

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

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COMCAST CABLE COMMUNICATIONS, LLC,  
Petitioner,

v.

PROMPTU SYSTEMS CORPORATION,  
Patent Owner.

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Case IPR2018-00340  
Patent 7,260,538

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**PETITIONER'S NOTICE OF APPEAL**

Pursuant to 35 U.S.C. §§ 141-142 and 37 C.F.R. § 90.2(a), notice is hereby given that petitioner Comcast Cable Communications, LLC (“Petitioner”) appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision of the Patent Trial and Appeal Board entered in IPR2018-00340 on March 29, 2019 (Paper 58), and from all underlying orders, decisions, rulings, and opinions. A copy of the Final Written Decision is attached.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Petitioner states that the anticipated issues on appeal may include, but are not necessarily limited to, the following:

1. Whether the Board erred in construing the terms of the challenged claims including, but not necessarily limited to, the following terms: “set-top-box-compatible command function corresponding to said voice command”; “controller-compatible command function corresponding to said voice command”; “set-top-box-compatible command functions corresponding to signals representing voice commands”; and “means responsive to receipt of the command functions for executing the command functions”;

2. Whether the Board erred in determining that the challenged claims are not unpatentable under 35 U.S.C. § 103 over U.S. Patent No. 6,513,063 (“Julia”);

3. Whether the Board erred in determining that the challenged claims are not unpatentable under 35 U.S.C. § 103 over Julia in view of U.S. Patent No.

5,774,859 (“Houser”);

4. Whether the Board erred in determining that the challenged claims are not unpatentable under 35 U.S.C. § 103 over U.S. Patent No. 7,013,283 (“Murdock”); and

5. Whether the Board erred in determining that the challenged claims are not unpatentable under 35 U.S.C. § 103 over Murdock in view of Houser.

A copy of this Notice of Appeal is being filed with the Patent Trial and Appeal Board. In addition, this Notice of Appeal is being filed, along with the required docketing fees, with the Clerk’s Office for the United States Court of Appeals for the Federal Circuit.

Dated: May 30, 2019

Respectfully submitted,

/s/ James L. Day

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**CERTIFICATE OF FILING AND SERVICE**

I hereby certify that on May 30, 2019, in addition to being filed electronically through the Patent Trial and Appeal Board's electronic filing system, the foregoing Notice of Appeal was filed by Federal Express to the Director of the United States Patent and Trademark Office at the following address:

Director of the United States Patent and Trademark Office  
c/o Office of the General Counsel  
Madison Building East, 10B20  
600 Dulany Street  
Alexandria, VA 22314-5793

In addition, I hereby certify that on May 30, 2019, the foregoing Notice of Appeal was electronically filed with the Clerk's Office of the United States Court of Appeals for the Federal Circuit.

In addition, I hereby certify that on May 30, 2019, the foregoing Notice of Appeal was served on the Patent Owner's counsel of record via email, as agreed to by Patent Owner, at the following email addresses:

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May 30, 2019  
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# ATTACHMENT

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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COMCAST CABLE COMMUNICATIONS, LLC,  
Petitioner,

v.

PROMPTU SYSTEMS CORPORATION,  
Patent Owner.

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Case IPR2018-00340  
Patent 7,260,538 B2

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Before JAMESON LEE, ROBERT L. KINDER, and  
ALEX S. YAP, *Administrative Patent Judges*.

YAP, *Administrative Patent Judge*.

FINAL WRITTEN DECISION  
*35 U.S.C. § 318(a)*

## I. INTRODUCTION

Petitioner, Comcast Cable Communications, LLC. (“Comcast”), filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–7, 17–24, and 33 of U.S. Patent 7,260,538 B2 (Ex. 1001, “the ’538 Patent”). We instituted review of claims 1–7, 17–24, and 33 on all grounds asserted in the Petition. Paper 10. Patent Owner, Promptu Systems Corporation (“Promptu”), filed a Response. Paper 20 (“Resp.”). Petitioner filed a Reply (Paper 29) and Patent Owner filed a Sur-Reply (Paper 37). An oral hearing was held on January 28, 2019. A copy of the transcript for the oral hearing has been entered as Paper 55 (“Tr.”).

As discussed below, Petitioner has not shown, by a preponderance of the evidence, that any of claims 1–7, 17–24, and 33 is unpatentable under any asserted grounds.

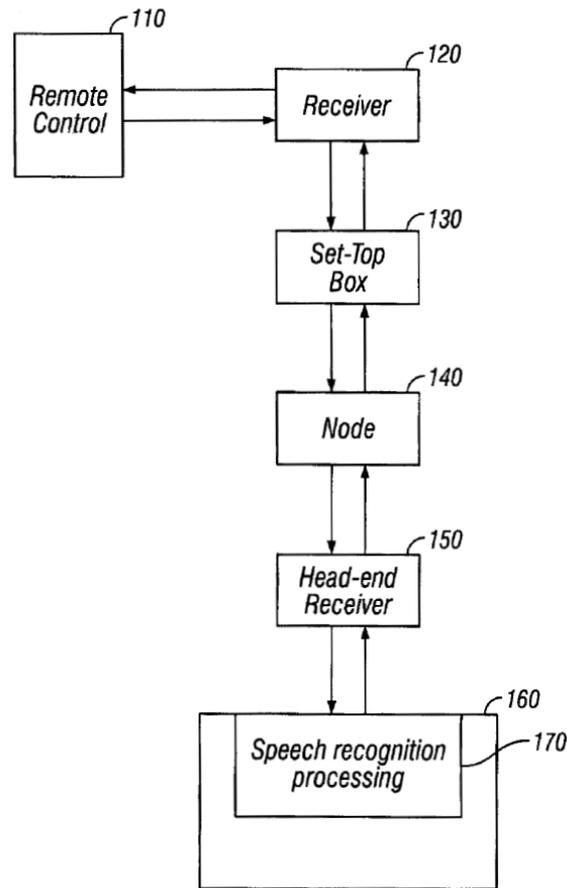
### A. *Related Matters*

The ’538 Patent is the subject of a pending civil action, *Promptu Systems Corporation v. Comcast Corporation and Comcast Cable Communications, LLC*, Case No. 2:16-cv-06516 (E.D. Pa.). Patent Owner’s Mandatory Notices (Paper 6), 2. Another petition for *inter partes* review has been filed by Petitioner on this patent in IPR2018-00341, which is pending before the Board. Pet. xii; *see also* IPR2018-00341, Paper 1. According to Patent Owner, the District Court stayed the pending civil action after the Board instituted trial in this matter. Patent Owner’s Updated Mandatory Notice (Paper 16), 2.

### B. *The ’538 Patent*

The ’538 Patent, titled “Method and Apparatus for Voice Control of a Television Control Device,” was issued on August 21, 2007. Ex. 1001, [45].

It issued from U.S. Patent Application 10/338,591, filed on January 7, 2003, and claims the benefit of U.S. Provisional Application No. 60/346,899 filed on January 8, 2002. *Id.* at [21], [22], [60]. The '538 Patent generally relates to a “method and apparatus [] for remotely processing voice commands for controlling a television.” Ex. 1001, Abstract. Figure 1 of the '538 Patent is reproduced below.



