UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

PROMPTU SYSTEMS CORPORATION,
Patent Owner.

Case IPR2018-00345
Patent 7,047,196

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 IPR2018-00345 on June 28, 2019 (Paper 59), 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 term: "a speech recognition system coupled to a wireline node in a network";

2. Whether the Board erred in determining that claims 14, 15, 17-19, 25, 26, 53-55, 61, 62, and 64-66 are not unpatentable under 35 U.S.C. § 103 over U.S. Patent No. 7,013,283 ("Murdock");

3. Whether the Board erred in determining that claims 14, 15, 17-19, 25, 26, 53-55, 61, 62, and 64-66 are not unpatentable under 35 U.S.C. § 103 over Murdock in view of U.S. Patent No. 6,490,727 ("Nazarathy") or U.S. Patent No. 6,650,624 ("Quigley");

4. Whether the Board erred in determining that claims 18, 19, 55, and 65

are not unpatentable under 35 U.S.C. § 103 over Murdock in view of Nazarathy or Quigley and further in view of U.S. Patent No. 5,477,262 ("Banker") or U.S. Patent No. 6,314,573 ("Gordon");

5. Whether the Board erred in determining that claims 14, 15, 17-19, 25, 26, 53-55, 61, 62, and 64-66 are not unpatentable under 35 U.S.C. § 103 over U.S. Patent No. 6,513,063 ("Julia");

6. Whether the Board erred in determining that claims 14, 15, 17-19, 25, 26, 53-55, 61, 62, and 64-66 are not unpatentable under 35 U.S.C. § 103 over Julia in view of Nazarathy or Quigley;

7. Whether the Board erred in determining that claims 18, 19, 55, and 65 are not unpatentable under 35 U.S.C. § 103 over Julia in view of Nazarathy or Quigley and further in view of Banker or Gordon; and

8. Whether the Board erred in apparently determining that Murdock is not prior art to the challenged claims.

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: August 9, 2019

Respectfully submitted,

/s/ *James L. Day*

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CERTIFICATE OF FILING AND SERVICE

I hereby certify that on August 9, 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 August 9, 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 August 9, 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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August 9, 2019
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Paper 59
Entered: June 28, 2019

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner,

v.

PROMPTU SYSTEMS CORPORATION,
Patent Owner.

Case IPR2018-00345
Patent 7,047,196 B2

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 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 of U.S. Patent 7,047,196 B2 (Ex. 1001, "the '196 Patent"). We instituted review of claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 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 ("Reply")) and Patent Owner filed a Sur-Reply (Paper 38 ("Sur-Reply")). An oral hearing was held on January 28, 2019. A copy of the transcript for the oral hearing has been entered as Paper 56 ("Tr.").

As discussed below, Petitioner has not shown, by a preponderance of the evidence, that any of claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 is unpatentable under any asserted grounds.

A. Related Matter

The '196 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 5), 2. According to Patent Owner, the pending civil action "has been stayed . . . based on the institution decisions rendered in . . . IPR2018-00344, and IPR2018-00345." Patent Owner's Updated Mandatory Notices (Paper 16), 2. Petitioner states that a related "petition for *inter partes* review of different claims" of the '196 Patent was also filed "along with [its] petition" for this case. Pet. x; *see also* IPR2018-00344,

Paper 1. We are also issuing a final written decision in IPR2018-00344 concurrently.

B. The '196 Patent

The '196 Patent, titled "System and Method of Voice Recognition Near a Wireline Node of a Network Supporting Cable Television and/or Video Delivery," was issued on May 16, 2006. Ex. 1001, [45]. It issued from U.S. Patent Application 09/785,375, filed on February 16, 2001, and claims the benefit of U.S. Provisional Application No. 60/210,440 filed on June 8, 2000. *Id.* at [21], [22], [60]. The '196 Patent generally relates to a "method and system of speech recognition presented by a back channel from multiple user sites within a network." Ex. 1001, Abstract.

According to the Specification, "a centralized wireline node refers to a network node providing video or cable television delivery to multiple users using a wireline physical transport between those users at the node." *Id*. at 1:66–2:2. The Specification states that "the problems of speech recognition at a centralized wireline node in a network supporting video delivery or cable television delivery have not been addressed by [the] prior art." *Id*. at 1:63–66. The Specification describes a "preferred embodiment [of the claimed invention that uses] a back channel containing a multiplicity of identified speech channels from a multiplicity of user sites presented to a speech processing system at a wireline node in a network that supports at least one of cable television delivery and video delivery." *Id*. at Abstract.

Figure 3 of the ’196 Patent is reproduced below.

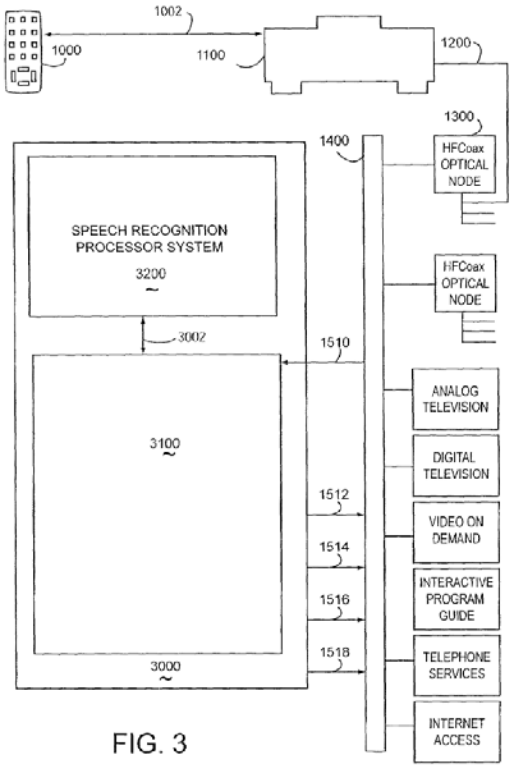


FIG. 3

Figure 3 illustrates:

> a remote control unit 1000 coupled 1002 to set-top apparatus 1100, communicating via a two-stage wireline communications system containing a wireline physical transport 1200 through a distributor node 1300, and through a high speed physical transport 1400, *possessing various delivery points 1510* and entry points 1512–1518 to a tightly coupled server farm 3000, with one or more gateways 3100, and one or more tightly coupled server arrays 3200[.]

