Trials@uspto.gov
571-272-7822

Paper 76
Entered: March 3, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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CAPTIONCALL, L.L.C.,
Petitioner,

v.

ULTRATEC, INC.,
Patent Owner.

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Case IPR2013-00541
Patent 5,909,482

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

BENOIT, *Administrative Patent Judge*.

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

# I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6(c). This final written decision is issued pursuant to under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1-15 of U.S. Patent No. 5,909,482 (Ex. 1001; "the '482 patent") are unpatentable.

## *A. Procedural History*

CaptionCall, L.L.C. ("Petitioner") filed a Petition requesting an *inter partes* review of claims 1–15 of the '482 patent pursuant to 35 U.S.C. §§ 311-319. Paper 1 ("Pet."). Patent Owner, Ultratec, Inc., did not file a preliminary response. On March 5, 2014, pursuant to 35 U.S.C. § 314(a), we instituted an *inter partes* review for claims 1-15 of the '482 patent on the following grounds of unpatentability:

| **Reference(s)** | **Basis** | **Challenged Claims** |
|---|---|---|
| Ryan[1] | § 102(e) | 1 and 5 |
| Wycherley[2] and Yamamoto[3] | § 103(a) | 1 and 5 |
| Wycherley, Yamamoto, and Jones[4] | § 103(a) | 2, 7, and 8 |

[1] U.S. Patent No. 5,809,112 (Ex. 1004) ("Ryan").
[2] U.S. Patent No. 5,163,081 (Ex. 1002) ("Wycherley").
[3] Seiichi Yamamoto & Masanobu Fujioka, *New Applications of Voice Recognition*, Proc. JASJ Conf. (March 1996) (Ex. 1005). Unless indicated otherwise, all subsequent citations to Yamamoto refer to its English language translation (Ex. 1006).
[4] PCT International Publication No. WO95/00946 (Ex. 1008) ("Jones").

| Reference(s) | Basis | Challenged Claims |
|---|---|---|
| Wycherley, Yamamoto, and Choi[5] | § 103(a) | 3, 10, and 11 |
| Wycherley, Yamamoto, and Vasile[6] | § 103(a) | 4, 13, and 14 |
| Wycherley, Yamamoto, and Liebermann[7] | § 103(a) | 6 |
| Wycherley, Yamamoto, Jones, and Liebermann | § 103(a) | 9 |
| Wycherley, Yamamoto, Choi, and Liebermann | § 103(a) | 12 |
| Wycherley, Yamamoto, Vasile, and Liebermann | § 103(a) | 15 |

Paper 6 ("Inst. Dec.").

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 28; "PO Resp."), and Petitioner filed a Reply (Paper 33; "Reply"). Patent Owner also filed Motions to Exclude Evidence. Paper 43 ("PO Mot. to Exc. Occhiogrosso"); Paper 44 ("PO Mot. to Exc. Yamamoto"). Petitioner filed a combined Opposition (Paper 53; "Pet. Opp. to Mots. to Exc.") to Patent Owner's Motions, and Patent Owner filed a Reply to Petitioner's Opposition (Paper 56; "PO Reply to Opp. to Mots. to Exc."). Also, Petitioner filed a Motion for Leave to File Supplemental Evidence Regarding Yamamoto (Paper 50), and Patent Owner filed an Opposition to Petitioner's Motion (Paper 55). In response to the Board's

[5] W. Choi et al., *Splitting and Routing Audio Signals in Systems with Speech Recognition*, IBM TECHNICAL DISCLOSURE BULLETIN, Vol. 38, No. 12, 503-04 (December 1995) (Ex. 1009) ("Choi").
[6] U.S. Patent No. 5,289,523 (Ex. 1003) ("Vasile").
[7] U.S. Patent No. 5,982,853 (Ex. 1010) ("Liebermann").

order (Paper 61), Petitioner filed additional briefing (Paper 63) regarding the public availability of Yamamoto. In turn, Patent Owner filed a response (Paper 65), to which Petitioner filed a Reply (Paper 66).

An oral hearing was held on November 19, 2014.[8]

### *B. Related Proceedings*

Petitioner represents that the '482 patent was asserted against its parent company in *Ultratec, Inc. v. Sorenson Communications, Inc.*, No. 13-CV-00346 (W.D. Wis.). Pet. 2. Petitioner also represents that in the same district court proceeding Patent Owner asserted the following patents at issue in *inter partes* reviews—U.S. Patent No. 6,233,314 (Case IPR2013-00540), U.S. Patent No. 7,319,740 (Case IPR2013-00542), U.S. Patent No. 7,555,104 (Case IPR2013-00543), U.S. Patent No. 8,213,578 (Case IPR2013-00544), U.S. Patent No. 6,594,346 (Case IPR2013-00545), U.S. Patent No. 6,603,835 (Case IPR2013-00549), and U.S. Patent No. 7,003,082 (Case IPR2013-00550).

### *C. The '482 Patent*

The '482 patent discusses a way to assist deaf, hard of hearing, or otherwise hearing impaired individuals to use telephones. Ex. 1001, 1:14-17. Conventional assistance uses a device having a keyboard and display,

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[8] This proceeding, as well as IPR2013-00540, IPR2013-00542, IPR2013-00543, IPR2013-00544, IPR2013-00545, IPR2013-00549, and IPR2013-00550 involve the same parties and some similar issues. The oral arguments for all eight reviews were merged and conducted at the same time. A transcript of the oral hearing is included in the record as Paper 75.

which may be called a text telephone (TT), a teletype (TTY), or a telecommunication device for the deaf (TDD). *Id*. at 1:26-29. A human intermediary facilitates communication between a hearing user and a hearing impaired user by communicating by voice with the hearing user and using a TDD to communicate with the hearing impaired user. *Id.* at 1:60-67. The system of voice-to-TDD communication used by the human intermediary (called an operator or call assistant) is referred to as a relay. *Id.* at 1:60-64.

The ’482 patent indicates the effectiveness of relay systems is limited by the speed at which a call assistant can type the words said by the hearing user. *Id.* at 2:8-21. The ’482 patent relates to a relay system to improve performance of voice-to-text interpretation for translating between hearing impaired and hearing users. *Id.* at 3:13-16. Instead of typing the hearing user’s words, the call assistant speaks those words into a microphone that transmits the voice of the call assistant to a computer with voice recognition software that is trained specifically to the voice of the call assistant. *Id.* at 5:28-47. The computer translates the words of the call assistant to digital text, which is sent to a display of the hearing impaired user. *Id.* at 5:30-64.

### *D. Illustrative Claims*

Claims 1, 7, 10, and 13 are independent claims. Claims 1 and 7 are illustrative of the claims at issue and read as follows:

> 1. A method of operating a relay system using a call assistant to facilitate communication between a deaf person and a hearing person by telephone comprising the steps of
>
> transmitting the voice of the hearing person when speaking to the ear of the call assistant;

the call assistant speaking in voice the same words that the call assistant hears spoken by the hearing person into a microphone connected to a digital computer;

the digital computer using voice recognition computer software trained to the voice of the call assistant to translate the words of the voice spoken by the call assistant into a digital text message stream containing the words spoken by the call assistant;

transmitting the digital text message stream created by the computer by telephone connection to a telecommunication device within sight of the deaf person; and

the telecommunication device displaying in visually readable text the words in the digital text message stream.

*Id.* at 8:4-21.

7. A relay to facilitate communication between a deaf person using a telecommunication device for the deaf and a hearing person through a telephone system and using a call assistant, the relay comprising

a speaker connected to receive voice communications from the telephone system and transmit those voice communications to the ear of the call assistant;

a microphone connected to pickup voice spoken by the call assistant;

a digital computer connected to the microphone, the computer programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream;

a modem to transit the digital text stream created by the computer over the telephone system to the telecommunication device for the deaf of the deaf person; and

noise attenuating means responsive to the voice spoken by the call assistant and connected to the speaker to attenuate

> the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant.

*Id*. at 8:48-9:2.

## II. ANALYSIS

### *A. Claim Construction*

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Techs., LLC*, No. 2014-1301, slip op. at 11–19 (Fed. Cir. Feb. 4, 2015). Under the broadest reasonable construction standard, claim terms are presumed to be given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An inventor may provide a meaning for a term that is different from its ordinary meaning by defining the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

We construe "the digital computer using a voice recognition computer software trained to the voice of the call assistant to translate the words of the voice spoken by the call assistant into a digital text stream containing the words spoken by the call assistant," recited in independent claim 1, and "a digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream," recited

in independent claims 7, 10, and 13, in accordance with these principles. We also construe "noise attenuating means" recited in independent claim 7. No other claim terms require express construction.

*1. "trained to the voice of the call assistant"*

Neither party expressly proposes a construction for "trained to the voice of the call assistant," recited in each of the independent claims. *See* Pet. 5-6; PO Resp. 9-13; Reply 2. In their dispute over the teachings of the asserted prior art, however, the parties articulate different views in how the term should be construed. Patent Owner construes "trained to the voice of the call assistant" to require training to recognize individual voices (PO Resp. 28-29), presumably trained to the voice of one and only one call assistant and precluding training for a type of speech used by a group of people (such as a regional accent) that could apply to more than one call assistant. Patent Owner also seeks to construe "trained to the voice of the call assistant" as having a temporal constraint so as to preclude training at the time when the voice recognition computer software package is "*designed* in advance of implementation at the source code level." *Id.* at 27. According to Patent Owner, "trained to the voice of the call assistant" precludes software that is "built to" recognize the voice of a particular agent. *Id.* at 27-28. Petitioner disagrees. Reply 3-4.

The Specification of the '482 patent does not set forth a special definition for "training." The Specification, however, in its "Brief Summary of the Invention" indicates "a speech recognition computer program which has been trained to the voice *pattern* of the call assistant." Ex. 1001, 2:46-48

(emphasis added). In the context of describing the relay shown in Figure 1, the Specification describes "the call assistant operat[ing] at a computer terminal which contains a copy of a voice recognition software package which is specifically trained to the voice of that *particular* call assistant." *Id.* at 5:44-47 (emphasis added). The Specification, however, does not indicate expressly that the voice recognition software is trained to the voice of only that particular call assistant or otherwise indicate the voice recognition software is trained for the voice of only one call assistant.