**FIG. 1**

Figure 1 “is a diagram illustrating elements of the voice control television system according to the invention.” *Id.* at 2:52–53. According to the Specification, a “problem with the prior art voice recognition systems is that they require a sophisticated voice recognition system in close proximity to

the user, requiring individual units[,] which is quite costly.” *Id.* at 1:59–62. The Specification discloses “method and apparatus [] for remotely processing voice commands,” purportedly solving one of the alleged problems in prior art systems. *Id.* at Abstract. A user’s voice command “is received by a microphone contained in a [] remote control.” *Id.* at 2:23–25. The microphone in the remote control “is activated by the depression of a push-to-talk (PTT) button or by word activation.” *Id.* at 2:41–42. “The voice command is modulated and wirelessly transmitted to a wireless receiver connected to the set-top box.” *Id.* at 2:25–26. “The voice command is then transmitted, for example, to a central processing station located at a cable television head-end unit[, which] processes the voice command for voice command recognition.” *Id.* at 2:29–33. “Once the voice command is determined a command function is created [and] transmitted back to the set-top box where the set-top box performs the command function.” *Id.* at 2:33–37.

### *C. Challenged Claims*

Claims 1, 2, 18, and 19 are independent. Claims 1 and 2 are method claims “for providing voice recognition processing at a cable television head-end unit.” *Id.* at 9:20–21, 41–42. Claims 18 and 19 are apparatus claims directed to apparatus “for providing voice recognition processing at a cable television head-end unit” (*id.* at 11:26–27, 56–57). Claims 3–7 and 17 depend directly or indirectly from claim 2. Claims 20–24 and 33 depend directly or indirectly from claim 19. Independent claims 1 and 18, reproduced below, are illustrative of the challenged claims.

1. A method for providing voice recognition processing at a cable television head-end unit for a plurality of voice controlled television cable set-top boxes in a cable television network, comprising the steps of:

a television remote control receiving user-activated indication of a voice command;

receiving said voice command through a microphone associated with said television remote control;

said television remote control wirelessly transmitting a signal representing said voice command to a cable set-top box;

said cable set-top box transmitting a signal representing said voice command via cable television link to a remotely located head-end unit;

processing said voice command at said head-end unit;

the head-end unit deriving a set-top-box-compatible command function corresponding to said voice command;

the head-end unit transmitting said command function to said cable set-top box via the cable television link;

performing said command function at said cable set-top box.

Ex. 1001, 9:20–40.

18. An apparatus for providing voice recognition processing at a cable television head-end unit for a plurality of voice controlled television cable set-top boxes in a cable television network, comprising:

a television remote control including: activation means for receiving user-activated indication of a voice command, microphone means for receiving the voice command, and transmission means for wirelessly transmitting a signal representing the voice command to a cable television controller;

a cable television controller including receiver means for receiving the signal representing the voice command from the television remote control and transmitter means for transmitting a signal representing the voice command via cable television link to a remotely located head-end unit;

a head-end unit including processing means for deriving cable-television-controller-compatible command functions corresponding to signals representing the voice commands received from the cable television controllers, and transmission means for transmitting signals representing the command functions back to respective cable television controllers;

where the cable television controller additionally includes second receiver means for receiving the signals representing the command functions from the head-end unit via the cable television link, and where the cable television controller includes means responsive to receipt of the command functions for executing the command functions.

Ex. 1001, 11:26–55.

*D. References Relied Upon*

Petitioner relies on the following references:

<b>Exhibit</b>	<b>Reference</b>
1017	United States Patent No. 6,513,063 B1, filed March 14, 2000 (“Julia”).
1018	United States Patent No. 7,013,283 B1, filed November 16, 2000 (“Murdock”).
1019	United States Patent No. 5,774,859, issued June 30, 1998 (“Houser”).

Pet. 2–3. Petitioner also relies on the Declaration of Anthony Wechselberger (Ex. 1022, “Wechselberger Declaration”), the Reply Declaration of Anthony Wechselberger (Ex. 1032), and the Declaration of Daniel C. Callaway (Ex. 1021).

1. *Julia (Ex. 1017)*

Julia describes a “navigation of electronic data by means of spoken natural language requests.” Ex. 1017, 1:16–18. Figure 1a of Julia is reproduced below.

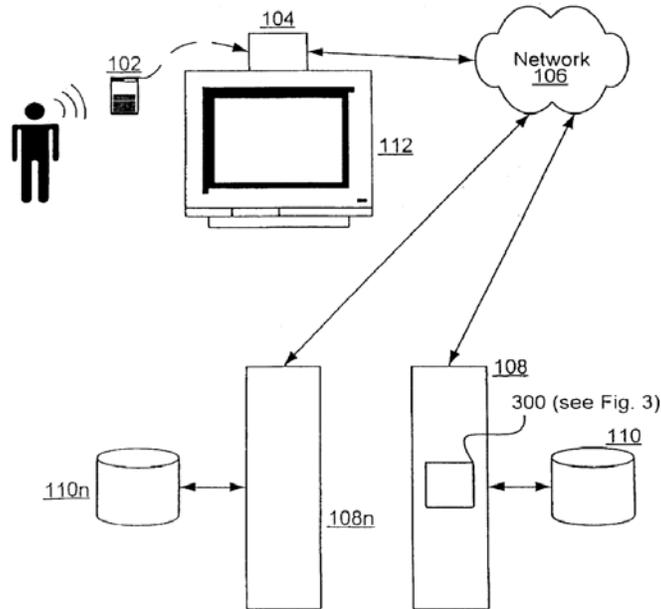


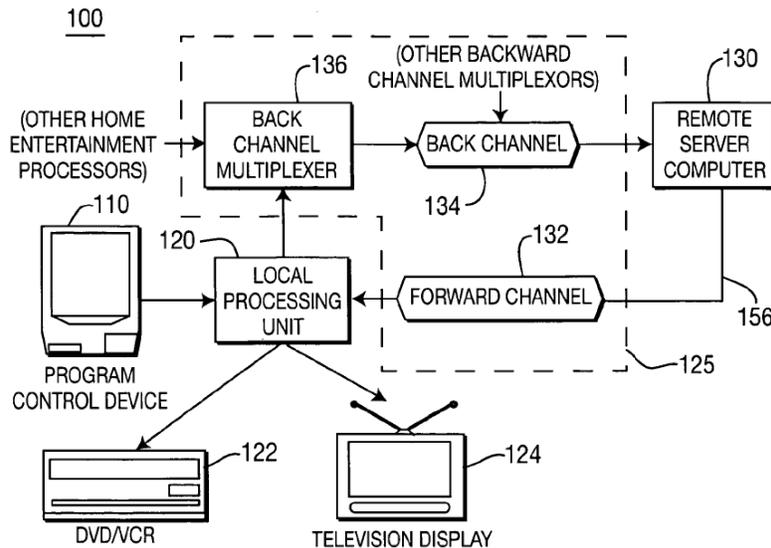
Fig. 1a

Figure 1a “illustrates a system providing a spoken natural language interface for network-based information navigation . . . with server-side processing of requests.” *Id.* at 3:6–9. “[A] user’s voice input data is captured by a voice input device 102, such as a microphone[, which p]referably [] includes a button or the like that can be pressed or held down to activate a listening mode.” *Id.* at 3:39–43. Input device 102 can be also be “a portable remote control device with an integrated microphone, and the voice data is transmitted from device 102 preferably via infrared (or other wireless) link to [a receiver in] communications box 104.” *Id.* at 3:46–52. “The voice data is then transmitted across network 106 to a remote server or servers 108.” *Id.* at 3:54–55. The voice data “is processed by request processing logic 300

in order to understand the user's request and construct an appropriate query or request for navigation of remote data.” *Id.* at 3:61–64. “Once the desired information has been retrieved from data source 110, it is electronically transmitted via network 106 to the user for viewing on client display device 112.” *Id.* at 4:18–20. Communications box 104 is used for “receiving and decoding/formatting the desired electronic information that is received across communications network 106.” *Id.* at 4:27–30. It is “preferabl[e to use] the same [] communications box 104, but [it] may also be a separate unit) for receiving and decoding/formatting the desired electronic information that is received across communications network 106.” *Id.* at 4:25–30.