Ex. 1001, 7:17–25, emphasis added. Server farm 3000 includes a central “speech recognition processor system 3200” for processing speech signals from user sites, such as from subscribers’ set-top boxes. *Id*. at Fig. 3. The Specification further notes that “[t]he back channel is from a multiplicity of user sites and is presented to a speech processing system at the wireline node in the network.” *Id*. at 22:12–14. Specifically, “[t]he speech signal

transmitted from a subscriber's set-top box, or set-top appliance, 1100[,] is received [at the] 1510 [entry points] by the five to 40 MHz data receiving equipment." *Id*. at 12:21–23, 12:57–58. Figure 10 of the '196 Patent is reproduced below.

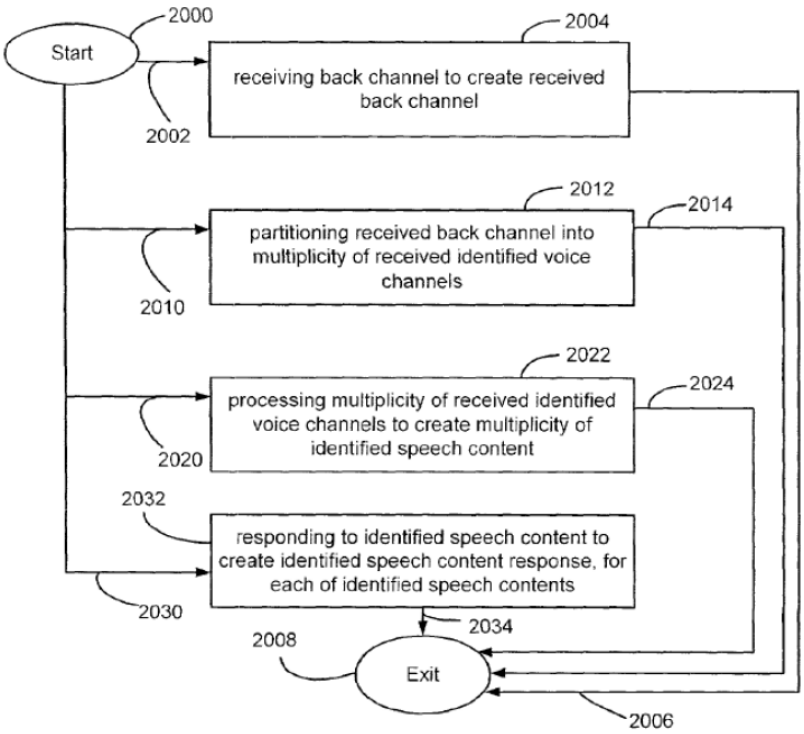


Figure 10 "depicts a flowchart of a method using a back channel from a multiplicity of user sites containing a multiplicity of identified speech channels presented to a speech processing system at a wireline node in a network supporting cable television delivery in accordance with the invention." *Id*. at 7:42–46.

C. Challenged Claims

Claim 14 is a system claim directed to a "program system controlling at least part of a speech recognition system coupled to a wireline node in a network" (*id*. at 52:65–53:21), while claim 53 is a method claim for

"operating at least part of a speech recognition system coupled to a wireline node in a network" (*id*. at 58:12–29). Claims 15, 17–19, 25, and 26 depend directly or indirectly from claim 14, while claims 54, 55, 61, 62, and 64–66 depend directly or indirectly from claim 53. Independent claims 14 and 53, reproduced below, are illustrative of the challenged claims.

> 14. A program system controlling at least part of a speech recognition system coupled to a wireline node in a network, said program system comprising the program steps of:
>
> > processing a multiplicity of received identified speech channels to create a multiplicity of identified speech content; and
> >
> > responding to said identified speech content to create an identified speech content response that is unique to each of said multiplicity of identified speech contents;
> >
> > wherein said speech recognition system is provided said multiplicity of received identified speech channels based upon a received back channel at said wireline node from a multiplicity of user sites coupled to said network;
> >
> > wherein each of said program steps reside in memory accessibly coupled to at least one computer included in said speech recognition system;
> >
> > wherein said at least one computer communicatively couples through said wireline node to said multiplicity of user sites; and
> >
> > wherein said network supports at least one of the collection comprising: cable television delivery to said multiplicity of user sites; and video delivery to said multiplicity of user sites.

Ex. 1001, 52:65–53:21.

> 53. A method of operating at least part of a speech recognition system coupled to a wireline node in a network, comprising the steps of:

> processing a multiplicity of received identified speech channels to create a multiplicity of identified speech content; and
>
> responding to said identified speech content to create an identified speech content response that is unique to each of said multiplicity of identified speech contents;
>
> wherein said speech recognition system is provided said multiplicity of received identified speech channels based upon a received back channel at said wireline node from a multiplicity of user sites coupled to said network;
>
> wherein said network supports at least one of the collection comprising: cable television delivery to said multiplicity of user sites; and video delivery to said multiplicity of user sites.

Ex. 1001, 58:12–29.

D. References Relied Upon

Petitioner relies on the following references:

Exhibit	Reference
1010	United States Patent No. 7,013,283 B1, issued March 14, 2006 (“Murdock”).
1012	United States Patent No. 6,513,063 B1, issued January 28, 2003 (“Julia”).
1013	United States Patent No. 6,490,727 B1, issued December 3, 2002 (“Nazarathy”).
1014	United States Patent No. 6,650,624 B1, issued November 18, 2003 (“Quigley”).
1015	United States Patent No. 5,477,262, issued December 19, 1995 (“Banker”).

Exhibit	Reference
1016	United States Patent No. 6,314,573 B1, issued November 6, 2001 ("Gordon").

Pet. 1–2. Petitioner also relies on the Declaration of Christopher Schmandt (Ex. 1019), the Reply Declaration of Christopher Schmandt (Ex. 1029), and on the Declaration of Jeffrey Lau (Ex. 1018).