As such, the Specification contemplates software trained to "a voice pattern of the call assistant" as well as software "specifically trained to the voice of [a] particular call assistant." Further, the Specification indicates, in those passages, that the voice recognition software package is trained but does not indicate when or how the training occurs. *Id.* at 2:46-48, 5:44-47.

Patent Owner, relying on its declarant Mr. Paul W. Ludwick, asserts software "designed" is not software that is "trained to recognize individual voices." PO Resp. 27. According to Mr. Ludwick, a person of ordinary skill in the art would not have understood "trained" software to include "designed" software because technology to train software to recognize individual voices did not exist in 1994 and was not used in telecommunications relay service at that time. *Id.* (citing Ex. 2010 ¶ 22). We also note here that the technology available in 1994 has little probative value here because the year of invention is 1997 for the reasons discussed below.

We give claim language its broadest reasonable construction in light of the specification of the patent in which it appears. Thus, we will not limit "trained to the voice of the call assistant" to require training to the voice of only one particular call assistant, because the claim language encompasses the invention as disclosed in the Specification—software trained to a voice *pattern* of a call assistant. Ex. 1001, 2:41-49 ("Summary of the Invention"). Nor will we limit "trained to the voice of the call assistant" to a particular time in which the training must occur or to a particular manner of training that is not found in the claims nor the Specification.

Accordingly, "trained to the voice of the call assistant" does not preclude voice recognition software that is designed or built in advance of implementation at the source code level to the voice pattern of a call assistant. Nor is "trained to the voice of the call assistant" limited to training to the voice of one and only one call assistant.

*2. "digital computer using a voice recognition computer software trained to the voice of the call assistant" and "digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant*

Neither party expressly proposes a construction for "digital computer using a voice recognition computer software trained to the voice of the call assistant," recited in claim 1, or "digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant," recited in claims 7, 10, and 13. *See* Pet. 5-6; PO Resp. 9-13; Reply 2. In the dispute over the teachings of the asserted prior art references, however, Patent Owner contends, based on the testimony of

Mr. Ludwick, that the claimed voice recognition software must be "running on the call assistant's workstation—e.g., not remotely or virtually running on or from a server or other computer." PO Resp. 25-26 (citing Ex. 2010 ¶¶ 102-105).

Mr. Ludwick explains that, because the claim requires the call assistant to speak into a microphone connected to the computer programmed to use a voice recognition computer software package and because of advantages of such an arrangement, the claimed software package must reside on the claimed computer to which the microphone is connected. Ex. 2010 ¶¶ 103-105; *see also* PO Resp. 25-26.

Independent claim 1 recites "the digital computer using voice recognition computer software" and claims 7, 10, and 13 each requires the computer "to use a voice recognition computer software package." These claims do not require expressly the voice recognition computer software to be stored on the computer using the voice recognition computer software or on the computer programmed to use the software package. Patent Owner, based on Mr. Ludwick's testimony, acknowledges the software package may be stored other than on the call assistant's computer. PO Resp. 26 (indicating a terminal may be able to transmit a voice signal to be converted to text by a server or other computer located remotely from the call assistant's computer) (citing Ex. 2010 ¶¶ 106-107). Notably, neither Patent Owner nor Mr. Ludwick addresses sufficiently how a person of ordinary skill in the art would understand the limitation "the digital computer using the voice recognition computer software" or the limitation "digital

computer . . . programmed *to use*" a software package to require the software package to be stored on the computer using, or programmed to use, the software package.

Thus, we will not construe "the digital computer using voice recognition computer software trained to the voice of the call assistant" or "a digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant" as requiring the software package to be stored on the computer using, or programmed to use, the software.

*3. "noise attenuating means . . . to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant"*

Petitioner asserts "noise attenuating means responsive to the voice spoken by the call assistant and connected to the speaker to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant," recited in independent claim 7, should be construed as a means-plus-function limitation under 35 U.S.C. § 112, sixth paragraph. Pet. 6. Petitioner identifies "noise canceling earphones, a computer with noise canceling sound generation software, or equivalents thereof" as corresponding structure in the Specification. *Id.* (citing Ex. 1001, 6:16-23).

Construing a means-plus-function limitation requires first defining the particular function of the limitation and then identifying, in the specification, the structure that performs the claimed function. *Golight, Inc. v. Wal-Mart Stores Inc.*, 355 F.3d 1327, 1333-34 (Fed. Cir. 2004).

We agree with Petitioner (Pet. 6) that "noise attenuating means" is a means-plus-function limitation because: (1) the limitation uses the word "means," (2) the term in the limitation is modified by functional language ("to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant"), and (3) the term is not modified by any structure recited in the claim for performing the claimed function. *See Flo Healthcare Solutions, LLC v. Kappos*, 697 F.3d 1367, 1373 (Fed. Cir. 2012). Although the limitation recites "connected to the speaker," this structure does not perform the claimed function of attenuating noise. *Id.*

The Specification of the '482 patent discloses earphones 38, which "produce the sound of the remote speaking person in the ear of the call assistant" (Ex. 1001, 5:23-24) and "have noise attenuating capability" (*id.* at 6:18). The Specification also discloses that "computer 42 can be provided with noise canceling sound generation software which would create sound transmitted to the earphone 38 so as to cancel the sounds of the call assistant's own voice." *Id.* at 6:20-23. The Specification further indicates that "noise attenuation or cancellation avoids distracting the call assistant, since he or she would then be less distracted by the words that he or she has spoken." *Id.* at 6:23-26.

As such, the Specification of the '482 patent discloses that earphones 38 and computer 42 provided with noise canceling sound generation software are structures that perform the function of "noise attenuating means"—that is, the function "to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant."

For these reasons, in the Decision to Institute, the Board construed "noise attenuating means . . . to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant" in claim 7 as follows:

> Function: "to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant."
>
> Corresponding structure: earphones 38 or computer 42 provided with noise canceling sound generation software.

Inst. Dec. 7-9. We also determined that "noise attenuating means" includes "noise canceling earphones, a computer with noise canceling sound generation software, or equivalents thereof," as asserted by Petitioner (Pet. 6). *Id.* at 9.

Neither party challenges our preliminary construction of "noise attenuating means" set forth in our Decision to Institute. *See* PO Resp. 9-13; Reply 2. Having considered whether the construction set forth in the Decision to Institute should be changed in light of evidence introduced during trial, we are not persuaded any modification is necessary. Therefore, we maintain the construction of "noise attenuating means . . . to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant," as indicated above.

### *B. Principles of Law*

To prevail in challenging claims 1-15 of the '482 patent, 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).

A claim is anticipated if a single prior art reference either expressly or inherently discloses every limitation of the claim. *Orion IP, LLC v. Hyundai Motor Am.*, 605 F.3d 967, 975 (Fed. Cir. 2010). To establish inherent disclosure, the evidence must show that a feature is necessarily described in the reference. *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). To anticipate, a reference also "must enable one of ordinary skill in the art to make the invention without undue experimentation." *Impax Labs., Inc. v. Aventis Pharm., Inc.*, 545 F.3d 1312, 1314 (Fed. Cir. 2008). To determine whether "undue experimentation" is required, various factors are examined, including (1) the quantity of experimentation; (2) the amount of direction or guidance present; (3) the presence or absence of working examples; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988); *see also Impax Labs.*, 545 F.3d at 1314-15 (indicating the Wands factors should be applied to a determination whether a prior art reference is enabled).

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). The level of ordinary skill in the art is reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

*C. Patent Owner's Motion to Exclude Testimony by Mr. Occhiogrosso*

Patent Owner seeks to exclude the testimony of Mr. Benedict Occhiogrosso (Exs. 1014, 1053, 2006, 2007, and 2017) on the theory that he is not qualified as an expert under Federal Rule of Evidence 702 ("FRE 702").[9,10] PO Mot. to Exc. Occhiogrosso; PO Resp. 5-9. FRE 702 provides that a witness qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion if (a) the expert's knowledge will help the trier of fact to understand the evidence or to determine a fact in issue, (b) the testimony is based upon sufficient facts or data, (c) the testimony is the product of reliable principles and

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[9] Patent Owner also seeks to *exclude* Mr. Occhiogrosso's testimony under 37 C.F.R. § 42.65. PO Mot. to Exc. Occhiogrosso 1. Rule 42.65, however, addresses (a) the weight given to expert testimony that does not disclose underlying facts or data on which the opinion is based, (b) the showing required if a party seeks to rely on a technical test or data from such a test, and (c) the exclusion of expert testimony on United States patent law or patent examination practice. As such, Rule 42.65 does not apply to a determination whether to exclude Mr. Occhiogrosso's testimony.

[10] With some enumerated exceptions, the Federal Rules of Evidence apply to an *inter partes* review. 37 C.F.R. § 42.62.

methods, and (d) the witness has applied the principles and methods reliably to the facts of the case.

Testimony on the issue of unpatentability proffered by a witness who is not "qualified in the pertinent art" generally is not admissible under FRE 702. *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1363-64 (Fed. Cir. 2008). In determining who is qualified in the pertinent art under FRE 702, we need not find a complete overlap between the witness's technical qualifications and the problem confronting the inventor or the field of endeavor. *See SEB S.A. v. Montgomery Ward & Co., Inc.*, 594 F.3d 1360, 1372-73 (Fed. Cir. 2010) (upholding admission of the testimony of an expert who admittedly lacked expertise in the design of the patented invention, but had experience with materials selected for use in the invention); *Mytee Prods., Inc. v. Harris Research, Inc.*, 439 Fed. App'x 882, 886–87 (Fed. Cir. 2011) (non-precedential) (upholding admission of the testimony of an expert who "had experience relevant to the field of the invention," despite admission that he was not a person of ordinary skill in the art).