## 2. *Murdock (Ex. 1018)*

Murdock describes a “system and a concomitant method for providing programming content in response to an audio signal.” Ex. 1018, Abstract. Figure 1 of Murdock is reproduced below.



**FIG. 1**

Figure 1 “depicts a high-level block diagram of a voice control system.”

Ex. 1018, 1:64–65. The program control device 110 can be “a portable or hand-held controller.” *Id.* at 2:35–36. It can “capture[] the input verbal command signal from the user of the voice activated control system 100.” *Id.* at 2:22–24. “Once the input command signal is received, the program control device 110 performs a transmission, *e.g.*, a wireless transmission, of the command signal to the local processing unit 120,” which “may include a set top terminal, a cable box, and the like.” *Id.* at 2:31–34, 45–47. The input command signal is then transmitted to remote server computer 130 via back channel 134. *Id.* at 3:1–12. Remote server computer 130 “performs speech recognition on the received signal, . . . retrieves the requested program content from a program database and transmits the retrieved program content via the forward channel 132 to the local processing unit 120.” *Id.* at 3:15–36. “Upon receipt of the requested programming content, the local processing unit 120 transmits the received content to the video player 122 or the television recorder 124.” *Id.* at 2:61–66.

### 3. *Houser (Ex. 1019)*

Houser describes a “system for controlling a device such as a television and for controlling access to broadcast information such as video, audio, and/or text information.” Ex. 1019, Abstract. Figure 1 of Houser is reproduced below.

**FIG. 1**

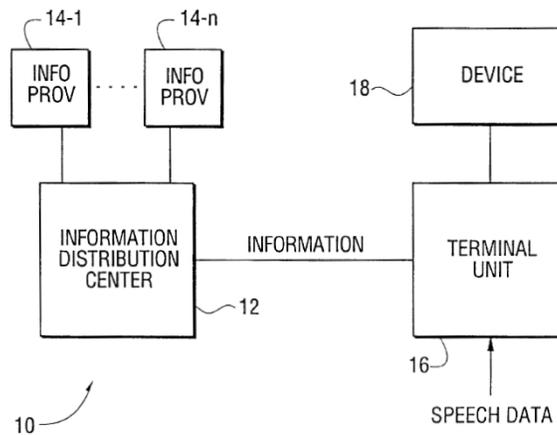


Figure 1 of Houser “is a generalized block diagram of an information system in accordance with” the claimed invention. Ex. 1019, 4:60–61. A remote control, which includes a microphone, captures “sounds or words spoken by a user” and transmits the sound data signals to terminal unit 16. *Id.* at 6:33–7:24. “Terminal unit 16 includes a processor for executing a speech recognition algorithm . . . to recognize, for example, commands for controlling device 18 or commands for accessing information transmitted by information distribution center 12.” *Id.* at 5:62–5:67. The information is then retrieved from “information distribution center 12[,] which receives information from one or more remotely located information providers 14-1, . . . 14-n[,] and supplies or broadcasts this information to a terminal unit 16.” *Id.* at 5:39–44. “Terminal unit 16 then [] generates a command for controlling device 18.” *Id.* at 5:67–6:2. “Device 18 may be any device [that] is capable of being operated in response to user supplied commands.” *Id.* at 7:27–29.

*E. Asserted Grounds of Unpatentability*

Petitioner challenges claims 1–7, 17–24, and 33 of the ’538 Patent based on the asserted grounds of unpatentability set forth in the following table. Pet. 1–3, 17–58.

<b>Ground</b>	<b>Reference(s)</b>	<b>Basis<sup>1</sup></b>	<b>Claims Challenged</b>
1	Julia	§ 103(a)	1–7, 17–24, and 33
2	Julia and Houser	§ 103(a)	1–7, 17–24, and 33
3	Murdock	§ 103(a)	1–7, 17–24, and 33
4	Murdock and Houser	§ 103(a)	1–7, 17–24, and 33

II. ANALYSIS

*A. Level of Ordinary Skill in the Art*

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). In that regard, Petitioner and Mr. Wechselberger contend that a person of ordinary skill in the relevant art would have:

- (i) an undergraduate degree (or equivalent) in electrical engineering, computer science, or a comparable subject and *at*

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<sup>1</sup> The relevant section of the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, took effect on March 16, 2013. Because the application from which the ’538 Patent issued was filed before that date, the pre-AIA statutory framework applies.

*least* three years of work experience in the field of analog and digital television systems with exposure to interactive networks and associated control technologies; or (ii) an advanced degree (or equivalent) in electrical engineering, computer science, or a comparable subject and at least one year of post-graduate research or work experience in the same field.

Pet. 7, emphases added; *see also* Ex. 1022 ¶¶ 101–102.

Quoting Petitioner’s proposal for the level of ordinary skill to be applied in connection with the reviews of related patents, Patent Owner contends that a person of ordinary skill in the relevant art would have:

(i) an undergraduate degree (or equivalent) in electrical engineering, computer science, or a comparable subject and at least three years of professional work experience in the field of multi-media systems ***including in particular speech recognition and control technologies***, or (ii) an advanced degree (or equivalent) in electrical engineering, computer science, or a comparable subject and at least one year of post-graduate research or work experience in the field of multi-media systems ***including in particular speech recognition and control technologies***.

Resp. 7 (*quoting Comcast Cable Commc’ns, LLC v. Promptu Sys. Corp.*, IPR2018-00342, Pet. at 8–9 (PTAB Dec. 19, 2017) (Paper 1)); *see also* Resp. 7–9 (asserting the level of ordinary skill as proposed by Petitioner in related IPR proceedings is appropriate for this case); Ex. 2033 ¶¶ 22–29 (same). As Patent Owner explains, its proposed definition is the same as that proposed by Petitioner in Case Nos. IPR2018-00342, IPR2018-00343, IPR2018-00344, and IPR2018-00345 (“other Comcast IPR proceedings”), which differs from Petitioner’s proposed definition in this proceeding in that the proposed definition in those other Comcast IPR proceedings includes a further requirement that the person of ordinary skill in the art at the time of the invention must also have experience in the field of multi-media systems

*“including in particular speech recognition and control technologies.”*

Resp. 6–9. Patent Owner explains that Petitioner’s proposed definition in this proceeding “would not necessarily include expertise with voice recognition technology, at least because ‘interactive networks and associated control technologies’ at the time of the invention for analog and digital television systems would not have included voice control, which was not commercially available (or well known) for television systems.” *Id.* at 8–9. Patent Owner also points out that “Promptu’s patents[, in this proceeding and the other Comcast IPR proceedings,] all relate to the same technology and claim various aspects of television voice command recognition and processing.” *Id.* at 6.

We agree with Petitioner that the definitions for a person of ordinary skill in the art involving unrelated patents in different proceedings need not be the same in each proceeding. Reply 2–4. Although the patents in each proceeding before us are issued to the same assignee and have some of the same inventors, the specific goal of each patent differ between proceedings. We also agree with Mr. Wechselberger that “[w]hile the ’538 Patent discloses a system that includes voice recognition processing,” it discusses voice recognition technology only as a component part of the system, and expertise in voice recognition technology was not required to understand the ’538 Patent because it does not discuss any particular voice recognition techniques or algorithms. Ex. 1032 ¶¶ 6–7. Therefore, we agree with Mr. Wechselberger that a practitioner would have understood how to implement existing voice recognition products in a cable television network without having special knowledge or experience with voice recognition algorithms. *Id.* ¶¶ 5–7.