1. Murdock (Ex. 1010)

Murdock describes a "system and a concomitant method for providing programming content in response to an audio signal." Ex. 1010, Abstract. Figure 1 of Murdock is reproduced below.

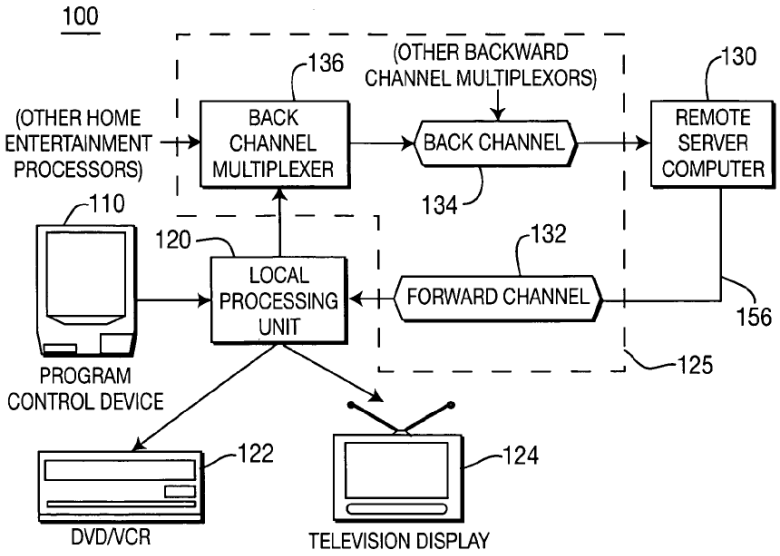


FIG. 1

Figure 1 "depicts a high-level block diagram of a voice control system." Ex. 1010, 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 2:63–66.

2. Julia (Ex. 1012)

Julia describes a "navigation of electronic data by means of spoken natural language requests." Ex. 1012, 1:16–18. Figure 1a of Julia is reproduced below.

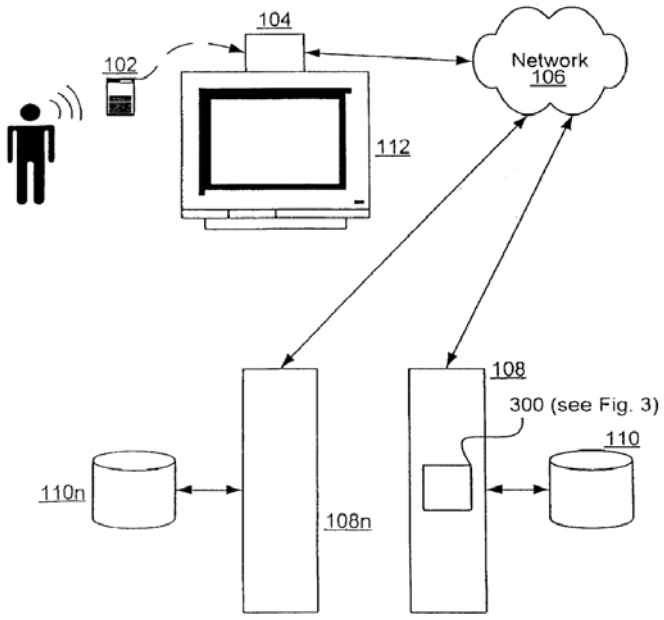


Fig. 1a

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 3:46–50. "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.

3. Nazarathy (Ex. 1013)

Nazarathy describes "hybrid fiber coaxial cable networks such as [those] used in cable television where two-way digital communications are desired." Ex. 1013, Abstract.

Figure 9 of Nazarathy is reproduced below.

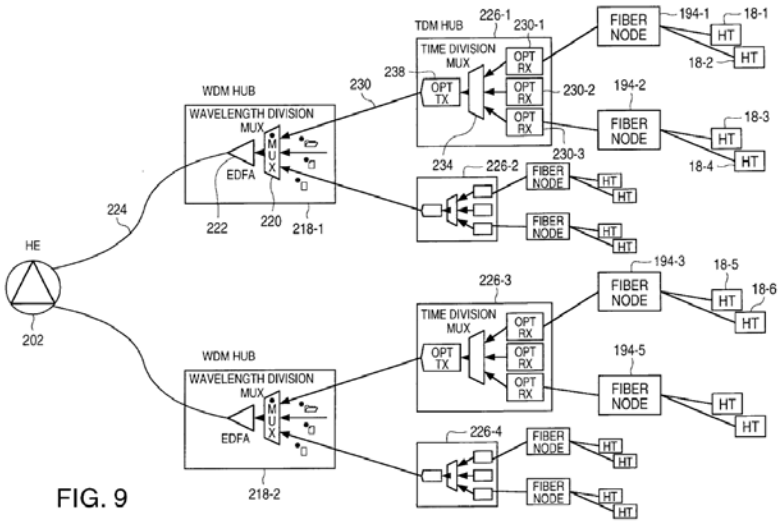


FIG. 9

Figure 9 of Nazarathy illustrates a Wavelength Division Multiplexing ("WDM") and Time Division Multiplexing ("TDM") network showing how data from multiple home terminals, 18-1, . . . 18-n, for example, cable modem or set-top box, is transmitted to the cable headend (HE 202). *Id*. at Fig. 9, 1:21–27, 14:6–8. Nazarathy discloses that "[a]ny operations of TDM and/or WDM multiplexing are undone at the [headend, HE202,] by corresponding WDM and TDM demultiplexers." *Id*. at 14:62–64, 15:40–46.

4. Quigley (Ex. 1014)

Quigley describes a "number of features for enhancing the performance of a cable transmission system in which data is transmitted between a cable modem termination system at a headend and a plurality of cable modem located [at] different distances from the headend." Ex. 1014, Abstract, 1:32–35. Figure 1 of Quigley is reproduced below.

