

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CAPTIONCALL, L.L.C. and
SORENSEN COMMUNICATIONS, INC.,
Petitioner,

v.

ULTRATEC, INC.,
Patent Owner.

Case IPR2015-01889
Patent 9,131,045 B2

Before WILLIAM V. SAINDON, BARBARA A. BENOIT, and
LYNNE E. PETTIGREW, *Administrative Patent Judges*.

BENOIT, *Administrative Patent Judge*.

DECISION
Final Written Decision
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

This *inter partes* review, instituted pursuant to 35 U.S.C. § 314, challenges the patentability of claims 1–74 of U.S. Patent No. 9,131,045 B2 (Ex. 1001, “the ’045 patent” or “the challenged patent”), owned by Ultratec, Inc. (“Patent Owner”). We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons discussed below, Petitioner has shown by a preponderance of the evidence that claims 1–74 of the ’045 patent are unpatentable. Furthermore, we deny Patent Owner’s Motion to Amend.

A. Procedural History

CaptionCall, L.L.C. (“Petitioner”) filed a Petition for *inter partes* review of claims 1–74 of the ’045 patent. Paper 1 (“Pet.”). Patent Owner filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). We instituted an *inter partes* review of claims 1–74 of the ’045 patent as unpatentable¹ as

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), revised 35 U.S.C. § 103, effective March 16, 2013. Because the challenged patent claims the benefit of a filing date before March 16, 2013, we refer to the pre-AIA version of § 103 in this decision. Ex. 1001, [63] (claiming August 23, 2001).

obvious over Liebermann,² Engelke '405,³ Mukherji,⁴ and Engelke '482.⁵
Paper 19 (“Institution Decision” or “Dec.”).

Subsequent to institution, Patent Owner filed a Patent Owner Response to the Petition (Paper 42, “PO Resp.”), along with a Contingent Motion to Amend (Paper 43, “Motion to Amend” or “Mot. Am.”), requesting substitution of various claims in the event certain claims in the '045 patent were found to be unpatentable. Petitioner filed a Reply to the Patent Owner Response (Paper 69, “Pet. Reply”) and an Opposition to Patent Owner’s Contingent Motion to Amend (Paper 70, “Opp. Am.”). Patent Owner filed a Reply in support of its Contingent Motion to Amend. Paper 81 (“Reply Am.”).

Petitioner also filed a Motion to Exclude (Paper 84, “Pet. Mot. Exc.”) certain exhibits, to which Patent Owner filed an Opposition to Petitioner’s Motion to Exclude (Paper 86, “PO Opp. Exc.”), and, in turn, Petitioner filed a Reply (Paper 89, “Pet. Reply Exc.”). Patent Owner also filed a Motion to Exclude (Paper 82, “PO Mot. Exc.”) certain exhibits, to which Petitioner filed an Opposition to Patent Owner’s Motion to Exclude (Paper 87, “Pet.

² U.S. Patent No. 5,982,853, issued Nov. 9, 1999 (Ex. 1006; “Liebermann”).

³ U.S. Patent No. 5,724,405, issued Mar. 3, 1998 (Ex. 1005; “Engelke '405”).

⁴ U.S. Patent No. 7,117,152 B1, filed June 23, 2000, issued Oct. 3, 2006 (Ex. 1007; “Mukherji”).

⁵ U.S. Patent No. 5,909,482, issued June 1, 1999 (Ex. 1004; “Engelke '482”).

Opp. Exc.”), and, in turn, Patent Owner filed a Reply (Paper 88, “PO Reply Exc.”).

An oral hearing was held on November 22, 2016. A transcript of the hearing has been entered into the record. Paper 110 (“Confidential Tr.”); Paper 113 (“Redacted Tr.”).

B. Related Matters

As required by 37 C.F.R. § 42.8(b)(2), each party identifies various judicial or administrative matters that would affect or be affected by a decision in this proceeding. Pet. 2–3; Paper 5 (Patent Owner’s Mandatory Notices). Petitioner represents the ’045 patent is involved in *Ultratec, Inc. v. Sorenson Communications, Inc.*, Case No. 3:15-CV-00563 (W.D. Wis.). Pet. 2.

The ’045 patent also claims the benefit of the filing date of U.S. Patent No. 6,603,835 B2 (Ex. 1003, “the ’835 patent”), which is the subject of two *inter partes* reviews, *CaptionCall, L.L.C. v. Ultratec, Inc.*, Case IPR2013-00549 (PTAB) (Final Written Decision issued March 3, 2015 finding claims 1–5 and 7 unpatentable; currently on appeal) and *CaptionCall, L.L.C. v. Ultratec, Inc.*, Case IPR2014-00780 (PTAB) (Final Written Decision issued December 1, 2015 finding claims 6 and 8 unpatentable; currently on appeal). See Pet. 3, Paper 5. Additionally, two patents claim the benefit of the filing date of the ’045 patent and are the subject of *inter partes* reviews for which final written decisions have been issued and are under appeal. *CaptionCall, L.L.C. v. Ultratec, Inc.*, Case IPR2015-00636 (PTAB) (Final Written Decision issued September 7, 2016

finding claims 1–29 of U.S. Patent No. 8,917,822 B2 unpatentable; currently on appeal); *CaptionCall, L.L.C. v. Ultratec, Inc.*, Case IPR2015-00637 (PTAB) (Final Written Decision issued September 7, 2016 finding claims 1–30 of U.S. Patent No. No. 8,908,838 B2 unpatentable; currently on appeal). A number of other *inter partes* reviews involving related patents are in various stages of review. See Pet. 2–3, Paper 5.

C. The '045 Patent

The '045 patent “relates to the general field of telephone communications and, more particularly, relates to systems to assist telephone communications by those persons who are deaf, hard of hearing, or otherwise have impaired hearing capability.” Ex. 1001, 1:22–26.

1. The Written Description

The typical telecommunications solution is a device having a keyboard and display, called, interchangeably, a telecommunications device for the deaf (TDD), a text telephone (TT), or a teletype (TTY). *Id.* at 1:34–39. When only one of the parties uses a TTY (e.g., in a phone conversation between a hearing and deaf person), a relay operator voices the deaf user’s typed words to the hearing user, and types the hearing user’s voiced words to the deaf person’s TTY.⁶ *Id.* at 1:62–2:15.

The '045 patent describes “text enhanced telephony” that extends a relay system to users who have attenuated hearing capabilities. *Id.* at 2:16–

⁶ The relay’s delivery of text-assisted telephone service is called “captioned telephone.” See Ex. 1001, 3:14–17.

21. “The text enhanced telephone call is connected through a relay which transmits both the voice of the hearing user at the other end and a text stream of words spoken by that user on the same telephone line.” *Id.* at 2:24–27.

One feature claimed in the ’045 patent uses a two-line captioned telephone, which uses one line for the voice telephone call between the hearing user and the assisted user, and another line for communicating with the relay. *Id.* at 7:31–43, Fig. 6. “A call can be initiated or received by the assisted user in the same manner as with a conventional telephone,” using the voice telephone call line. *Id.* at 7:51–53.

An advantage of a two-line captioned telephone “is that the captioned telephone service can be added to a telephone call already in progress.” *Id.* at 7:9–11. “When the [assisted] user wishes to invoke the captioning service, the assisted user presses a button . . . on the [captioned telephone] that causes the [captioned telephone] to automatically dial the relay on the second telephone line.” *Id.* at 7:53–56. “At the relay, the voice is converted into text and a text stream is sent back down the telephone connection” to the captioned telephone for display. *Id.* at 7:59–64. Thus, a “button” on the captioned telephone allows the relay to be dialed by the assisted user on demand—such that the call may begin as a voice-only call, but when a user decides hearing assistance is needed, the user may activate, using the button, the relay service while the call is in progress. *Id.* at 7:14–21, 7:53–64.

2. Illustrative Claim

Petitioner challenges all seventy-four claims of the '045 patent, of which claims 1, 18, 24, 31, 43, 49, 53, 55, 58, and 61 are independent.

Claim 24 is illustrative of the claimed subject matter:

24. A system for providing captioned telephone service to an assisted user communicating with a hearing person, the system comprising:

a relay for providing captioned text, the relay including a relay computer, a relay input device and a relay display screen;

a captioned device that is linkable to at least first and second communication links, **the captioned device comprising:**

a captioned device processor;

a microphone;

a speaker;

a visually readable display in communication with the captioned device processor;

an activation switch in communication with the captioned device processor and selectable by an assisted user to initiate a captioning service;

the captioned device enabling the assisted user to use the captioned device to facilitate a telephonic communication via the first communication link between the user of the captioned device and a hearing person and facilitating a captioned call in which a text translation of words spoken by the hearing person is presented via the visually readable display, **the captioned device configured to perform the steps of:**

(i) facilitating a voice telephone call on the first communication link between the captioned device and the hearing person during which voice communication occurs between the hearing person and the assisted user and during

which words spoken by the hearing person are received by the processor via the first communication link;

(ii) after the first communication link is established and while the voice telephone call is progressing, receiving an indication that the activation switch has been activated;

(iii) after receiving the indication that the activation switch has been activated, passing the words spoken by the hearing person to the relay via the second communication link;

(iv) receiving a text message corresponding to the words spoken by the hearing person from the relay; and

(v) displaying the text message on the display within sight of the assisted user;

wherein the words spoken by the hearing person and received by the processor during each of the telephone call and the captioned call are broadcast via the speaker substantially in real time as the words are received by the processor;

the relay configured to perform the steps of:

(i) generating a text message stream corresponding to the words spoken by the hearing person and received via the second communication link;

(ii) displaying the text message stream on the relay display screen;

(iii) receiving corrections to the text message stream entered by a call assistant using the relay input device to generate corrected text; and

(iv) transmitting the corrected text to the captioned device.

Ex. 1001, 11:51–12:43 (formatting changes).

II. DISCUSSION

A. Patent Owner's Motion to Exclude

Patent Owner filed a Motion to Exclude various declarations and deposition transcripts. PO Mot. Exc. 1–2. First, Patent Owner also seeks to exclude two deposition transcripts of Patent Owner's declarant Ms. Brenda Battat (Exhibits 1096 and 1121). *Id.* at 2. Our Final Written Decision does not rely on evidence contained in either of those exhibits. Accordingly, Patent Owner's Motion to Exclude with regard to Exhibits 1096 and 1121 is denied as moot.

Additionally, Patent Owner seeks to exclude (i) the entirety of the declaration of Mr. Benedict J. Occhiogrosso (Exhibit 1009) filed in support of the Petition, (ii) the entirety of the supplemental declaration of Mr. Occhiogrosso (Exhibit 1049) filed in support of Petitioner's Reply to Patent Owner's Response and Petitioner's Opposition to Patent Owner's Motion to Amend, and (iii) the entirety of the declaration of Mr. James E. Malackowski (Exhibit 1126) filed in support of Petitioner's Reply to Patent Owner's Response.

Patent Owner seeks to exclude, under Federal Rule of Evidence ("FRE") 702,⁷ the testimony of Petitioner's declarants because, according to Patent Owner, neither Mr. Occhiogrosso nor Mr. Malackowski is qualified as an expert on the subject matter of the challenged patent.

⁷ Under 37 C.F.R. § 42.62(a), the Federal Rules of Evidence generally apply to this *inter partes* review.

PO Mot. Exc. 2. To testify under FRE 702, one must be qualified as an expert in the “pertinent art” to testify regarding issues calling for consideration of evidence from the perspective of a person of ordinary skill in the art. *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1363–64 (Fed. Cir. 2008). This is because issues of unpatentability “are analyzed in great part from the perspective of a person of ordinary skill in the art, and testimony explaining the technical evidence from that perspective may be of great utility to the factfinder.” *Id.* at 1361.

Based on a single sentence with a single citation to the challenged patent, Patent Owner asserts “[a]ccordingly, to be a person of ordinary skill in the relevant art (POSA) in the context of the [challenged patent], the relevant prior art [is] of telephone technology for the deaf and HOH.^[8]” PO Mot. Exc. 6–7 (citing Ex. 1001, 1:23–26); *but see* Ex. 1001, 1:22–26 (“The present invention relates to the general field of telephone communications. In more particular, the invention relates to systems to assist telephone communications by those persons who are deaf, hard of hearing, or otherwise have impaired hearing capability.”). Patent Owner asserts Mr. Occhiogrosso lacks “the requisite knowledge and experience in TRS⁹ systems.” PO Mot. Exc. 8. Patent Owner asserts Mr. Malackowski “similarly lacks the requisite knowledge and experience in assistive technologies for the deaf or HOH—and, in particular, TRS—to provide

⁸ HOH is a common abbreviation for “hard of hearing.”

⁹ TRS is a common abbreviation for “telecommunications relay service.”

opinions regarding secondary considerations relating to the nonobviousness of the claimed two-line captioned telephone service” in the challenged patent. *Id.* at 9.

In opposition, Petitioner contends Mr. Occhiogrosso is qualified to provide expert testimony regarding the patentability of the claims of the challenged patent. Pet. Opp. Exc. 1. Petitioner contends that Patent Owner “erroneously asserts that the sufficiency of technical expertise hinges on whether one knows the relevant prior art” related to telephone technology for the deaf and hard of hearing. *Id.* Petitioner contends Patent Owner “conflates expertise in the pertinent **technical art** with expertise in Patent Owner’s narrow **commercial industry**.” *Id.* Petitioner then identifies instances in the challenged patent that make clear the written description and claims cover a scope broader than providing services for deaf and hard of hearing users. *Id.* at 1 (citing Ex. 1001, 3:58–60); *id.* at 3 (citing Ex. 1001, 3:51–53, 54–56).

We agree with Petitioner because the cited portions of the challenged patent unambiguously indicate the invention is intended to be applied more broadly than deaf and hard of hearing users. *See* Ex. 1001, 3:56–60 (“Thus, . . . the operation of the relay will sometimes be described here by referring to an ‘assisted user,’ who may be deaf or hard of hearing, but who also may be a *normally hearing person* who simply wants text assistance for some reason.” (emphasis added)); *id.* at 3:51–53 (“It is envisioned that there are a number of *hearing* or partially hearing users who would have reason to benefit from voice to text transcription services.” (emphasis added)); *id.* at

3:54–56 (“Relay voice to text service might also be useful for *any application* in which it is desired to supplement voice communications by text transcription of the voice spoken on the telephone.” (emphasis added)); *see also id.* at 3:60–63 (The user at the other end of the line will be referred to here as the hearing user, simply for the purpose of having something to call that person, *even though both users may be hearing.*” (emphasis added)).

We find Patent Owner’s arguments unduly narrow in view of the unambiguous disclosures in the challenged patent. Thus, we do not agree with Patent Owner that Mr. Occhiogrosso and Mr. Malackowski are not qualified as experts because of a purported lack of experience in TRS systems.

Moreover, the qualifications of Mr. Occhiogrosso, as summarized in his curriculum vitae (Ex. 1010), qualify him to give expert testimony on the subject of telecommunication technologies. *See also* Ex. 1009 ¶¶ 4–16 (summarizing his qualifications). For example, Mr. Occhiogrosso earned a Bachelor of Science in Electrical Engineering and a Master of Science in Electrical Engineering in 1975 and has decades of experience in the field of telecommunications and information technology. Ex. 1010, 1–2. His experience includes cellular telephony, wireless communications systems, packet speech/Voice over Internet Protocol, telephone switching systems, voice digitization/voice processing, automated out dialing systems, and video digitization. *Id.* at 1. Accordingly, we also have determined that Mr. Occhiogrosso meets the definition we adopt as the level of ordinary skill in

the art. *See infra* Level of Ordinary Skill section (adopting a level of “a bachelor’s degree in electrical engineering (or electrical and computer engineering) and a few years of experience with telephone communication system architecture, design and implementation, digitization of voice, speech recognition technology, and/or traditional relay systems”).

Furthermore, even if we were to adopt Patent Owner’s definition of a person of ordinary skill in the art, we find Mr. Occhiogrosso meets Patent Owner’s proffered level of ordinary skill: a person who must know the relevant prior art of telephone technology for the deaf and HOH (PO. Mot. Exc. 7). Mr. Occhiogrosso’s experience providing expert testimony in proceedings regarding assistive technologies for the deaf or hard of hearing is uncontroverted. *See* PO Mot. Exc. 7 (two other *inter partes* reviews and a district court case). Furthermore, the seven prior art references Mr. Occhiogrosso considered for this case (Ex. 1009 ¶ 36) all involve telephone technology for the deaf and HOH and support his qualification under Patent Owner’s overly narrow view of the pertinent art.

Furthermore, we disagree with Patent Owner’s arguments purportedly regarding why Mr. Occhiogrosso would not qualify as an expert: “no experience with TRS systems for the hearing impaired . . . never designed a TRS system for the hearing impaired. . . [b]efore the patent disputes arose between these parties, he had never analyzed a TRS system . . . has never used a Telecommunications Device for the Deaf (“TDD”), the type of device sued to assist the deaf and HOH to use telephones before TRS systems became available . . . and ha[s] never visited a TRS relay center.” PO Mot.

Exc. 8. We find Patent Owner’s arguments to be unduly narrow even in view of its proffered definition: a person must know the relevant prior art of telephone technology for the deaf and HOH. Direct hands-on experience or work experience in TRS systems is not required for knowing the relevant prior art of telephone technology for the deaf and HOH.

Regarding Mr. Malackowski, Petitioner indicates that “Mr. Malackowski offers testimony on commercial success, a subject for which his economic qualifications are unchallenged.” Pet. Opp. Exc. 9. Mr. Malackowski’s economic qualifications, which are articulated in paragraphs 5–9 of Exhibit 1126, are unchallenged. We find Mr. Malackowski possesses the requisite “knowledge, skill, experience, training, [and] education,” as required by FRE 702, to provide relevant and reliable testimony concerning commercial success of Patent Owner’s products and service. We do not agree with Patent Owner’s position that an economics expert testifying as to matters involving economics need also be an expert in the technical field of the patent. *See id.* at 10–11.

For these reasons, we deny Patent Owner’s Motion to Exclude with respect to Mr. Occhiogrosso’s declaration testimony (Exhibits 1009 and 1049) and Mr. Malackowski’s declaration testimony (Exhibit 1126).

B. Petitioner’s Motion to Exclude

Petitioner filed a Motion to Exclude (Paper 84) Exhibits 2117, 2118, and 2164 (various trial transcripts from another proceeding) and Ex. 2133 (chart of relay usage minutes). Pet. Mot. Exc. 12. Patent Owner presented this evidence as objective indicia of non-obviousness. PO Resp. 35, 38,

42, 44. As an initial matter, after reviewing the information included in Exhibit 2133, we conclude that it does not change our analysis of commercial success. Therefore, Petitioner's Motion is denied as moot with respect to Exhibit 2133.

Petitioner argues that Exhibits 2117, 2118, and 2164, which are transcripts of district court trial testimony, are irrelevant and inadmissible hearsay. Pet. Mot. Exc. 3–8. Patent Owner responds that Exhibits 2117, 2118, and 2164 are not hearsay under Federal Rule of Evidence ("FRE") 801(d)(2) because they are statements of the opposing party (the testimony being given by employees of Petitioner).¹⁰ PO Opp. Exc. 2–3, 4. As to Exhibit 2118, Patent Owner argues that this testimony is not being offered for the truth of the matter asserted and that the testimony is admissible. *Id.* at 8. Patent Owner also argues that the residual exception to hearsay also is applicable. *Id.* at 12–13.

¹⁰ FRE 801(d)(2) reads:

An Opposing Party's Statement. The statement is offered against an opposing party and: (A) was made by the party in an individual or representative capacity; (B) is one the party manifested that it adopted or believed to be true; (C) was made by a person whom the party authorized to make a statement on the subject; (D) was made by the party's agent or employee on a matter within the scope of that relationship and while it existed; or (E) was made by the party's coconspirator during and in furtherance of the conspiracy.

The statement must be considered but does not by itself establish the declarant's authority under (C); the existence or scope of the relationship under (D); or the existence of the conspiracy or participation in it under (E).

Reviewing the passages cited by Patent Owner, we are not persuaded that the exhibits fall under FRE 801(d)(2) because the testimony does not contain the admissions Patent Owner alleges were made. In addition, we do not agree that the exhibits fall under the residual exception to hearsay. Therefore, we grant Patent Owner's Motion to Exclude Exhibits 2117, 2118, and 2164. Our reasons follow.

1. Exhibit 2117 – Trial Transcript

With regard to Patent Owner's assertion that Petitioner copied its product, Patent Owner offers district court trial testimony of Mr. Brian Chevrier, an employee of Petitioner. Patent Owner cites Exhibit 2117 on page 42 of its Response. Patent Owner states:

Petitioner not only tested CapTel phones and service, but they had a third party vendor "tear down" CapTel phones to better observe CapTel's technology. Ex. 2135 at ¶ 83, Ex. 2117 at 49:16–50:7.