For the foregoing reasons, we credit the testimony of Mr. Wechselberger regarding the person of ordinary skill in the art and adopt, with modification (*e.g.*, removing the words “at least” from Petitioner’s proposed definition), Petitioner’s definition of a person of ordinary skill in the art:

- (i) an undergraduate degree (or equivalent) in electrical engineering, computer science, or a comparable subject and three years of work experience in the field of analog and digital television systems with exposure to interactive networks and associated control technologies; or
- (ii) a Master’s of Science degree (or equivalent) in electrical engineering, computer science, or a comparable subject and one year of post-graduate research or work experience in the same field.

We further note that the prior art in the instant proceeding reflects the level of ordinary skill in the art at the time of the invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). For example, as reflected in *Julia*, a person of ordinary skill in the art would have familiarity with using a spoken natural language as an input into control systems. *See Ex. 1017*, 1:39–48.

## *B. Claim Construction*

### *1. General Principles*

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b) (2017);<sup>2</sup> *Cuozzo*

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<sup>2</sup> A recent amendment to this rule does not apply here, because the Petition was filed before November 13, 2018. *See* “Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board,” 83 Fed. Reg. 51,340 (Oct. 11, 2018)

*Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard as the claim construction standard to be applied in an *inter partes* review proceeding). Under the broadest reasonable interpretation standard, claim terms generally are 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. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Construction of a “means-plus-function” limitation under 35 U.S.C. § 112, sixth paragraph, involves two steps: first identifying the function explicitly recited in the claim, and then identifying the corresponding structure set forth in the written description that performs the particular function set forth in the claim. *Asyst Techs, Inc. v. Empak, Inc.*, 268 F.3d 1364, 1369–70 (Fed. Cir. 2001).

Petitioner proposes constructions for several terms in claim 18, including “activation means for receiving user-activated indication of a voice command,” “transmission means for wirelessly transmitting a signal representing the voice command to a cable television controller,” “processing means for deriving cable-television-controller-compatible command functions . . . ,” and “means responsive to receipt of the command functions.” Pet. 8–11. Patent Owner takes no position as to any of these terms. *See generally* Resp. Petitioner acknowledges, and we are persuaded on the record before us, that these are means-plus-function limitations that should be construed in accordance with 35 U.S.C. § 112, ¶ 6. *See id.*

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(amending 37 C.F.R. § 42.100(b) effective November 13, 2018) (to be codified at 37 C.F.R. pt. 42).

2. “*activation means for receiving user-activated indication of a voice command*”

Petitioner proposes the following construction for “activation means for receiving user-activated indication of a voice command”:

- Function: “receiving user-activated indication of a voice command”;
- Structure: “push to talk (PTT) button” or “a word recognition unit” and equivalents<sup>3</sup>.

Pet. 8 (citing Ex. 1022 ¶¶ 106–108; Ex. 1001 4:36–40, 7:37–40, Fig. 2).

Patent Owner does not propose an alternative construction nor does Patent Owner respond to Petitioner’s proposal. *See generally* Resp. Based on our review of the record before us, we partially adopt Petitioner’s proposed construction for the recited function but find the corresponding structure to be: “‘push to talk (PTT) button’ or ‘a voice processor and a buffer’ and equivalents.” Specifically, we replace “a word recognition unit” in the proposed corresponding structure with “a voice processor and a buffer” because “word recognition unit” is a functional recitation and does not identify any particular structure. The Specification refers to the “word recognition unit [a]s typically constructed of a voice processor and a buffer.” *See* Ex. 1001, 7:42–44.

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<sup>3</sup> We read “equivalents” in Petitioner’s proposed constructions for means plus function elements as referring to equivalents of the identified corresponding structure.

3. “*transmission means for wirelessly transmitting a signal representing the voice command to a cable television controller*”

Petitioner proposes the following construction for “transmission means for wirelessly transmitting a signal representing the voice command to a cable television controller”:

- Function: “wirelessly transmitting a signal representing the voice command to a cable television controller”;
- Structure: “transmitter 224,” which can be a “radio frequency (RF) transmitter” or an “infrared transmitter,” and equivalents.

Pet. 8–9 (citing Ex. 1022 ¶¶ 113–115; Ex. 1001, 2:54–56, 2:62–64, 4:37–40, 4:51–55, 11:33–35, Fig. 2). Patent Owner does not propose an alternative definition nor does Patent Owner respond to Petitioner’s proposal. *See generally* Resp. Based on our review of the record before us, we adopt Petitioner’s proposed construction for this term.

4. “*processing means for deriving cable-television-controller-compatible command functions . . .*”

Petitioner proposes the following construction for “processing means for deriving cable-television-controller-compatible command functions . . .”:

- Function: “deriving cable-television-controller-compatible command functions corresponding to signals representing the voice commands received from the cable television controllers”;
- Structure: “speech recognition processor 670” and equivalents.

Pet. 9 (citing Ex. 1022 ¶¶ 124–126; Ex. 1001, 5:46–56). Patent Owner does not propose an alternative definition nor does Patent Owner respond to Petitioner’s proposal. *See generally* Resp. Based on our review of the record before us, we adopt Petitioner’s proposed construction for this term.

5. “means responsive to receipt of the command functions for executing the command functions”

Petitioner proposes the following construction for “means responsive to receipt of the command functions for executing the command functions”:

- Function: “executing the command functions”;
- Structure: “a processor” and equivalents.

Pet. 10–11 (citing Ex. 1022 ¶¶ 136–138; Ex. 1001, 3:51–52, 4:20–24, 11:53–55). First, regarding the recited function, claim 18 includes the recitation “responsive to receipt of the command functions.” That is, the recited function is “responsive to receipt of the command functions for executing the command functions.” Neither Petitioner nor its expert explains why it is appropriate to remove “responsive to receipt of the command functions for” from the recited function. Pet. 10–11; Ex. 1022 ¶ 137.

Next, Petitioner is required to identify “the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function.” 37 C.F.R. § 42.104(b)(3). As the Federal Circuit has noted, “structure disclosed in the specification is “corresponding” structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim. This duty to link or associate structure to function is the *quid pro quo* for the convenience of employing § 112, ¶ 6.” *Saffran v. Johnson & Johnson*, 712 F.3d 549, 562 (Fed. Cir. 2013) (quoting *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)). We are not persuaded that Petitioner has identified sufficient corresponding structure for this means-plus-function limitation.

Here, Petitioner contends that the corresponding structure for performing the recited function is “‘a processor’ and equivalents.” Pet. 11. Petitioner’s expert further opines that “the patent identifies the Motorola DCT-2000 set-top box (’538 Patent[, ] 3:51–52), and a person of ordinary skill in the art would have known that the DCT-2000 includes a processor that executes command functions from the cable head-end.” Ex. 1022 ¶ 138. However, for means-plus-function limitations,

[i]f special programming is required for a general-purpose computer to perform the corresponding claimed function, then the default rule requiring disclosure of an algorithm applies. It is only in the rare circumstances where any general-purpose computer without any special programming can perform the function that an algorithm need not be disclosed.

*Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1365 (Fed. Cir. 2012); *see also Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1352 (Fed. Cir. 2015) (en banc) (“In cases . . . involving a claim limitation that is subject to § 112, para. 6 that must be implemented in a special purpose computer, this court has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor[; it must] disclose an algorithm for performing the claimed function.”) (citations omitted); *Aristocrat Techs. Austl. Party Ltd. vs. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

We decline to adopt Petitioner’s proposed construction because Petitioner has not explained sufficiently that the recited function for this term (“responsive to receipt of the command functions for executing the command functions”) is a basic computer function that would not require a special purpose computer, nor has Petitioner directed us to any portion of the

Specification sufficient to link a structure (*i.e.*, an algorithm)<sup>4</sup> to the recited function. The reference to “a processor” without specifying the algorithm is too generic to identify any specific structure. In *Aristocrat*, the Federal Circuit stated that “the corresponding structure for a § 112 ¶ 6 claim for a computer-implemented function is *the algorithm disclosed in the specification.*” *Id.*, emphasis added. As the Federal Circuit explained, “a general purpose computer programmed to carry out a particular algorithm creates a ‘new machine’ because a general purpose computer ‘in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software.’” 521 F.3d at 1333 (quoting *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1249 (Fed. Cir. 2005)); *see also WMS Gaming, Inc. v. Int’l Game Techs.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). Consequently, the specification must disclose enough of a specific algorithm to provide the necessary structure under § 112, sixth paragraph. *Finisar Corp. v. DirectTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008). Allowing a computer programmed to perform a specialized function to be claimed without disclosure of the algorithm used for that programming would exhibit the same type of impermissible overbreadth of purely functional claims. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008).

If special programming is required for a general-purpose computer to perform the corresponding claimed function, then the default rule requiring disclosure of an algorithm applies. It is only in the rare circumstances where any general-purpose computer without any special programming can perform the function that an algorithm need not be disclosed.

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<sup>4</sup> We do not opine on whether the Specification contains such an algorithm.

*Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1365 (Fed. Cir. 2012).

Here, by simply noting that “a processor” can perform the recited function of “responsive to receipt of the command functions for executing the command functions,” Petitioner has not identified the underlying algorithm to perform the recited function. Petitioner has not made the case that this falls within the narrow exception explained in *In re Katz Interactive Call Processing Patent Litigation*, 639 F.3d 1303, 1316 (Fed. Cir. 2011), where the function recited is generic and can be performed by any general-purpose computer without special programming, *e.g.*, “processing,” “receiving,” “storing.” Petitioner makes no explanation as to why the recited function would be so basic that it could be performed by “a processor” without any special programming. Accordingly, Petitioner has not identified corresponding structure, described in the Specification of the ’538 Patent, that causes a computer to perform the recited function of “responsive to receipt of the command functions for executing the command functions.”

#### 6. *Other Terms Containing “means for”*

Petitioner proposes that the following terms, in claim 18, containing the words “means for” should not be construed as means-plus-function terms: “microphone means for . . . ,” “receiver means for . . . ,” “transmitter means for . . . ,” and “second receiver means for . . . .” Pet. 11 (citing to Ex. 1022 ¶¶ 109–112, 116–119, 120–123, 131–135). Patent Owner does not propose any alternative definitions nor does Patent Owner respond to Petitioner’s proposal. *See generally* Resp.

The use of the term “means” triggers a rebuttable presumption that § 112, ¶ 6 applies. *TriMed, Inc. v. Stryker Corp.*, 514 F.3d 1256, 1259 (Fed. Cir. 2008). One way in which this presumption can be overcome is if “the claim recites sufficient structure for performing the described functions in their entirety.” *Id.* To determine if the claim recites sufficient structure, “it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.” *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1359–60 (Fed. Cir. 2004).

Here, for each limitation, the claim recites sufficient structure for performing the described functions. For example, a microphone is sufficient structure “for receiving the voice command” (Ex. 1022 ¶ 109) and a transmitter is sufficient structure for “transmitting a signal representing the voice command via cable television link to a remotely located head-end unit” (*id.* ¶ 120). *See also id.* ¶¶ 110–112, 116–119, 121–123, 131–135. Therefore, based on our review of the record before us, we are persuaded by Petitioner that these terms do not invoke 35 U.S.C. § 112, ¶ 6.

### C. *Obviousness*

#### 1. *General Principles*

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).

An invention “composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. Rather, to establish obviousness, petitioner bears the “burden to demonstrate both that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1381 (Fed. Cir. 2016) (internal quotations omitted); *see KSR*, 550 U.S. at 418. Moreover, a petitioner cannot satisfy this burden by “employ[ing] mere conclusory statements” and “must instead articulate specific reasoning, based on evidence of record” to support an obviousness determination. *Magnum Oil*, 829 F.3d at 1380. Stated differently, there must be “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

The “factual inquiry” into the reasons for “combin[ing] references must be thorough and searching, and the need for specificity pervades . . . .” *In re Nuvasive, Inc.*, 842 F.3d 1376, 1381–82 (Fed. Cir. 2016) (internal quotations and brackets omitted). A determination of obviousness cannot be reached where the record lacks “explanation as to *how* or *why* the references would be combined to produce the claimed invention.” *TriVascular, Inc. v.*

*Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016); *see Nuvasive*, 842 F.3d at 1382–86 (holding that an obviousness determination cannot be reached where there is no “articulat[ion of] a *reason why* a [person having ordinary skill in the art] would combine” and “modify” the prior art teachings). This required explanation as to how and why the references would be combined avoids an impermissible “hindsight reconstruction,” using “the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.” *TriVascular*, 812 F.3d at 1066; *see also In re NTP, Inc.*, 654 F.3d 1279, 1299 (Fed. Cir. 2011). We analyze the asserted grounds based on obviousness with these principles in mind.

## 2. *Claim 18*

As discussed above, Petitioner fails to identify the structure corresponding to the recited function “responsive to receipt of the command functions for executing the command functions” within the means-plus-function element “means responsive to receipt of the command functions for executing the command functions” of claim 18. As such, we determine that Petitioner has not established, by a preponderance of the evidence, the unpatentability of claim 18 in *any* of the asserted grounds (Grounds 1 to 4).

## 3. *Combination Grounds – Obviousness over Julia in view of Houser and Obviousness over Murdock in view of Houser*

Patent Owner contends that “Petitioner’s combinations fail because [Petitioner] did not articulate a sufficient motivation to combine the features of the prior art to yield the claimed invention.” Resp. 12–13. According to Patent Owner, “[t]he entirety of the [P]etition’s discussion of a motivation to

combine Julia with Houser (or Murdock with Houser) falls within a mere two paragraphs of each ground.” *Id.* at 13–15.

Petitioner notes that a person of ordinary skill in the art would have been motivated to combine Julia with Houser and Murdock with Houser because the references “all relate to the field of interactive television systems specifically including cable television networks” (*i.e.*, analogous art) and that they all “also address the same problem of providing voice control capability in such an interactive television system.” Pet. 44–45, 70–71. Petitioner also states that “a person of ordinary skill in the art would have recognize[d] the benefits of combining” the references and that such a combination “would have been no more than combining prior art elements according to known methods to yield predictable results.” *Id.*

Petitioner’s conclusory rationale for the combinations, however, is untethered to any claim limitations. *See* Pet. 44–45, 70–71 (citing to Ex. 1022 ¶¶ 375–380, 382–383, 493–497, 499–500). For example, when discussing the combination of the references for a particular limitation, Petitioner starts with a discussion of either Julia or Murdock, followed by a discussion of Houser, and then provides a conclusory assertion that the combination would disclose the limitation at issue. *See, e.g.*, Pet. 24–26 (“In Julia . . . . In addition to the disclosures in Julia, the Houser prior art patent also discloses . . . . Thus, Julia alone or combined with Houser discloses . . . .”), 27–28 (“As explained above, Julia discloses . . . . In addition, Houser also discloses . . . . Thus, Julia alone or combined with Houser discloses . . . .”). These discussions do not articulate, with respect to any specific limitation, or for any claim as a whole, why or how Julia or Murdock can and should be combined with Houser.