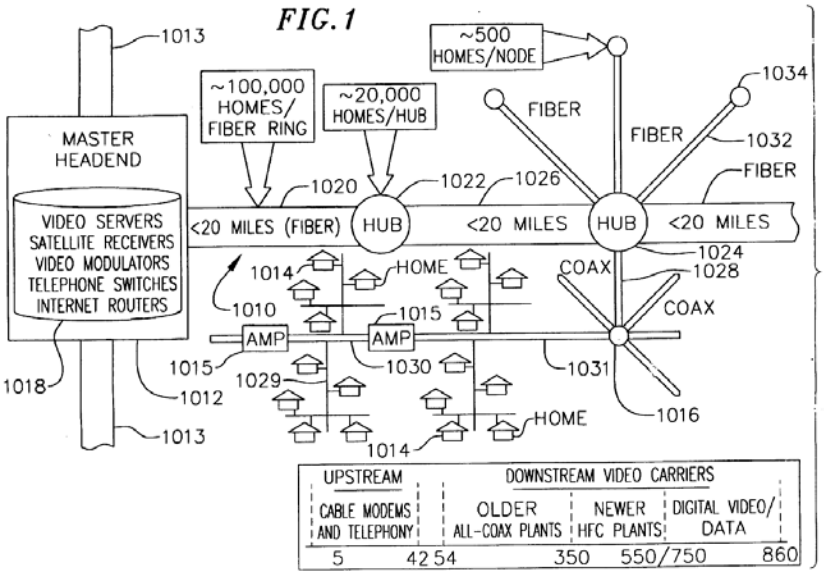
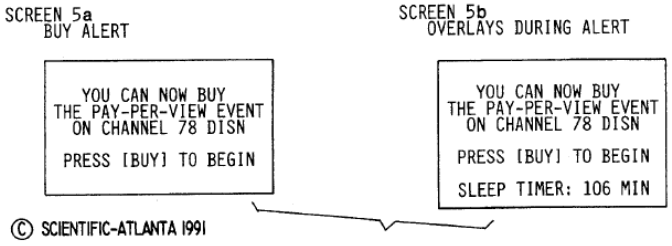


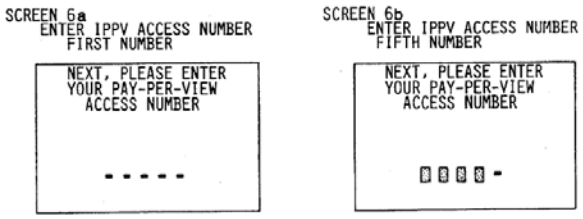
Figure 1 of Quigley "is a schematic diagram of a hybrid fiber coaxial (HFC) network showing typical pathways for data transmission between the headend[,] which contains the cable modem termination system[,] and a plurality of homes[,]each of which contain[s] a cable modem[.]" *Id.* at 3:56–60. In Quigley, "[t]he hybrid fiber coaxial network of a cable modem system utilizes a point-to-multipoint topology to facilitate communication between the cable modem termination system and the plurality of cable modems." *Id.* at 9:1–4. "Frequency domain multiple access (FDMA)/time domain multiple access (TDMA) is used to facilitate communication from each cable modem to the cable modem termination system, [*i.e.*], in the upstream direction." *Id*. at 9:8–12, 48–52. "The upstream channel 491, is divided into a plurality of time intervals 110." *Id*. at 46:31–34. "The upstream channel 491 is thus partitioned so as to facilitate the definition of time slots, such that each of a plurality of cable modems 12 may transmit data packets to the cable modem termination system 10 without interfering with one another." *Id*. at 46:34–40.

5. Banker (Ex. 1015)

Banker describes an apparatus "for providing a user friendly interface to a subscription television terminal." Ex. 1015, Abstract. Banker describes a number of user interface features such as "messaging, establishing a favorite channel list, pay-per-view, program timing, and terminal control." *Id.*; *see also id.* at 4:1–5, 16–18. Figures 6E and 6F of Banker are reproduced below.

FIG.6E





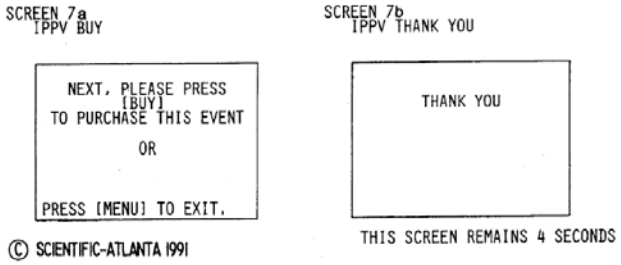


FIG.6F

Figures 6E and 6F illustrate a sequence of screens a user would navigate through in order to purchase a pay-per-view event. *Id.* at 16:54–17:3.

Banker also discussed how customers can be billed for using the subscription television terminal. *See id*. at 7:58–8:3, 12:1–15.

6. Gordon (Ex. 1016)

Gordon describes a "method and apparatus for providing subscription-on-demand (SOD) services for a[n] interactive information distribution system, where a consumer may subscribe to packages of on-demand programs for a single price[.]" Ex. 1016, Abstract. Figure 8 of Gordon is reproduced below.

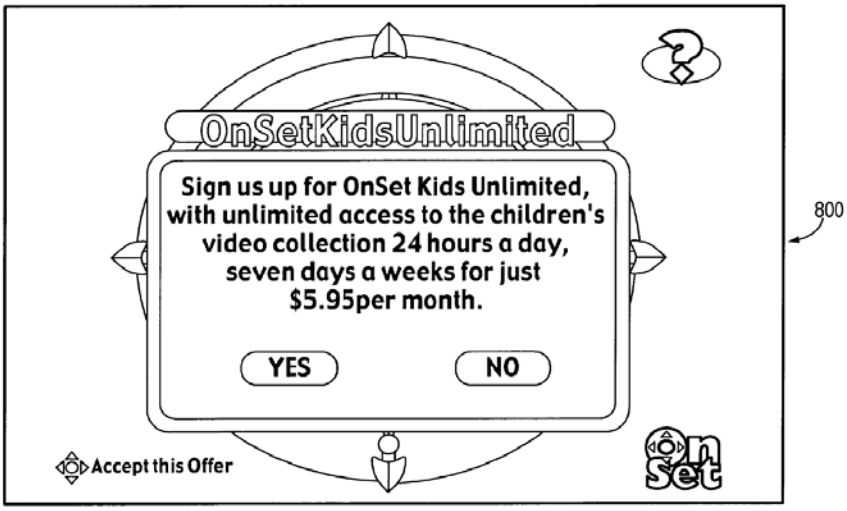


FIG. 8

Figure 8 of Gordon shows "a menu that allows a consumer to subscribe to a selected subscription-on-demand service." *Id*. at 3:40–41. According to Gordon, "through manipulation of the menus, the consumer [can] select[] a programming package [and] become[] a subscriber to that package and [will be] billed accordingly." *Id*. at 2:61–63.