Patent Owner contends that, to qualify as an expert under FRE 702, Mr. Occhiogrosso must be a person of ordinary skill in the art, and that Mr. Occhiogrosso is not a person of ordinary skill in the art because "he is an information technology ("IT") generalist" and does not have "*any* specific experience in the context of [telecommunications relay systems] for the deal and the HOH [hear of hearing]." PO Mot. to Exc. Occhiogrosso 5; *see also id.* at 1-4 (discussing the definition of a person of ordinary skill in

the art); 5-7 (discussing Mr. Occhiogrosso's experience with respect to these factors). Petitioner responds that Patent Owner's definition of the level of ordinary skill in the art conflates a requirement for skill in the relevant technical art ("telecommunications systems [having] voice-to-text transcription") with skill in one particular commercial sector that applies that technical art ("telecommunications services *specifically* designed for the deaf or hard of hearing"). Pet. Opp. to Mots. Exc. 1, 3-4.

Patent Owner's arguments are unpersuasive at the outset because, to testify as an expert under FRE 702, a person need not be a person of ordinary skill in the art, but rather "qualified in the pertinent art." *Sundance*, 550 F.3d at 1363–64; *SEB*, 594 F.3d at 1372-73; *Mytee*, 439 Fed. App'x at 886-87. Patent Owner's arguments are also unpersuasive because they attempt to constrict the "pertinent art," i.e., the pertinent technology, to a particular subset of individuals who use the pertinent technology, rather than the pertinent technology itself. *See* Pet. Opp. to Mots. to Exc. 4-5 (arguing that the problems in the pertinent art are not "uniquely related" to the deaf and hard-of-hearing).

Moreover, Patent Owner indicates elsewhere that the relevant field of art is telecommunication technologies. *See* PO Resp. 19 n.2 (Patent Owner indicating its declarant "Mr. Ludwick indisputably is [a person of ordinary skill in the art] in telecommunications technologies, which is the relevant field of art" to opine on speech recognition software for use in telecommunication relay service settings). Petitioner similarly indicates the relevant field is telecommunication technologies. Pet. Opp. to Mots. to

Exc. 6 ("Mr. Occhiogrosso's qualifications should be analyzed with respect to the pertinent art of telecommunication technologies in which an intermediary facilitates voice-to-text transcription.").

We agree that the pertinent art is telecommunication technologies. The '482 patent states that the "present invention relates to the general field of telephone communications." Ex. 1001, 1:14-15. The '482 patent focuses on a particular application of that technology: people who need assistance in using telecommunications devices. *Id.* at 1:15-2:8 (describing various prior art assistive technologies). The '482 patent also summarizes the invention as the use of a speech recognition computer program trained to the voice of the call assistant to translate promptly the words spoken by an intermediary call assistant into a "high speed digital communication message [that] is then transmitted electronically promptly by telephone to a visual display accessible to the" hearing-assisted user. *Id.* at 2:41-52.

The qualifications of Mr. Occhiogrosso, as summarized in his curriculum vitae (Ex. 1015), qualify him to give expert testimony on the subject of telecommunication technologies. He possesses a Bachelor of Science in Electrical Engineering and a Master of Science in Electrical Engineering. Ex. 1015, 2. Mr. Occhiogrosso testifies that he has more than thirty years of experience in the field of telecommunications and information technology, and he has planned, designed, implemented, and managed large scale projects involving wired and wireless communication systems, including transmission of voice and data. Ex. 1014 ¶ 7; *see also* Ex. 1015,

2-6 (detailing Mr. Occhiogrosso's enterprise consulting engagements, research and development, and wireless experience).

Moreover, to the extent Mr. Occhiogrosso is more familiar with general telecommunications technology and less familiar with voice-to-text or its application to the deaf or hearing-impaired, or to the extent that Mr. Occhiogrosso's testimony is inconsistent or unsupported, we weigh Mr. Occhiogrosso's testimony accordingly, taking into account the extent of his expertise in these areas. *See, e.g.*, *Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010) (holding the Board has discretion to give more weight to one item of evidence over another "unless no reasonable trier of fact could have done so"); *In re Am. 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.").

Patent Owner also contends that Mr. Occhiogrosso's testimony fails to identify the level of skill in the art in his Declaration (Ex. 1014), fails to give any consideration to what one of ordinary skill in the art would have known or not known, is unsupported and unreliable, and does not consider secondary considerations. PO Mot. to Exc. Occhiogrosso 8-9; PO Resp. 7-8; PO Reply to Opp. to Mots. to Exc. 3. Petitioner counters that Mr. Occhiogrosso "consistently applied his definition of a [person of ordinary skill in the art] throughout his testimony" and, in a supplemental declaration, Mr. Occhiogrosso "made explicit the level of ordinary skill he applied" in Exhibit 1014. Pet. Opp. to Mots. to Exc. 11-12.

Patent Owner's argument goes more to the weight we should accord Mr. Occhiogrosso's testimony, rather than its admissibility. It is within our discretion to assign the appropriate weight to the testimony offered by Mr. Occhiogrosso. *See, e.g.*, *Yorkey*, 601 F.3d at 1284. Moreover, Mr. Occhiogrosso provided a supplemental declaration identifying the level of skill in the art and confirming his opinion presented in the earlier declaration (Ex. 1014) in view of the level of skill in the art. *See* Ex. 1053 ¶¶ 12-17, 19. Mr. Occhiogrosso's testimony also confirmed his legal understanding of anticipation and obviousness, including secondary considerations. *See id.* ¶¶ 20-26.

Under the totality of these circumstances, we decline to exclude the testimony of Mr. Occhiogrosso. Accordingly, Patent Owner's Motion to Exclude to Mr. Occhiogrosso's testimony (Paper 43) is *denied*.

### *D. Anticipation by Ryan*

Petitioner asserts that independent claim 1 and its dependent claim 5 are unpatentable under 35 U.S.C. § 102(e) as anticipated by Ryan. Pet. 10, 13-17. Patent Owner challenges Petitioner's assertion. PO Resp. 16-38.

#### *1. Summary of Ryan*

Ryan discloses a telecommunications relay system with a relay interface for communicating between a standard telephone set and a TDD for a hearing impaired person. Ex. 1004, Abstract. Figure 1 of Ryan is a diagram of the telecommunications relay system and is set forth below:

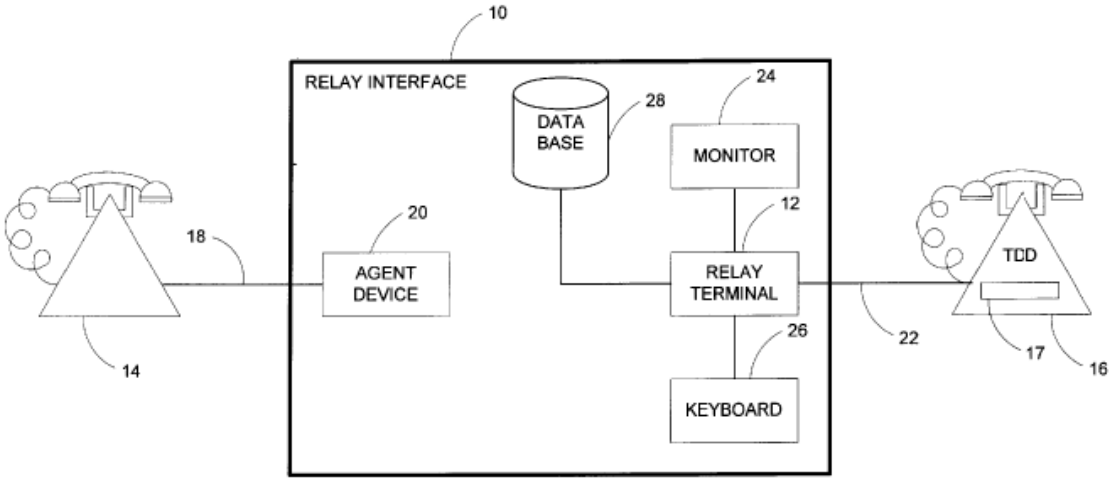


FIG. 1

As shown in Figure 1, Ryan's telecommunications relay interface 10 includes operator/relay terminal 12 and couples standard telephone 14 with TDD 16. Ex. 1004, 3:34-35, 43-51. An operator or relay agent typically is responsible for manipulating relay terminal 12 to relay messages between telephone 14 and TDD 16. Ryan indicates, however, that speech recognition software could be used to automate the relay function so that an operator or relay agent would not be required. *Id.* at 4:19-24. Ryan specifically describes using speech recognition software at agent device 20 to interpret a voice message from a caller at telephone 14 and convert the message from a voice format to a data format. *Id.* at 4:24-27. Ryan further indicates:

> If the software is specifically designed to recognize the voice of particular relay agents, the accuracy of the relay service may be improved by having one of these agents listen to the caller and repeat the voice message into a terminal adapted to convert the agent's voice message into a data message.

*Id.* at 4:33-38.

*2. Ryan Is Prior Art*

Ryan issued on September 15, 1998, with a filing date of July 3, 1996, and is entitled to the benefit of the filing date of its parent application, October 18, 1994. Ex. 1004. Thus, Petitioner contends Ryan is prior art under 35 U.S.C. § 102(e). Pet. 10. Patent Owner contends that Ryan is not prior art under § 102(e) because it is not enabled. PO Resp. 16-25.

Under § 102(e), Ryan must be enabled prior to the date of invention of the '482 patent. *See* 35 U.S.C. § 102 (Section 102 indicates that "[a] person shall be entitled to a patent unless— . . . (e) the invention was described in . . . (2) a patent granted on an application for patent . . . filed in the United States before the invention by the applicant for patent."). The '482 patent issued from an application filed on September 8, 1997. Accordingly, the earliest possible date of invention of the claims of the '482 patent is presumed to be September 8, 1997.