A determination of obviousness cannot be reached where the record lacks “explanation as to *how* or *why* the references would be combined to produce the claimed invention.” *TriVascular*, 812 F.3d at 1066. The Petitioner also states that “a skilled artisan would have been capable of combining the teaching[s] of [the prior art references because such] combination[s] would have been no more than combining prior art elements according to known methods to yield predictable results.” However, this discussion is similarly untethered to any claim element, or to the claim as a whole. Pet. 45, 72 (citing to Ex. 1022 ¶¶ 382–383;<sup>5</sup> 499–500.) And, again, we are not informed what teaching of one reference is proposed to be combined with what teaching of the other reference, or why and how the combination would have been made. To the extent Petitioner’s position is that once it establishes that two prior art references are within the same field and are directed to solving the same problem, then all features within one reference can be used within the other, and vice versa, without need for further explanation, it cites no authority to support that broad position and we are aware of none.

Therefore, we determine that Petitioner has not established, by a preponderance of the evidence, that claims 1–7, 17, 19–24, and 33 would have been obvious over Julia in view of Houser or Murdock in view of Houser.

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<sup>5</sup> The Petition cites, erroneously, to paragraphs 382 to 383 of the Wechselberger Declaration. Pet. 45. We assume Petitioner intends to cite to paragraphs 322 to 323 of the Wechselberger Declaration.

4. *Single Reference Obviousness Grounds – Obvious over Julia alone or Obvious over Murdock Alone*

a. *Claims 1–7, 17, 19–24, and 33*

Petitioner contends that claims 1–7, 17, 19–24, and 33 are unpatentable over Julia alone or Murdock alone under 35 U.S.C. § 103(a), relying on the supporting testimony of Mr. Wechselberger (Exs. 1022, 1032). Pet. 18–35, 40–61, 66–70; *see also* Reply 4–12.

Patent Owner makes numerous arguments regarding how Julia or Murdock fails to “renders obvious several specific claim features” of claims 1–7, 17, 19–24, and 33. Resp. 22–50; Sur-Reply 9–19; *see also* Resp. 15–22 (discussing the Petition’s alleged deficiency in its *Graham* analysis); Sur-Reply 8–9 (same).

As discussed below, we determine that Petitioner has not established, by a preponderance of the evidence, that either Julia alone or Murdock alone teaches “the head-end unit deriving a set-top-box-compatible command function corresponding to said voice command” limitation of independent claims 1 and 2 or “a head-end unit to derive set-top-box-compatible command functions corresponding to signals representing voice commands” limitation of independent claim 19.

In light of these deficiencies, Petitioner has not persuasively established that any of claims 1–7, 17, 19–24, and 33 would have been unpatentable. Because the above issue is dispositive, we exercise our discretion to not reach all other arguments raised by Patent Owner regarding the non-obviousness of these claims.

Petitioner and its declarant cite to three examples to show how Julia teaches the limitation “the head-end unit deriving a set-top-box-compatible

command function corresponding to said voice command,” as recited in claim 1 and similarly recited in claims 2 and 19.<sup>6</sup> Pet. 24–26.

*(1) Decoding / Formatting*

Petitioner, citing to various portions of Julia and the testimony of Mr. Wechselberger, explains that after the “remote server performs speech recognition processing[, it] then constructs a query to obtain the requested content.” Pet. 24 (citing Ex. 1017, 3:61–64). The desired content is then searched and retrieved. *Id.* According to Petitioner’s expert, “[i]n the case of an on-demand video (and other types of content), the information must be decoded and formatted by the set-top box before being displayed.” Ex. 1022 ¶ 178 (citing to Julia, Ex. 1017, 4:25–30 (“display device 112 is coupled to or integrated with a communications box (which is preferably the same as communications box 104, but may also be a separate unit) for receiving and decoding/formatting the desired electronic information that is received across communications network 106”), emphasis omitted).

Patent Owner and its declarant, Mr. Tinsman, disagree. Resp. 29–31; Ex. 2033 ¶¶ 41–43. Patent Owner points out that “Petitioner does not explain why decoding/formatting video content requires the claimed command” and contends that a “POSITA would know that decoding and formatting content data does not require that a command be derived by a head-end unit in response to a user’s query and then sent to the set-top box.” Resp. 29 (citing Ex. 2033 ¶¶ 41–43). According to Patent Owner’s declarant, Mr. Tinsman, Petitioner “has not shown that that information

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<sup>6</sup> The parties analyze these claim limitations together. We will address this limitation of claim 1 as representative of the corresponding limitations in claims 2 and 19.

includes a set-top box compatible command function” because “while the references’ disclosures broadly indicate that their set-top boxes receive some information from a remote network location,” the information does not require a command to be sent for decoding or formatting. Ex. 2033 ¶ 43.

Specifically, Mr. Tinsman testifies:

Cable digital television content is typically transmitted as compressed data that must be decompressed by the set-top box for display on a television. Such content information is generally comprised of the compressed video data accompanied by metadata describing the content data to the set-top box, including, e.g., details of the data’s format. A POSITA would know that a set-top box does not need to receive specific instructions to perform a function every time it receives content data. Instead, the video decoder in the set top box automatically decodes the incoming data for display on a television without needing specific instructions to do so from the head-end unit.

*Id.* We credit the above-quoted testimony of Mr. Tinsman, and find it to be persuasive. Patent Owner also points out that Mr. Wechselberger admitted that decoding and formatting information does not necessarily require a command to be sent. Resp. 29–30 (citing Ex. 2034, 50:20–24 (“Q Is it your opinion that decoding and formatting information necessarily requires a command to be sent from the head end to the set top box? A No.”)); *see also* Ex. 2034, 50:25–52:20.

In contrast, we do not credit the conclusory testimony of Mr. Wechselberger that “[a] person of ordinary skill in the art would know that remote server 108 would send a ‘set-top-box-compatible command function’ to the communications box 104 (‘set-top box’) as a prerequisite to permit it to decode and format the video signal for display on display device 112.” Ex. 1022 ¶ 178. This conclusory statement is not supported by persuasive evidence, and is inconsistent with Mr. Wechselberger’s admission that

decoding and formatting information does not necessarily require a command to be sent. *See* Ex. 2034, 50:20–24.

Petitioner also contends that:

Patent Owner’s argument is based on an unstated, narrow construction of the term “set-top-box-compatible instructions” [and] Patent Owner is unable to do so because the ’538 Patent does not specifically define or use the term, except in the claims, *and instead refers broadly to derived voice commands that cause the user’s set-top box to display video content or otherwise perform a function.*

Reply 8, emphasis added.<sup>7</sup> Petitioner’s counsel argued during the oral hearing that a “command function” can simply be information as long as it causes the set-top box to perform a function:

JUDGE YAP: So a command can be a head end unit sending an instruction or sending something akin to “display this pop up box on the screen?” Or it can also be, according to you, a movie, just basically the name of a movie, just information about the movie, and it just displays it, and that would also be a command. Is that right?

MR. DAY: I think that’s right. There’s nothing in -- well, yes, Your Honor. There’s nothing in the patent that requires a narrower reading of what’s happening here. The invention is not -- these command functions are not part of the invention here. The patent doesn’t talk about command functions and say, oh, we have this really neat thing, we’re going to send command functions. What it talks about is the user can speak a voice command into their remote, it’s going to be interpreted -- whatever they ask for is going to happen. That’s what the patent is about.