E. Asserted Grounds of Unpatentability

The Board instituted review of claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 of the '196 Patent based on the following grounds of

unpatentability set forth in the following table. Paper 10, 16, 20–21.

Ground	Reference(s)	Basis[1]	Claims Challenged
Obviousness Grounds involving Murdock			
1	Murdock alone	§ 103(a)	14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66
2	Murdock and Nazarathy	§ 103(a)	14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66
3	Murdock and Quigley	§ 103(a)	14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66
4	Murdock, Nazarathy, and Banker	§ 103(a)	18, 19, 55, and 65
5	Murdock, Nazarathy, and Gordon	§ 103(a)	18, 19, 55, and 65
6	Murdock, Quigley, and Banker	§ 103(a)	18, 19, 55, and 65
7	Murdock, Quigley, and Gordon	§ 103(a)	18, 19, 55, and 65
Obviousness Grounds involving Julia			
8	Julia alone	§ 103(a)	14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66
9	Julia and Nazarathy	§ 103(a)	14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66

[1] 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 '196 Patent issued was filed before that date, the pre-AIA statutory framework applies.

Ground	Reference(s)	Basis[1]	Claims Challenged
10	Julia and Quigley	§ 103(a)	14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66
11	Julia, Nazarathy, and Banker	§ 103(a)	18, 19, 55, and 65
12	Julia, Nazarathy, and Gordon	§ 103(a)	18, 19, 55, and 65
13	Julia, Quigley, and Banker	§ 103(a)	18, 19, 55, and 65
14	Julia, Quigley, and Gordon	§ 103(a)	18, 19, 55, and 65

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. Schmandt 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 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.

Pet. 7–8, emphases added; *see also* Ex. 1019 ¶¶ 75–76. Patent Owner does not propose an alternative definition nor does Patent Owner respond to Petitioner's proposal. *See generally* Resp. We adopt, with modification (*e.g.*, removal of the qualifier "at least," which broadens ordinary skill to include expert level knowledge and skill), 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 professional work experience in the field of multi-media systems including in particular speech recognition and 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 field of multi-media systems including in particular speech recognition and control technologies.

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 spoken natural language as input into control systems. *See* Ex. 1012, 1:39–48.

B. Claim Construction

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); *Cuozzo*

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).

Petitioner proposes constructions for three terms: "wireline node," "back channel," and "partitioning said received back channel into a multiplicity of [said] received identified speech channels." Pet. 8–11. The Patent Owner does not propose alternative constructions but states that "[w]hile Promptu does not agree with these constructions, many of which are disputed in the corresponding litigation, the Board need not construe them here because the [P]etition fails to carry its burden of establishing that the claims are unpatentable even under Petitioner's own proposed claim constructions." *See* Resp. 5–6.

Based on our review of the record before us, we determine that no term, except "a speech recognition system coupled to a wireline node in a network," requires express construction to resolve the controversy regarding the unpatentability of the challenged claims. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that only claim terms that "are in controversy" need to be construed and "only to the extent necessary to resolve the controversy"). The term "a speech recognition system coupled to a wireline node in a

network," needs construction, which we will address within the specific patentability analysis below where more context is provided.

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 Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Rather, to establish obviousness, it is petitioner's "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) (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) (quotations 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; *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. Obviousness Grounds Involving Julia (Grounds 8–14)

Petitioner contends that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 are unpatentable over Julia (Ground 8), Julia in view of

Nazarathy (Ground 9) or Quigley (Ground 10), or Julia in view of Nazarathy or Quigley and Banker (Grounds 11 and 13) or Gordon (Grounds 12 and 14) under 35 U.S.C. § 103(a), relying on the supporting testimony of Mr. Schmandt (Exs. 1019, 1029). Pet. 43–65; *see also* Reply 9–17.

Patent Owner makes numerous arguments against how "Julia alone or combined with the teaching of Nazarathy or Quigley renders any of the claims obvious." Resp. 8–22; Sur-Reply 1–4, 9–10.

As discussed below, we determine that Petitioner has not established, by a preponderance of the evidence, that Julia teaches "a speech recognition system coupled to a wireline node in a network" as required by independent claims 14 and 53.[2]

In light of this deficiency, Petitioner has not persuasively established that claims 14 and 53 are 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.

The preamble of claim 14 recites "a speech recognition system coupled to a wireline node in a network." Ex. 1001, 52:65–66. For this preamble of claim 14, the Petition states the following:

> Julia discloses a program system controlling at least part of a speech recognition system coupled to a wireline node in a network as recited in claim 1. Schmandt Decl. ¶¶ 271–272. In particular, Julia discloses a voice control system that can be implemented in an interactive cable television network. Julia at 1:29–34, 4:31–35. Multiple users can issue voice commands requesting television and other video content from *a remote server computer (e.g., "a wireline node")*. *Id*. at 6:12–26. *The*

[2] The parties analyze this claim limitation together. We will address this limitation of claim 14 as representative of the corresponding limitation in claim 53.

> *remote server performs speech recognition processing* to identify the spoken request and then sends the requested content to the particular user. *Id*. at 4:18–20, 11:60–67.