As an initial matter, we address Patent Owner's assertion of an earlier date of invention—June 23, 1997—for claim 1 of the '482 patent. PO Resp. 23-24. Patent Owner relies on a journal entry from August 5, 1997 indicating "the [call assistant] repeats what voice person says" (Ex. 2011 ¶¶ 3-4) and two declarations regarding the purchase of commercial software (i.e., IBM ViaVoice) (Ex. 2012 ¶¶ 5-10; Ex. 2013 ¶¶ 7-9). PO Resp. 23. The declarations indicate additionally that IBM ViaVoice was released in August 1997 and the patent application was filed shortly thereafter on September 8, 1997. Ex. 2012 ¶¶ 5-10; Ex. 2013 ¶¶ 7-9.

Patent Owner's earliest proffered evidence dates back only to August 5, 1997, not June 23, 1997. Moreover, Patent Owner has not attempted to show diligence in reduction to practice.[11] Thus, we do not find that Patent Owner has established a date of invention for the claims prior to September 8, 1997.

We now turn to whether the portion of Ryan relied on by Petitioner as disclosing the recited "digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream" was enabled prior to the relevant time. Initially, there is a presumption that a prior art reference is enabled. *See In re Antor Media*, 689 F.3d 1282, 1287-1288 (Fed. Cir. 2012); *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1355 (Fed. Cir. 2003).

The parties agree that commercial voice recognition software available from Dragon Systems, called "Naturally Speaking" (and sometimes referred to as "Dragon Naturally Speaking"), enabled "a digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream." PO Resp. 24 (citing Exs. 2011, 2012, and 2013); Reply 4. There is no dispute that

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[11] *See Mahurkar v. C.R. Bard, Inc.*, 79 F.3d 1572, 1577 (Fed. Cir. 1996) (holding that the first to conceive "may date his patentable invention back to the time of its conception, if he connects the conception with its reduction to practice by reasonable diligence on his part, so that they are substantially one continuous act" (internal citation and quotations omitted)).

Dragon Naturally Speaking was available to the public on June 23, 1997. PO Resp. 23 (citing Exs. 2011, 2012, and 2013); Reply 4. Moreover, the '482 patent indicates Dragon Naturally Speaking was available commercially. Ex. 1001, 5:50-57 (stating "a recently available commercial voice recognition package from Dragon Systems, known as 'Naturally Speaking,' is a voice recognition software which will . . . translate to digital text spoken words of a user at the normal speeds of human communication in conversation when operating on conventional modern personal computers").

Weighing the *Wands* factors, we determine that at least the state of the prior art (including commercial availability of Dragon Naturally Speaking), the breadth of the claims ("a digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream"), and the predictability of the telecommunications art support a finding that Ryan is enabled as of June 23, 1997. *See Wands*, 858 F.2d at 737.

Patent Owner argues that Ryan does not anticipate claims 1 and 5 under § 102(e) because Ryan's disclosure of speech recognition software (Ex. 1004, 4:19-38) was not enabled in 1994, the earliest effective filing date claimed by Ryan. PO Resp. 16-25. We do not agree with Patent Owner that, to anticipate under 35 U.S.C. §102(e), a reference must be enabled as of the date of the reference's earliest claimed priority date. *Id*. at 16-25.

First, "[e]nablement of an anticipatory reference may be demonstrated by a later reference." *Bristol-Myers Squibb Co.*, 246 F.3d at 1379. An anticipatory reference under § 102(b) is enabled if it can be shown that the claimed subject matter was in possession of the public before the critical date of the challenged patent. *Id.* Based on well-established law that to anticipate under § 102(b) a reference must be enabled by the critical date, not by the publication date of the reference asserted as prior art, we conclude that to anticipate under § 102(e) a reference must be enabled by the date of invention of the challenged claim. As determined previously, Ryan is enabled by commercial software available to the public on June 23, 1997, which precedes the earliest date of invention for the '482 patent. Thus, Ryan is prior art to the claim 1 and 5 of the '482 patent. *See* 35 U.S.C. § 102(e) (precluding a patent if the invention of the patent was described in "a patent granted on an application for patent . . . filed in the United States before the invention").

Second, we are not persuaded by Patent Owner's arguments citing cases concerning (i) the written description requirement of 35 U.S.C. § 112, *In re Wertheim*, 646 F.2d 527 (CCPA 1981), and (ii) the problem of "secret prior art," *Alexander Milburn Co. v. Davis-Bournonville Co.*, 270 U.S. 390 (1926). Patent law now recognizes "secret prior art" in section 102(e), and the Federal Circuit has observed that "[e]ven the 'secret prior art' of § 102(e) is ultimately public in the form of an issued patent before it attains prior art status." *OddzOn Prods., Inc. v. Just Toys, Inc.*, 122 F.3d 1396, 1402 (Fed. Cir. 1997). Further, it is well-settled that the enablement requirement is a

separate requirement from the written description requirement. *See, e.g.*, *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010); *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991). Moreover, "[t]he enablement requirement is often more indulgent than the written description requirement. The specification need not teach explicitly those in the art to make and use the invention; the requirement is satisfied if, given what they already know, the specification teaches those in the art enough that they can make and use the invention without 'undue experimentation.'" *Amgen*, 314 F.3d at 1334.

Finally, we are not persuaded by Mr. Ludwick's testimony addressing the inability of technology in 1994 to implement speech recognition technology that kept up with conversation. PO Resp. 20 (citing Ex. 2010 ¶¶ 25-28). For the reasons discussed previously, Ryan does not need to be enabled as of 1994 to qualify as prior art to claims 1 and 5 of the '482 patent. Further, we note the language used to describe transcription speeds used in the written description of the '482 patent—transcription speeds "which will translate to digital text spoken words of a user at the normal speeds of human communication in conversation" (Ex. 1001, 5:54-56)—is not included in claims, which merely recite "the computer programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream."

For these reasons, Ryan need not be enabled as of 1994 to qualify as prior art to claims 1 and 5 of the '482 patent. We have determined that Ryan

was enabled as of June 1997 and, therefore, qualifies as prior art to claims 1 and 5.

*3. Analysis of Claims 1 and 5*

To support its contention that Ryan anticipates independent claim 1 and its dependent claim 5, Petitioner relies on analysis as to how each claim limitation is disclosed by Ryan and also relies on declaration testimony by Mr. Occhiogrosso. Pet. 13-19 (citing Ex. 1004). Patent Owner responds, relying on declaration testimony by Mr. Ludwick and others. PO Resp. 24-37 (citing Exs. 2010-2013). Having considered the parties' contentions and supporting evidence, we determine that Petitioner has demonstrated by a preponderance of the evidence that Ryan discloses, either expressly or inherently, each limitation of claims 1 and 5, and so anticipates claims 1 and 5, for the reasons set forth below.

In particular, Ryan's description of using speech recognition software noted above discloses "the call assistant speaking in voice the same words that the call assistant hears spoken by the hearing person into a microphone connected to a digital computer" and "the digital computer using voice recognition computer software trained to the voice of the call assistant to translate the words of the voice spoken by the call assistant," as recited in independent claim 1. Ryan's TDD discloses the recited "telecommunication device displaying in visually readable text the words in the digital text message stream." Ex. 1004, 1:53-59; 2:52-54; 4:65-66.

Further, Petitioner acknowledges that Ryan does not disclose expressly "a microphone connected to a digital computer," as recited in

independent claim 1. Pet. 14-15. Petitioner, however, asserts that Ryan inherently discloses those components. *Id.* (citing Ex. 1004 ¶ 28). We credit Mr. Occhiogrosso's testimony that the recited "microphone connected to a digital computer" necessarily must be present in Ryan's relay system for it to process the voice of the relay operator, and a digital computer necessarily must be present for Ryan's relay system to use speech recognition software. Ex. 1014 ¶ 28 (citing Ex. 1004, 4:14, 33). Thus, we find that Ryan inherently discloses the recited "microphone connected to a digital computer."

A central dispute between the parties is whether Ryan discloses "a digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream," as recited in independent claim 1. *Compare* Pet. 15-16, 18-19 *with* PO Resp. 24-37.

Petitioner contends this limitation is disclosed by Ryan's relay interface system in which a relay agent is responsible for relaying messages between phone 14 and TDD 16. Pet. 15 (citing Ex. 1004, 4:19-38). We agree with Petitioner that Ryan's description of "speech recognition software . . . employed at [relay agent] device 20 [and] . . . specifically designed to recognize the voice of particular relay agents" discloses the recited "digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant." *See* Pet. 15 (citing Ex. 1004, 4:24-34) (emphasis omitted). We also agree that Ryan's indication

that "[i]f the software is specifically designed to recognize the voice of particular relay agents, the accuracy of the relay service may be improved by having one of these agents listen to the caller and repeat the voice message into a terminal adapted to convert the agent's voice message into a data message" discloses "the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream." *See* Pet. 15 (citing Ex. 1004, 4:33-38) (emphasis omitted).

Patent Owner responds with several arguments that Ryan does not disclose the recited digital computer, none of which we find persuasive. *See* PO Resp. 25-37. Undergirding some of Patent Owner's contentions is the state of the art of voice recognition technology in 1994. *See* PO Resp. 27 ("[S]peech recognition was not actually used at all in the [telecommunications relay service] field in 1994"); *id.* at 37-38 (asserting Ryan must be read narrowly in view of the state of the art of telecommunications relay service art in 1994); Ex. 2010 ¶¶ 23-30 (Mr. Ludwick submitting that Ryan does not contain an enabling disclosure of the recited digital computer based on technology available in 1994). The state of the art of the relevant technology in 1994, however, has limited probative value. Rather, the state of the art of the relevant technology in September 1997, the date of invention of the subject matter claimed in the '482 patent, is of greater significance. *See* 35 U.S.C. § 102(e) (finding subject matter unpatentable if the "the invention was described in [a reference] *before the invention*") (emphasis added). As noted previously,

there is no dispute about the state of voice recognition technology as of June 23, 1997, when Dragon Naturally Speaking was released.