PO Resp. 42. At the cited portion of Exhibit 2117, Mr. Chevrier testifies that he "heard" that a teardown "has happened." Ex. 2117, 50:7. This statement is offered for the truth of the matter asserted (that a teardown happened) but is not an admission about copying, and is hearsay. FRE 801(c) (defining hearsay). Patent Owner makes no specific arguments explaining how Mr. Chevrier's testimony here falls under FRE 801(d)(2). We are not persuaded that this testimony qualifies under FRE 801(d)(2) as an opposing party statement.

2. Exhibit 2164 – Trial Transcript

With regard to Patent Owner's assertion of commercial success, Patent Owner offers district court trial testimony of Mr. Pat Nola, an employee of Petitioner. Patent Owner cites Exhibit 2164 on page 38 of its Response. Patent Owner states:

Even Petitioner's President and CEO admitted that commercial success of captioned telephones was attributable to Patent Owner's claimed inventions; specifically, delivery of captions and voice using voice recognition software and two-line captioned telephone service. Ex. 2164 at 106:23–116:6.

PO Resp. 38. At the cited portion of Exhibit 2164, Mr. Nola fields many questions regarding the features of Petitioner's product, and questions asking Mr. Nola to guess as to whether various features were important to Petitioner's customers. *See* Ex. 2164, 106:23–116:6. The only discussion regarding Patent Owner in the cited portion is:

Q. All right. And you knew that Ultratec was already in the captioning market?

A. Yes.

Id. at 116:4–6. Again, it is not clear to us how this statement is an admission regarding commercial success, and Patent Owner provides no analysis in support of its assertion. *See* PO Resp. 38. Therefore, we are not persuaded that this testimony qualifies under FRE 801(d)(2) as an opposing party statement.

3. Exhibit 2118 – Trial Transcript

With regard to Patent Owner's assertion of long-felt, unmet need and praise, Patent Owner argues that testimony of Mr. Nola describing an email

sent by Mr. Robert Puzey, a former employee of Petitioner, in Exhibit 2118 is not offered for the truth of the matter asserted. Opp. Exc. 7–8. Patent Owner cites Exhibit 2117 on page 44 of its Response. Patent Owner states:

Even Mr. Puzey, Petitioner’s former Senior Product Manager, has spoken positively about Cap Tel. Ex. 2118 at 24:13–25:11, 26:1–4.

The cited portion of Mr. Nola’s testimony about Mr. Puzey’s email indicates “Ultratec’s CapTel is currently the only captioned telephone on the market,” indicates it offers “convenience of being able to use the CapTel phone to dial the number you want to call and speak for yourself,” and describes various features of the CapTel phone. Ex. 2118 at 24:24–25:9.

We do not agree Mr. Puzey’s statement is being offered for his state of mind. Rather, Mr. Puzey’s testimony about features in Patent Owner’s product is being offered as proof regarding an alleged long-felt need for the feature. Accordingly, his testimony is hearsay.

4. Patent Owner’s Residual Exception Argument

Patent Owner lastly argues that the exhibits are admissible under the residual exception of FRE 807. The residual exception is to be “reserved for exceptional cases”¹¹ and requires four elements:

- (1) the statement has equivalent circumstantial guarantees of trustworthiness;
- (2) it is offered as evidence of a material fact;
- (3) it is more probative on the point for which it is offered than any other evidence that the proponent

¹¹ *Conoco v. Dep’t of Energy*, 99 F.3d 387, 392 (Fed. Cir. 1996).

can obtain through reasonable efforts; and
(4) admitting it will best serve the purposes of these
rules and the interests of justice.

Patent Owner's analysis (Opp. Exc. 14–15) alleges that the testimony is “offered regarding highly material facts relating to secondary considerations and is more probative on the point than any other evidence reasonabl[y] available to Patent Owner.” *Id.* at 12. As should be clear from our analysis above of why the testimony in the exhibits are not admissions, however, the testimony generally is not useful in showing the various things for which Patent Owner offers it. As we will discuss below in our analysis of Patent Owner's evidence of secondary considerations of non-obviousness, Patent Owner has offered evidence in the form of declarations, fund reports, internal documents from Petitioner, and the like, that are more probative on the point of secondary considerations than these out-of-court statements. *See United States v. Ismoila*, 100 F.3d 380, 393 (5th Cir. 1996) (requiring exceptions under the residual exception to be “sufficiently material [and] probative”). In addition, we are not persuaded why admission would be in the interests of justice—Patent Owner's argument here is simply an unsupported allegation that it is in the interests of justice. Accordingly, we do not find that Exhibits 2117, 2118, and 2164 should be admitted under the residual exception.

C. Claim Construction

In an *inter partes* review, the Board interprets claims in an unexpired patent using the “broadest reasonable construction in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b);

see Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2144 (2016) (holding that 37 C.F.R. § 42.100(b) “represents a reasonable exercise of the rulemaking authority that Congress delegated to the Patent Office”). Under that standard, claim terms are presumed to be given their ordinary and customary meaning, which “is the meaning that the term would have to a person of ordinary skill in the art in question” at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). To rebut this presumption by acting as a lexicographer, the patentee must give the term a particular meaning in the specification with “reasonable clarity, deliberateness, and precision.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In addition, the Board may not “construe claims during [an *inter partes* review] so broadly that its constructions are unreasonable under general claim construction principles.” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015).

We construe the challenged claims according to these principles.

1. Terms Construed in Prior Proceedings

Petitioner suggests that the terms “assisted user” and “hearing user,” construed in the *inter partes* reviews challenging the ’835 patent, of which the ’045 patent claims the effective filing date and with which the ’045 patent shares a written description, also should be applied to this proceeding. Pet. 8. Patent Owner does not dispute the construction of these terms. We adopt these constructions:

Term or Phrase	Prior Construction ¹²
“assisted user”	The individual making use of the transcribed text, regardless of the individual’s actual hearing abilities.
“hearing user”	The individual in communication with the assisted user.

We also agree with Petitioner there is no patentable distinction between a “hearing user” and a “hearing person.” *Id.* at 7. Accordingly, we adopt the construction of “hearing user” as the broadest reasonable construction of “hearing person,” recited in independent claim 1 and other claims.

Ex. 1001, 9:11–13.

2. “control limitation”

Petitioner also proposes that the Board’s prior construction of the “control limitation,” which is discussed in *inter partes* reviews involving the related ’835 patent, “should be applicable in the present proceeding” because “there is no distinction between a . . . ‘control,’ ‘switch,’ ‘button,’ or ‘activator.’” Pet. 6–7; *see, e.g., CaptionCall, L.L.C. v. Ultratec, Inc.*, Case IPR2013-00549, slip op. at 11–12 (PTAB) (Paper 7, Decision to Institute, discussing the “control limitation”). As noted by Petitioner, we previously construed “while the assisted user is conversing over the first telephone line with the hearing user over a first direct telephone connection between the assisted user and the hearing user, the assisted user operating a control on

¹² *See, e.g., CaptionCall, L.L.C. v. Ultratec, Inc.*, Case IPR2013-00549, slip op. at 8–9 (PTAB Mar. 5, 2014) (Paper 7, Decision to Institute); *id.* at Paper 71, 7 (Final Written Decision).

the captioned telephone device to initiate a captioning service” as including a timing element, a context element, and an action element. IPR2013-00549 Decision to Institute, 11. We need not decide this issue at present because, as Petitioner points out, “the ’045 Patent more explicitly claims these features in separate elements.” Pet. 7.

3. Other Claim Terms

To the extent it is necessary for us to construe other claim terms in this decision, we do so below in the context of analyzing whether the prior art renders the claims unpatentable.

D. Principles of Law

To prevail in challenging Patent Owner’s claims, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. See *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner cannot satisfy its burden of proving

obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

Petitioner has asserted each of the claims in the ’045 patent is unpatentable under 35 U.S.C. § 103(a) over various references. A claim is unpatentable under 35 U.S.C. § 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 of the invention to a person having ordinary skill in the art. *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 ordinary skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

E. Level of Ordinary Skill

In determining whether an invention would have been obvious at the time it was made, 35 U.S.C. § 103 requires us to determine the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991). The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention. *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). Factors that may be considered in determining the level of ordinary skill in the art include, but are not limited

to, the types of problems encountered in the art, prior art solutions to those problems, rapidity with which innovations are made, the sophistication of the technology, and educational level of active workers in the field. *Id.* In a given case, one or more factors may predominate. *Id.* Generally, it is easier to establish obviousness under a higher level of ordinary skill in the art.

Innovention Toys, LLC v. MGA Entm't, Inc., 637 F.3d 1314, 1323 (Fed. Cir. 2011) (“A less sophisticated level of skill generally favors a determination of nonobviousness . . . while a higher level of skill favors the reverse.”).

Petitioner’s declarant Mr. Occhiogrosso concludes that one of ordinary skill in the art “would have been a person with a bachelor’s degree in electrical engineering (or electrical and computer engineering) and a few years of experience with telephone communication system architecture, design and implementation, digitization of voice, speech recognition technology, and/or traditional relay systems.” Ex. 1009 ¶ 32.

Mr. Occhiogrosso also offers that “someone with less technical education but more experience, or more technical education but less experience would have also met this standard.” *Id.* Mr. Occhiogrosso enumerates several factors which he considered in determining the characteristics of a hypothetical person of ordinary skill in the art of the challenged patent as of August 23, 2001. *Id.* at ¶ 31. Among the factors, Mr. Occhiogrosso identifies “various approaches to designing and implementing telephone communication systems in the prior art, the type of problems encountered, and the rapidity with which innovations were made in this field.” *Id.*

Patent Owner does not challenge directly Mr. Occhiogrosso's testimony or set forth a proposed level of ordinary skill in its Response. *See generally* PO Resp. 6. Patent Owner does not identify any relevant testimony from Mr. Ivan Zatkovich, who is Patent Owner's declarant, proposing a level of ordinary skill in the art to be adopted, nor are we able to identify any. *See generally* Ex. 2142; PO Resp. 6. Patent Owner indicates that it "has applied the Board's definition of [one of ordinary skill in the art] from IPR2013-00549 for the purposes of [its] Response" but does not articulate the level.

We find Mr. Occhiogrosso's testimony, based on the level of specificity and the explanation of the facts on which based his conclusion, credible. Furthermore, we have reviewed the challenged patent and prior art of record in this proceeding (Exs. 1001, 1004–1008) and find that evidence consistent with Mr. Occhiogrosso's opinion. Accordingly, we adopt Mr. Occhiogrosso's characterization of the level of ordinary skill in the art for purposes of the following analysis.

*F. Asserted Ground of Obviousness of Claims 1–74
in view of Liebermann, Engelke '405, Mukherji, and Engelke '482*

Petitioner asserts that claims 1–74 would have been obvious in view of Liebermann, Engelke '405, Mukherji, and Engelke '482. Pet. 8–14 (summarizing prior art), 14–60 (asserted ground). Petitioner provides explanations, with liberal specific citations to the asserted references, how the references would have conveyed to one of ordinary skill in the art the limitations of the challenged claims and reasons why one of ordinary skill in

the art would have combined the references in the manner proposed by Petitioner. *Id.* Petitioner also relies on the declaration of Mr. Occhiogrosso (Ex. 1009).

With support of the declarations of Mr. Zatkovich (Ex. 2142), Paul W. Ludwick (Ex. 2135), and others, Patent Owner challenges Petitioner's contentions, arguing that (i) Petitioner failed to show several claim limitations (PO Resp. 10–20), (ii) it would not have been obvious to modify Petitioner's proposed combination to meet the purportedly missing limitations (*id.* at 14, 19), and (iii) objective indicia establish that the claims of the challenged patent are nonobvious (*id.* at 20–54). In reply, Petitioner maintains its position that the challenged claims would have been obvious (Pet. Reply 1–16) and contends that Patent Owner's evidence of secondary considerations fails to establish non-obviousness (*id.* at 16–27).

We have reviewed the Petition, the Patent Owner's Response, and Petitioner's Reply, as well as the relevant evidence discussed in those papers, and other record papers. For reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence claims 1–74 would have been obvious in view of Liebermann, Engelke '405, Mukherji, and Engelke '482.

1. Summary of Asserted Prior Art

a. Summary of Liebermann

Petitioner asserts Liebermann qualifies as prior art to the challenged claims under 35 U.S.C. § 102(b). Pet. 8. Liebermann is a United States patent titled "Telephone for the Deaf and Method of Using the Same" and

discloses various embodiments for providing assisted telephone service to an assisted user communicating with a hearing user. Ex. 1006, [54], Abstract, 4:23–26, 6:20–25, 6:40–7:43. In an embodiment, the assisted user and hearing user first connect over a telephone connection. *Id.* at 6:64–65 (“[t]he normally hearing person who calls a deaf person dials the deaf person’s phone number”), 7:5–6 (“the line between the normally hearing person and the deaf person is analog for voice content only”), 7:25–26 (“the cellular phone maintains two cellular connections . . . one to the [hearing user].”). Then, the assisted user’s device connects to the relay on another line and arranges for all parties to be on line, thus facilitating the captioning service. *Id.* at 7:1–9 (“[t]he deaf person’s station also arranges for the *simultaneous transmission of both voice and data on the dedicated line*”) (emphasis added); 7:18–28 (explaining that “voice/data is sent to the center on the *dedicated line* assigned for the deaf person” and “the cellular phone maintains *two cellular connections* on line, one to the center (voice/data) and one to the caller”) (emphases added). The relay converts the spoken words of the hearing user into text, which is displayed to the assisted user. *Id.* at 7:10–17, Fig. 8 (showing the assisted user’s display, including the hearing user’s spoken words as text). Using Liebermann’s device, a hearing user may call an assisted user at the assisted user’s phone number directly (i.e., in lieu of calling a relay first). *Id.* at 6:64–65.

Based on these disclosures, we find that Liebermann teaches using a two-line communication device operated by an assisted user. Liebermann’s device operates in conjunction with a translation center that converts the

spoken words of the hearing user into text, which is transmitted to the communication device and displayed for an assisted user.

b. Summary of Engelke '405

Petitioner asserts Engelke '405 qualifies as prior art to the challenged claims under 35 U.S.C. § 102(b). Pet. 9. Engelke '405 is a United States patent titled “Text Enhanced Telephone” that explains that there are many people who are not deaf but would benefit from devices similar to those offered to the deaf, by offering a service providing simultaneous voice-and-text. Ex. 1005, [54], 2:9–27, 2:30–45, Fig. 4. Accordingly, Engelke '405 describes a text-enhanced telephone, which allows for the assisted user to have both a voice connection with the hearing user and a text connection with the relay service at the same time. *Id.* at 3:31–37, Fig. 4. The device of Engelke '405 allows “the [hard-of-hearing] user to speak and to hear the words spoken by the other party [with] the . . . device also supplying to the user a text character stream of the words spoken by the other party.” *Id.* at Abstract. The device uses the voice-to-text relays used by deaf users already in existence. *Id.* Figure 4 of Engelke '405 is illustrative:

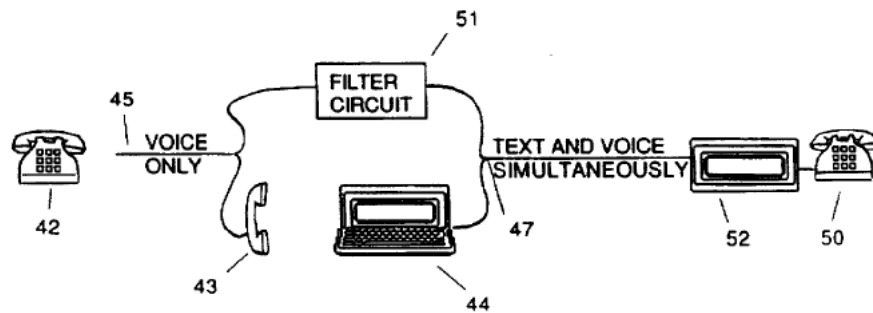


FIG. 4

Figure 4 of Engelke '405 depicts a text-enhanced telephone connection in which assisted user's telephone 50 can send and receive both text and voice, such that the hearing user (at telephone 42), assisted user (at telephone 50 and TET device 52), and relay operator (at relay 44) can all speak and hear each other, and the assisted user's TET appliance and the relay operator's telecommunication device for the deaf (TDD) machine can send text back and forth. *Id.* at 6:29–52. Figure 4 depicts sending “TEXT AND VOICE SIMULTANEOUSLY” to the assisted user's TET device 52.

Engelke '405 discusses how assisted communications solutions have been available for the deaf but not for the hard-of-hearing. *Id.* at 2:9–27. The benefit of the system of Engelke '405 is that it allows users with some hearing or speaking capability to continue to use a telephone and to augment the spoken words of the hearing user with text from the relay service. *Id.*; *see also id.* at 3:30–42 (describing how the text-enhanced telephone allows the assisted user to use a telephone as they previously were accustomed). The text-assisted service can also be bypassed by using an “on/off” switch. *Id.* at 4:54–58. Thus, the system allows the assisted user to speak directly to

the hearing user and to hear directly from the hearing user, with the relay service providing supplemental assistance, if needed. *Id.*; *id.* at 6:48–52.

The benefit of this type of system, according to Engelke ’405, is that it allows users with some hearing or speaking capability to continue to use a telephone and to augment the spoken words of the hearing user with text from the relay service. *Id.* at 2:9–27. Thus, the system allows the assisted user to speak directly to the hearing user or to hear directly from the hearing user, with the relay service providing text of what is said. *Id.* at 6:48–52.

Based on these disclosures, we find that Engelke ’405 teaches a conventional relay system with a call assistant, who receives the hearing user’s voice and transcribes it for the assisted user. Engelke ’405 also teaches that assisted users may be deaf or hard of hearing. In addition, we find that Engelke ’405 also teaches providing simultaneously both voice and text to an assisted user.

c. Summary of Mukherji

Petitioner asserts Mukherji qualifies as prior art to the challenged claims under 35 U.S.C. § 102(e). Pet. 11. Mukherji is a United States patent titled “System and Method for Speech Recognition Assisted Voice Communications.” Ex. 1007, [54]. Mukherji recognizes that, in some circumstances, it is necessary to supplement voice communications with text. *Id.* at 4:35–38. Mukherji describes a text-assistance feature as one that could be enabled “[d]uring setup or at any other appropriate time during the session.” *Id.* at 3:19–22, 6:65–7:4. A graphical user interface is provided on

the communications device for controlling the session. *Id.* at 6:33–42.

Figure 4 of Mukherji is reproduced below:

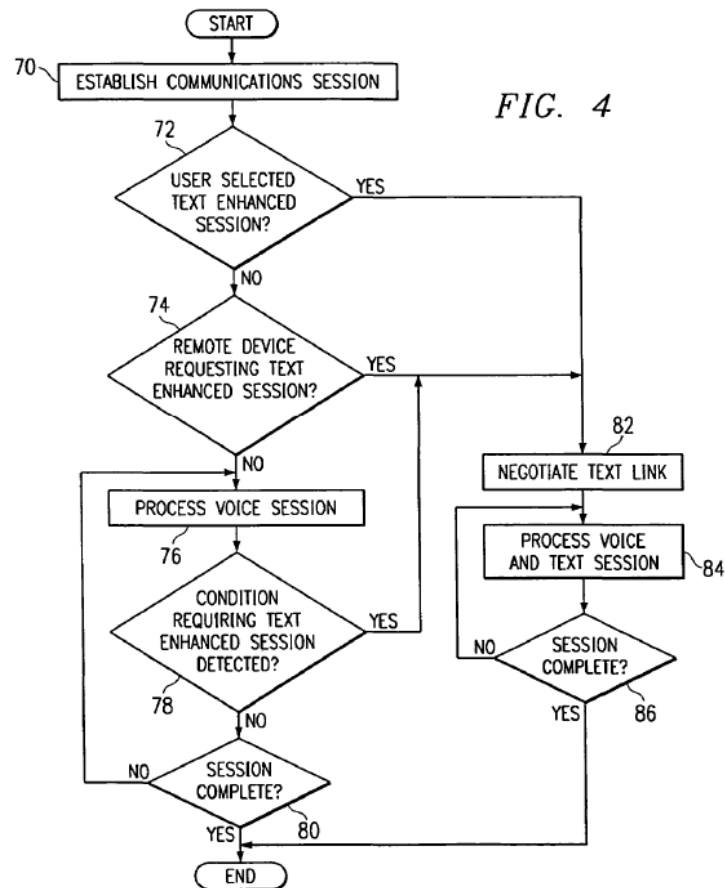


Figure 4 of Mukherji depicts a flowchart of a process for handling a communications session between users. Upon establishing communications (70), the process looks to see if a text enhanced session has been chosen by either user (72, 74). If not, a voice-only session is begun (76). If yes, a text link is added to the voice session (82). During the voice-only session, the process checks to see if a text enhanced session is required (78), and if so,

adds the text link (82). Accordingly, Mukherji provides text assistance on demand.