Pet. 44, emphasis added. Petitioner's declarant, Mr. Schmandt, explains that Julia's "remote server is [] a 'program system controlling at least part of a speech recognition system' as the preamble of claim 14 requires, because it performs speech recognition." Ex. 1019 ¶ 271. Accordingly, Petitioner, in the Petition, maps both the recited "speech recognition system" and "wireline node" to remote server 108. Patent Owner contends "to the extent Comcast is trying to map both the speech recognition system and wireline node to remote server 108, that is an improper interpretation of the claim language because a proper interpretation 'must give meaning to all the words in [the] claims.'" Resp. 11.

In its Reply, Petitioner contends, without any analysis, that "[t]his language appears only in the claim preambles, which are generally not limiting." Reply 9. We, however, agree with Patent Owner that "a speech recognition system coupled to a wireline node in a network" is limiting.

"In general, a preamble limits the invention if it recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quotation omitted). One way for a preamble to "give life, meaning, and vitality to the claim" is to provide antecedent basis for a term in the body of the claim. *See Eaton Corp. v. Rockwell Int'l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003) ("When limitations in the body of the claim rely upon and derive antecedent basis from the preamble, then the preamble may act as a necessary component of the claimed invention."). Here, "a wireline node in a network" provides antecedent basis for "said

wireline node . . . coupled to said network" recited in the body of the claim. Specifically, the preamble ("a wireline node") identifies "the wireline node" in the body of the claim to where "a received back channel" is received (i.e., "a received back channel at said wireline node"). *See Catalina*, 289 F.3d at 808 ("[D]ependence on a particular disputed preamble phrase for antecedent basis may limit claim scope because it indicates a reliance on both the preamble and claim body to define the claimed invention.").

Similarly, "a speech recognition system" provides antecedent basis for "said speech recognition system is provided . . . ." In particular, the preamble ("a speech recognition system") identifies "the speech recognition system" in the body of the claim where "at least one computer" is included (i.e., "at least one computer included in said speech recognition system"). Thus, we determine that the preamble "a speech recognition system coupled to a wireline node in a network" is limiting.

Petitioner attempts, in its Reply, to change its mapping of the preamble by contending that "processing logic 300 . . . constitutes a speech recognition system executing on the server." Reply 10. As support, Petitioner cites to page 53 of its Petition. However, that page is discussing claims 15, 17, and 25, not claim 14 or claim 53. Petitioner also cites to paragraphs 271 and 272 of Mr. Schmandt's declaration. Even though paragraph 271 states that "[t]he processing of a user's spoken input request is 'processed by request processing logic 300,' which is stored in 'remote server 108,'" it does not map processing logic 300 to "a speech recognition system." Ex. 1019 ¶ 271. To the contrary, Mr. Schmandt states unequivocally that "[t]he remote server is [] a 'program system controlling at least part of a speech recognition system' as the preamble of claim 14

requires, because it performs speech recognition." *Id*.; *see also* Pet. 44 ("The remote server performs speech recognition processing to identify the spoken request and then sends the requested content to the particular user."). Moreover, when discussing other limitations involving the speech recognition system, Petitioner points to remote server 108. For example, when discussing "wherein said speech recognition system is provided . . . ," Petitioner states that "Julia discloses that a user's voice request is transmitted from the user's 'communication box 104 . . . through network 106 to remote server 108, the 'speech recognition system' and a 'wireline node' as discussed above." Pet. 47–48, emphasis added; *see also id*. at 49 (". . . are performed by the remote server 108, which is a 'computer' that is 'included' in the 'speech recognition system'"). Therefore, Petitioner's new mapping in the Reply constitutes improper new argument and will not be considered. 37 C.F.R. 42.23(b); *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("Unlike district court litigation—where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material—the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute."); Trial Practice Guide Update (Aug. 2018), 14–15, https://www.uspto.gov/patents-application-process/patenttrial-and-appeal-board/trials/guidance-impact-sas-aia-trial.

We next turn to Patent Owner's argument that Petitioner's original mapping in the Petition "both the speech recognition system and wireline node to remote server 108 . . . is an improper interpretation of the claim language because a proper interpretation 'must give meaning to all the words in [the] claims.'" Resp. 11. First, we note that reading a portion of the

claim as superfluous is generally disfavored. *Stumbo v. Eastman Outdoors, Inc.*, 508 F.3d 1358, 1362 (Fed. Cir. 2007) (denouncing claim constructions that render phrases in claims superfluous); *Elektra Instruments S.A. v. O.U.R. Scientific Int'l, Inc.*, 214 F.3d 1302, 1305, 1307 (Fed. Cir. 2000) (claims are interpreted with an eye toward giving effect to all terms in the claim).

Here, Petitioner does not point to anything in the Specification to support a construction that a speech recognition system and wireline node can be construed to be the same thing.[3] In addition, construing "a speech recognition system" and "wireline node" to be the same thing would also read out "coupled to" in "a speech recognition system coupled to a wireline node in a network." In other words, the term "coupled to" makes little sense and is not meaningful if used to refer to a single element and itself. Mr. Schmandt's testimony is consistent with and even supports the understanding that elements that are coupled to each other are not the same element. Mr. Schmandt "testified that the term 'coupled to' means the *coupled elements* 'have some way of communicating' or 'there's some influence *between the two things* that are coupled.'" Ex. 2034, 27:24–29:9. In addition, the Specification discloses two different things "coupled to" each other:

> As in FIG. 1, each user site contains a Set Top Box, such as STB 180, *coupled to* the network through a coaxial cable 172 which interfaces 170 to a collective coaxial cable 160[,] which *is coupled* to Node 126.

[3] Petitioner's arguments in Reply are based on its new mapping of remote server 108 (to "wireline node") and processing logic 300 (to "speech recognition system"). Reply 9–10.

Ex. 1001, 4:18–21, emphases added.

> FIG. 23 depicts a detail block diagram of an augmented distributor node 1310, *coupled to* wireline physical transport 1200 and *coupled to* the wireline communications loop of FIG. 21;
>
> FIG. 24 depicts an alternative detail block diagram of an augmented distributor node 1310, *coupled to* wireline physical transport 1200 and *coupled to* the wireline communications loop of FIG. 21;

Id. at 9:1–8, emphases added.