Patent Owner contends that Ryan does not disclose the recited digital computer because the claims require voice recognition software to be running or stored on the call assistant's workstation. PO Resp. 25-26. As discussed above, we disagree with Patent Owner's implicit construction of "the computer programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream." For the reasons noted above, we do not construe the limitation to require the voice recognition computer software package to be stored on the computer programmed to use the software package. Thus, we do not agree with Patent Owner's argument because it is not commensurate in scope with the claims.

Moreover, contrary to Patent Owner's contentions, we find Ryan discloses voice recognition software running at the location of the call assistant. Ryan indicates "speech recognition software could be employed at device 20," which is included in Ryan's telecommunications relay interface system 10 used by the relay agent. Ex. 1004, 3:43-45; *see also id.* at Fig. 1 (showing agent device 20 within telecommunications relay interface system 10). Ryan goes on to state "[i]f the software is specifically designed to recognize the voice of particular relay agents, the accuracy of the relay service may be improved by having one of these agents listen to the caller and repeat the voice message into a terminal adapted to convert the agent's voice message into a data message." *Id.* at 4:33-38. We do not agree with

Patent Owner's assertion that, because Ryan indicates "a terminal" (rather than expressly identifying a particular component shown in Figure 1), Ryan's voice recognition software could be located other than on the agent's workstation.

Also, Patent Owner contends that Ryan does not disclose the recited "voice recognition software trained to the voice of the call assistant" because Ryan's software is not trained as required by Patent Owner's interpretation of the required training. Rather, according to Patent Owner, Ryan discloses voice recognition software that is "designed," which means the software is designed in advance of implementation at the source code level and, therefore, the software is not trained. PO Resp. 26-27.

For the reasons noted previously, we do not agree the recited trained voice recognition software precludes training during software design, which Patent Owner acknowledges is disclosed by Ryan. *Id.* at 27-28. Thus, we do not agree with Patent Owner's argument because it is not commensurate in scope with the claims.

Moreover, Patent Owner relies on Mr. Ludwick's testimony asserting Ryan does not teach "voice recognition computer software trained to the voice of the call assistant." PO Resp. 26-28 (citing Ex. 2010 ¶ 22). We do not find Mr. Ludwick's testimony that Ryan's voice recognition software is "designed to recognize the voice of particular relay agents" to be persuasive because Mr. Ludwick grounded his testimony in the state of the art in 1994, when the date of invention is 1997. *See* Ex. 2010 ¶ 21 (referring to the

telecommunications relay service field in 1994), ¶ 22 (noting the needed technology "did not then exist").

Next, Patent Owner, relying on Mr. Ludwick's testimony, contends that Ryan does not disclose the recited "voice recognition software trained to the voice of the call assistant," because Ryan's "voice recognition software is written specifically to recognize the voices of a collection or group of people, rather than a particular, individual call assistant." PO Resp. 28-29 (citing Ex. 2010 ¶ 22).

For the reasons noted previously, we do not agree that the claims are limited to voice recognition software trained to one and only one call assistant. Thus, we do not agree with Patent Owner's argument because it is not commensurate in scope with the claims.

Moreover, we are not persuaded by Patent Owner that a person of ordinary skill in the art would interpret Ryan as only disclosing software written specifically for a group of people (PO Resp. 28-29). Patent Owner's argument is unpersuasive because it relies on the level of ordinary skill in the art as reflected in a prior art patent filed in 1994, when the invention date of the challenged claims is September 1997. *See* PO Resp. 29 (citing Ex. 2008, U.S. Patent No. 5,553,119 ("McAllister") filed on July 7, 1994).

Patent Owner also contends that, at most, Ryan is ambiguous as to the disclosure of a call agent translating the words spoken in voice by the call assistant into a digital text stream, and so does not anticipate claims 1 and 5. PO Resp. 29-37. Patent Owner contends, based on the goals of Ryan to correct errors before displaying words and the context of the passage, that

Ryan discloses a relay agent using "revoicing" as an error correction mechanism for individual, unrecognized letters of a word. *Id.* at 30-35; *see* Ex. 1004, Abstract, 4:19-38.

Ryan's technology is intended to "overcome[] the problem associated with existing telecommunications relay services by providing a system and method for correcting mistakes before the message is displayed at the end user's TDD" (i.e., telecommunications device for the deaf). Ex. 1004, 2:35-38 ("Summary of the Invention"). In the above-quoted passage, Ryan describes ways to do so using speech recognition software. One way is automating the relay function so as to eliminate the need for a human operator. *Id.* at 4:19-24. To do so, Ryan describes using speech recognition software to convert the voice message from a caller to text "while providing an error correction feature for words not recognized by the software." *Id.* at 4:24-28. Ryan further describes the error correction feature as having two forms—phonetic spelling of the unrecognized word by the speech recognition software or prompting the caller to spell the unrecognized word. *Id.* at 4:29-33. Ryan describes, in the passage, another way to improve the accuracy of a relay system before the text is displayed at the TDD—if the speech recognition software is designed specifically to recognize the voice of particular relay agents, a relay agent "listen[s] to the caller and repeat[s] the voice message into a terminal adapted to convert the agent's voice message into a data message." *Id.* at 4:33-38.

In contrast to Ryan's description of the error correction by the *caller* spelling letters of an unrecognized word, here Ryan unambiguously

describes a relay agent repeating the voice message of the caller and having speech recognition software, designed specifically to recognize the voice of the relay agent, convert the agent's voice message into a data message. Thus, we are not persuaded that Ryan is ambiguous as to its disclosure of translating the words spoken by the call assistant, and we are not persuaded that Ryan discloses only letters (rather than words) being translated.

For these reasons, we find Ryan discloses the recited "computer programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream," recited in independent claim 1.

Claim 5, which depends from independent claim 1, additionally recites "there are separate telephone lines of the telephone system used for communicate between the call assistant and the hearing person and the call assistant and the deaf person." As noted by Petitioner (Pet. 17), Ryan's Figure 1 shows two telecommunications links, 18 and 22. Ex. 1004, Fig. 1, 3:48-52. Ryan's telecommunications link 18 connects phone 14 with relay interface 10, and Ryan's telecommunications link 22 connects telecommunications device for the deaf ("TDD") 16 with the relay interface 10. *Id.*at 3:48-52. Ryan's relay interface is used by an operator or relay agent. *Id.* at 4:19-21. We find that Ryan's telecommunications links 18 and 22 disclose the recited telephone lines recited in claim 5.

We, therefore, determine that Petitioner has demonstrated by a preponderance of the evidence that Ryan anticipates claims 1 and 5 under 35 U.S.C. § 102(e).

*E. Obviousness over Wycherley and Yamamoto*

Petitioner asserts that claims 1 and 5 of the '482 patent are unpatentable under 35 U.S.C. § 103(a) for obviousness over Wycherley and Yamamoto. Pet. 22-25. Petitioner asserts both Wycherley and Yamamoto qualify as prior art to the '482 patent under 35 U.S.C. § 102(b). Pet. 8, 11. Patent Owner challenges Petitioner's contentions regarding Wycherley and Yamamoto. PO Resp. 38-59.

*1. Yamamoto Is a Printed Publication under 35 U.S.C. § 102(b)*

Petitioner asserts that Yamamoto was published in March 1996 and, therefore, qualifies under 35 U.S.C. § 102(b) as prior art to the '482 patent. Pet. 11. Patent Owner contends that Yamamoto is not prior art because Petitioner has not provided sufficient evidence to show that Yamamoto was a publicly accessible printed publication more than one year prior to September 8, 1997, the earliest effective filing date claimed by the '482 patent. Mot. to Exc. Yamamoto; Paper 65.

*a. Evidence of Public Accessibility*

We begin with some procedural background to provide context for the evidence relied on by Petitioner. In April 2014, approximately one month after our Institution Decision, Petitioner served on Patent Owner supplemental evidence in response to Patent Owner's objections regarding the publication date of Yamamoto and, hence, its prior art status. *See* Paper 20, 4; *see also* Paper 61, 3-4 (detailing procedural history). On May 30, 2014, Patent Owner filed its Patent Owner Response, which did not

challenge the sufficiency of Petitioner's evidence demonstrating the public accessibility of Yamamoto, or otherwise contend that Yamamoto is not prior art to the '482 patent under 35 U.S.C. § 102(b). Paper 28; *see* Paper 61, 4. Rather, Patent Owner waited an additional three months, until August 26, 2014, in its Motion to Exclude Evidence, to challenge the sufficiency of Petitioner's evidence regarding the public accessibility of Yamamoto. Paper 44; *see* Paper 61, 4.

Petitioner then moved to submit supplemental information under 37 C.F.R. § 123(b), including a transcript of a videotaped interview with Mr. Seiichi Yamamoto, the first named author of the Yamamoto reference. Paper 50; Ex. 2018 (Videoconference Deposition of Seiichi Yamamoto, Aug. 20, 2014) ("Yamamoto transcript"). We granted the motion, and permitted the parties to file supplemental briefing regarding the public accessibility of Yamamoto, including the admissibility of the Yamamoto transcript. *See* Paper 61, 10-11; Paper 63 (Petitioner's Additional Briefing); Paper 65 (Patent Owner's Response to Additional Briefing); Paper 66 (Petitioner's Reply to Patent Owner's Response to Additional Briefing).

We now turn to the evidence regarding the public accessibility of Yamamoto. The first page of Yamamoto indicates it was a paper presented at the Proceedings of the Acoustical Society of Japan Spring 1996 Research Presentation Conference in March 1996. Ex. 1006. In support of its contention that Yamamoto was publicly accessible in March 1996, Petitioner relies primarily on the transcript of the interview with Mr. Yamamoto, in which the parties questioned Mr. Yamamoto regarding the presentation and

distribution of the paper at the conference. *See* Ex. 2018. This interview was conducted in connection with the related district court proceeding, *Ultratec, Inc. v. Sorenson Communications, Inc.*, No. 13-CV-00346 (W.D. Wis.). *See* Ex. 2017, 1.