Based on these disclosures, we find that Mukherji teaches a user initiating receiving a text transcript of the other user's voice for display ("user-activated captioning"). Mukherji also teaches the text transcript could be initiated during set up or by user request during the conversation. In addition, Mukherji teaches using a second, text communication link to provide voice-to-text in addition to a first, voice communication link. *See, e.g., id.* at 3:19–22 ("During setup or at any other appropriate time during the session, the participants may establish two communications streams using network 14, a voice link 20 and a text link 22."). In addition, Mukherji teaches transmitting packet-based voice and text transmissions over the internet. *See id.* at 1:18–24, 2:39–63.

d. Summary of Engelke '482

Petitioner asserts Engelke '482 qualifies as prior art to the challenged claims under 35 U.S.C. § 102(b). Pet. 13. Engelke '482 is a United States patent titled "Relay for Personal Interpreter." Ex. 1004, [54]. The patent is directed to a relay system that facilitates communication between deaf and hearing persons by using a call assistant that re-voices the words of the hearing person into a speech recognition program, which sends text of the hearing person's words to the assisted user. Ex. 1004, Abstract, 2:41–49. Engelke '482 discusses how prior art systems typically involved the call assistants typing the words of the hearing user, but that system "tries the patience" of the users because it is slow compared to the speed of speech

conversations. *Id.* at 2:9–38. Engelke ’482 states that re-voicing will “dramatically increase[]” the speed of the conversations. *Id.* at 2:53–57. Engelke ’482 also describes a buffer used as an error correction feature, to allow the call assistant to fix words the speech recognition program misinterprets. *Id.* at 6:29–43.

2. Claim Limitations

a. Independent Claim 24

Petitioner contends the combination of Liebermann, Engelke ’405, Mukherji, and Engelke ’482 would have conveyed to one of ordinary skill in the art every limitation recited in independent claim 24, which Petitioner selects as representative of the ten independent claims. *Id.* at 27–45. Patent Owner does not propose a representative claim. *See generally* PO Resp. For clarity, we first address independent claim 24, which follows the organization of the arguments presented in the Petition.

Regarding the limitations recited in independent claim 24, Petitioner relies on Liebermann for a two-line captioned telephone device operating in conjunction with a translation center. Pet. 8 (citing Ex. 1006, 6:31–36, 6:64–7:28). According to Petitioner, Liebermann discloses the claimed two communication links—between the assisted user and the hearing person, and between the assisted user and the relay. *See, e.g., id.* at 8, 32, 38–41.

Petitioner relies on Engelke ’405 for “text enhanced telephony” providing both voice and text to an assisted user. *See, e.g., id.* at 9–10 (citing Ex. 1005, 5:64–6:3, 6:11–14, 6:15–28, 6:42–52, 14:49–15:5, Figs. 2, 3). Petitioner also relies on Engelke ’405 for disclosing a switch that allows

a user to select, at the start of an outgoing call, whether to receive captions for the call. *Id.* at 11 (citing Ex. 1005, 4:54–58, Fig. 1). Regarding the limitation that the captioned device receive an indication that the activation switch has been activated after the first communication link is established and while the voice telephone call is progressing, Petitioner additionally relies on Mukherji as describing a voice communications system that supplements voice communications with supplemental text communications and, particularly, describes that the supplemental text communication may be enabled on-demand. *See, e.g., id.* at 11–13 (citing Ex. 1007, 1:18–24, 1:43–46, 2:2–9, 3:16–41, 6:43–45, 6:65–7:15, Fig. 4).

Petitioner relies on Engelke '482 for a relay configured to perform the steps recited in independent claim 24. *Id.* at 43–45 (citing Ex. 1004, 2:41–45, 5:21–24, 5:29–35, 5:36–40, 6:28–39, 6:57–60). For generating a text message stream corresponding to the words spoken by the hearing user, Petitioner relies on Engelke '482 as disclosing revoicing¹³ by a call assistant at the relay the hearing person's words into a computer system equipped with voice recognition for generating a translation of the words to text. *Id.* at 43 (citing Ex. 1004, 2:41–45, 5:21–24, 5:29–35, 5:36–40). Petitioner also relies on Engelke '482 for teaching correction of the generated text and transmitting the corrected text to the captioned device. *Id.* at 44 (citing Ex. 1004, 6:32–39, 6:57–60). Petitioner additionally relies on Liebermann

¹³ As noted by Petitioner, the '045 patent refers to the “re-voicing strategy” described in Engelke '482, incorporates Engelke '482 by reference, but does not claim priority to Engelke '482. *Id.* at 14 (citing Ex. 1001, 3:45–47).

and Engelke '405 for transmitting the corrected text to the captioned device. *Id.* at 44–45 (citing Ex. 1006, 6:64–7:14, 7:18–26, Fig. 8; Ex. 1005, 5:16–21).

Along these lines, Petitioner contends the combination of Engelke '482, Engelke '405, and Liebermann would have conveyed to one of ordinary skill in the art each relay component recited in independent claim 24, including a relay computer, a relay input device, and a relay display screen. *Id.* at 30–31.

Petitioner contends the combination of Liebermann, Engelke '405, Mukherji, and Engelke '482 would have conveyed to one of ordinary skill in the art the captioned telephone device recited in independent claim 24, including a captioned device processor, a microphone, a speaker, and a visually readable display in communication with the captioned device processor. *Id.* at 31–34. Petitioner further contends that the combination of Engelke '405, Liebermann, Mukherji, and Engelke '482 would have conveyed to one of ordinary skill the recited activation switch to initiate a captioning service while the voice telephone call is in progress. *Id.* at 35–43.

(i) Purportedly No “Substantially in Real Time”

Patent Owner contends that the references relied on by Petitioner do not teach or suggest “the substantially in real time” limitation recited in independent claim 24. PO Resp. 15–17. Specifically, Patent Owner contends that none of Liebermann, Mukherji, or Engelke '405 disclose “broadcasting, from the assisted user’s device, the words spoken by the

hearing person to the assisted user ‘substantially in real time’ as the words spoken by the hearing user.” *Id.* at 15; *see also id.* at 17 (concluding that “none of the cited prior art references discloses, or even addresses, broadcasting from the assisted user’s device to the relay words spoken by the hearing person to the assisted user substantially in real time as the words spoken by the hearing user”).

We understand Patent Owner to argue that independent claims 18, 24, and 61 require the voice of the hearing user to be broadcast substantially in real time as the hearing person speaks. *See, e.g.*, PO Resp. 15 (indicating prior art “would not be concerned with the real-time broadcast of the hearing user’s voice”); *id.* (arguing Mukherji “is silent as to any sort of temporal limitation on the manner in which the hearing user’s (or any user’s) voice is broadcast to a relay”); *id.* at 16 (indicating prior art “does not disclose or suggest anything about real-time voice broadcast”); *id.* (“Nothing in this passage discloses any sort of temporal limitation on the manner in which the hearing user’s voice is broadcast.”).

We do not agree with Patent Owner because the plain language of the claim does not require broadcasting from the captioned device the words spoken with the hearing person substantially in real time as the words *are* spoken by the hearing person. Rather, independent claim 24 requires broadcasting via the speaker of the captioned device “the words spoken by the hearing person and received by the [captioned device] processor . . . substantially in real time *as the words are received by the [captioned device] processor.*” Ex. 1001, 12:29–33 (emphasis added). Notably, the only

processor recited in independent claim 24 is “a captioned device processor” and the only speaker recited in independent claim 24 is the speaker that is part of the captioned device. Independent claim 24 does not require that the words of the hearing user be broadcast substantially in real time as the words are spoken by the hearing user, as Patent Owner contends. Instead, independent claim 24 requires the words “are broadcast via the speaker substantially in real time as the words are received by the processor.” In order words, claim 24 recites a temporal limitation for the broadcasting as compared with the time the words are received by the processor of the captioned device. Perhaps, Patent Owner assumes, without explaining its interpretation, that claim 24 requires the voice of the hearing user to be broadcast at the captioned device substantially in real time as the words are spoken by the hearing user because the voice of the hearing user travels over the communication line between the hearing user and the captioned device “substantially in real time.” To the extent we agree that this is required by claim 24, we determine the combination would have conveyed this to one of ordinary skill in the art for the reasons discussed below.

We agree with Petitioner’s position that during “a standard telephone call” in Engelke ’405 “the voice of both parties is broadcast in real time over a speaker in a handset.” Pet. 42–43 (citing Ex. 1009 ¶¶ 42, 44); *see id.* (citing Ex. 1005 (Engelke ’405), 4:35–37, 13:22–38, claim 18). Petitioner relies on Mr. Occhiogrosso’s testimony that Engelke ’405 discloses a text enhanced telephone that operates as a standard telephone. Pet. 42 (citing Ex. 1009 ¶ 42). We find credible Mr. Occhiogrosso’s testimony because it

is based on a citation from the reference. Ex. 1009 ¶ 42 (quoting Ex. 1005, 2:30–46) (“The text enhanced telephone will, to the user, operate like a normal telephone but will, in addition to receiving normal voice communication, permit the user to receive the words spoken by the remote party in a visual format on a visual display located on the text enhanced telephone which the user is operating.”).

Moreover, in response to Patent Owner’s contention, Mr. Occhiogrosso opined that the text enhanced telephone of Engelke ’405 “does not contain any circuitry that would delay or otherwise present output of the hearing user’s voice; therefore, it continues to operate as a conventional telephone by outputting the voice of the hearing user ‘substantially in real time.’” Ex. 1049 ¶ 30; Pet. Reply 8 (quoting Ex. 1049 ¶ 30). We credit Mr. Occhiogrosso’s testimony because it provides a sufficient explanation how one of ordinary skill in the art would have understood Engelke ’405’s embodiment that integrates a text enhanced telephone into a conventional telephone. Ex. 1049 ¶ 30 (explaining 1005, 3:59–4:24, 13:23–30, Fig. 1); Pet. Reply 8 (citing Ex. 1049 ¶¶ 26–30).

We also credit Mr. Occhiogrosso’s testimony because it comports with Engelke ’405’s description of the microprocessor in the text enhanced telephone. Engelke ’405 describes the microprocessor 30 of the text enhanced telephone depicted in Figure 1 as being “connected to a visual display 38 which is capable of providing an alpha-numeric display of text characters presented to it by the microcontroller 30.” Ex. 1005, 4:35–36,

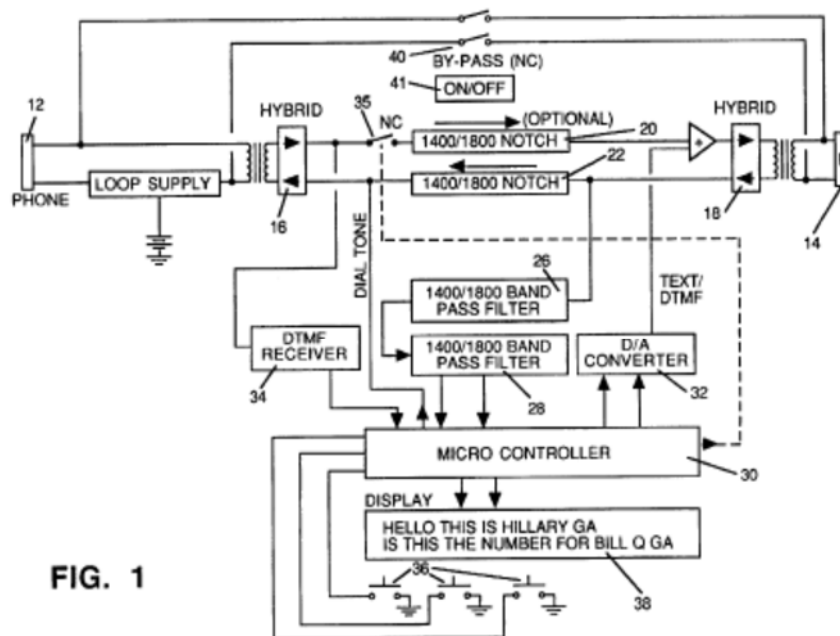


Figure 1 shows two arrows between microcontroller 30 and display 38, which shows text—“HELLO THIS IS HILLARY[;] IS THIS THE NUMBER FOR BILL Q GA.” Thus, we determine Figure 1 of Engelke ‘405 supports Petitioner’s position that “[t]he TET device does not contain any circuitry that would delay or otherwise prevent output of the hearing user’s voice; therefore, it continues to operate as a conventional telephone by outputting the voice of the hearing user ‘substantially in real time’” (Pet. Reply 8 (citing Ex. 1049 ¶ 30)).

For the reasons discussed above, we agree with Petitioner's contentions that the combination of Liebermann, Engelke '405, Mukherji, and Engelke '482 would have conveyed to one of ordinary skill in the art all

limitations recited in independent claim 24. Pet. 28–45. Moreover, we have reviewed Petitioner’s arguments and the underlying evidence cited in support and conclude Petitioner has demonstrated by a preponderance of the evidence that the combination of Liebermann, Engelke ’405, Mukherji, and Engelke ’482 would have conveyed to one of ordinary skill in the art all limitations recited in independent claim 24. *Id.*

b. Other Independent Claims

Petitioner contends that the ten independent claims in the ’045 patent are “highly repetitive and nearly identical in scope.” Pet. 27. Petitioner identifies limitations in other independent claims that are similar to limitations in representative claim 24. *Id.* at 45–50. Petitioner asserts those limitations would have been obvious for the same reasons as the limitations recited in independent claim 24. *Id.* Petitioner also identifies additional limitations recited in independent claims other than those in representative independent claim 24, and asserts reasons why those additional limitations would have been obvious over the asserted references. *Id.*

For the reasons discussed above with respect to independent claim 24, we agree with Petitioner’s position. Moreover, we conclude Petitioner has demonstrated by a preponderance of the evidence that the combination of Liebermann, Engelke ’405, Mukherji, and Engelke ’482 would have conveyed to one of ordinary skill in the art all limitations recited in the other independent claims. *Id.* We further explain our reasoning with regard to particular claim limitations recited in independent claims 1, 18, 49, and 61.

(i) Independent Claim 1

Independent claim 24 requires, after a switch is activated, passing the hearing user's voice over the second communication link to the relay. Ex. 1001, 12:21–24. Independent claim 24, however, does not recite initiating the second communication link from the captioned device to the relay, whereas independent claim 1 does. *Compare* Ex. 1001, 1:11–58 (claim 1), *with id.* at 11:51–12:43 (independent claim 24). Petitioner relies on Mukherji for teaching initiating the second connection. *See, e.g., id.* at 46–47. For the reasons discussed in the Summary of Mukherji section, we find Mukherji teaches opening a second, text communication link to provide voice-to-text in addition to a first, voice communication link, as Petitioner contends. *See, e.g., id.* at 3:19–22 (“During setup or at any other appropriate time during the session, the participants may establish two communications streams using network 14, a voice link 20 and a text link 22.”). We recognize that Petitioner has the burden to demonstrate unpatentability, but we note for clarity that Patent Owner does not challenge with particularity this limitation recited in claim 1. *See Dynamic Drinkware*, 800 F.3d at 1378; *see* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

(ii) Independent Claims 18 and 61

Like independent claim 24, independent claims 18 and 61 each requires broadcasting the words spoken by the hearing user at the captioned device “substantially in real time” as the words are received by the captioned device, not as the words are spoken by the hearing user. *See* Ex. 1001, 10:64–67 (claim 18) (“*broadcasting* the words spoken by the hearing person to the assisted user via the speaker *substantially in real time* as the words

spoken by the hearing person *are received by the captioned device*”) (emphasis added); *id.* at 18:64–67 (claim 61) (“a speaker for *broadcasting voice messages received by the captioned device* to the assisted user *substantially in real time* as voice messages from the hearing person *are received at the captioned device*”). Claims 18 and 61 also recite “broadcasting . . . to the assisted user.” For the same reasons discussed above with respect to independent claim 24, we determine that the combination of asserted references would have conveyed these limitations to one of ordinary skill in the art, as Petitioner contends.

(iii) Independent Claim 49

Independent claim 49 requires, among other limitations, that an assisted user’s captioned device be configured to perform the step of “receiving words spoken by the assisted user via the microphone and transmitting the words spoken by the assisted user to the hearing person.” Ex. 1001, 15:25, 35, 41–43. The captioned device recited in independent claim 49 also “enabl[es] the assisted user to use the device to facilitate communications via the first communication link between the assisted user and the hearing person.” *Id.* at 15:31–35. Independent claim 49 further recites that “relay caption services can be provided to the assisted user without disturbing the telephone call on the first communication link between the assisted user and the hearing person” (“the without-disturbing” limitation). Ex. 1001, 16:3–6.

For the without-disturbing limitation of independent claim 49, Petitioner relies on Mr. Occhiogrosso’s testimony and contends:

To the extent that this limitation has any discernible meaning, it is obvious over the prior art. The proposed combination discloses a two-line captioned telephone system where captioning can be invoked mid-conversation. Ex. 1009, ¶ 80. This is all that the specification of the '045 Patent describes.

Pet. 48. Thus, as we noted in our Decision to Institute, Petitioner's argument—invoking captioning in mid-conversation meets this limitation—seems to imply that “without disturbing” would encompass “does not disconnect.” Inst. Dec. 18–19. In other words, Petitioner seems to contend that “without disturbing” encompasses “does not disconnect the voice line between the hearing user and the assisted user when invoking captioning.

Patent Owner contends that “does not disconnect” would not be the broadest reasonable construction of the term “without disturbing” and identifies, from the specification, descriptions of “how captions may be invoked during the course of the conversation without *involving* the hearing user” as purported examples of “without disturbing.” PO Resp. 9, 11 (citing Ex. 1001, 6:14–15, 8:33–40). Patent Owner additionally contends that the specification in Figure 6 provides a structure for ensuring “the non-disturbance condition” and further contends the specification “notes ‘[n]ormally the hearing user does not even need to be aware that captioning is being used on the call.’” *Id.* (citing Ex. 1001, 7:65–67, Fig. 6; Ex. 2142 ¶ 18). Patent Owner contends that “without disturbing” as recited in claim 49 “should be construed to require providing captioning services in such a way that the relay does not interpose on the first communication link.” PO Resp. 8–9.

In reply, Petitioner and Mr. Occhiogrosso agree that the broadest reasonable construction of “without disturbing the telephone call” encompasses invoking captioning mid-conversation without disconnecting the call. Pet. Reply 3 (citing Ex. 1049 ¶¶ 9–16). Mr. Zatkovich, Patent Owner’s declarant, also agrees that not disconnecting a call would be an example of “without disturbing” as construed by Patent Owner. As Mr. Zatkovich testifies, “disconnecting the call to involve the relay, as would be required in a one line system, would be only one example of something that might result in the relay interposing on the line.” Ex. 2142 ¶ 20; see PO Resp. 8–9 (proposing the “without disturbing” limitation “should be construed to require providing captioning services in such a way that the relay does not interpose on the first communication link”; PO Resp. 8–9 (citing Ex. 2142 ¶ 20).

Thus, the testimony of Patent Owner’s declarant, Mr. Zatkovich, provides further support for Petitioner’s position that a two-line captioned telephone system where captioning can be invoked mid-conversation (as in Petitioner’s proposed combination of the asserted references) would have conveyed to one of ordinary skill in the art that “the relay caption services can be provided to the assisted user without disturbing the telephone call on the first communication link between the assisted user and the hearing person,” as required by claim 49.

We agree with Petitioner’s position that the without-disturbing limitation is a negative limitation which means that “the inclusion of additional ‘non-disturbance conditions’ progressively narrows the scope of

the without-disturbing limitation. Pet. Reply 3. Thus, we are wary of requiring additional specific types of non-disturbance conditions to meet the without-disturbing limitation.

Mr. Occhiogrosso and Mr. Zatkovich agree that disconnecting a call to involve the relay would interpose or disturb the call. Thus, we agree with Petitioner that Liebermann's use of a two-line device that does not involve disconnecting (as would be required in a one-line system) to provide relay caption services would have conveyed to one of ordinary skill in the art providing "relay caption services . . . to the assisted user without disturbing the telephone call on the first communication link between the assisted user and the hearing person," as recited in claim 49.

We do not agree with Patent Owner that "Liebermann's system necessarily interposes the relay between the assisted and hearing users because its relay sends the hearing user synthesized speech." PO Resp. 11–13. Mr. Zatkovich testifies that "Liebermann's Center sends to the hearing user synthesized speech intended to correspond to the assisted user's signs." Ex. 2142 ¶ 27; *see* PO Resp. 12 (citing Ex. 2142 ¶ 27). Petitioner replies that its proposed combination does not use Liebermann's synthesized speech. Pet. Reply 4 (citing Ex. 1049 ¶ 12).