> As used herein, a server farm refers to a collection of at least two server components communicatively *coupled to* one another. The server components may or may not all be directly communicatively *coupled to* each other.

Id. at 9:59–62, emphases added.

> The invention may also include an array of microphones that are operated in conjunction with a remote control 1000 that is *coupled to* the set top box 1100.

Id. at 10:33–35, emphases added; *see also id*. at 22:43–50, 56–58; 27:19–20, 26–27; 29: 23–26; 31:64–67; 40:42–46, 55–60; 48:3–4; 47:51–52; 48:64–67; 49:23–26; 49:46–49. None of these passages in the Specification refers to something being coupled to itself.

For the foregoing reasons, we determine that that "a speech recognition system" and "wireline node" should be interpreted to be different components. Accordingly, because the Petition points to the same element for "a speech recognition system" and "wireline note," we determine that Petitioner has not established, by a preponderance of the evidence, that Julia teaches "a speech recognition system coupled to a wireline node in a network," as claims 14 and 53 require. Thus, Petitioner has not shown, by a preponderance of the evidence, that independent claims

14 and 53 as well as dependent claims 15, 17–19, 25, 26, 54, 55, 61, 62, and 64–66 are unpatentable based on the obviousness grounds relying on Julia.

3. Obviousness Grounds Involving Murdock (Grounds 1–7)

Petitioner contends that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 are unpatentable over Murdock alone (Ground 1); Murdock in view of Nazarathy (Ground 2) or Quigley (Ground 3); or Murdock in view of Nazarathy or Quigley and Banker (Grounds 4 and 5) or Gordon (Grounds 6 and 7) (collectively, "Murdock Grounds") under 35 U.S.C. § 103(a), relying on the supporting testimony of Mr. Schmandt (Exs. 1019, 1029). Pet. 15–43. Below, we consider whether Petitioner has established by a preponderance of the evidence that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 would have been obvious over the Murdock Grounds.

The '196 Patent issued from an application that has a filing date of February 16, 2001, and that claims the benefit of priority to a provisional application with a filing date of June 8, 2000. Ex. 1001, at [22], [60]; Pet. 4. Murdock was filed on November 16, 2000, after the effective filing date of the '196 Patent, but claims the benefit of priority to the filing date of Provisional Application No. 60/166 010 (Ex. 1011, the "Murdock Provisional"), which was filed on November 17, 1999. Ex. 1010, at [22], [60]. Petitioner argues that Murdock is 35 U.S.C. § 102(e) prior art to the '196 Patent because Murdock is entitled to the benefit of priority to the filing date of the Murdock Provisional. Pet. 11.

In *Ex Parte Mann*, the Board held that "under *Dynamic Drinkware*, a non-provisional child can be entitled to the benefit of a provisional application's filing date if the provisional application provides sufficient support for at least one claim in the child." 2016 WL 7487271, at *6 (PTAB

Dec. 21, 2016) (emphases omitted) (discussing whether *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015), requires "support in the provisional . . . for *all* claims, *any* claim, or something in between"). The Board further held that "the [party claiming priority] also must show that the subject matter relied upon in the non-provisional is sufficiently supported in the provisional application [and that t]his subject matter test is in addition to the comparison of claims required by *Dynamic Drinkware*." *Id*. at *5.

Recognizing these requirements, Petitioner asserts that:

> Petitioner's expert Christopher Schmandt shows in his supporting declaration that at least claim 1 of Murdock is supported by the disclosure in the [Murdock P]rovisional application. Schmandt Decl. ¶¶ 99–113. In addition, . . . Petitioner's expert witness confirms that the Murdock [P]rovisional application meets this requirement, too. Schmandt Decl. ¶¶ 135–257 (showing that the provisional application discloses the challenged claims and also showing that the provisional application discloses the same subject matter) . . . .

Pet. 11–12.

Patent Owner, however, contends that Petitioner fails to establish that Murdock is prior art and thus cannot establish a reasonable likelihood of prevailing on the Murdock Grounds because the Petition omits the analysis necessary to establish Murdock as prior art, and instead relies on incorporating "more than 150 paragraphs of essential analysis from the declaration into the [P]etition, [which] particularly when the [P]etition was within 300 words of the word limit, is improper." Resp. 7.

We agree with Patent Owner that Petitioner's barebones analysis, in its Petition, is insufficient to support its contention that Murdock is entitled to the filing date of the Murdock Provisional. Specifically, although there is

no requirement to rewrite every word or example from an expert declaration into a petition, Petitioner's two sentences concluding that "at least claim 1 of Murdock is supported by the disclosure in the [Murdock P]rovisional application" and that "the [Murdock P]rovisional . . . provide[s] support for the subject matter relied upon" are insufficient to establish Murdock as prior art. Pet. 11. "Arguments must not be incorporated by reference from one document into another document." 37 C.F.R. § 42.6(a)(3). Here, Petitioner cites to over 130 paragraphs (Ex. 1019 ¶¶ 99–113, 135–257), spanning more than 60 pages in the Schmandt Declaration. No reasonable application of 37 C.F.R. § 42.6(a)(3) to the circumstance of this case results in a conclusion that Petitioner complied with the rule. The Petition should provide reasonable notice to Patent Owner as to how the Murdock Provisional provides support for the subject matter relied upon. In this proceeding, we initially determined that the Petition offered only an insufficient conclusory statement at to the Murdock Provisional. Paper 10, 24–27. Nonetheless, pursuant to *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018) and Patent Office practice, we instituted review of all grounds, including the grounds based on Murdock. *Id.* at 2, 45.

Petitioner, post institution of trial, attempts to remedy its deficient Petition in its Reply brief. Specifically, Petitioner contends in its Reply that, in any event, Murdock still constitutes applicable prior art because Murdock pre-dates the actual filing date of the '196 Patent so it was incumbent on Patent Owner to establish entitlement to an earlier effective filing date, which Patent Owner did not do. *Id*. at 2. Patent Owner contends that these are "new argument[s] and [they] should not be considered." Sur-Reply 7.