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<sup>7</sup> Petitioner appears to be referring to “set-top-box-compatible command function” (in claims 1, 2, 19) and “set-top-box-compatible instructions” (claims 34 and 41) interchangeably.

And so these command functions just are not defined in a narrow way to be anything other than what you just said. *Yes, sending information, sending data. If it causes the set top box to perform a function, then it's a set top box compatible command function.*

Tr. 23:18–24:12, emphasis added; *see also* Ex. 1032 ¶ 18.

We are not persuaded that a command function can be any kind of information or data that causes the set-top box to perform a function. Petitioner's reading of the term "command function" is unreasonably broad.<sup>8</sup> The claim requires "the head-end unit [to] deriv[e] a set-top-box-compatible command function corresponding to said voice command." Ex. 1001, 9:35–36. Petitioner's construction of "command function" would essentially read the term out of the claim. Importantly, the term "command function" should at least include a "command" to perform a function. The Specification also does not describe "command function" as simply information or data. *See, e.g.,* Ex. 1001 2:35–39 ("The command function is transmitted back to the set-top box where the set-top box *performs the command function*). Alternatively, the set-top box just passes on the command and the head end performs or carries out the command."), emphasis added; 4:19–23 ("After the voice command is processed, the central processing station 160 sends a corresponding command function to the cable set-top box 130 or other system component where *the command is then performed*."), emphasis added.

Petitioner has not established that everything that leads to performing a function is a command. For instance, a function may be performed upon

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<sup>8</sup> The parties do not offer any explicit claim construction for this term.

the satisfaction of a condition, *e.g.*, when A happens, then do B. Although B is performed as a result of A occurring, A is not a command to perform B.

Petitioner also contends that “Patent Owner not only fails to disclose and support its narrow construction of the term ‘set-top-box-compatible command function,’ it abandons its construction when mapping the challenged claims to its own product” in Patent Owner’s attempt to show a nexus between its product (AgileTV) to the challenged claims. Reply 8–11. This argument is not persuasive because, as the Patent Owner points out, “Ex. 2008, which Mr. Tinsman relied on in forming his opinion, expressly states that the system issued ‘*appropriate action commands* to the set-top box as speech requests are recognized.” Sur-Reply 15.

Petitioner also argues that “Patent Owner’s declarant and former CTO David Chaiken testified that the similar term ‘set-top-box-compatible command function’ refers broadly to anything causing the set-top box to show video content or perform a function.” Reply 9 n.3 (citing Ex. 1027, 17:21–18:24, 19:12–20:4). Petitioner’s reliance on Dr. Chaiken’s testimony is not persuasive because, although Dr. Chaiken was discussing his understanding of the AgileTV system and how it was an embodiment of the challenged claims, he is not an inventor of the ’538 Patent nor was he opining on the definition of the term as would have been understood by a person of ordinary skill in the art. Reply 9, n.3; Sur-Reply 13–14.

For the foregoing reasons, we determine that Petitioner’s construction of “command function” is unreasonably broad . Accordingly, we determine that Petitioner has not established that a person of ordinary skill in the art would have understood from Julia’s disclosure that “‘set-top-box-compatible command function’ [would be sent] to the communications box 104 (‘set-top

box’) as a prerequisite to permit it to decode and format the video signal for display on display device 112,” as Mr. Wechselberger opines. Ex. 1022 ¶ 178.

*(2) Authorization and Security Information*

In addition, Petitioner, relying on Mr. Wechselberger’s testimony, states that “[a] skilled artisan would also know that the head-end unit sends authorization and security information to the user’s set-top box to permit it to display the movie[, and that s]uch conditional authorization and security information also constitutes a ‘set-top box compatible command function.’” Pet. 25; *see* Ex. 1022 ¶ 179. Patent Owner and its declarant, Mr. Tinsman, disagree. Resp. 31–33; Ex. 2033 ¶¶ 41–43. Patent Owner points out that Petitioner does not explain why “authorization and security information requires deriving and transmitting a set-top box compatible command” and contends that a “POSITA would know that conditional authorization and security information does not need to be a command.” Resp. 31 (citing Ex. 2033 ¶¶ 44–46). Particularly, Patent Owner’s declarant, Mr. Tinsman, explains that:

45. A POSITA would know that conditional authorization and security information does not need to be a command. Premium channels such as HBO may be encrypted. Security information delivered to a set-top box can include the digital key data needed to decrypt a given channel. But such keys are not themselves commands; they simply provide data necessary to view a program in the event a user chooses to do so. Like receiving a key for a physical door, receiving the encryption key data provides the ability—but not the affirmative instruction—to unlock the content. In my view, the mere receipt of authorization and security information does not require that the head-end unit send the set-top box a command function, and Comcast has thus not explained how Julia or Murdock render obvious this claim feature.

46. A POSITA would also know that authorization and security information does not always need to be sent in response to a user's query. As an example, when a user first subscribes to HBO, the cable company sends the set-top box information allowing it to display HBO on the television. But once the set-top box is configured to enable a user access to a particular channel, the cable company does not need to send authorization information to the set-top box every time the user asks the voice remote to play the channel. The delivery of the channel could thus occur as a direct result of a user's voice command to find a specific film or program, without any authorization or security information being sent in response to the user's command. Consequently, it is incorrect to conclude that the delivery of any needed entitlements to view a program is a direct result of the claimed voice request.

Ex. 2033 ¶¶ 45–46; *see also* Resp. 31–32. We find Mr. Tinsman's testimony to be well-explained and well-reasoned, and we therefore afford it substantial weight. In contrast, we do not credit the conclusory testimony of Mr. Wechselberger that “[a] skilled artisan would also know that the head-end unit sends authorization and security information to the user's set-top box to permit it to display the movie[, and that s]uch conditional authorization and security information also constitutes a ‘set-top box compatible command function.’” Pet. 25; *see* Ex. 1022 ¶ 179. Petitioner also relies on the claim construction argument, as discussed above. Accordingly, for the same reasons discussed above, we determine that Petitioner has not established that a person of ordinary skill in the art would have understood that conditional authorization and security information also constitutes a “set-top box compatible command function.” *Id.*; *see also* Reply 8–11.

*(3) Displaying Interactive Menu*

Petitioner provides a third example of how Julia teaches “the head-end unit deriving a set-top-box-compatible command function corresponding to said voice command” limitation. Petitioner notes that “[i]n addition to providing video and other content to the user, Julia also discloses utilizing voice commands to return control information such as an interactive list of available on-demand movies.” Pet. 24–25. According to Petitioner:

[T]he user can say, for example, “I want to see that movie starring and directed by Clint Eastwood.” Julia at 11:31–32. The remote server would query the data source and then return instructions to the user’s set-top box to display the list of movies satisfying the query. *Id.* at 11:32–49. The system would then display an interactive menu of options for the user, who would respond with a further voice command (e.g., “Let’s see Unforgiven”) to select a particular on-demand movie. *Id.* at 11:57–67.

*Id.* at 24. Petitioner then, relying on its declarant’s testimony, concludes that “[t]he interactive menu information transmitted to the set-top box [also] constitutes a ‘set-top-box-compatible command function . . . corresponding to said voice command,’ as claimed.” *Id.* at 24–25 (citing Ex. 1022 ¶ 181). Patent Owner disagrees and points out that “Petitioner fails to explain how displaying a menu on a television screen *requires* that a command be derived and sent to the set-top box” and that Mr. Wechselberger’s “conclusory testimony should not be given weight.” Resp. 34–35, emphasis omitted.