We agree with Petitioner's position that its combination does not rely on Liebermann's synthesized speech, which is disclosed in column 5. *See* Ex. 1006, 5:7–11 (describing synthesized speech provided to hearing user); PO Resp. 12 (citing Ex. 1006, 4:60–5:13); Pet. 48 (identifying corresponding arguments in claim 24 for limitations in claim 49). Rather,

Petitioner relies on other aspects described in Liebermann. *See generally* Pet. 28–45 (none of Petitioner’s citations to Liebermann rely on speech synthesis). Moreover, we note that Liebermann also indicates that the signing motions of the assisted user are translated and “[t]he translated message is then conveyed to the ‘listener’ in either verbal or written form.” Ex. 1006, 6:12–14. This further supports Petitioner’s position that its combination does not rely on Liebermann’s synthesized speech, as Petitioner contends with support of Mr. Occhiogrosso (Pet. Reply 4 (citing Ex. 1049 ¶ 12)).

Patent Owner additionally contends that one of ordinary skill in the art would not have modified Liebermann to allow undisturbed calls because that modification would have frustrated Liebermann’s intended purpose in that synthesized speech would not be provided. PO Resp. 14; *see* Pet. Reply 14 (opposing Patent Owner’s argument). As noted previously, we do not agree that Liebermann’s synthesized speech is a necessary component of its system. Therefore, we disagree with Patent Owner’s position.

For these reasons, we determine that Petitioner’s combination of Liebermann, Engelke ’405, Mukherji, and Engelke would have conveyed to one of ordinary skill in the art the “without disturbing the telephone call” limitation in claim 49.

c. Dependent Claims

Petitioner provides analysis and claim charts for the subject matter recited in the sixty-four dependent claims. Pet. 50–60. We conclude Petitioner has demonstrated by a preponderance of the evidence that the

combination of Liebermann, Engelke '405, Mukherji, and Engelke '482 would have conveyed to one of ordinary skill in the art all limitations recited in the dependent claims. We further articulate our reasoning regarding certain dependent claims below.

(i) Claims 17, 59, and 74

Claims 17 and 74, which depend from independent claims 1 and 61, respectively, recite “wherein only the hearing person’s voice and the assisted user’s voice are transmitted on the first communication link.” Ex. 1001, 12:43–45, 20:46–48. Similarly, claim 59, which depends from independent claim 58, recites “wherein only assisted user and hearing person voice signals are transmitted on the first communication link during the voice conversation.” *Id.* at 18:39–41.

For these limitations, Petitioner relies on Liebermann’s description that only voice is transmitted on the connection between the hearing person and the assisted user. Pet. 57 (quoting Ex. 1006, 7:5–6 (“the line between the normally hearing person and the deaf person is analog for voice content only”)).

Patent Owner acknowledges that Petitioner relies on Liebermann for this limitation but contends that Liebermann “cannot disclose” the requirement that only assisted user and hearing person voice signals are transmitted on the first communication link, as required by dependent claims 17, 59, and 74. PO Resp. 17–18. According to Patent Owner, Liebermann “requires synthesized voice from the relay to be carried on this first connection” and, thus, would not teach “only assisted user and hearing

person voice signals are transmitted on the first communication link.” *Id.* at 18.

For the reasons discussed previously with respect to independent claim 49, we do not agree that synthesized voice necessarily is provided in each of Liebermann’s embodiments. Notably, Liebermann describes that “the translated message of the sign language of the assisted user is “conveyed to the ‘listener’ in either verbal or written form.” Ex. 1006, 6:12–14.

Patent Owner contends that Liebermann “cannot disclose this requirement, since that reference requires synthesized voice from the relay to be carried on this first connection.” PO Resp. 18; Pet. Reply 5 (Petitioner opposing Patent Owner’s arguments). Because we do not agree that synthesized voice is necessary to Liebermann’s operation, it naturally follows that we do not agree not including Liebermann’s synthesized voice would render it inoperable for its intended purpose, as Patent Owner contends (PO Resp. 19).

Thus, based on the disclosure of Liebermann that “the line between the normally hearing person and the deaf person is analog for voice content only” (Ex. 1006, 7:5–6), we agree with Petitioner that its combination of Liebermann, Engelke ’405, Mukherji, and Engelke ’482 would have conveyed the only voice limitation.

(ii) Claims 23 and 72

Claim 23, which depends from independent claim, and claim 72, which depends from independent claim 61, each requires that “the first

communication link is completely independent of the second communication link.” Ex. 1001, 11:43–50, 20:35–42. For these limitations, Petitioner relies on the teaching that two cellular connections are used in Liebermann’s device. Pet. 59 (quoting Ex. 1006, 7:25–26 (“the cellular phone maintains two cellular connections on line, one to the center (voice/data) and one to the caller”)).

Patent Owner acknowledges that Liebermann discloses two cellular connections in its cellular telephone embodiment. PO Resp. 19. Patent Owner, however, contends that two cellular connections is insufficient to disclose these limitations additionally recited in claims 23 and 72. *Id.* Patent Owner contends that two cellular connections “travel over the same physical medium, i.e., electromagnetic energy propagating through the air.” PO Resp. 19. Patent Owner reiterates its position by stating, “while two cellular signals may be separate, conceptually or logically, they are not physically separate if they are both using over-the-air transmission as a transmission medium.” *Id.*

Petitioner maintains its position and, in its Reply, Petitioner relies on testimony from both Mr. Zatkovich and Mr. Occhiogrosso. Pet. Reply 7 (citing Ex. 1050, 47:15–18; Ex. 1049 ¶¶ 20–25). Petitioner contends that Mr. Zatkovich testifies that “all electromagnetic energy propagating through the air does not use the same physical medium.” Pet. Reply 7 (citing Ex. 1050, 47:15–18); Ex. 1050, 47:15–18 (“Q. Is it your opinion that all electromagnetic radiation sent over air uses the same physical medium? A. No.”). Although Petitioner accurately paraphrases Mr. Zatkovich’s

testimony, we note that Mr. Zatkovich's testimony is equivocal in that it does not seem to preclude an interpretation that *some but not all* electromagnetic radiation sent over the air uses the same physical medium. We also note in this regard that Mr. Zatkovich's deposition testimony contradicts his declaration testimony that "Liebermann's description of two cellular connections at Liebermann, 7:18–28, does not disclose or suggest [the requirement in claims 23 and 72] of separate distinct and physical links." Ex. 2142 ¶ 50. We weigh Mr. Zatkovich's testimony accordingly.

Mr. Occhiogrosso testifies that one of ordinary skill in the art "would understand that two separate telephone lines are physically distinct and separate, i.e., they are 'completely independent.'" Ex. 1049 ¶ 21. For support, Mr. Occhiogrosso relies on various portions of the written description of the challenged patent. *Id.* ¶¶ 21–24 (citing Ex. 1001, 2:24–27, 3:5–10, 6:49–58, 7:32–35, 7:39–43, 8:63–66, Figs. 5, 6).

Mr. Occhiogrosso also testifies that one of ordinary skill in the art would understand "that a first cellular link transmitted/receiver over a first pair of frequencies is separate and distinct from a second cellular link transmitted/received over a second pair of distinct frequencies." Ex. 1049 ¶ 25; *see* Pet. Reply 7 (citing Ex. 1049 ¶¶ 20–25). Mr. Occhiogrosso also opines that "different frequencies are different physical media even though both the first and second cellular links are wireless." *Id.* ¶ 25. For support, he cites as an example that a particular analog cellular standard (i.e., Advanced Mobile Phone System or AMPS) uses different, distant frequency pairs for each link. *Id.* ¶ 25 (citing Ex. 1152, 1–28;

Ex. 1154, 252–54) (paragraph 25 of Mr. Occhiogrosso’s declaration includes two and a half pages of testimony); Pet. Reply 7 (discussing Mr. Occhiogrosso’s testimony concerning AMPS). Mr. Occhiogrosso also supports his opinion with a discussion of ISDN connections, which also are discussed in the challenged patent. Ex. 1049 ¶¶ 22–25; Pet. Reply 7 (discussing Mr. Occhiogrosso’s testimony concerning ISDN lines).

Weighing the testimony of Mr. Zatkovich with that of Mr. Occhiogrosso, we accord Mr. Occhiogrosso’s testimony more weight. We find Mr. Occhiogrosso’s testimony is better supported by sufficient explanation and factual corroboration. Pet. 22–23 (relying on Ex. 1008 ¶¶ 71–73); *see* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”); *Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1368 (Fed. Cir. 2004) (“[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.”).

Moreover, Mr. Zatkovich’s deposition testimony, even though it may be somewhat equivocal, that all electromagnetic energy propagating through the air does not use the same physical medium (Ex. 1050, 47:15–18) undermines Patent Owner’s position that two cellular connections “traveling over the same physical medium, i.e., electromagnetic energy propagating through the air” (PO Resp. 19).

For these reasons, and based on the record developed during this proceeding, we determine that Liebermann would have conveyed to one of

ordinary skill in the art the “completely independent” limitations required by claims 23 and 72, as Petitioner contends.

d. Conclusion: Limitations

Having reviewed the Petition, Patent Owner’s Response, and Petitioner’s Reply, as well as the relevant evidence discussed therein, we determine that Petitioner has demonstrated by a preponderance of the evidence that Liebermann, Engelke ’405, Mukherji, and Engelke ’482 would have conveyed to one of ordinary skill in the art all the limitations in the challenged claims.

3. Rationale to Combine References

Having determined that Petitioner’s combination of Liebermann, Engelke ’405, Mukherji, and Engelke ’482 would have conveyed to one of ordinary skill in the art the limitations in claims 1–74, our inquiry continues because “[a] patent 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, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.* In other words, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.* (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

In addition, “[c]are must be taken to avoid hindsight reconstruction by 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.’” *Grain Processing Corp. v. Am.-Maize Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (quoting *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1012 (Fed. Cir. 1983)).

Petitioner presents reasons why one of ordinary skill in the art would have combined the teachings of Liebermann, Engelke ’405, Mukherji, and Engelke ’482. Pet. 15–27. We recognize that Petitioner has the burden to demonstrate unpatentability but note for clarity that Patent Owner, other than those arguments discussed above with respect claim 49 (PO Resp. 14) and claims 17, 59, and 74 (PO Resp. 19), does not challenge the reasons set forth by Petitioner. *See Dynamic Drinkware*, 800 F.3d at 1378; *see also* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

a. Liebermann and Engelke ’405

We first turn to Petitioner’s proffered rationale for combining Engelke ’405’s teaching of captioned telephony with Liebermann’s two-line architecture. Pet. 15–16. Then we address Petitioner’s proffered rationale for combining Engelke ’405’s on/off switch with Liebermann’s device. *Id.* at 16.

(i) Adding Voice and Text

Petitioner, with support from Mr. Occhiogrosso, indicates one reason that one of ordinary skill in the art would have configured the two-line device of Liebermann to output both voice and text to the assisted user would have been “to cater to the particular impairment or needs of a user,” such as by providing both voice and text to a user who had attenuated but functional hearing (as described in Engelke ’405). Pet. 16 (citing Ex. 1009

¶ 52). We credit Mr. Occhiogrosso’s testimony, which is consistent with our previous findings that Engelke ’405 teaches extending devices intended for the deaf to assist users who are hard-of-hearing, by providing simultaneous voice and text, so as to make the experience more like a conventional telephone. *See* Ex. 1005, 2:9–27 (extending devices for deaf users to hard-of-hearing users; providing assistance to “emulate, to the fullest extent possible, the normal telephonic communication patterns of hearing people”), 2:30–37 (describing simultaneous voice and text). In addition, Mr. Occhiogrosso’s testimony is consistent with our finding that Engelke ’405 also teaches providing tailored services based on particular impairments of the assisted user. *See* Ex. 1005, 5:64–6:3 (describing different modes of operation for particular user impairments). Moreover, Mr. Occhiogrosso provides prior art evidence of other instances of describing extending devices for a deaf person for users who are not deaf but require voice and/or speech assistance, such as hard-of-hearing users. Ex. 1009 ¶ 51 (citing Ex. 1012, 1:40–52 (describing “Voice Carry Over” or “VCO,”¹⁴ and “Hearing Carry Over” or “HCO”); Ex. 1008, 29:64–30:12 (describing VCO and HCO); Ex. 1011, 1:65–2:15 (describing combination VCO and traditional telephone)).

We credit Mr. Occhiogrosso’s testimony, which relies on citations to prior art of record for support. 37 C.F.R. § 42.65(a) (“Expert testimony that

¹⁴ “VCO” is voice carry over, where the assisted user’s voice is sent to the hearing user. Ex. 2013 ¶ 129. “HCO” is hearing carry over, where the hearing user’s voice is sent to the assisted user. *Id.*

does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”); *see Am. Acad. of Sci. Tech Ctr.*, 367 F.3d at 1368 (“[T]he Board is entitled to weigh the declarations and conclude that the lack of factual corroboration warrants discounting the opinions expressed in the declarations.”).

After considering the evidence and arguments presented, we find one of ordinary skill in the art would have modified the two-line configuration of Liebermann (intended for deaf users) to provide simultaneous voice and text, making the device usable by hard-of-hearing users. *See KSR*, 550 U.S. at 418 (explaining an asserted ground of obviousness must demonstrate articulated reasoning with rational underpinning to support the legal conclusion of obviousness).

(ii) Adding the On/Off Switch

We turn to reasons why one of ordinary skill in the art would have combined the on/off switch Engelke ’405 with the teachings of Liebermann. According to Petitioner, with support of Mr. Occhiogrosso, incorporating the on/off switch of Engelke ’405 into the proposed combination “would have allowed families with both hearing-impaired and unimpaired members to utilize a single device.” Pet. 16 (citing Ex. 1009 ¶¶ 53–59); Ex. 1009 ¶¶ 53–54, 59). Mr. Occhiogrosso supports his conclusion with citations to prior art of record. Ex. 1009 ¶ 54 (“It was common in the art to configure communication devices for the hearing and/or speech impaired to also be used by non-impaired individuals (e.g., non-impaired family members).”) (citing Ex. 1011 (Lee), 2:22–34 (“Hearing-impaired individuals . . . often

would prefer that the text transmission device look like a telephone . . . particularly . . . where the telephone communication device is used in a household which has both hearing-impaired and nonhearing-impaired members.”)).

Mr. Occhiogrosso also testifies that such on/off switches were a common feature in the art to allow the device to be used by assisted and non-assisted users. Ex. 1009 ¶ 54 (citing Ex. 1011 (Lee), 2:22–34 (describing that devices are used by both impaired and non-impaired users), 9:8–32 (describing telephone keypad that alternates between TTY and telephone modes); Ex. 1006 (Liebermann), 1:19–23 (describing how deaf parents often have hearing children)).

Having reviewed the Petition, the Patent Owner’s Response, and the Petitioner’s Reply, as well as the relevant evident discussed therein, for the reasons discussed above, we agree with and adopt Petitioner’s contentions regarding adding the on/off switch to Petitioner’s proposed combination.

(iii) Modifications Are Within Level of Ordinary Skill

We conclude that both of these modifications—adding voice and text and adding the on/off switch—would have been within the level of ordinary skill. A person of ordinary skill in the telecommunications art has engineering or equivalent technical experience with telephone systems. This relatively high level of ordinary skill in a technical art (telecommunications) supports the determination that the modifications would have been within that level of skill. In addition, this level of ordinary skill further supports a conclusion of obviousness because it is easier to establish obviousness under

a higher level of ordinary skill in the art. *Innovention Toys*, 637 F.3d at 1323 (“A less sophisticated level of skill generally favors a determination of nonobviousness . . . while a higher level of skill favors the reverse.”). We credit Mr. Occhiogrosso’s testimony that it would have been “easy” for a person of ordinary skill in the art to add the on/off switch. Ex. 1009 ¶ 55; Pet. 16 (citing Ex. 1009 ¶ 55). Mr. Occhiogrosso explains that such a modification “would simply involve associating the ‘on/off switch’ of the ‘bypass circuit’ on the second telephone line of the device of Liebermann to bypass the dialing circuitry that connected to the center when the ‘on/off switch’ was not engaged.” Ex. 1009 ¶ 55; Pet. 16 (citing Ex. 1009 ¶ 55).

Thus, for these reasons, we conclude that the combination of Liebermann and Engelke ’405, as proposed by Petitioner, would be the application of known methods, the results of which would have been predictable to one of ordinary skill in the art and would have been within the ordinary level of skill of one of ordinary skill in the art. This further supports a conclusion of obviousness. *KSR*, 550 U.S. at 416 (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”).

b. Liebermann/Engelke ’405 and Mukherji

For the reasons explained in the Summary of Asserted Prior Art, we find that Mukherji teaches a device that will open a second, text communication link to provide voice-to-text in addition to a first, voice communication link. *See, e.g.*, Ex. 1007, 3:19–22 (“During setup or at any other appropriate time during the session, the participants may establish two

communications streams using network 14, a voice link 20 and a text link 22.”). We further find that Mukherji teaches that the text communication link can be enabled prior to or by a user-activated control during a call. *Id.*

We turn to reasons that would have prompted one of ordinary skill in the art to have incorporated these features taught by Mukherji into the Liebermann/Engelke ’405 combination discussed above. We agree with Petitioner that one of ordinary skill in the art would have recognized the benefit of including Mukherji’s teaching that text assistance could be invoked in mid-conversation by a request from a user and configuring the on/off switch of Engelke ’405 to be operable at the times taught by Mukherji—mid-conversation. Pet. 17–18. For example, as noted above, Mukherji teaches that a user may wish to invoke text assistance during a call based on low-quality voice transmissions. Ex. 1007, 3:19–22, 6:65–7:4.

We also conclude that combining Mukherji with Liebermann and Engelke ’405 would have been applying a known technique to a known device ready for improvement to yield predictable results. See Pet. 18–20. Petitioner points out, with support of Mr. Occhiogrosso, that “the architecture was in place” and Mukherji “additionally recognizes that it is desirable in some circumstances to invoke text assistance mid-conversation.” Pet. 19 (citing Ex. 1009 ¶¶ 81–82). According to Petitioner, Liebermann/Engelke ’405 combination includes the “on/off switch” of Engelke ’405 that could be used to turn the captioning functionality on or off and to that combination, one of ordinary skill in the art “would simply replace Liebermann’s automated initiation [of the call to the relay in

Liebermann to one] that awaited a request by the assisted user . . . as disclosed in Mukherji.” *Id.* at 19 (citing Ex. 1009 ¶¶ 81–82); Ex. 1009 ¶ 81 (“With such an architecture in place, a person of ordinary skill in the art would have readily recognized that the device was ready for an improvement such as allowing the second connection to the center to be manually initiated, rather than automatically initiated.”). Petitioner asserts that the combination is predictable because the same effect in Mukherji would occur in the proposed combination—“an additional connection would be initiated to receive text assistance upon actuation of a control.” Pet. 19; Ex. 1009 ¶¶ 81–82. We also note that telecommunications (the pertinent art) is a generally predictable art as compared with other arts, such as chemistry.

Evidence and reason support Petitioner’s assertions. Mukherji teaches a control that causes invocation of a text line in addition to a voice line. In Petitioner’s proposed combination of Liebermann, Engelke ’405, and Mukherji, the Liebermann/Engelke ’405 device would operate in the same way because Liebermann/Engelke ’405 already includes invocation of a text line in addition to a voice line, merely at a different period of time. The difference is that the text connection also could be invoked by the control, as taught by Mukherji, in addition to being invoked right away or not at all, as taught by the on/off switch of Engelke ’405. Thus, the added feature would operate in the same way as taught in Mukherji (i.e., activating captions during a call), but would also operate on the existing two-line architecture of Liebermann/Engelke ’405.

We acknowledge that this modification would require some supporting circuitry and/or software to enact and accommodate the Mukherji activator control. Based on the prior art of record and the disclosure of the activator in the challenged patent, we credit Mr. Occhiogrosso's testimony (Ex. 1009 ¶ 63) that this modification would have been within the level of ordinary skill in the telecommunications filed. Mukherji itself speaks very little of how to enact the activator control, leaving it to the level of ordinary skill in the art. *See, e.g.*, Ex. 1007, 3:19–22; *see also Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384 (Fed. Cir. 1986) (“a patent need not teach, and preferably omits, what is well known in the art”). Likewise, the challenged patent speaks very little of how to enact its activator control. *See* Ex. 1001, 8:20–24 (describing the device implementing the claimed feature in little technical detail).

We also credit Mr. Occhiogrosso's testimony that the Liebermann and Engelke '405 combination was ready for the improvement of Mukherji's mid-conversation invocation of text assistance. Pet. 19 (citing Ex. 1009 ¶¶ 81–82). Mr. Occhiogrosso testifies that the architecture of the two-line device in Liebermann and the on/off switch of Engelke '405 provided an architecture ready to include the timing of manually initiating text assistance upon a request by the user, as taught by Mukherji, and would have the same predictable result of initiating an additional connection to receive text assistance upon activation of a control, as discussed above. Ex. 1009 ¶¶ 81–82.