Pursuant to stipulation of the parties, both parties had the opportunity to ask Mr. Yamamoto questions at the interview, an interpreter was present to translate Mr. Yamamoto's testimony, and a court reporter made a stenographic record of the English portion of the interview. *See* Ex. 1062 (Stipulation Regarding Seiichi Yamamoto) ¶¶ 1, 3. The parties also stipulated that the stenographic record of the interview would be treated as sworn deposition testimony in the district court proceeding and, "[w]ith respect to other proceedings, the stenographic record will be treated as a sworn deposition taken in Western District of Wisconsin Case Nos. 13-cv-346 and 14-cv-66 at which both parties appeared and had the opportunity to question the witness." *Id.* ¶ 5.

Patent Owner contends the Yamamoto transcript should be excluded as evidence because the parties did not agree it could be used in this proceeding. Paper 65, 5-6. To the contrary, the parties' stipulation provides that "[t]he use and admissibility of the stenographic record in any other proceedings will be governed by the rules in effect with respect to such other proceeding." Ex. 1062 ¶ 5. Thus, the parties agreed that the Yamamoto transcript may be used in this *inter partes* review to the extent permitted by our rules.

Patent Owner argues that Board rules require exclusion of the Yamamoto transcript because Mr. Yamamoto was not sworn and did not sign the transcript, and because Petitioner failed to provide advance notice to the Board of its intent to take a foreign language deposition. Paper 65, 6 (citing 37 C.F.R. § 42.53(a), (e), (f)). The Yamamoto transcript, however, does not run afoul of the rules cited by Patent Owner because Petitioner seeks to admit the transcript as a deposition taken in the district court proceeding, not as deposition testimony taken in this *inter partes* review proceeding. *See* Paper 66, 1. Moreover, the parties stipulated that the Yamamoto transcript would be treated as sworn deposition testimony taken in the district court. Ex. 1062 ¶ 5.

Patent Owner further contends that the Yamamoto transcript constitutes inadmissible hearsay under the Federal Rules of Evidence, which apply to this proceeding. Paper 65, 7 (citing 37 C.F.R. § 42.62(a); Fed. R. Evid. 801, 802). Petitioner responds that the Yamamoto transcript is admissible as an exception to the rule against hearsay. Paper 66, 1-3. We agree with Petitioner.

First, Rule 804(b)(1) allows the use of former testimony of an unavailable witness if the testimony "(A) was given as a witness at a trial, hearing, or lawful deposition, whether given during the current proceeding or a different one; and (B) is now offered against a party who had . . . an opportunity and similar motive to develop it by direct, cross-, or redirect examination." Fed. R. Evid. 804(b)(1). By stipulation of the parties, the interview of Mr. Yamamoto was treated as a lawful deposition in the district

court proceeding. Ex. 1062 ¶ 5. Also, both parties had the opportunity to develop Mr. Yamamoto's testimony and had the same motive as in this proceeding—to determine whether Yamamoto was publicly accessible. *See* Ex. 1062 ¶ 1; Ex. 2018. As we determined previously, Petitioner reasonably concluded, based on Patent Owner's Response (Paper 28) filed on May 30, 2014, that Patent Owner no longer was challenging the prior art status of the Yamamoto reference, and only became aware of Patent Owner's continued challenge when Patent Owner improperly challenged the sufficiency of the Yamamoto reference in its Motion to Exclude filed on August 26, 2014, well after the time for taking testimony in this proceeding. Paper 63, 7. At that point, Petitioner had no reasonable means for obtaining Mr. Yamamoto's testimony for this proceeding. *See* Paper 50, 3 (Petitioner's Motion for Leave to File Supplemental Evidence Regarding Yamamoto). We determine, therefore, that Mr. Yamamoto was unavailable as a witness, *see* Fed. R. Evid. 804(a), and the Yamamoto transcript is admissible under Rule 804(b)(1).[12]

In addition, the Yamamoto transcript is admissible under Rule 807. First, Mr. Yamamoto's videotaped interview, which was stipulated to be sworn deposition testimony in the district court proceeding, and in which Mr. Yamamoto was subject to cross-examination, "has equivalent

[12] We note that the parties stipulated, for purposes of the district court proceeding, that Mr. Yamamoto's testimony would be deemed former testimony under Rule 804(b) and Mr. Yamamoto was deemed unavailable under Rule 804(a).

circumstantial guarantees of trustworthiness." Fed. R. Evid. 807(a)(1). Also, Petitioner offers the Yamamoto transcript as evidence of a material fact—the public availability of a prior art reference—and it is more probative on that point than any other evidence Petitioner can obtain through reasonable efforts because Mr. Yamamoto co-authored the Yamamoto reference and presented it at a conference of the Acoustical Society of Japan. *See* Fed. R. Evid. 807(a)(2), (3). Finally, admitting the Yamamoto transcript is in the interests of justice, as it provides as complete a record as possible regarding the public accessibility of the Yamamoto reference. *See* Fed. R. Evid. 807(a)(4); *see also* Paper 63, 8 (determining that submission of the Yamamoto transcript is in the interests of justice).

Finally, we are not persuaded by Patent Owner's argument that the Yamamoto transcript should be excluded under Federal Rules of Evidence 602, 603, and 604. Mr. Yamamoto's testimony indicates that he was present at the conference at which his paper was presented and had personal knowledge of the distribution of the paper, as required by Rule 602. *See* Ex. 2018. As for Rules 603 and 604, requiring an oath or affirmation by a witness and interpreter, respectively, they do not require exclusion of the Yamamoto transcript because the parties stipulated that it would be treated as sworn deposition testimony. *See* Ex. 1062 ¶ 5.

*b. Yamamoto Was Publicly Accessible in March 1996*

Under 35 U.S.C. § 102(b), a person is not entitled to a patent if "the invention was . . . described in a printed publication . . . more than one year prior to the date of the application for patent." "The statutory phrase

'printed publication' has been interpreted to mean that before the critical date the reference must have been sufficiently accessible to the public interested in the art; dissemination and public accessibility are the keys to the legal determination whether a prior art reference was 'published.'" *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1568 (Fed. Cir. 1988)). The determination of whether a reference qualifies as a printed publication "involves a case-by-case inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public." *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004).

In the present case, based on the circumstances surrounding the presentation and dissemination of the Yamamoto reference, we conclude that Yamamoto was publicly accessible in March 1996, more than one year before September 8, 1997, the earliest effective filing date of the claims of the '482 patent. As indicated on the first page of the reference, the Yamamoto reference was presented at the March 1996 Research Presentation Conference of the Acoustical Society of Japan. Ex. 1006, 1. Mr. Yamamoto's testimony, which we find credible, confirms that he gave an oral presentation of the paper at Special Session A of the conference on March 26, 1996. Ex. 2018, 6:8-23, 13:23-14:3. According to Mr. Yamamoto's estimate, 100 to 150 people attended his presentation of the paper. *Id.* at 13:23–14:3.

The Acoustical Society created a book containing all the papers presented at the conference, including the Yamamoto paper. *Id.* at 8:12-23,

12:24-13:10, 15:18-19. Conference attendees were able to purchase a copy of the book at the time of registration. *Id.* at 13:8-10, 14:17-21. Beginning on the first day of the conference, copies of the book were "piled up on the registration desk for purchase, for anyone who wished to purchase." *Id.* at 16:19-22. According to Mr. Yamamoto, many of his friends who attended the conference purchased a copy of the book. *Id.* at 9:18-10:2, 15:11-17. He also made the paper available to anyone who asked for a copy, and he recalls providing copies to subordinates of Mr. Fujioka, his co-author, though he does not recall the precise timing. *Id.* at 14:8-13, 16:6-14.

The facts of this case are similar to those in *MIT v. AB Fortia*, 774 F.2d 1104 (Fed. Cir. 1985). In that case, our reviewing court concluded that a paper that had been presented orally at a conference attended by 50 to 500 interested persons of ordinary skill in the art, and had been disseminated to at least six persons, was a printed publication for prior art purposes. *Id.* at 1109. Similarly, Mr. Yamamoto orally presented his paper to 100 to 150 persons of ordinary skill in the art, and many conference attendees received a copy of the book containing the paper. Ex. 2018, 9:18-10:2, 13:23-14:3, 15:11-17.

Patent Owner argues that without a detailed analysis of factors such as the length of time the paper was displayed at a conference, the expertise of its target audience, and the expectations regarding and ease with which the material would be copied, Yamamoto cannot be considered prior art. Paper 61, 7-8 (citing *In re Klopfenstein*, 380 F.3d at 1350). Those factors, however, are relevant when determining the public accessibility of a

reference that was displayed at a conference without distribution to the public. *In re Klopfenstein*, 380 F.3d at 1350. In contrast, the Yamamoto reference was included in a book of papers presented at the Acoustical Society conference that was available for purchase by all conference attendees, and actually was purchased by many attendees. Ex. 2018, 9:18-10:2, 12:24-13:10, 15:11-19.

Patent Owner also contends that the distribution of the Yamamoto reference does not show it was accessible publicly because there is no evidence that it occurred among people in the interested public. Paper 65, 8-9. Although Mr. Yamamoto could not recall if the Acoustical Society of Japan's March 1996 conference was open to non-Society members, Ex. 2018, 7:23-8:11, attendance by at least 100 to 150 Society members is sufficient to show the Yamamoto reference was available to persons interested in the subject matter of the paper, voice recognition applications in communication systems. This case is distinguishable from those cited by Patent Owner, which involve papers posted online for a small, closed group of specialists. *See* Paper 61, 8-9 (citing *SRI Int'l Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1197 (Fed. Cir. 2008); *Samsung Electronics Co. v. Rembrandt Wireless Techs., LP*, 2014 WL 4537478, at *5, IPR2014-00515 (PTAB Sept. 9, 2014)).