We need not decide this issue because, even *assuming arguendo* that Murdock is prior art to the '196 Patent, Petitioner's arguments with regard to the alleged grounds of obviousness over Murdock are not persuasive. They are premised on interpreting "a speech recognition system" and "wireline node" to be the same thing, which we have rejected in connection with Petitioner's arguments based on Julia. *See* Pet. 17–18, 30; Ex. 1019 ¶¶ 136–137, 213. Specifically, the Petition states that "Murdock discloses using a "'program system controlling at least part of *a speech recognition system' (i.e., remote server computer 130)* that is 'coupled to *a wireline node* in a network' (*i.e., remote server computer 130*), as recited in claim 1 [sic]." Pet. 17–18, emphases added; *see also id*. at 22 ("Thus, Murdock discloses that the 'speech recognition system' (i.e., remote server 130) . . . as recited in claim 14."); Ex. 1019 ¶¶ 136 (". . . causes the remote server computer 130 to operate as a speech recognition server. . . . The remote server computer is therefore a 'program system controlling at least part of a speech recognition system' as the preamble of claim 14 requires, because it performs speech recognition."); *id.* ¶ 137 ("In Murdock, remote server computer 130 is a 'wireline node' as that term is used in the '196 Patent").

Accordingly, because the Petition points to the same component for "a speech recognition system" and "wireline node," we determine that Petitioner has not established, by a preponderance of the evidence, that Murdock teaches "a speech recognition system coupled to a wireline node in a network."

4. Secondary Considerations of Non-obviousness

Patent Owner also contends that secondary considerations further demonstrate non-obviousness of the challenged claims. Resp. 21–35. 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.

D. Motions to Exclude

1. Petitioner's Motion to Exclude

Petitioner files a Motion to Exclude Evidence seeking to exclude Exhibits 2001–2003, 2009–2011, 2015, 2021, 2024, and 2032 as inadmissible hearsay evidence. Paper 37; *see also* Papers 45 (Patent Owner's Opposition to Petitioner's Motion to Exclude Evidence), 49 (Petitioner's Reply in Support of its Motion to Exclude Evidence). These exhibits relate to Patent Owner's support for its secondary considerations arguments. Resp. 21–35. 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 files a Motion to Exclude seeking to exclude the following portions of Mr. Cook's testimony (Ex. 1024) "as containing hearsay and/or hearsay within hearsay, as well as for containing testimony outside the scope of the IPR depositions." Paper 40, 2. According to Patent Owner, Petitioner used the following portions of Mr. Cook's testimony as follows:

> (1) to support its assertion that the AgileTV product wasn't successful (Paper 29[,] 1 (citing Ex. 1024[,] 206:2–17));
>
> (2) as a purported admission that the Diva Systems video-on-demand system provided pay-per-view (Paper 29[,] 15 (citing Ex. 1024[,] 22:2–13, 249:6–17));

> (3) as evidence that Comcast rejected Promptu's product (Paper 29[,] 21 (citing Ex. 1024[,] 215:13–217:7));
>
> (4) as evidence that the AgileTV product employed voice recognition processing provided by a third-party vendor (Paper 29[,] 23 [sic] n.5 (citing Ex. 1024[,] 250:15–253:14, 255:22–258:21, 316:4–6));
>
> (5) as evidence that Comcast's payment to Promptu was a loan that Promptu later repaid in full, that Promptu offered a paid-up license to its patents, and that Promptu dropped its television product and shifted to an automotive product (Paper 29[,] 23–24 (citing Ex. 1024[,] 106:20–107:9, 117:12–118:7, 135:4–5, 156:5–12, 160:20–161:2, 215:13–218:13)); and
>
> (6) as evidence that Promptu received substantial funding to develop an automobile product (Paper 29[,] 24 (citing Ex. 1024[,] 217:22–219:18)).

Id. at 2–3. Patent Owner argues that "the Board should exclude all of Mr. Cook's testimony cited in Comcast's reply relying on the above-noted portions" of Mr. Cook's testimony. *Id*. at 3. These portions of Mr. Cook's testimony, however, relate to Patent Owner's secondary considerations arguments. Resp. 21–41. Because we do not reach the issue of secondary considerations, we dismiss Patent Owner's motion as moot.

III. CONCLUSION

Petitioner has not established, by a preponderance of the evidence, that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 would have been obvious over Julia;

Petitioner has not established, by a preponderance of the evidence, that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 would have been obvious over Julia and Nazarathy;

Petitioner has not established, by a preponderance of the evidence, that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 would have been obvious over Julia and Quigley;

Petitioner has not established, by a preponderance of the evidence, that claims 18, 19, 55, and 65 would have been obvious over Julia, Nazarathy, and Banker;

Petitioner has not established, by a preponderance of the evidence, that claims 18, 19, 55, and 65 would have been obvious over Julia, Nazarathy, and Gordon;

Petitioner has not established, by a preponderance of the evidence, that claims 18, 19, 55, and 65 would have been obvious over Julia, Quigley, and Banker;

Petitioner has not established, by a preponderance of the evidence, that claims 18, 19, 55, and 65 would have been obvious over Julia, Quigley, and Gordon;

Petitioner has not established, by a preponderance of the evidence, that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 would have been obvious over Murdock;

Petitioner has not established, by a preponderance of the evidence, that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 would have been obvious over Murdock and Nazarathy;

Petitioner has not established, by a preponderance of the evidence, that claims 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 would have been obvious over Murdock and Quigley;

Petitioner has not established, by a preponderance of the evidence, that claims 18, 19, 55, and 65 would have been obvious over Murdock, Nazarathy, and Banker;

Petitioner has not established, by a preponderance of the evidence, that claims 18, 19, 55, and 65 would have been obvious over Murdock, Nazarathy, and Gordon;

Petitioner has not established, by a preponderance of the evidence, that claims 18, 19, 55, and 65 would have been obvious over Murdock, Quigley, and Banker; and

Petitioner has not established, by a preponderance of the evidence, that claims 18, 19, 55, and 65 would have been obvious over Murdock, Quigley, and Gordon.

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 14, 15, 17–19, 25, 26, 53–55, 61, 62, and 64–66 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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