We agree with Mr. Tinsman that Mr. Wechselberger “does not explain why” a person of ordinary skill in the art “would recognize that the ‘list of film titles’ displayed to the user is based on a command function” (Ex. 2033 ¶ 49 (citing Ex. 1022 ¶ 181)), and therefore we do not credit the testimony of

Mr. Wechselberger. As noted above, Petitioner’s argument (*see* Reply 8–11) and the conclusory testimony of Mr. Wechselberger (Ex. 1022 ¶ 181) rely on an overly broad construction of “command function” that we have rejected. We also agree with and credit Mr. Tinsman’s testimony that:

Even if that is true, a POSITA would recognize that if the head-end “generates an interactive menu” that is then sent to the set-top box to be displayed on the screen, then the head-end would appear to simply prepare information based on a user’s query, not a command for the set-top box to do something. Mr. Wechselberger’s statement that the menu is “executed” by the cable set-top box could be accomplished by the set-top box simply performing a pre-programmed function when it receives a certain type of information, and does not explain how either of Julia or Murdock alone teaches deriving a command function. In my opinion, a POSITA would not view mere information sent to the set-top box from the head-end unit (that the set-top box uses to generate a menu) as a “command function.”

Ex. 2033 ¶ 49. We, therefore, determine that Petitioner has not established that “[a person of ordinary skill in the art] would recognize that the ‘list of film titles’ displayed to the user is based on a command function.”

*b. Secondary Considerations of Non-obviousness*

Patent Owner also contends that secondary considerations further demonstrate non-obviousness of the challenged claims. Resp. 50–63. We need not, however, consider or discuss the objective evidence of nonobviousness, because even assuming the absence of any evidence of nonobviousness, there is not sufficient evidence of obviousness to support a conclusion that any challenged claim is unpatentable.

*c. Single-Reference Obviousness Conclusions*

For the foregoing reasons, we determine that Petitioner has not established, by a preponderance of the evidence, that claims 1–7, 17, 19–24, and 33 would have been obvious over Julia.

Petitioner’s arguments with regard to the alleged ground of obviousness over Murdock are premised on the same overly broad interpretation of “command functions” that we have rejected in connection with Petitioner’s arguments based on Julia. *See* Pet. 51–52 (“A person of ordinary skill in the art would have known that ‘command functions’ would be transmitted along with the programming content (e.g., formatting and display instructions, authorization information, etc.). Wechselberger Decl. ¶¶ 341–342.”). Therefore, for the same reasons explained above in connection with Petitioner’s arguments based on Julia, we also determine that Petitioner has not established, by a preponderance of the evidence, that claims 1–7, 17, 19–24, and 33 would have been obvious over Murdock.

*D. Motions to Exclude*

*1. Petitioner’s Motion to Exclude*

Petitioner filed a Motion to Exclude Evidence seeking to exclude Exhibits 2001–2003, 2009–2011, 2015, 2021, 2024, and 2032 as inadmissible hearsay evidence. Paper 35; *see also* Papers 44 (Patent Owner’s Opposition to Petitioner’s Motion to Exclude Evidence), 49 (Petitioner’s Reply in Support of its Motion to Seal). These exhibits relate to Patent Owner’s support for its secondary considerations arguments. Resp. 50–63. Because we do not reach the issue of secondary considerations, we dismiss Petitioner’s motion as moot.

2. *Patent Owner's Motion to Exclude*

Patent Owner filed a Motion to Exclude seeking to exclude Dr. Chaiken's testimony in response to two questions that purportedly exceeded the scope of permissible cross-examination. Paper 39 (citing Ex. 1027, 17:21–18:24, 19:12–20:4). According to Patent Owner, Dr. Chaiken, in his declaration (Ex. 2032) “offered no opinion regarding the construction of ‘command function’ or about the application of the claims of the ’538 Patent to the AgileTV device. Rather, Dr. Chaiken’s declaration simply stated that ‘the architecture and solution described in the ’538 patent accurately reflect the AgileTV solution in 2002.’” Paper 39, 1 (citing Ex. 2032 ¶ 16). Patent Owner argues that “Comcast’s questions regarding the meaning of ‘set-top-box-compatible command function’ therefore fell outside the scope of Dr. Chaiken’s direct testimony” and should be excluded because “they exceeded the proper scope of cross-examination.” *Id.* at 1–2.

Petitioner contends that “Dr. Chaiken’s testimony regarding the term ‘command function’ is relevant [because i]n his declaration, Dr. Chaiken primarily addresses Patent Owner’s arguments regarding purported secondary considerations of non-obviousness.” Paper 47, 1. Specifically, according to Petitioner, “[b]y relying on Dr. Chaiken’s testimony in an effort to establish a nexus between the challenged claims and the AgileTV product, Patent Owner put his understanding of the challenged claims at issue[, hence, h]is testimony regarding his understanding of the claim term ‘command function’ is therefore relevant” and within the scope of cross-examination. *Id.* at 2. Patent Owner disagrees, arguing that Dr. Chaiken, a fact witness, “never mapped the AgileTV system to the claims, and his testimony truly had nothing to do with the claims or any potential

interpretation of them.” Paper 48, 1. According to Patent Owner, “Dr. Chaiken presented testimony as a fact witness regarding the development of Promptu’s AgileTV system in the early 2000s that was previously licensed by Comcast and successfully installed in Comcast’s cable network system” and his testimony “answers were based on his memory of how the Promptu system worked and not on a legal interpretation of the invention described in the ’538 Patent or the proper scope of the claims.” *Id.* at 2–3 (citing Ex. 2032, 113:17–115:1).

Patent Owner’s argument concerns subject matter that is not properly raised in a Motion to Exclude. As we have noted in our Scheduling Order, a “Motion to Exclude shall only raise admissibility issues under the Federal Rules of Evidence, and not be used as additional briefing on any other topic, subject, or issue, for example, any assertion that *a certain brief or evidentiary submission exceeds the proper scope for such brief or submission.*” Paper 11, 7, emphasis added. Moreover, “[i]n case of an issue based on exceeding the proper scope of a submission, the parties must raise the matter by initiating a conference call with the Board.” *Id.* Therefore, because Patent Owner’s motion concerns the *scope* of permissible cross-examination, Patent Owner should have raised the matter with the Board by initiating a conference call rather than raising this issue in a Motion to Exclude.<sup>9</sup>

Accordingly, Patent Owner’s Motion to Exclude is *dismissed*.

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<sup>9</sup> Furthermore, as discussed above, Petitioner has not shown unpatentability even if we were to consider the evidence Patent Owner seeks to exclude. Thus, in any event, it is not necessary to rule on the Motion to Exclude because it is moot.

### III. CONCLUSION

Petitioner has not established, by a preponderance of the evidence, that claims 1–7, 17–24, and 33 would have been obvious over Julia;

Petitioner has not established, by a preponderance of the evidence, that claims 1–7, 17–24, and 33 would have been obvious over Julia and Houser;

Petitioner has not established, by a preponderance of the evidence, that claims 1–7, 17–24, and 33 would have been obvious over Murdock;

Petitioner has not established, by a preponderance of the evidence, that claims 1–7, 17–24, and 33 would have been obvious over Murdock and Houser.

### IV. ORDER

For the foregoing reasons, it is hereby:

ORDERED that Petitioner has not shown, by a preponderance of the evidence, that any of claims 1–7, 17–24, and 33 is unpatentable;

FURTHER ORDERED that Petitioner’s Motion to Exclude is *dismissed*;

FURTHER ORDERED that Patent Owner’s Motion to Exclude is *dismissed*; and

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

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