We agree with Petitioner that one of ordinary skill in the art would have recognized that Mukherji and Liebermann/Engelke '405 are in the same field of endeavor (telecommunications and voice-to-text transcription), address the same problem (assisting a user in understanding a telephonic conversation), and solve it in the same way (providing text of the telephonic conversation to an assisted user). Pet. 22–23; Ex. 1009 ¶ 56; Ex. 1007, 1:32–36. We find ample support in the record that one of ordinary skill in the art would have looked to solutions for hard-of-hearing users that offered telephone services more like conventional telephones. Ex. 1005, 2:9–27, 31–49; Ex. 1009 ¶ 52 (citing Ex. 1011, 2:22–34). For this reason, one of ordinary skill in the art would have looked to Mukherji to improve the Liebermann/Engelke '405 device. *KSR*, 550 U.S. at 420 (“Under the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.”).

Thus, we conclude that “the improvement is [no] more than the predictable use of prior art elements according to their established functions,” which further supports a finding of obviousness. *KSR*, 550 U.S. at 417. We also find persuasive Petitioner’s contentions regarding why it would have been obvious to try its proposed combination of Mukherji with Liebermann/Engelke '405 (Pet. 20–21) and Petitioner’s contentions regarding the inclusion of Mukherji’s packet-based and Internet-based communications in its proposed combination (Pet. 24–25). We find Petitioner’s contentions to be supported adequately by Mr. Occhiogrosso’s

testimony, which is based on citations to prior art references and reasonable explanations. See Ex. 1009 ¶¶ 83–86.

On the other hand, we accord little weight to Mr. Occhiogrosso's testimony that one of ordinary skill in the art would have been motivated to add the activator of Mukherji to solve the problem of needing language translation assistance when a call was ongoing. Pet. 22 (citing Ex. 1009 ¶ 72). Although Mr. Occhiogrosso supports his conclusion with prior art of record—Engelke '405—that recognizes that problem (Ex. 1009 ¶¶ 71–73; see Pet. 22–23), we find his reasoning to be incomplete. There would be little reason for one of ordinary skill in the art to combine the activator of Mukherji with Liebermann and Engelke '405 based on Mukherji's discussion of aiding foreign language speakers. Notwithstanding, Petitioner articulates sufficient rationale based on other theories, which we have analyzed above, that explain sufficiently why a person of ordinary skill in the art would have considered it obvious to combine the activator of Mukherji with Liebermann and Engelke '405.

c. Liebermann/Engelke '405/Mukherji and Engelke '482

As explained in the Summary of Asserted Prior Art, we find that Engelke '482 teaches re-voicing with error correction at a relay. See, e.g., Ex. 1004, 2:41–49, 2:53–57, 6:29–43. We turn to reasons that would have prompted one of ordinary skill in the art to have incorporated these features taught by Engelke '482 into the Liebermann/Engelke '405/Mukherji combination discussed above.

Petitioner contends, with support of Mr. Occhiogrosso, that one of ordinary skill in the art “would have been motivated to introduce the revoicing relay and error correction of Engelke ’482 into the combination [of Liebermann, Engelke ’405, and Mukherji] to improve the efficiency and accuracy” of the captioning service resulting from the combined references. Pet. 26 (citing Ex. 1009 ¶¶ 95–98). Specifically, Mr. Occhiogrosso testifies that “it would have been obvious to incorporate the re-voicing scheme of Engelke ’482 into the relay of Engelke ’405 in order to increase the speed of the voice-to-text translations.” Ex. 1009 ¶ 95. For support, Mr. Occhiogrosso relies on a disclosure in Engelke ’482 that indicates the speed benefits of revoicing. *Id.* (quoting Ex. 1004, 7:48–52) (“the revoicing methodology combined with speech recognition by the call assistant results in a through put of communication two to four times faster than the typing which can be achieved by a normal call assistant operating a keyboard”). Mr. Occhiogrosso also testifies that “error correction would yield more accurate text for the assisted user.” Ex. 1009 ¶ 95. Mr. Occhiogrosso explains his conclusion is based on his awareness of advertising of manufacturers of voice recognition software, who advertise that “[t]he voice recognition software would provide increased speed and accuracy over keyboard typing.” *Id.* at ¶ 98. We conclude that Petitioner has provided some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR*, 500 U.S. at 418.

Furthermore, Petitioner and Mr. Occhiogrosso characterize the inclusion of re-voicing with error correction taught by Engelke ’482 into the

Liebermann, Engelke '405, and Mukherji combination, as the use of a known technique to improve similar devices in the same way and yield predictable results. Pet. 26–27 (citing Ex. 1009 ¶¶ 95–98).

Mr. Occhiogrosso opines that voice recognition software was available off-the-shelf and would be used “exactly as intended” and that correction features were “simply the use of word-processing techniques that have been commonly used for even longer than voice recognition software.”

Ex. 1009 ¶ 97 (identifying a particular off-the-shelf voice recognition software product). After reviewing Petitioner’s evidence and arguments, we conclude that “the improvement is [no] more than the predictable use of prior art elements according to their established functions,” which further supports a finding of obviousness. *KSR*, 550 U.S. at 417.

4. *Objective Indicia of Non-Obviousness*

In sum, we determine that the asserted references would have conveyed to one of ordinary skill in the art all limitations of the challenged claims, and we determine that Petitioner articulated some reasoning with some rational underpinning to support legal conclusions that the subject matter of the claims would have been obvious. Prior to making any determination on the obviousness of the claimed subject matter, however, evaluation and crediting of objective indicia of nonobviousness may lead to a conclusion that the challenged claims would not have been obvious to one with ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984); see *Graham v. John Deere Co.*, 383 U.S. at 17 (identifying factual inquiries for an obviousness determination). Furthermore, a

determination of whether a patent claim would have been “obvious under § 103 requires consideration of all four *Graham* factors, and it is error to reach a conclusion of obviousness until all those factors are considered.” *Apple v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016) (en banc) (citations omitted). One of the *Graham* factors, of course, is evidence of secondary considerations (also called objective indicia of non-obviousness). *Graham*, 383 U.S. at 17 (instructing use of “secondary considerations [such] as commercial success, long felt but unsolved needs, failure of others, etc.” in determining obviousness of the claimed subject matter).

It is axiomatic that there must be “a nexus between the evidence and the merits of the claimed invention.” *WBIP, LLC v. Kohler, Co.*, 829 F.3d 1317, 1331 (Fed. Cir. 2016) (quoting *In re GPAC Inc.*, 57 F.3d 1573, 1580 (Fed. Cir. 1995)). In other words, “[e]vidence of secondary considerations must be reasonably commensurate with the scope of the claims.” *In re Huai-Hung Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011) (citing *In re Hiniker*, 150 F.3d 1362, 1369) (Fed. Cir. 1998)). For example, objective evidence may be tied to a specific claim element or to the inventive combination of known elements. *WBIP*, 829 F.3d at 1332. In addition, “there is a presumption of nexus for objective considerations when the [Patent Owner] shows that the asserted objective evidence is tied to a specific product and that product “is the invention disclosed and claimed in the patent.” *Id.* at 1339 (citing *J.T. Eaton & Co. v. Atl. Paste & Glue Co.*, 106 F.3d 1563, 1571 (Fed. Cir. 1997); *Crocs, Inc. v. Int’l Trade Comm’n*, 598 F.3d 1294, 1310–

11 (Fed. Cir. 2010); *Brown & Williamson Tobacco Corp. v. Philip Morris, Inc.*, 229 F.3d 1120, 1130 (Fed. Cir. 2000); *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392–93 (Fed. Cir. 1988)). This presumption of nexus, however, “is rebuttable: a [petitioner] may respond by presenting evidence that shows the proffered evidence was ‘due to extraneous factors other than the patented invention.’” *WBIP*, 829 F.3d at 1329 (citing *Demaco*, 851 F.2d at 1393). Examples of factors that a petitioner may use to rebut the presumption include “additional unclaimed features and external factors, such as improvements in marketing.” *Id.* A petitioner, however, must present evidence and “cannot successfully rebut the presumption with argument alone.” *Id.*

Here, Patent Owner argues and presents evidence of “commercial success, praise, long-felt need and copying” of its “two-lined captioned telephones operating in accordance with its two-line CapTel service.” PO Resp. 29, 24; *see id.* at 20–55. Petitioner contends Patent Owner’s evidence does not show non-obviousness. Pet. Reply 16–27.

a. Nexus

Patent Owner contends that its CapTel telephones (when operated in two-line mode) and the CapTel two-line service embody three features recited in the claims of the challenged patent: “(1) the provision of the hearing user’s voice substantially in real time, together with text captions generated by revoicing, resulting in synchronized voice and text (referred to as ‘voice and revoiced text’ or the like); (2) the two-line configuration; and (3) the activator, which enables the initiation of text captioning over the

second line during a call.” PO Resp. 23–24. For commercial success and copying, Patent Owner relies on the combination of these features. See PO Resp. 24 (indicating these three “features combined to create a system that allowed hard of hearing/speaking users to, for the first time, conduct a telephone call in as close a manner as possible to a conventional telephone call”); *id.* at 29 (“the elements of synchronized voice and text, two-line, and the activator, . . . along with the transparency quality that they enable, which gave rise to the commercial success, praise, long-felt need and copying discussed more fully below”); *id.* at 54 (“The embodying CapTel products addressed that need [of communication that is functionally equivalent to normal telephone conversation] in that the combination of voice and revoiced text, two-line, and other claimed contributors to transparency work together to bring assisted users substantially closer to achieving functional equivalence in telecommunications.”).

(i) Whether the Claims Require the Features Purportedly Underlying Patent Owner’s Product Success

In our nexus analysis, we first look to see whether the challenged claims embody the features described by Patent Owner as being responsible for the commercial success, praise, long-felt need, and copying of its products. Then we will turn to Patent Owner’s evidence to determine whether Patent Owner’s products and services embody the claimed features that Patent Owner contends relate to its evidence of secondary considerations.

For support of how certain claims embody the features of synchronized voice and revoiced text, two-line, and the activator, Patent

Owner relies on the declaration of Paul W. Ludwick (Ex. 2135 ¶¶ 32–58). We agree with Patent Owner that all seventy-four claims require a two-line captioned device with an activator (such as a caption switch). PO Resp. 25; Ex. 2135 ¶ 46 (two-line captioned telephone service); *id.* ¶ 50 (activator to establish the second communication link and invoke the captioning service).

Mr. Ludwick opines that three of the seventy-four challenged claims (i.e., claims 22, 30, and 74) require “receiving the revoiced captions and voice of the hearing user substantially in synchrony.” Ex. 2135 ¶ 40. We disagree. He is correct that additional limitations recited in claims 22, 30, and 74 require revoicing at the relay to produce text captions. *Id.* He also is correct that the claims require (through their dependency from independent claims 18, 24, and 61, respectively) that the hearing user’s voice be broadcast by the captioned device “substantially in real time as the words spoken by the hearing person are received by the captioned device.” And, even if we agree that the independent claims require the captioned device to broadcast the words spoken by the hearing user in real time as the words are spoken by the hearing user (which we do not for the reasons discussed previously), Mr. Ludwick does not explain adequately how the synchrony of the broadcast of the hearing person’s voice at the captioned device with the receipt of the text words generated by revoicing is required by claims 18, 24, and 61. Although the additional limitations required in claims 22, 30, and 71 require revoicing by the call assistant at the relay using a microphone and a processor trained to the voice of the call assistant to translate the revoiced words, these claims do not require a temporal relationship between receipt of

the revoiced text captions and broadcast of the hearing user's voice at the captioned device. Ex. 1001, 11:33–41 (claim 22), 12:58–67 (claim 30); 20:26–34 (claim 71). Rather, the only temporal relationship required is one between broadcasting the information at the captioned device and the receipt of the broadcast information. Ex. 1001, 10:64–67 (claim 18) (“*broadcasting the words spoken* by the hearing person to the assisted user via the speaker *substantially in real time* as *the words spoken* by the hearing person *are received by the captioned device*”); *id.* at 12:29–33 (claim 24) (“wherein the words spoken by the hearing person and received by the processor during each of the telephone call and the captioned call are *broadcast* via the speaker *substantially in real time as the words are received by the processor*”); *id.* at 18:64–67 (claim 61) (“a speaker for *broadcasting voice messages* received by the captioned device to the assisted user *substantially in real time as voice messages are received by the captioned device*”).

For these reasons, we determine Patent Owner's arguments regarding the purportedly claimed feature of “synchrony” or “the provision of the hearing user's voice substantially in real time, together with text captions generated by revoicing, resulting in synchronized voice and text (referred to as ‘voice and revoiced text’ or the like) do not support a finding of nexus because the features argued by the Patent Owner are not claimed features. Therefore, in the case of the synchrony of voice and revoiced text feature on which Patent Owner bases its arguments concerning secondary considerations, we need not consider whether Patent Owner's products embody this feature, which is not claimed in claims 22, 30 or 74 as argued

by Patent Owner. Patent Owner does not argue that the synchrony of voice and revoiced text is required by any other of the seventy-four challenged claims.

Moreover, to the extent Patent Owner relies on the synchrony of voice and text in its evidence of objective indicia, we do not accord substantial weight to that evidence because Patent Owner's proffered evidence is due to additional unclaimed features. *Cf. WBIP*, 829 F.3d at 1329 (indicating "additional unclaimed features" are factors that can rebut a presumption of nexus); see PO Resp. 29 (contending the elements of synchronized voice and text, two-line, and activator "gave rise to of commercial success, praise, long-felt need and copying" evidence proffered by Patent Owner).

(ii) Whether Patent Owner's Product Embodies the Claimed Invention

Patent Owner contends that "the CapTel telephones (when operated in two-line mode) and the CapTel two-line service perform and embody the elements of certain of the challenged claims." PO Resp. 23. To support this, Patent Owner proffers declaration testimony from Mr. Ludwick and its employees Mr. Kevin Colwell, who is Patent Owner's Vice President of Engineering (Sealed Exhibit 2137), Mr. Troy Vitek, who is Patent Owner's Executive Director of Engineering (Exhibit 2162), and Ms. Katie Kretschman, who is the Training and Quality Manager for CapTel (Exhibit 2138). PO Resp. 26. Patent Owner proffers a 192-page chart (Exhibit 2140) by Mr. Ludwick that sets forth on a claim-by-claim, element-by-element basis the correspondence between the claim elements and Patent Owner's CapTel Service and CapTel phones. PO Resp. 23 (citing

Ex. 2140). Mr. Ludwick’s chart includes numerous citations to various declarations, including those from Mr. Colwell, Mr. Vitek, and Ms. Kretschman. Mr. Ludwick’s chart also includes numerous citations and reprinted text and figures from various user guides, including the 104-page *CapTel 840i How-to-Guide* (Ex. 2122). *See, e.g.*, Ex. 2140, 1–27 (analyzing elements of claim 1).

Petitioner does not dispute that Patent Owner’s captioned telephones (when operated in two-line mode) and its two-line relay service embody the activator and two-line architecture that Patent Owner contends contributed to the commercial success, praise, long-felt but unmet need, and copying. *See generally* Pet. Reply 9–16 (contending no nexus).

(iii) Whether Prior Art Features Preclude a Nexus

We now turn to the issue of whether features relied on by Patent Owner as a nexus for its objective evidence were known in the prior art. “[O]bjective evidence of nonobviousness lacks a nexus if it exclusively relates to a feature that was ‘known in the prior art.’” *WBIP*, 829 F.3d at 1330 (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). Patent Owner, however, “can show that it is the claimed combination as a whole that serves as a nexus for the objective evidence.” *Id.*

As noted above, Patent Owner contends that its evidence of secondary considerations relates to the combination of three features—synchronized voice and revoiced text, activator button, and two-line architecture. To the extent, however, that Patent Owner’s arguments relate solely to an activator button or solely to two-line architecture, we determine those arguments

(which each are based solely on a feature known in the prior art—activator or two-line architecture) lack the requisite nexus. As discussed, Liebermann describes a device with a two-line architecture (Ex. 1006, 7:5–6, 7:25–26), Engelke '405 describes a text enhanced telephone with an on/off switch for controlling whether captions are displayed (Ex. 1005, 4:54–58), and Mukherji describes initiating text transcription during a conversation (Ex. 1007, 3:19–22, 6:65–7:4).

(iv) Conclusion: Nexus

For these reasons, we conclude that Patent Owner has proffered sufficient evidence to demonstrate a nexus between (i) Patent Owner's telephones (when operated in two-line mode) and its two-line relay service and (ii) a combination of a two-line captioned telephone with an activator. Thus, Patent Owner is entitled to a rebuttable presumption of a nexus for evidence of secondary considerations attributable to the combination of the activator and two-line features. As discussed above, however, no substantial weight will be accorded to Patent Owner's evidence of secondary considerations that Patent Owner argues rely on the unclaimed feature of synchronized voice and text, solely on the prior art activator, or solely on the prior art two-line captioned device architecture.

b. Commercial Success

“Demonstrating that an invention has commercial value, that it is commercially successful, weighs in favor of its non-obviousness.” *WBIP*, 829 F.3d at 1337; *see id.* (citing *Magowan v. N.Y. Belting & Packing Co.*, 141 U.S. 332, 343 (1891) (holding extensive public use of a patented

invention is “evidence of its novelty, value, and usefulness”)). In considering a commercial success argument, the Board must make “a factual determination as to whether the commercial success of the embodying product resulted from the merits of the claimed invention as opposed to the prior art or other extrinsic factors.” *Kao*, 639 F.3d at 1070; *see also Solder Removal Co. v. United States Int’l Trade Comm’n.*, 582 F.2d 628, 637 (CCPA 1978) (“[c]ommercial success due only to superior business acumen, or effective advertising, is of no relevance”).

Patent Owner contends “CapTel enjoyed tremendous commercial success” due to “the combination of (1) providing both the revoiced captions and the voice of the hearing user to the assisted user in synchrony; (2) two-lined captioned telephone service and (3) an activator to establish the second communication line and invoke the captioning service, and the qualities and characteristics those features enabled, such as transparency.” PO Resp. 29; *see also id.* at 39 (arguing constant increase due to “the four key capabilities of synchronized voice and text, two-line, the activator, and transparency”). Because Patent Owner’s arguments are based on a combination that includes an unclaimed feature—providing both the revoiced captions and the voice of the hearing user to the assisted user in synchrony, we do not accord such arguments substantial weight.

Regarding Patent Owner’s contentions regarding commercial success from the other features in Patent Owner’s proffered combination—the two-line architecture and activation feature, Patent Owner’s evidence is not

compelling because it is due to unclaimed features and marketing, rather than due to the merits of the claimed invention. Our reasons follow.

(i) Overview of the Relevant Marketplace

Before addressing Patent Owner’s evidence and evidence offered by Petitioner in rebuttal, we note that the market for telephone relay services is a heavily regulated market. See Ex. 2165, 4 (Petitioner describing the captioned telephone market as one having “high revenue, high margin, and high barriers to competitive entry”). Key dynamics in this marketplace are that (1) government funds, not consumers, pay for the service;¹⁵ (2) firms must be pre-approved to compete;¹⁶ and (3) features are dictated by regulation.¹⁷

In light of these factors, we requested supplemental briefing from the parties on the impact, if any, that the nature of the market for a product embodying a claimed invention would have on an evaluation of the commercial success of that product. Paper 106. Both Petitioner (Paper 109, “Pet. Supp.”) and Patent Owner (Paper 108, “PO Supp.”) submitted supplemental briefs.

¹⁵ See, e.g., Ex. 1076 ¶ 7 (By law, “the costs caused by CTS [are] be shared by all subscribers to telecommunications and VoIP services”). We refer to this practice as “reimbursement.”

¹⁶ See, e.g., Ex. 2083, 1, n.3 (“providers of Internet-based TRS must be granted certification by the Commission in order to receive compensation from the TRS fund.”).

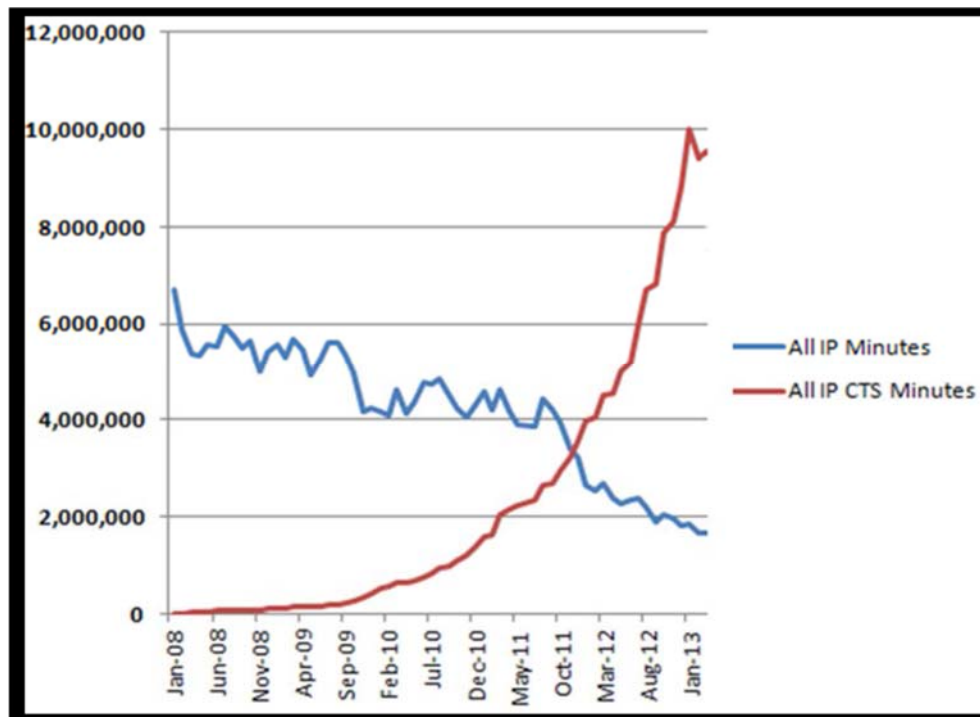
¹⁷ See, e.g., Ex. 2136 ¶ 19 (discussing federal approval of two-lined captioned telephone relay service to be eligible for reimbursement).

