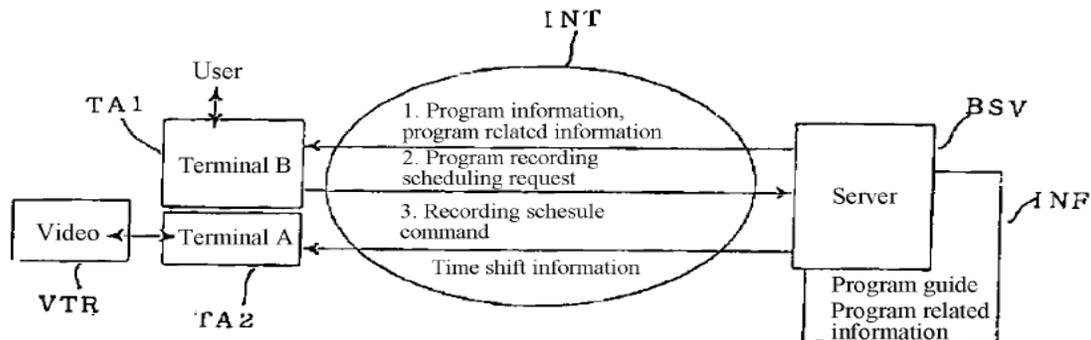
Comcast contends that claims 1–54 of the ’801 patent are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, and Kawamura. Pet. 38–57. Comcast explains how this proffered combination teaches or suggests the subject matter of each challenged claim, and provides reasoning as to why 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 ¶¶ 174–246. 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 elements of independent claims 1, 5, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51.

We begin our analysis with brief overviews of Kondo and Kawamura, and then we address on the parties’ contentions with respect to 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

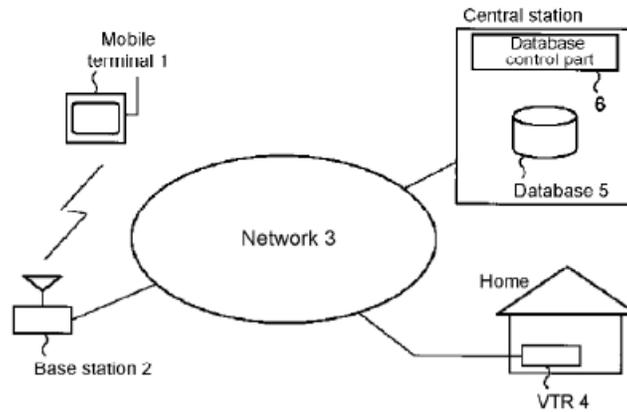
communication terminal TA2 (also labeled “Terminal A”), both of which communicate with server BSV via network INT. *Id.* ¶¶ 10, 12.

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. 1114 ¶¶ 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, 5, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51*

Comcast generally relies on Kondo for teaching the system recited in independent claim 1. Pet. 38–40. Comcast also cites Killian and Kawamura for teaching certain details regarding the claimed local guide and remote guide, respectively. *Id.* at 40–42.

Of particular importance to this ground, independent claim 1 recites, in relevant part, that the remote access interactive television program guide “transmitting, *with the remote guide*, a communication *to the local guide* identifying the program corresponding to the selected program listing via the Internet” (emphases added). Similar limitations are also found in the other contested, independent claims.

With respect to this limitation, Comcast relies on Kondo’s disclosure of transmitting a recording request for a program 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 52–53 (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 communication between two guides required by independent claim 1. *See* Dec. on Inst. 27–29.

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 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 TA1, the request is sent to 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 TA1, with a guide thereon, there would be no need for TA2 to have the same or similar guide at the terminal connected to the VTR. As such, both terminals 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 communications 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, requesting recordings, i.e., so that both terminals would have guides, 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 argued by Rovi. *See Prelim. Resp.* 26–27.

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 teach or suggest communication between separate guides. Comcast also has 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 elements of independent claims 1, 5, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51. Accordingly, Comcast has not demonstrated by a preponderance of the evidence that the subject

matter of independent claims 1, 5, 10, 15, 19, 23, 28, 33, 37, 41, 46, and 51 would have been obvious over the combined teachings of Kondo, Killian, and Kawamura.

4. Dependent Claims

Because we determine that Comcast has not demonstrated that the teachings of Kondo, Killian, and Kawamura account for all of the elements of the challenged independent claims, Comcast has not demonstrated by a preponderance of the evidence that the subject matter of the dependent claims would have been obvious over the combined teachings of Kondo, Killian, and Kawamura.

III. CONCLUSIONS

Comcast has demonstrated by a preponderance of the evidence that claims 1–54 are unpatentable under § 103(a) over the combined teachings of Humpleman and Killian. Comcast, however, has not demonstrated by a preponderance of the evidence that claims 1–54 are unpatentable under § 103(a) over the combined teachings of Kondo, Killian, and Kawamura.

IV. ORDER

Accordingly, it is
In consideration of the foregoing, it is
ORDERED that claims 1–54 of the '801 patent are held to be unpatentable; and

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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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PETITIONER:

Frederic M. Meeker
Bradley C. Wright
Scott M. Kelly
Azuka C. Dike
Joshua Davenport
Camille Sauer
Jared Radkiewicz
BANNER & WITCOFF, LTD
fmeeker@bannerwitcoff.com
brwright@bannerwitcoff.com
skelly@bannerwitfoff.com
adike@bannerwitcoff.com
jadavenport@bannerwitcoff.com
csauer@bannerwitcoff.com
jradkiewicz@bannerwitcoff.com

PATENT OWNER:

Mark D. Rowland
Gabrielle E. Higgins
Scott McKeown
Scott S. Taylor
Andrew Sutton
James R. Batchelder
Josef Schenker
David Chun
Henry Huang
ROPES & GRAY, LLP
mark.rowland@ropesgray.com
gabrielle.higgins@ropesgray.com
scott.mckeown@ropesgray.com
scott.taylor@ropesgray.com
andrew.sutton@ropesgray.com
james.batchelder@ropesgray.com
josef.schenker@ropesgray.com

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david.chun@ropesgray.com
henry.huang@ropesgray.com