For these reasons, based on the facts and circumstances regarding presentation and dissemination of the Yamamoto reference, we determine that Yamamoto was publicly accessible in March 1996. Yamamoto,

therefore, qualifies as a printed publication that is available as prior art to the claims of the '482 patent.[13]

*2. Summary of Wycherley*

Wycherley describes a system for a relay service for establishing a telephone call between a hearing person and a hearing-impaired person. Ex. 1002, 1:6-10. To reduce the time a service attendant is involved in such a telephone call, Wycherley's relay system uses text-to-speech processing and, on a limited basis, automatic speech recognition. *Id.* at Abstract. Wycherley's relay system includes Automatic Speech Recognition (ASR) units, which may be software that is available commercially and trained using a voice template, enabling the voice processor to recognize each word uttered by the speaker in a call. *Id.* at 3:59-60; 4:26-29, 35-56. In the event of excessive translation errors by the automated translation of the hearing person's words, Wycherley's relay system transfers the telephone call to a call attendant, who "may request that the speaker repeat the substance of his or her response" and type the words spoken by the hearing person for transmission to the hearing impaired person's TDD terminal. *Id.* at 5:42-47; *see id.* at 5:1-53.

[13] Because we conclude that Yamamoto was publicly accessible in March 1996, we need not address Petitioner's argument and evidence regarding public accessibility in May 1996, when Petitioner asserts that the book containing Mr. Yamamoto's paper was received by the Japan Science and Technology Agency. *See* Paper 65, 6.

*3. Summary of Yamamoto*

Yamamoto describes tests of voice recognition systems. Ex. 1006, 34-36. Along with other examples, Yamamoto describes a test with an operator assistance system for international calling, noting a preliminary step in an operator assistance system for international calling is "voice recognition of an operator repeating the question from the [international calling] user" to increase efficiency. *Id.* at 35, § 3.2.

*4. Analysis of Claims 1 and 5*

To support its contentions that claims 1 and 5 would have been obvious over Wycherley and Yamamoto, Petitioner relies on analysis provided with respect to the references and the declaration testimony of Mr. Occhiogrosso. Patent Owner responds, relying on declaration testimony by Mr. Ludwick and others. PO Resp. 38-45 (citing Exs. 2002, 2004, 2005, and 2010). Having considered the parties' contentions and supporting evidence, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1 and 5 are unpatentable for obviousness over Wycherley and Yamamoto for the reasons set forth below.

Petitioner relies on Wycherley as teaching or suggesting the microphone recited in independent claim 1. *See* Pet. 24. Petitioner relies on a combination of Wycherley and Yamamoto for teaching or suggesting "a digital computer connected to the microphone, the computer programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream," as recited in independent claim 1. As

acknowledged by Petitioner, Wycherley's relay service uses "caller-specific templates to implement speaker-dependent voice recognition directly on the voice of the unimpaired caller." Pet. 22 (citing Ex. 1002, 3:43-4:56).

Petitioner further relies on Wycherley for disclosing a digital computer connected to the microphone and programmed to use a voice recognition computer software package trained to the voice of *the caller* (rather than trained to the voice of the call assistant, as recited in independent claim 1) to translate the words spoken in voice by *the caller* (rather than the call assistant) into a digital text stream. In combination with Wycherley's teaching of a computer programmed for the caller, Petitioner relies on Yamamoto's description of an international call assistance system as teaching the recited call assistant. *See* Pet. 22-24. Specifically, Petitioner relies on Yamamoto's description of an international call assistance system that uses "voice recognition of an operator restating the question from the [international calling] user" as teaching or suggesting "the computer programmed to use a voice recognition computer software package" to translate the voice of the call assistant. *Id*. Thus, Petitioner contends the combination of Wycherley and Yamamoto teaches or suggests "a digital computer connected to the microphone, the computer programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream," as recited in independent claim 1.

Petitioner, relying on Mr. Occhiogrosso for support, indicates both Wycherley and Yamamoto "involve the use of voice recognition to increase

the efficiency of operator assisted telephone services" and contends "it would have been obvious to incorporate *Yamamoto*'s intermediate re-voicing solution into *Wycherley* during situations where, like *Yamamoto*, full automation was not practical." Pet. 23 (citing Ex. 1014 ¶ 42).

We are persuaded that Wycherley teaches or suggests "a microphone connected to a digital computer," as recited in independent claim 1. *See* Pet. 24; *id.* at 22-25. Wycherley describes an attendant console at which an attendant listens, and Wycherley depicts headsets connected to attendant terminals 220 (Ex. 1002, 1:31-37; Fig. 1), which teaches or suggests that the attendant hears words. Wycherley describes that the attendant transmits an oral version of a displayed text message transmitted by a hearing-impaired person (*id.* at 1:27-37), which teaches or suggests the attendant speaks in voice the displayed text. Wycherley's Automatic Speech Recognition (ASR) unit includes modem 305 for transmission of digitized words to the TDD user (*id.* at 5:13-14; Fig. 1 (depicting modem 305 in an ASR unit)), which teaches or suggests translating words into a digital text message stream. Wycherley further describes, after transmitting to the hearing person an oral version of a displayed text message transmitted by a hearing-impaired person, the attendant at the console "listens to" the hearing person's oral response. *Id.* at 1:31-37. Thus, we are persuaded that Wycherley teaches or suggests receiving voice communications from the telephone system and transmitting those voice communications to the ear of the call assistant.

We also are persuaded that Petitioner's proposed combination of Wycherley's relay service that uses text-to-speech processing and automatic speech recognition with Yamamoto's voice recognition system used to provide operator assistance would have taught or suggested to a person of ordinary skill in the art "a microphone connected to a digital computer" and "the digital computer using voice recognition computer software trained to the voice of the call assistant to translate the words of the voice spoken by the call assistant into a digital text message stream containing the words spoken by the call assistant," as recited in independent claim 1. Thus, we conclude that the teachings of Wycherley and Yamamoto in combination would have suggested the subject matter of claim 1 as a whole to one of ordinary skill in the art.

Claim 5, which depends from independent claim 1, further recites "there are separate telephone lines of the telephone system used for communicat[ing] between the call assistant and the hearing person and the call assistant and the deaf person." For this limitation, Petitioner relies on Wycherley's teaching of a TDD user transmitting a text message "via a telephone connection" to an attendant's console and the attendant at the console transmitting "via a separate telephone connection to the unimpaired person an oral version of the displayed text message." Ex. 1002, 1:27-33; *see* Pet. 22.

We also determine that Petitioner has articulated sufficient reasoning with some rational underpinning to support the legal conclusion that the subject matter of the claims would have been obvious to one of ordinary

skill in the art in view of the teachings of Wycherley and Yamamoto as combined in the manner proposed by Petitioner. *See KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). As noted by Petitioner (Pet. 232), both references disclose using voice recognition systems to increase the efficiency of operator-assisted telephone services. *See* Ex. 1002, 3:43-57; Ex. 1006, 35; *see also* Ex. 1014 ¶ 42. We agree that, at the time of the invention in 1997 and in view of the commercial availability of Dragon Naturally Speaking, it would have been obvious to one skilled in the art to mix and match the teachings of voice recognition systems used in operator-assisted telephone services as a whole to arrive at the claimed invention, because the prior art shows a person of ordinary skill could predictably use known elements according to their established functions and address a common problem—increasing the efficiency of operator-assisted telephone services. *See KSR*, 550 U.S. at 416 (stating "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results"), 420 (indicating "[u]nder the correct analysis, any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed").

We first turn to Patent Owner's contention that Wycherley and Yamamoto do not teach the subject matter of the claims—particularly, the recited "a digital computer . . . programmed to use a voice recognition computer software package trained to the voice of the call assistant to

translate the words spoken in voice by the call assistant into a digital text stream." PO Resp. 38-44.

Patent Owner contends that Yamamoto, rather than facilitating communication between a hearing person and a hearing-impaired person, only provides examples of single word speech recognition and speech recognition software used for database information retrieval tasks. Patent Owner asserts that Yamamoto does not disclose the subject matter of claims 1 and 5 because the claims require "a real-time continuous speech recognition application" and require that the call assistant "repeat[s] everything" the caller says. PO Resp. 40, 42. Patent Owner further indicates Yamamoto is unsuitable to perform the subject matter of the claimed subject matter because Yamamoto describes (i) speech recognition only for database retrieval tasks, (ii) word spotting voice recognition, (iii) using isolated word recognition because it recognizes continuous speech recognition is not yet commercially viable, and (iv) a continuous voice recognition system as being only able to identify a restricted set of responses.

The pertinent question, however, is whether the claimed subject matter as a whole would have been obvious to one of ordinary skill in the art in view of the combined references, not whether the references in the asserted combination individually teach the subject matter of claims 1 and 2. 35 U.S.C. § 103(a); *See 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 of ordinary skill in the art"). Patent Owner's

arguments in large measure amount to attacks on Wycherley and Yamamoto individually, without sufficient consideration of the combination of Wycherley and Yamamoto, an approach we find unpersuasive. Patent Owner's arguments regarding Yamamoto unduly focus on specific, isolated capabilities described in Yamamoto without addressing what those capabilities, in combination with Wycherley's relay with voice recognition software trained to the caller's voice, would have suggested to one of ordinary skill in the art at the time of the invention of the '482 patent.

Notably, Yamamoto describes "a continuous speech recognition system driven by a context-free grammar" and describes an operator assistance system that uses voice recognition of an operator repeating words heard from a caller. Ex. 1006, 34-35. Further, Dragon Naturally Speaking was available commercially in June 1997 before the invention in September 1997. Thus, we credit the testimony of Petitioner's declarant, Mr. Occhiogrosso, that that these features would have been known in September 1997 to one of ordinary skill in the art in view of the teachings of Wycherley and Yamamoto. Pet. 23; Ex. 1014 ¶ 38-43.

In challenging the combination of Wycherley and Yamamoto, Patent Owner further contends, with support of Mr. Ludwick, that a person of ordinary skill would not have considered Wycherley because (i) continuous speech recognition technology did not exist in 1990, when the application that issued as Wycherley was filed, (ii) some implemented aspects of Wycherley's relay were "disliked by customers," and (iii) Wycherley teaches away from designing a relay employing revoicing. PO Resp. 49-51.