Both parties acknowledge the nature of the market can have an impact on the commercial success inquiry. Pet. Supp. 1; PO Supp. 1. Patent Owner contends that the approval of a particular feature in a service mandated by government agencies may weigh in favor of non-obviousness where the particular feature is a novel feature of the patented invention. PO Supp. 2. Petitioner contends that providing a nexus between marketplace success and features of the patented invention is more difficult “in markets restricted by heightened barriers to entry, with few authorized players and largely undifferentiated products” because “market success may be driven by restricted competition, not by any particular product features.” Pet. Supp. 1–2. Petitioner contends our commercial success analysis in a regulated market should be informed by the United States Court of Appeals for the Federal Circuit’s holding that, in the context of commercial success in a damages award, evaluation of a patent should not include extra value accruing to a patent from the fact that the patent is essential to an industry standard. Pet. Supp. 4 (citing *Commonwealth Sci. & Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295 (Fed. Cir. 2015)). Petitioner also contends that “consumer preference [and by extension commercial success] is more difficult to prove when consumers do not have to pay for the patented benefit and prices cannot move based on fundamental microeconomic principles due to price regulation.” Pet. Supp. 5. We conclude each party’s assertions have merit and application to the regulated market of captioned telephones and services, which we take into consideration in our analysis.

(ii) Two-lined Caption Telephone: Internet Protocol

Regarding commercial success in the federally regulated market of captioned telephoned services, Patent Owner contends two-line captioned telephone service rapidly displaced prior art systems. PO Resp. 31. Patent Owner proffers evidence of a chart comparing usage of Internet Protocol (IP) captioned telephone service (“All IP Minutes”) with usage of traditional IP relay (“All IP Minutes”). *Id.* at 31–32 (citing sealed Ex. 2135 ¶ 66¹⁸). Patent Owner represents the usage shown in the chart is based on reimbursement summaries published by the Interstate TRS fund management organization (RISA) and is measured in minutes of use of the respective services. *Id.* at 31. The chart is set forth below:

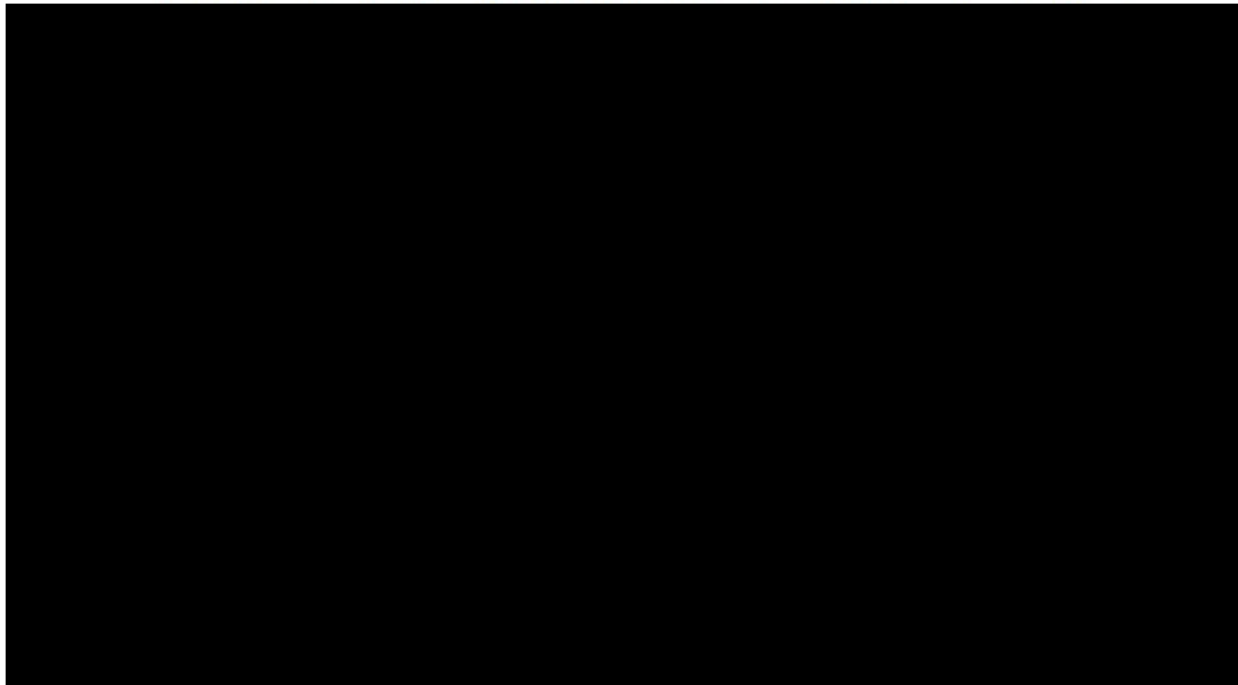
¹⁸ Although Patent Owner cites Mr. Ludwick’s declaration (Ex. 2135) as supporting its argument, the chart does not appear in the cited portion of Mr. Ludwick’s declaration; nor are we aware of another portion of Mr. Ludwick’s declaration in which the chart appears.



The chart shows a line graph that compares minutes used by traditional IP relay with minutes used by IP captioned telephone service from January 2008 until January 2013. The use of traditional IP relays showed a generally downward trend over the period, starting at over six million minutes in January 2008 and ending with less than two million minutes in January 2013. Usage of IP captioned telephone service remained generally flat from January 2008 until September 2009, when usage started to increase steadily and then sharply. IP captioned telephone service minutes increased from around two million in May 2011 to ten million in January 2013.

Petitioner, however, successfully rebuts Patent Owner's evidence of commercial success of the IP captioned telephone service by providing evidence that the increased usage of IP captioned telephone service was

driven by the IP feature of the two-line IP captioned telephone service, rather than the two-line feature itself. Pet. Reply 19–20. More specifically, Mr. Malackowski provides a comparison of usage growth of two-line IP captioned telephone¹⁹ and a two-line PSTN captioned telephone. *Id.* (citing Ex. 1126 ¶¶ 51–60). The chart is set forth below.



Pet. Reply 20; Ex. 1126 ¶ 54. As shown in the line chart, [REDACTED]
[REDACTED]
[REDACTED]. This is consistent with Patent Owner’s evidence that IP captioned telephone minutes increased during that period, as discussed above with regard to Patent Owner’s evidence.

¹⁹ The “IP captioned telephone” is a misnomer in that the telephone is a hybrid telephone that uses one PSTN line and one IP line.

Petitioner's line chart shows that CapTel's two-line PSTN captioned telephone service did not experience an increase in usage during that period. Patent Owner's chart did not include usage of two-line PSTN captioned telephone service but only compared two types of IP captioned telephone service (two-line with traditional relay service). [REDACTED]

[REDACTED]

[REDACTED]

This supports Mr. Malackowski's conclusion (Ex. 1126 ¶ 60) that it is the adoption of internet technology used in two-line IP CapTel phone—not the two-line captioned telephone service itself—that lead to the growth. Mr. Malackowski testifies that it is IP captioned telephone service (which uses a hybrid telephone) that removes the need to install and pay for a second PSTN telephone line as “the differentiating factors driving use and success of captioned telephone service.” Ex. 1126 ¶ 60.

For support, Mr. Malackowski relies on deposition testimony of Brenda E. Battat, a former Executive Director of the Hearing Loss Association of American (“HLAA”) (Ex. 2136 ¶ 2), indicating use of the “two-line capability” “took off” with the introduction of the two-line IP captioned telephone service because, among other reasons, the cost of two PSTN lines was too expensive for some people. Ex. 1126 ¶ 60 (citing Ex. 1055, 40:22–41:8). Ms. Battat also indicated that she did not consider separately the impact of two-line technology or IP captioned telephone service. Ex. 1055, 41:9–13. Ms. Battat also indicated her statements on commercial success were based on what she “gleaned from interactions,”

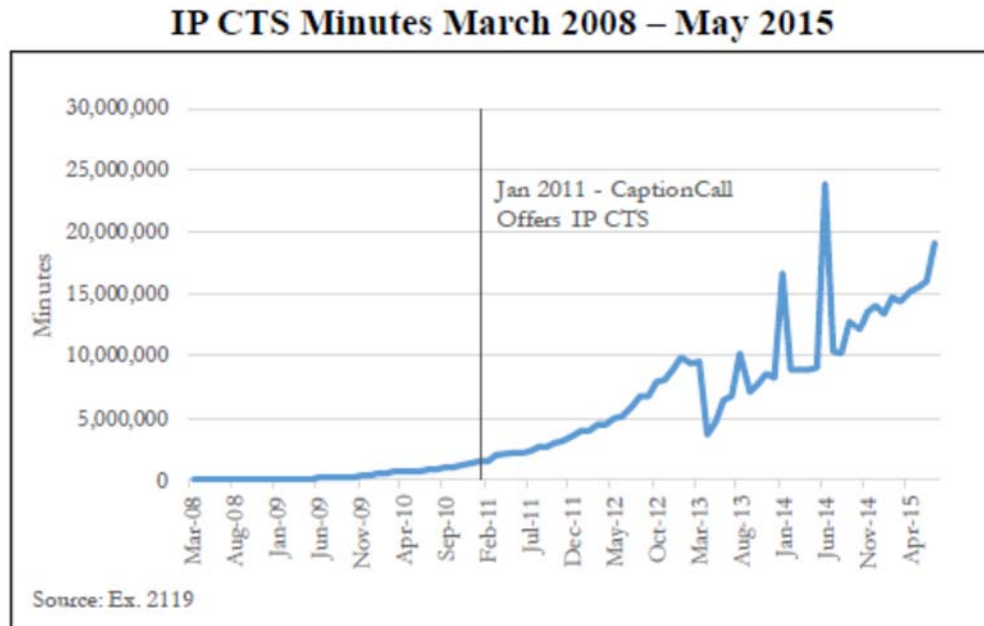
rather than consumer statistics, surveys, or industry reports. Ex. 1055, 41:20–42:17.

Considering the evidence of objective indicia provided by Patent Owner and by Petitioner, we determine that the evidence supports a finding that the technology of the internet, not merely the two-line architecture contributed to the increased usage of IP captioned telephone usage. Thus, this militates against a finding that Patent Owner’s evidence of IP captioned telephone minutes favors a conclusion of non-obviousness.

(ii) Two-lined Caption Telephone: Marketing Practices of Competitor

Petitioner also presents rebuttal evidence to support its contention that Petitioner’s own marketing practices contributed to the increased usage in the market. Pet. Reply 20–22. Patent Owner was the only captioned telephone service provided in the market prior to 2011, when Petitioner entered the market. Ex. 2135 ¶ 70; Ex. 1126 ¶ 62. Mr. Malackowski opines that IP captioned telephone service “minutes grew with the market entry of CaptionCall and its marketing program.” Ex. 1126 ¶ 61. Relying on supporting evidence, Mr. Malackowski testifies about differences in the marketing practices used by Petitioner and those used by Patent Owner. Ex. 1126 ¶ 62 (citing Ex. 1107 ¶¶ 7–13, 20; Ex. 1008; Ex. 1109; Ex. 1112, 77:1–79:10; Ex. 1113; Ex. 1114, 3–4; Ex. 1115, 4; Ex. 1116, 82:10–83:16; Ex. 1132; Ex. 1133).

Petitioner presents a chart depicting IP captioned telephone service minutes set forth below.



Pet. Reply 21; Ex. 1126 ¶ 64. The line chart depicts usage of IP captioned telephone service minutes from March 2008 through May 2015. Usage began to increase sharply beginning when Petitioner entered the market in 2011, which supports a finding that marketing efforts contributed to the increased use of IP captioned telephone service. *See* Pet. Reply. 21.

In addition, Petitioner relies on findings of the FCC, which “not[ed] in 2013 that marketing practices by TRS providers ‘directly caus[ed] the sharp increase in IP CTS usage.’” Pet. Reply 21 (citing Ex. 1076, 4–5; Ex. 1058, 50 n.25).

The evidence that marketing practices contributed to the sharp increase in usage also weighs against a finding that Patent Owner’s evidence of IP captioned telephone minutes favors a conclusion of non-obviousness.

(iv) Licenses

Patent Owner also asserts it licensed its technology to major telecommunication companies. PO Resp. 40 (citing Ex. 2135 ¶ 61 (Mr. Ludwick opines, “Sprint entered into an agreement to provide CapTel captioned telephone service as part of Sprint Relay. . . . I understand that Hamilton Relay and AT&T similarly licensed CapTel’s technology.”)). Neither Patent Owner nor Mr. Ludwick provide details or evidence of such licensing. Without explanation of the timing and terms of the licenses, such licensing assertions provide little probative value in this regulated market in which Patent Owner was the only participant until 2011, when Petitioner entered the market.

(v) Conclusion

Considering the evidence of commercial success provided by Patent Owner and rebuttal evidence provided by Petitioner, we do not find the evidence relating to commercial success tends to show non-obviousness. First, Patent Owner contends that its commercial success is based on a combination of features that includes the unclaimed feature of synchronized voice and revoicing text. Even if we were to conclude these were claimed features, we place little weight on arguments that the particular feature drove commercial success because Mr. Colwell (Patent Owner’s declarant) testified that Patent Owner [REDACTED]

[REDACTED] Thus, Patent Owner’s own declarant indicates the captioned telephone did not embody the synchronized voice and text that Patent Owner purports to be a key feature leading to its commercial success.

Second, Patent Owner's evidence of commercial success based on the success of its IP captioning telephone service provides minimal probative value in view of Petitioner's successful rebuttal evidence that (i) the internet protocol, not two-line captioning that was present in both IP and PSTN telephones, was responsible for the rapid increase in usage and (ii) marketing efforts of new market participant CaptionCall contributed to the growth of IP captioned telephone service usage.

Thus, we determine that the evidence does not show commercial success due to the combination of patented features identified by Patent Owner and so do not accord substantial weight to this evidence as support for of non-obviousness. To the extent that evidence was directed solely to the claimed two-lined architecture (as evidence based on IP captioned telephone minutes), this further diminishes the probative value of the evidence because the two-line architecture was known in the prior art, as previously discussed with regard to nexus.

Finally, in considering the nature of the marketplace, the highly regulated market of captioned telephone service, with its barriers to entry and federally funded subsidies for usage of captioned telephone calls, generally makes it more difficult to for us to conclude commercial success was due to the patented features of a product or service. We agree with Patent Owner, however, that federal government mandate of patented features, which can act as a surrogate for consumer popularity, can weigh in favor of non-obviousness. We address Patent Owner's evidence regarding consumer praise along with industry praise later in this section.

c. Copying

Evidence of copying tends to show nonobviousness. *WBIP*, 829 F.3d at 1336. “The fact that a competitor copied technology suggests it would not have been obvious.” *Id.* Copying may be a form of praise for copied inventive features. *Id.* (citing *Crocs, Inc. v. Int’l Trade Comm’n*, 598 F.3d 1294, 1311 (Fed. Cir. 2010)).

Patent Owner argues that Petitioner copied its CapTel phone and service. PO Resp. 40–42. Patent Owner asserts that Petitioner had access to CapTel because the phone and service were commercially available in 2004 and also had access to the challenged patent’s “grandparent” application since August 5, 2003, which predates Petitioner’s CaptionCall phone and service. *Id.* at 41 (citing Ex. 2135 ¶ 62). Patent Owner asserts that Petitioner’s CaptionCall service had the same features. *Id.* (citing Ex. 2135 ¶ 80). Lastly, Patent Owner points to Petitioner’s internal documents describing the very benefits of Patent Owner’s technology. *Id.* at 42 (citing Ex. 2135 ¶¶ 80–82; Ex. 2136 ¶¶ 27–29, 34–73; Ex. 2165, 12, 18).

For copying to be effective in showing non-obviousness, there must be more than simply a competing version of the product. *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004) (“Not every competing product that arguably fails within the scope of a patent is evidence of copying. Otherwise every infringement suit would automatically confirm the nonobviousness of the patent.”). Evidence of copying can be particularly persuasive when a competitor had tried and failed to introduce a competing product until the patented product became

available. *Vandenberg v. Dairy Equipment Co., a Div. of DEC Int'l, Inc.*, 740 F.2d 1560, 1567 (Fed. Cir. 1984). Copying, however, “is only equivocal evidence of non-obviousness in the absence of more compelling objective indicia.” *Ecolochem, Inc. v. So. Cal. Edison Co.*, 227 F.3d 1361 (Fed. Cir. 2000).

In this case, we find that Petitioner’s purported copying appears to be no more than providing a competing product according to the FCC’s authorization to provide a reimbursable captioned telephone service. *See, e.g.*, Ex. 1076 ¶ 6 (describing captioned telephone service as having a re-voicing feature to provide captions). Given that the FCC authorized reimbursement for such services, it seems entirely logical that Petitioner would attempt to provide a product for that service. Providing a competing IP CTS product with federally mandated features does not mean necessarily that the competitor had to copy Patent Owner’s technology.

Patent Owner’s evidence shows that Petitioner performed its due diligence in identifying competing products and does not rise to the level of demonstrating copying. For example, Petitioner’s internal documents show that they were trying to bring a captioned telephone service to compete with Patent Owner’s service under the FCC-authorized captioned telephone service. Ex. 2043, 11–12 (using a strengths-weaknesses-opportunities-threats analysis regarding relay services, one of which is Patent Owner’s CapTel service); *id.* at 16 (setting out how Petitioner’s product would be different from Patent Owner’s).

Patent Owner argues in a single-sentence conclusory assertion that Petitioner hired a company to do a “teardown” of one of Patent Owner’s products “to better observe [Patent Owner’s] technology.” PO Resp. 42 (citing Ex. 2135 ¶ 83, Ex. 2117, 49:16 – 50:7²⁰). Petitioner argues that its employees have denied copying and attempted to design its own product, and supports its position with testimony in related proceedings by employees. Pet. Reply 24 (citing Ex. 1143, 116:7–13; Ex. 1144, 45:22–46:1). Petitioner also contends that Patent Owner’s declarant, Mr. Colwell,

[REDACTED]
[REDACTED]
[REDACTED]. *Id.* at 24–25 (citing Ex. 1053, 171:7–173:16); Ex. 1053, 172:24–173:5 [REDACTED]
[REDACTED]
[REDACTED]

After considering the evidence presented by Patent Owner and Petitioner, we do not find evidence of copying that tends to show non-obviousness. Instead, we find evidence that Petitioner was trying to introduce a competing product to provide an FCC-approved captioned telephone service.

d. Long-Felt, Unmet Need

“Evidence of a long-felt but unresolved need can weigh in favor of the non-obviousness of an invention because it is reasonable to infer the need

²⁰ Exhibit 2117 has been excluded pursuant to Petitioner’s Motion to Exclude and is not considered for supporting this assertion.

would not have persisted had the solution been obvious.” *Apple*, 839 F.3d at 1056. Evidence must be of a need that “existed on the patent’s filing date.” *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1332 (Fed. Cir. 2009).

Patent Owner argues that synchronized voice and revoiced text was a long-felt, unmet need. PO Resp. 44–49. As discussed above, however, this is an unclaimed feature and, thus, does not weigh toward a conclusion of non-obviousness.

Patent Owner also argues that the two-line captioned service and activator met “the long-felt need for increased flexibility and control for the assisted user . . . to choose if and when to initiate captions at any point before or during a call.” PO Resp. 50; *see id.* at 52–53 (“The use of two-line CapTel service with an activator enabled on-the-fly captioning and met the long-felt need for increased flexibility and control over one’s calls because it enabled the user to choose if and when to use captions.”). Patent Owner relies on Ms. Battat’s declaration testimony of beneficial results of the two-line feature, such as allowing a hearing user to dial the assisted user directly without dialing a relay first, users feeling independent, and improved automatic number and geographic location identification. PO Resp. 50 (citing Ex. 2136 ¶¶ 56–63). For support of some of these benefits, Ms. Battat cites to comments submitted to the FCC in the context of rule-making as evidence, including hyperlinks to comments by individuals. Ex. 2136 ¶¶ 57, 59. In some cases, Ms. Battat does not even provide a hyperlink to an individual comment but provides opinions without providing

any factual support. See Ex. 2136 ¶ 58 (describing benefits of two-line captioned telephone regarding automatic number and geographic location identification).

We agree with Petitioner's contentions that the declaration of Ms. Battat fails to show that the need was both known and unresolved. Pet. Reply 25–26. Ms. Battat did not review prior art to make her assessment, offers conclusory statements, and relies on a handful of individual statements. *Id.* (citing Ex. 1055, 76:19–80:9; Ex. 2136 ¶¶ 36, 46, 72).

Accordingly, we determine that Patent Owner's contentions of purported long-felt, unmet need fall short of sufficient evidence of an unmet need as of the date of invention. Therefore, we accord Patent Owner's evidence little weight.

e. Praise

“Evidence that the industry praised a claimed invention or a product which embodies the patent claims weighs against an assertion that the same claim would have been obvious.” *WBIP*, 829 F.3d at 1334. “Industry participants, especially competitors, are not likely to praise an obvious advance over the known art.” *Id.*

Patent Owner argues that synchronized voice and revoiced text was praised widely. PO Resp. 48; see *id.* at 44–49. As discussed above, however, this is an unclaimed feature and, thus, does not weigh toward a finding of obviousness.

Patent Owner also contends, relying on declaration testimony by Ms. Battat, that users praised features enabled by the two-line captioned service

and activator and urged the FCC to approve it as a relay service, as did organizations “that revolve around the deaf and [hard of hearing] community.” PO Resp. 51–52 (citing Ex. 2136 ¶ 67). We accord some weight to this evidence.

Petitioner’s rebuttal evidence, however, that the required use of the activator was met with substantial user resistance diminishes the probative value of Patent Owner’s evidence of praise for the activator feature. Pet. Reply 22 (citing Ex. 1142, at 3, 6–7, Appendix A). Specifically, Patent Owner opposed requiring a captioned telephone default to not-captioning and requiring a user to press the activator button to engage captioning. Patent Owner submitted ten pages of user comments, which were received by CapTel customer service representatives, complaining about the need to use the activator to start captions for each call. Ex. 1142, Appendix A. This undermines Patent Owner’s evidence of praise for the activator feature.

Patent Owner also presents evidence of industry awards to Mr. Engelke and Mr. Colwell, who are the inventors of two-line CapTel phone. PO Resp. 43 (citing Ex. 2136 ¶¶ 64–67); *id.* at 53 (citing Ex. 2136 ¶ 73). Patent Owner also submitted evidence of Mr. Engelke being nominated in July 2011 as a candidate for an honorary degree from a university. Ex. 2124. We accord some weight to these industry awards and nomination for an honorary degree. These recognitions, however, seem to reflect the benefits the deaf and hard of hearing community have received from the CapTel service and telephones, which may be a result of CapTel’s success in the market attributable to IP two-line captioning as discussed

previously. Moreover, none of Patent Owner’s evidence represents competitor praise,²¹ which provides stronger evidence than other types of praise to support a determination that an improvement was not obvious. *WBIP*, 829 F.3d at 1334 (“Industry participants, especially competitors, are not likely to praise an obvious advance over the known art.”).

f. Conclusion: Secondary Considerations of Non-Obviousness

In sum, we recognize a nexus between Patent Owner’s product—a two-lined captioned telephone with an activator—and its enabling captioning service, and the combination of claimed features identified by Patent Owner—two-lined captioned telephone with an activator. We determine the evidence of commercial success due to these combined features has been successfully rebutted by Petitioner’s evidence, which shows the greater effect of other factors. The other factors are (i) an IP captioned telephone, which eliminated the need for (and accompanying expense of) a second PSTN telephone line for the assisted user to use the captioned telephone, and (ii) marketing efforts of others, which the FCC recognized were responsible for growth in captioned telephone usage. We also concluded that the evidence of copying was weak because, among other reasons, the federal regulation mandated certain features be present in captioned telephone service to receive reimbursement for services.

²¹ In a one-sentence conclusory assertion, Patent Owner contends that a former employee of Petitioner, Mr. Puzey, “has spoken positively about CapTel.” PO Resp. 44 (citing Ex. 2118, 24:13–25:11, 26:1–4). Patent Owner does not identify or explain what Mr. Puzey said that Patent Owner contends is speaking positively.

We further conclude the evidence of long-felt but unmet need and the evidence of praise was weak relative to the required showing of objective indicia of non-obviousness for those factors. We, however, recognize the great benefits the hearing impaired have received through the use of two-lined captioned telephony with revoiced text. The awards from the deaf and hard-of-hearing advocacy organizations to Mr. Colwell and Mr. Engelke, the accolades to which Ms. Battat testifies, the mandate of certain features by the FCC to receive reimbursement for captioning services, and the nomination of Mr. Engelke to receive an honorary university degree, all attest to such benefits.

The evidence of these benefits represents user praise, rather than evidence of praise by competitors in the industry. Praise by industry competitors is a stronger objective indicium of non-obviousness. *WBIP*, 829 F.3d at 1334 (“Evidence that the industry praised a claimed invention or a product which embodies the patent claims weighs against an assertion that the same claim would have been obvious. Industry participants, especially competitors, are not likely to praise an obvious advance over the known art.”) The value of this evidence to show non-obviousness is diminished because the awards and honorary degree nomination are to Mr. Engelke and Mr. Colwell who are inventors of two of the prior art references asserted in Petitioner’s contentions that the claims would have been obvious. *See* Ex. 1005, [75] (naming Mr. Engelke and Mr. Colwell as joint inventors); Ex. 1004, [75] (naming Mr. Engelke as sole inventor). Thus, it is difficult to know whether the accolades are for the invention of the challenged patent

(as Patent Owner contends here) or for technologies disclosed in the other patents, including revoicing using software trained to the voice of the call assistant. See Ex. 1004, 5:36–40 (“The computer [at the relay] has been provided with a voice recognition software package which can recognize the spoken voice of the call assistant and immediately translate words spoken in that voice into a digital text communication stream.”).

The value of the evidence asserted for long-felt but unmet needs and praise also is diminished because a substantial portion of the evidence and explanations relate to the feature of synchronized voice and revoiced text, a feature which is not claimed and also, as Mr. Colwell testifies, is not present in Patent Owner’s device and service because [REDACTED]

[REDACTED] The value of this evidence is further diminished because Patent Owner’s request, with its evidence of customer complaints, to the FCC to remove the FCC’s requirement that captioning must be set to off and only begin once activated by the assisted user. Additionally, the evidence of long-felt but unmet need is flawed because it is not based on evidence of such a need prior to the invention. *Perfect Web*, 587 F.3d at 1332 (holding that evidence of must be of a need that “existed on the patent’s filing date”).

For these reasons, we determine the evidence of objective indicia of non-obviousness is weak.

5. Conclusion: Obviousness

After reviewing the evidence and arguments brought before us, and considering (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 ordinary skill in the art, and (4) objective evidence of nonobviousness, we determine that Petitioner has demonstrated by a preponderance of the evidence that the subject matter of claims 1–74 is unpatentable under 35 U.S.C. § 103 over the combination of Liebermann, Engelke '405, Mukherji, and Engelke '482.

G. Contingent Motion to Amend

Patent Owner filed a Contingent Motion to Amend, requesting substitution of various claims in the event certain claims in the '045 patent were found to be unpatentable. Paper 43 (“Motion to Amend” or “Mot.”). Patent Owner’s Motion included an appendix of proposed substitute claims. Paper 43, Appendix A (“Mot. Am. App.”); 37 C.F.R. § 42.121 (requiring a motion to amend to include a claim listing, which may be contained in an appendix to the motion, to show the proposed changes clearly). As noted previously, we have determined that Petitioner has demonstrated by a preponderance of the evidence that the subject matter of claims 1–74 is unpatentable. Accordingly, we consider Patent Owner’s Motion to Amend.

In an *inter partes* review, a patent owner may file a motion to amend to propose a reasonable number of substitute claims for each challenged claim. 35 U.S.C. § 316(d)(1)(B); 37 C.F.R. § 42.121(a)(3). A motion to amend also must set forth “support in the original disclosure of the patent for each claim that is added or amended” and “support in an earlier-filed

disclosure for each claim for which benefit of the filing date of the earlier filed disclosure is sought.” 37 C.F.R. § 42.121(b). A motion may be denied where “the amendment seeks to enlarge the scope of the claims of the patent or introduce new subject matter” or “does not respond to a ground of unpatentability involved in the trial.” 37 C.F.R. § 42.121(a)(2); see 35 U.S.C. § 316(d)(3) (“An amendment . . . may not enlarge the scope of the claims of the patent or introduce new matter.”).

As the moving party, Patent Owner has the burden to establish it is entitled to the requested relief. 37 C.F.R. § 42.20(c); *MasterImage 3D, Inc. v. RealD Inc.*, Case IPR2015-00040, slip op. at 4 (PTAB July 15, 2015) (Paper 42) (precedential) (indicating a patent owner, as movant, bears “the ultimate burden of persuasion . . . to demonstrate the patentability of the amended claims”); see *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d at 1306 (indicating 37 C.F.R. § 42.20(c) is “plainly applicable to motions to amend filed during [*inter partes* reviews]”); but see *In re Aqua Products*, 833 F.3d 1335 (Fed. Cir. 2016) (order granting rehearing en banc to address burdens of persuasion and production regarding motions to amend under 35 U.S.C. § 316(d) and vacating *In re Aqua Products*, 823 F.3d 1369 (Fed. Cir. 2016)).

1. Patent Owner’s Motion

In its Motion to Amend, Patent Owner contends its proposed claims all have written description support that is traceable to the original disclosure. Mot. Am. 1–4. Patent Owner provides an explanation of the continuity of various applications for which filing dates are claimed by the

'045 patent and provides redline comparisons (Exs. 2154–2157) between the applications. Patent Owner also provides a chart that identifies by column and line number (or figure number, as appropriate) purported support in the written description of the '045 patent for limitations in the proposed claims. *Id.*

Patent Owner also provides proposed claim constructions for various proposed claim terms, including (i) “without the captioned device transmitting signals to the hearing person other than those of the conventional voice telephone call” recited in proposed claim 75, (ii) “involvement of the relay during invocation and usage of captioning services is transparent to the hearing person for both incoming and outgoing calls” recited in proposed claim 77, (iii) “an isolation circuit connected to the first communication link and the second communication link to communicate voice signals received over the first communication link to the second communication link while preventing any signals from the second communication link from being communicated onto the first communication link” recited in proposed claim 80, (iv) “directly between” and “directly to” recited in proposed claims 75, 77, and 80, (v) “conventional telephone call” recited in claim 75, and (vi) “as soon as” or “substantially in synchrony with” recited in claims 76, 79, and 18. *Id.* at 4–14. Patent Owner further provides arguments as to why the proposed claims are patentable over the prior art. *Id.* at 14–30.

Petitioner opposes all of Patent Owner's proposed claims. Paper 70 (sealed), Paper 72 (redacted) ("Opp. Am."). In reply, Patent Owner maintains its positions. Paper 86 ("Reply Am.").

2. A General Concept Recited in Added Limitations

Patent Owner proposes claims 75–81 as substitutes, respectively, for (i) independent claim 24 and its dependent claim 30, (ii) independent claim 58 and its dependent claims 59 and 60, and (iii) independent claim 61 and its dependent claim 81. Mot. Am. App., 1–7.

Patent Owner has not characterized the additional limitations to its proposed claims. After reviewing the subject matter of the proposed claims as a whole and Patent Owner's arguments made in its Motion to Amend, one general concept in the added limitations of the proposed claims is isolating the hearing person from signals related to providing text captions to the captioned device, while transmitting the voice of the assisted user from the captioned device to the hearing person. Specifically, for example, the proposed claims recite added limitations:

- (vii) providing the captioned telephone service to the assisted user such that invocation and usage of the service is performed without the captioned device transmitting signals to the hearing person other than those of the conventional voice telephone call [independent claim 75];
- (vii) providing the captioning services to the assisted user such that involvement of the relay during invocation and usage of captioning services is transparent to the hearing person for both incoming and outgoing calls [independent claim 77];
- (vii) an isolation circuit connected to the connection of the

first communication link and the second communication link to communicate signals received over the first communication link to the second communication link while preventing any signals received from the second communication link from being communicated onto the first communication link;

wherein the connection for the first communication link is connected to the isolation circuit, and in communication with the microphone, to receive and transmit to the hearing user only signals received via the microphone [independent claim 80];

a) initiating the second communication link directly between the captioned device and the relay to invoke the captioning service without involving the hearing user [independent claim 80].

Mot. Am. App. 2, 4, 6.

Prior art references discussed by Patent Owner in its Motion to Amend (including the references used by Petitioner to demonstrate by a preponderance of the evidence that claims 1–74 would have been obvious) recognize that many assisted users have the ability to speak and some relay systems enable the assisted user to speak to a hearing user who is not assisted by the captioned device. For example, U.S. Patent No. 6,181,736 B1 (Ex. 1008, “McLaughlin”) “note[s] that many deaf persons can speak” and describes “the sounds of his or her voice are ‘bridged’ [transmitted] over to the phone line of the remote hearing party he or she is communicating with.” Ex. 1008, 29:30–35. In another example, Engelke ’482 indicates “[i]f the deaf person can speak, he or she may then answer the hearing person with a spoken voice.” Ex. 1004, 4:50–52. Similarly, Engelke ’405 describes a “hard of hearing” person uses a text enhanced telephone (which

may be “a unitary device built into the telephone itself”) “as they would a normal telephone” except “[i]n addition to the remote person’s spoken voice being heard over the telephone speaker or earpiece, the words spoken by the remote user appear in written text form on the visual display, where they can be read by the person with hearing difficulty.” Ex. 1005, 3:20–22, 3:28–37.

Prior art references also recognize the problem of tones disturbing voice calls in the context of a relay service. For example, McLaughlin describes problems of hearing tones when listening to voice sounds. Ex. 1008, 29:53–63. McLaughlin indicates that “unless special filtering techniques are used” “any person listening to voice sounds . . . will also hear the TDD tones.” *Id.* at 29:54–56. McLaughlin continues by describing the problem in the context of “[t]raditional modem protocols” as “us[ing] a constant modem carrier [because] [a]nyone listening in on the phone line . . . will hear the constant sounds of this modem carrier and will have a difficult time hearing voice sounds on the line.” Ex. 1008, 29:57–63.

Against this backdrop of prior art, Patent Owner maintains that the prior art does not teach or suggest “that the captioned device only transmits signals to the hearing person of a conventional telephone (claim 75),” “the involvement of the relay is ‘transparent’ (claim 77),” or the “isolation circuit” required by claims 78 and 80. Mot. Am. 15, 24. Patent Owner, however, does not address “filter circuit 51” in Engelke ’405.

As previously described, Engelke ’405 describes a text enhanced telephony system that assists users with some hearing and speaking capability to continue to use a telephone and to augment the spoken words of

the hearing user with text from the relay service. Ex. 1005, 2:9–27.

Figure 4 of Engelke '405 is set forth below.

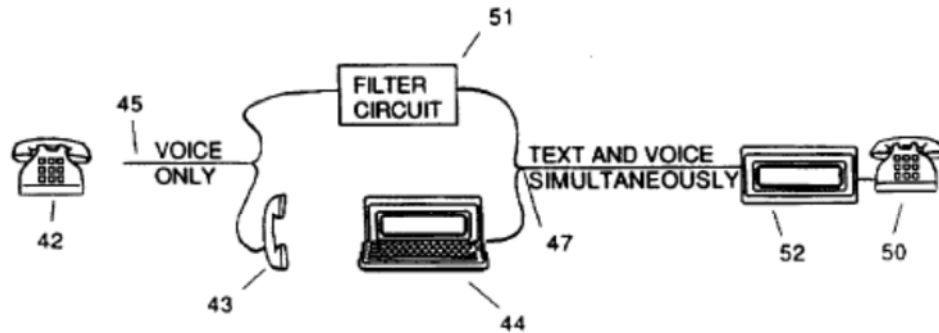


FIG. 4

Figure 4 of Engelke '405 shows “a schematic illustration of the operation of a text enhanced telephone (TET) relay system.” *Id.* at 2:64–65. The hearing person using telephone 42 and the assisted user with speaking capability using telephone 50 “converse normally, with the communication to the user of the telephone 50 assisted by the display of text of what is said by the other user [i.e., the hearing person using telephone 42] onto the visual display of the TET appliance 52.” *Id.* at 6:48–52. To provide text assistance to the assisted user of TET appliance 52 and telephone 50, the telephone 42 of the hearing person is connected by a first telephone line 45 (“VOICE ONLY”) to handset 43 of the call assistant. *Id.* at 6:30–32. The call assistant types at the TDD 44, which places the data communications of text on a second telephone line between the relay and the assisted user who is at telephone 50. *Id.* at 6:32–35. “A filter circuit 51 connects the telephone line

45 from the hearing user's telephone [42²²] to the telephone line 47.” *Id.* at 6:36–38. “The filter circuit 51 is constructed such that all voice communications, but no data signals from the text pass through the filter circuit 51, so that the hearing user does not hear the communication tones of the text transmissions.” *Id.* at 6:38–42.

Based on these disclosures, we find that Engelke '405 teaches a circuit (filter circuit 51) connected to two telephone lines: (i) telephone line 45 “VOICE ONLY” to telephone 42 used by the hearing user who receives only voice from the assisted user and (ii) telephone line 47 “TEXT AND VOICE SIMULTANEOUSLY” to the TET device and telephone 50 used by the assisted user. Filter circuit 51 prevents the text signals received from telephone line 47 from being communicated onto telephone line 45, and telephone line 45 to the hearing user's telephone only receives voice signals from the telephone 50 used by the assisted user.

Furthermore, Engelke '405 describes a circuit to implement the TET relay shown in Figure 4. *Id.* at 2:66–67, 6:53–59. Figure 5 of Engelke '405 is shown below.

²² The hearing user's telephone is identified by reference numeral 42, whereas the handset of the call assistant at the relay is identified by reference number 43. *Compare* Ex. 1005, 6:30–31 (“The telephone 42 of the hearing user . . .”), *with id.* at 6:31–32 (“the handset 43 of the call assistant”).

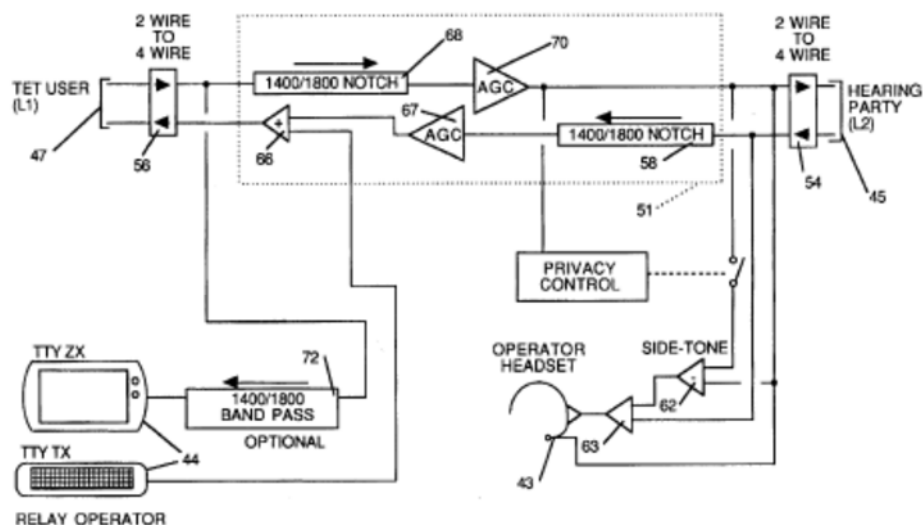


FIG. 5

Figure 5 of Engelke '405 depicts a TET relay having filter circuit 51. *Id.* at 6:56–59. “The telephone line 47 from the [assisted] TET user . . . is passed through a notch filter 68, then [after passing through amplifier 70] to the telephone line 45 to the hearing user.” *Id.* at 7:8–11. “The text communication frequencies are filtered out by the notch filter 68, so that the hearing user . . . will not hear the text communication tones” but allows voice signals to pass. *Id.* at 7:20–24.

Thus, Engelke '405 discloses two embodiments of devices that filter received text transmissions on a telephone line, leaving only voice signals on the telephone line. First, Engelke '405 discloses a TET device 52 that filters text from telephone line 47 that connects the TET device 52 and the relay 44. Thus, here, Engelke '405 discloses a TET device 52 configured not to transmit text signals. Second, Engelke '405 discloses filter circuit 51 on telephone line 47 that filters text received from the relay 44 “so that the

hearing user does not hear the communication tones of the text transmissions.” *Id.* at 6:38–42. Accordingly, Engelke ’405 discloses filtering text transmissions, while leaving voice signals, on a telephone line to a hearing user.

Similarly, Engelke ’405 discloses other notch filters that “pass signals of all frequencies except those at the digital text communication frequencies” in other TET devices. Ex. 1005, 4:13–24. For example, Engelke ’405 discloses notch filters 20 and 22 as depicted in an embodiment of a TET shown in Figure 1. *Id.* Engelke ’405 also indicates that such notch filters are “of conventional design in the art.” *Id.* at 4:13–17.

Based on these disclosures and the level of ordinary skill in the art of telecommunications at the time of the claimed invention (as reflected by Mr. Occhiogrosso’s testimony discussed previously as well as the types of problems and solutions described in the ’045 patent and the prior art of record), we find that Engelke ’405 would have conveyed to one of ordinary skill in the art a captioned device configured with an isolation circuit and configured to send only voice signals on a telephone line to the hearing user.

In addressing Engelke ’405 in its Motion to Amend, Patent Owner characterizes Engelke ’405 as a “one-line system” that “would always inherently be aware that a relay is involved because the hearing user would be directly connected to the relay” and so would not teach or suggest the “transparency” limitation of claim 77 or the captioned device only transmitting signals to the hearing person as required by claim 75. Mot. Am. 17. Similarly, with regard to the isolation circuit recited in claims 78

and 80, Patent Owner characterizes Engelke '405 as a one-line reference, "in which there inherently would be no circuitry isolating signals between two communication links." *Id.* at 27.

Patent Owner, however, does not provide specific arguments or evidence to support these contentions regarding one-line references. *Id.* Nor does Patent Owner address the unambiguous disclosures of filtering text transmissions so that the receiving party hears voice but not the sound of text transmissions in Engelke '405. This absence is all the more striking considering Engelke '405 is one of the references in the combination asserted against claims 1–74 and Engelke '405 is one of Patent Owner's own patents.

These unaddressed disclosures of Engelke '405 alone would be sufficient to deny Patent Owner's Motion to Amend for which Patent Owner bears the burden to demonstrate it is entitled to the relief of entry of the proposed claims.

In addition, we find sufficient record evidence to support a determination that there is sufficient reasoning about what would prompt one of ordinary skill in the art to combine the references. Specifically, we explained previously reasons why one of ordinary skill in the art would have modified the two-line configuration of Liebermann, intended for deaf users, so that it can provide simultaneous voice and text (as disclosed in Engelke '405), making the device usable by hard-of-hearing users. Filtering text transmission signals from a line providing simultaneous voice and text so that voice only would be provided to the hearing user is a critical aspect of

Engelke '405, as discussed above with respect to Figures 4 and 5. Thus, for the reasons explained previously, we determine one of ordinary skill in the art would have had reason to combine a notch filter of Engelke '405 with Liebermann's two-line configuration.

In addition, we note that Engelke '405 describes notch filters that filter text transmissions and leave voice signals for transmission as conventional components known in the art. Ex. 1005, 4:13–17. Based on that disclosure, we determine that including a notch filter in a captioned device to filter text transmissions is a use of a prior art element according to its established function and that the notch filter would result in filtering text transmissions, as one would expect a notch filter to perform. *See KSR*, 550 U.S. at 417 (one “must ask whether the improvement is more than the predictable use of prior art elements according to their established functions”); *id.* (“[W]hen a patent ‘simply arranges old elements with each performing the same function it had been known to perform’ and yields no more than one would expect from such an arrangement, the combination is obvious.”) (citing *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273, 282 (1976)).

We also agree with Petitioner that Patent Owner's arguments, which are directed to references individually, are insufficient to grant its Motion to Amend. Opp. Am. 1; *see, e.g.*, Mot. Am. 15 (“The alleged two-line references do not teach or suggest . . .”), 17 (“None of the cited one-line references teaches or suggests . . .”), 18 (“The closest references not cited in the Petition also do not teach or suggest . . .”), 22 (“No motivation or rationale exists to combine or modify the prior art . . .”). Patent Owner does

not, for example, address what the combination of the isolation technology provided in one-line systems that allowed assisted hearing users to speak with normally hearing users (as described in Engelke '405) and two-line references would have conveyed to one of ordinary skill in the art. In another example, Patent Owner does not address what Engelke '482's disclosure of a "hard of hearing" person using a text enhanced telephone that is "a unitary device built into the telephone itself" and is used "as they would a normal telephone" would have conveyed to one of ordinary skill in the art regarding use of conventional telephones. *See* Ex. 1005, 3:20–22, 3:28–37.

Patent Owner has not adequately addressed what the combined teachings of the references would have suggested to one of ordinary skill in the art. *In re Mouttet*, 686 F.3d 1322, 1333 (Fed. Cir. 2012) (citing *In re Keller*, 642 F.2d 413, 425 (CCPA 1981)) ("The test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art."). We find Patent Owner's approach inadequate to meet its burden to demonstrate the patentability of the amended claims. *See MasterImage 3D*, Case IPR2015-00040, slip op. at 4.

We discuss Patent Owner's particular arguments in detail in our claim-by-claim analysis below.

3. *Proposed Substitute Claims 75 and 76*

Patent Owner proposes independent claim 75 as a substitute for independent claim 24 if it is found unpatentable. Mot. Am. App., 1–3. Claim 75 incorporates substantially all limitations of claim 24, adds an

additional step performed by the captioned device, changes “telephone call” to “conventional voice telephone call,” and adds some additional terms. *Id.* at 1–2. Patent Owner argues particularly with the added step. *Id.* at 15–17. More specifically, Patent Owner contends that “the alleged two-line references do not teach or suggest that the captioned device only transmits signals to the hearing person of a conventional telephone call” (*id.* at 15–17), “none of the cited one-line references teaches or suggests the limitations of claim 75” (*id.* at 17–18), “none of the closest references not cited in the Petition also do not teach or suggest the limitation of claim[] 75” (*id.* at 18–22), and no motivation or rationale exists to combine or modify the prior art to achieve the subject matter of claim 75 (*id.* at 22–24).

For clarity, we note that claim 75 does not require “transparency” or hiding the relay from the hearing user, which seem to apply to claim 77, which Patent Owner argues together with claim 75. *Id.* at 15–17. Nor does claim 75 recite “the captioned device only transmits signals to the hearing person of a conventional telephone call,” which is the formulation of the subject matter argued by the Patent Owner. *Id.* at 15. This, however, seems to be a reasonable shorthand for the only limitation in claim 75²³ that recites “transmitting signals”—step (vii) performed by the captioned device processor:

²³ We follow Patent Owner’s convention in the Motion to Amend Appendix to identify changes in the proposed substitute claim as compared with the respective patent claim. Underlining represents additions, and strike-throughs brackets indicating deletions.

(vii) providing the captioned telephone service to the assisted user such that invocation and usage of the service is performed without the captioned device transmitting signals to the hearing person other than those of the conventional voice telephone call.

Mot. Am. App. 2. Patent Owner argues that this limitation is not present in Liebermann or U.S. Patent No. 6,181,736 B1 (Ex. 1008, “McLaughlin”), another prior art reference in evidence. Patent Owner contends that claim 75 is distinct from the two-line architecture in McLaughlin that “is designed to connect to a traditional relay, in which the call assistant speaks directly to the hearing user when reading text types by the deaf user” and “is specifically designed to send automated status messages to the hearing user.” *Id.* at 16–17 (citing Ex. 1008, 31:35–52).

We disagree with Patent Owner’s characterization as to the teaching of McLaughlin. McLaughlin describes “a relay service in which operators, or automated equipment, mediate phone calls.” Ex. 1008, 29:20–22. McLaughlin “note[s] that many deaf persons can speak” and describes “the sounds of his or her voice are ‘bridged’ [transmitted] over to the phone line of the remote hearing party he is she is communicating with.” *Id.* at 29:30–35. Patent Owner does not address this disclosure of McLaughlin, which contradicts Patent Owner’s position that McLaughlin requires the call assistant to speak directly to the hearing user. Mot. Am. 16. Patent Owner, however, is correct that in some embodiments—including some of McLaughlin’s two-line architecture embodiments—McLaughlin’s relay operator voices text typed by a deaf user who is speech impaired. *Id.* at 16 (citing Ex. 1008, 31:41–52). McLaughlin discloses, however, that the call

assistant (relay operator) voices text typed by the assisted user only in some conditions—“[i]f the deaf user is speech impaired.” Ex. 1008, 31:47–49 (“If the deaf user is speech impaired, the user may type responses back to the relay operator who will then voice this text,” which is sent from the captioned device to the voice caller (hearing user who is not assisted) over the telephone line connecting the voice caller with the captioned device used by the assisted user). In its Reply, Patent Owner again contends that “McLaughlin provides, ‘[t]he voice sounds of the relay operator will [not ‘may’] travel on the SVD [simultaneous voice and data] line on Line B to the answering system and pass over to the Line A and so be heard by the voice caller on Line A.” Reply Am. 7 (quoting Ex. 1008, 31:49–52) (alteration in original). Patent Owner, however, does not address the previous sentence in McLaughlin: “If the deaf user is speech impaired, the user may type responses back to the relay operator who will then voice this text.” Ex. 1008, 31:47–49.

McLaughlin, in limiting relay operators to voicing text sent by the assisted user “if the deaf user is speech impaired” and recognizing that “many deaf persons may speak,” indicates a relay operator does not always speak, even when a deaf user who is able to speak uses the relay. This contradicts Patent Owner’s position that “the call assistant’s voice are automatically and always communicated onto Line A [from the captioned device] to be sent to the hearing user.” Mot. Am. 16 (emphasis in original).

Moreover, McLaughlin describes in the case of “one presently preferred embodiment . . . the voice caller and relay operator can hear each

other and may each talk to each other simultaneously at any time.”

Ex. 1008, 31:52–58. The conditional nature of this arrangement (i.e., “one presently preferred embodiment”) further undermines Patent Owner’s position.

Patent Owner also contends that McLaughlin’s captioned device “is specifically designed to send automated status messages to the hearing user (e.g., ‘please wait’ and ‘the call can proceed’) timed to the connection of the Line B SVD modem to the relay, which is not part of a ‘conventional’ telephone call.” Mot. Am. 16–17 (citing Ex. 1008, 31:35–40). Here again, Patent Owner does not acknowledge, much less address sufficiently, the conditional nature of McLaughlin’s automated messages. Ex. 1008, 31:35–37 (describing that the captioned device “may provide a ‘please wait’ message to the voice caller on Line A”).

For these reasons, we disagree with Patent Owner that McLaughlin does not teach or suggest “providing the captioned telephone service to the assisted user such that invocation and usage of the service is performed without the captioned device transmitting signals to the hearing person other than those of the conventional voice telephone call,” as recited in independent claim 75.

We recognize that demonstrating that each claim element was known does not prove a claim obvious. *KSR*, 550 U.S. at 418. Here, however, we need not demonstrate that the proposed claim would have been obvious. Rather, we are determining whether Patent Owner has met its burden that it is entitled to its requested relief—entry of proposed independent claim 75.

We conclude that Patent Owner has not done so because Patent Owner has not demonstrated adequately that the added claim limitation, or subject matter of the claim as a whole, would not have been obvious, particularly in light of our earlier determination that the subject matter of independent claim 24 would have been obvious.

First, and importantly, we do not agree with Patent Owner’s position regarding the teaching of McLaughlin for the reasons discussed. Second, we do not agree with Patent Owner’s contention that there is no motivation to combine the references to limit signals on the first telephone line to those of a conventional telephone call. Reply Am. 8–10. Step vii performed by the captioned device (as discussed above) does not require “limiting signals” or “ensur[ing] the absence of relay signals,” as Patent Owner contends. *Id.* Rather, claim 75 requires “providing the captioned telephone service to the assisted user such that invocation and usage of the service is performed without the captioned device transmitting signals to the hearing person other than those of the conventional voice telephone call.” Step vii in claim 75 does not require the action of “limiting” or “ensuring.” Rather, step vii describes a requirement for “providing the captioned telephone service to the assisted user”—“such that invocation and usage of the service is performed without the captioned device transmitting signals to the hearing person other than those of the conventional voice telephone call.” Limiting or ensuring may be one way to fulfill the claimed requirement. But the claim merely recites the requirement—and a negative limitation reciting “without”—and

does not recite any particular circuitry or devices that would perform the requirement in a certain way.

For these reasons, we conclude that Patent Owner has not met its burden to demonstrate the patentability of the amended claims, as required by the Board’s precedential decision in *MasterImage 3D*. See *MasterImage 3D*, Case IPR2015-00040, slip op. at 4.

Accordingly, we deny Patent Owner’s request to substitute claim 75 for claim 24. Because proposed claim 76 depends from claim 75 but does not further limit step viii discussed above, we also deny Patent Owner’s request to substitute claim 76 for claim 30.

4. Proposed Substitute Claims 77–79

Patent Owner proposes independent claim 77 as a substitute for independent claim 58 if it is found unpatentable. Mot. Am. App., 3–4. Claim 77 incorporates substantially all limitations of claim 58 and further requires the captioned device to include:

a connection to a first communication link, wherein the first communication link is initiated only by a hearing person dialing a telephone number of the assisted user or the assisted user dialing a telephone number of a hearing person.

Patent Owner does not argue this limitation with particularity. Indeed, Patent Owner seems to describe McLaughlin as performing its “call setup process” in response to an incoming call on the voice line between the hearing user to the captioned device (i.e., “Line A” in McLaughlin). Reply Am. 7 (citing Ex. 1008 3:31–40) (“[D]uring the incoming call setup process, [McLaughlin] transmits automated ‘please wait’ and proceed messages to

the hearing user over line A while the captioning service is allegedly being set up on line B.”). Additionally, McLaughlin expressly discloses the hearing person initiating the call to the assisted person. Ex. 1008, 30:61–63 (“Line A will be the communication link on which the [hearing/speaking] person initially calls the deaf and/or speech impaired person.”); *id.* at 30:64–66 (“When an incoming call is received by Line A, the deaf and/or speech impaired person” determines how the incoming call will be handled).

Claim 77 also requires the captioned device process to perform an additional step:

(vii) providing the captioning services to the assisted user such that involvement of the relay during invocation and usage of captioning services is transparent to the hearing person for both incoming and outgoing calls.

Mot. Am. App. 4. As noted previously, Patent Owner argues together that McLaughlin does not teach or suggest this limitation with its argument that McLaughlin does not teach step viii recited in claim 75. Mot. Am. 16 (contending McLaughlin “would not teach or suggest the limitations of claims 75 and 77). As discussed previously, we do not agree with Patent Owner that McLaughlin’s call assistant must speak directly to the hearing user. *Id.* at 16. Nor do we agree that the various embodiments in McLaughlin all send automated status messages. *Id.*

Nor do we agree with Patent Owner’s contention that “McLaughlin does not suggest that it would be desirable to hide the use of the relay from the hearing user such that the call presented only as a ‘conventional’ call, or such that the involvement of the relay was ‘transparent.’” *Id.* First, we note

Patent Owner's statements are conclusory without adequate explanation or factual support. Although Patent Owner cites to a paragraph in Mr. Zatkovich's declaration, Patent Owner does not present in its Motion any additional reasoning provided by Mr. Zatkovich. Indeed, the paragraph of Mr. Zatkovich's declaration cited in the Motion presents substantially the same conclusory text as in the Motion.

Second, as noted above, McLaughlin describes problems of hearing tones when listening to voice sounds. Ex. 1008, 29:53–63. McLaughlin indicates that “unless special filtering techniques are used” “any person listening to voice sounds . . . will also hear the TDD tones.” *Id.* at 29:54–56. McLaughlin continues by describing the problem in the context of “[t]raditional modem protocols” as “us[ing] a constant modem carrier [because] [a]nyone listening in on the phone line . . . will hear the constant sounds of this modem carrier and will have a difficult time hearing voice sounds on the line.” Ex. 1008, 29:57–63. This disclosure of McLaughlin undermines, if not contradicts, Patent Owner's position that “McLaughlin does not suggest that it would be desirable to hide the use of the relay from the hearing user.” Mot. Am. 16.

Patent Owner also contends that McLaughlin does not disclose “anything at all in regard to the content of, or transparency of, outbound calls” and “is silent in regard to how a deaf user would operate the system to place an outgoing call.” Mot. Am. 17. As Petitioner correctly identifies, “McLaughlin teaches a modem, including a VOICE modem dialing ‘the outgoing call, set[ting] its detectors to ‘listen’ for TDD Baudot frequencies

as well as ITU modem answer tones, and then connect[ing] appropriately according to the signals received.” Opp. Am. 23 (citing Ex. 1008, 11:49–52); *see also* Ex. 1008, 11:47–49 (“When ITU/TDD/VOICE modem 14 originates a call over the PSTN . . . “). Petitioner also indicates that McLaughlin discloses “requesting node software [that] will provide the desired phone number to the modem software, and the call will be dialed out.” Opp. Am. 23 (quoting Ex. 1008, 13:33–35) (alteration in original).

For these reasons, we determine that Patent Owner has not met its burden to demonstrate it is entitled to the amended claims being entered. *See MasterImage 3D*, Case IPR2015-00040, slip op. at 4. Accordingly, we deny Patent Owner’s request to substitute claim 77 for claim 58. Because proposed claims 78 and 79 each depends from claim 77 but does not further limit step vii discussed above, we also deny Patent Owner’s request to substitute claims 78 and 79 as requested by Patent Owner.

5. *Proposed Substitute Claims 80 and 81*

Patent Owner proposes independent claim 80 as a substitute for independent claim 61 if it is found unpatentable. Mot. Am. App., 5–7. Claim 80 incorporates substantially all limitations of claim 61 and further requires the captioned device to include:

- (vi) a connection for a first communication link directly between the assisted user and hearing person;
- (vii) a connection for a second communication link directly between the captioned device and the relay;
- (vii) an isolation circuit connected to the connection of the first communication link and the second communication link to communicate signals received over the first

communication link to the second communication link while preventing any signals received from the second communication link from being communicated onto the first communication link;

wherein the connection for the first communication link is connected to the isolation circuit, and in communication with the microphone, to receive and transmit to the hearing user only signals received via the microphone.

Mot. Am. App. 6. Independent claim 80 also further requires the captioned device to perform the step of “(a) initiating the second communication link directly between the captioned device and the relay to invoke the captioning service without involving the hearing user” and to do so “in response to activation of the caption switch.” *Id.*

Arguing as if the only unpatentability issue is whether a reference discloses every element as arranged in the claim, as required to show anticipation, Patent Owner contends that the “isolation circuit” recited in independent claim 80 is not disclosed in Engelke ’405 or Engelke ’482 because those references are one-line references, “in which there inherently would be no circuitry isolating signals between communication links.” Mot. Am. 26–27. We disagree with Patent Owner’s position for the reasons described previously.

As discussed above, Engelke ’405 describes a text enhanced telephony system that includes filter circuit 51 and other filters. Furthermore, in Petitioner’s opposition to the Motion, Petitioner bolsters its arguments that the relay assistant’s voice is not provided to the hearing user. Specifically, Petitioner (with Mr. Occhiogrosso support) describes that Engelke ’482 teaches a switch that allows for the voice of the call assistant

to be directed to the hearing user only when intended to be directed to the hearing user and, if an assisted user can speak to the hearing user, the call assistant would not speak to the hearing user. Opp. Am. 25 (citing Ex. 1004, 4:50–59, 5:65–6:15, 7:4–10; Ex. 1049 ¶¶ 13–16, 53, 54, 62).

The teachings of Engelke '405 and Engelke '482 further support our determination that Patent Owner has not met its burden regarding the step vii of claim 75 (“providing the captioned telephone service to the assisted user such that invocation and usage of the service is performed without the captioned device transmitting signals to the hearing person other than those of the conventional voice telephone call”) and the “transparent” requirement of claim 77.

For these reasons, we determine that Patent Owner has not met its burden to demonstrate it is entitled to entry of the amended claims. See *MasterImage 3D*, Case IPR2015-00040, slip op. at 4. We also determine that Petitioner has offered sufficient explanation as to why Patent Owner’s motion should be denied.

Accordingly, we deny Patent Owner’s request to substitute claim 80 for claim 61. Because proposed claim 81 depends from claim 80 but does not further limit the “isolation circuit” discussed above, we also deny Patent Owner’s request to substitute claim 81 as requested by Patent Owner.

III. CONCLUSION

Based on the evidence and arguments, Petitioner has demonstrated by a preponderance of the evidence that claims 1–74 of the '045 patent would

have been obvious over Liebermann, Engelke '405, Mukherji, and Engelke '482.

Also, after reviewing Patent Owner's Motion to Amend, Petitioner's Opposition, and Patent Owner's Response in support of its Motion to Amend, as well as the relevant evidence discussed in those papers, we deny entry of substitute claims 75–81 for the reasons given.

IV. ORDER

Accordingly, it is:

ORDERED that claims 1–74 of U.S. Patent No. 9,131,045 B2 have been shown to be unpatentable;

FURTHER ORDERED that Patent Owner's Contingent Motion to Amend is denied;

FURTHER ORDERED that Petitioner's Motion to Exclude is granted-in-part and denied-in-part;

FURTHER ORDERED that Patent Owner's Motion to Exclude is denied;

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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