Mr. Ludwick's testimony regarding the state of the art in 1990 has little probative value because the time of the invention is September 1997, as discussed previously. *See* 35 U.S.C. § 103(a) ("A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious *at the time the invention was made* to a person having ordinary skill in the art to which said subject matter pertains.") (emphasis added). Further, as discussed previously, continuous speech recognition software was known by the invention date of claims 1 and 5 in 1997.

Nor do we agree with Patent Owner that Wycherley teaches away from the claimed invention. Patent Owner has not identified where Wycherley criticizes, discredits, or otherwise discourages "us[ing] a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream," as recited in independent claim 1. *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (prior art does not teach away from claimed subject matter merely by disclosing a different solution to a similar problem unless the prior art also criticizes, discredits, or otherwise discourages the solution claimed).

Moreover, Mr. Ludwick's statements concerning customer dislike of some features of an implementation of Wycherley's relay do not persuade us that a person of ordinary skill in the art would not look to Wycherley. First, Patent Owner has not identified the aspect of the implementation of Wycherley's relay that was less desirable than the claimed invention.

Second, even if some aspect of the implementation of Wycherley's relay was less desirable than the claimed invention, that, in itself, is insufficient to teach away from the purportedly inferior alternative of Wycherley unless the disclosure criticizes, discredits, or otherwise discourages that alternative. *Cf. In re Fulton*, 391 F.3d at 1200 ("a finding that the prior art as a whole suggests the desirability of a particular combination need not be supported by a finding that the prior art suggests that the combination claimed by the patent applicant is the preferred, or most desirable, combination").

Thus, we are not persuaded that Wycherley teaches away from the subject matter recited in claims 1 and 5.

Further, Patent Owner contends that Yamamoto teaches away, because Yamamoto states that "continuous speech and spontaneous speech recognition [was still] not yet commercially viable." PO Resp. 53 (citing Ex. 1006, 33; Ex. 2010 ¶ 52). We are not persuaded. First, as noted previously, we do not agree that Yamamoto indicates that "recognition of continuous speech and spontaneous speech recognition is not yet commercially viable" in all contexts. Rather, we have determined that Yamamoto teaches particular techniques—word spotting—are useful in contexts in which "recognition of continuous speech and spontaneous speech recognition is not yet commercially viable." Ex. 1003, 33. Although this indicates that such technology is not viable in some situations, this does not indicate the technology is not viable commercially in all contexts. Moreover, Yamamoto indicates "[v]oice-recognition systems [and] voice-recognition software . . . have arrived at a usable state" (Ex. 1006, 33),

which further undercuts Patent Owner's position that voice recognition technology is not viable commercially. Yamamoto also indicates "a variety of voice recognition application systems in communication networks are also becoming commercially available" (*id.*), which further undercuts Patent Owner's position that voice recognition technology is not viable commercially. Thus, we do not agree Yamamoto criticizes, discredits, or otherwise discourages—and so teaches away—from the claimed subject matter.

According to Patent Owner, Yamamoto does not teach how to incorporate automatic speech recognition into real time telephone communication between users. PO Resp. 53. Yamamoto, however, need not teach how to incorporate automated speech recognition into real-time telephone communication between users. A determination of obviousness is based not on teaching bodily incorporation of parts from one disclosed system into another, but, as noted previously, on what the combined teachings would have suggested to one with ordinary skill in the art. *In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012); *Keller*, 642 F.2d at 425.

Nor are we persuaded that automated speech recognition, enabled by Dragon Naturally Speaking in 1997, would have been uniquely challenging or otherwise beyond the level of ordinarily skilled artisans to combine with Wycherley's relay system at the time the invention was made in August or September 1997. *See Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007). Indeed, the '482 patent describes the use of a voice recognition software, such as Dragon Naturally Speaking, but does not

describe the technical details of how to incorporate Dragon Naturally Speaking into the computer terminal containing a copy of the software. *See* Ex. 1021, 5:42-57.

Patent Owner further submits Yamamoto is focused "on operated-assisted database tasks," Yamamoto is unsuitable for a relay application for a conversation between multiple parties, and that modifying Wycherley so that the relay agent repeats the unimpaired user's words would render Wycherley unsatisfactory for its intended purpose. PO Resp. 51-52. Patent Owner, relying on its declarant, reasons that the use of a relay agent to repeat the caller's words "would negate Wycherley's entire premise of providing a more cost efficient relay service by reducing or eliminating the call assistant's involvement." PO Resp. 52 (citing Ex. 2010 ¶ 55). We disagree because we credit Mr. Occhiogrosso's testimony (Ex. 1053 ¶ 60) that augmenting Wycherley's call assistants with voice recognition software would increase their efficiency, and thus help achieve Wycherley's goal of minimizing use of call assistants.

In view of the foregoing, we are persuaded that Petitioner has articulated a sufficient reason to support a conclusion of obviousness in view of Petitioner's combination of Wycherley and Yamamoto. *See* PO Resp. 44-49.

*5. Secondary Considerations*

Factual inquiries for an obviousness determination include secondary considerations based on evaluation and crediting of objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Notwithstanding what the teachings of the prior art would have suggested to one with ordinary skill in the art at the time of the '482 patent's invention, the totality of the evidence submitted, including objective evidence 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). Secondary considerations may include any of the following: long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, and praise. *See Graham*, 383 U.S. at 17; *Leapfrog Enters.*, 485 F.3d at 1162.

To be relevant, evidence of nonobviousness must be commensurate in scope with the claimed invention. *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011) (citing *In re Tiffin*, 448 F.2d 791, 792 (CCPA 1971)); *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998). Thus, to be accorded substantial weight, there must be a nexus between the merits of the claimed invention and the evidence of secondary considerations. *In re GPAC*, 57 F.3d at 1580. "Nexus" is a legally and factually sufficient connection between the objective evidence and the claimed invention, such that the objective evidence should be considered in determining nonobviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1392 (Fed. Cir. 1988). The burden of showing that there is a nexus lies with the Patent Owner. *Id.*; *see Paulsen*, 30 F.3d at 1482.

Patent Owner alleges "substantial praise for the inventions claimed in [Patent Owner's] patents, including the '482 Patent, the long-felt but unresolved need of the deaf and hard of hearing community, the commercial

success of the products and services embodying the invention, and the failure of others to provide a relay service or other solution that provided the benefits of the claimed inventions." PO Resp. 57-59. For support, Patent Owner proffers Declarations by Ms. Brenda Battat (Ex. 2004) and Ms. Constance Phelps (Ex. 2005) describing general innovations of Patent Owner's CapTel Service and its CapTel phone and describing their benefits to the deaf and hard of hearing community. PO Resp. 58-59; *see* Ex. 2004 ¶¶ 18-19, 25-41.

In an attempt to establish the requisite nexus, Patent Owner relies on a declaration of Mr. Ludwick (Ex. 2002) asserting that his expert declaration "explain[s], on a feature by feature basis, the nexus between those secondary considerations and the claimed design" and "illustrates, in chart form, that the CapTel system and various models of CapTel phones embody the claims of the present invention." PO Resp. 58–59.

Patent Owner's Response contains no substantive arguments. *Id.* Instead, Patent Owner merely lists various common forms of secondary considerations evidence, without exposition. This does not provide sufficient analysis for us to determine whether Patent Owner has provided adequate evidence of secondary considerations and a nexus between any such evidence and the merits of the claimed invention. Thus, Patent Owner's broad contentions regarding secondary considerations in its Patent Owner Response do not demonstrate nonobviousness.

Moreover, Patent Owner's declarations fail to establish a nexus between the merits of the claimed invention and the evidence of secondary

considerations. To show a nexus, Patent Owner relies on Mr. Ludwick's declaration, which describes his visit to CapTel, Inc.'s relay center in Madison, Wisconsin. Ex. 2002 ¶ 47. Mr. Ludwick's chart presents his conclusions based on personal observation that the CapTel Service meets each claim limitation of the '482 patent. Ex. 2002 ¶ 48 (pages 28-30). For example, regarding "a digital computer connected to the microphone, the computer programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream," recited in independent claim 1, Mr. Ludwick asserts:

> I personally observed that the CapTel Service meets this claim element. I further confirmed this from my own knowledge of CapTel Service. This feature of the CapTel Service relay is present when the Service is used with each of the CapTel Phones and has always been included as part of the CapTel Service.

Ex. 2002 ¶ 48 (page 28).

Because Mr. Ludwick's conclusions are based on personal observations, without sufficient supporting facts or data, his testimony has little probative value. *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."); *see also* Fed. R. Evid. 702 (providing one may testify in the form of an opinion if the testimony is based on sufficient facts or data). As such, Mr. Ludwick's conclusory assertions do not provide a sufficient connection between objective evidence and the claimed invention, and so do

not establish the requisite nexus between the merits of the claimed invention and the evidence of secondary considerations.

Accordingly, Patent Owner fails to provide sufficient credible evidence to support its allegations of nonobviousness based on secondary considerations. When we balance Petitioner's evidence of obviousness against Patent Owner's asserted objective evidence of nonobviousness, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 1 and 5 would have been obvious over Wycherley and Yamamoto.

### *F. Obviousness over Wycherley and Yamamoto in Combination with Various Other References*

Petitioner asserts claims 2-4 and 6-15 would have been obvious over Wycherley, Yamamoto, and various other references, as described in more detail below. Independent claims 7, 10, and 13 are directed to a relay and recite similar limitations to those recited in claim 1. For instance, each of independent claims 7, 10, and 13 recites "a digital computer connected to the microphone, the computer programmed to use a voice recognition computer software package trained to the voice of the call assistant to translate the words spoken in voice by the call assistant into a digital text stream."

For these additional grounds of obviousness relying on Wycherley and Yamamoto, Petitioner substantially relies on the same analysis and supporting evidence described previously with regard to the ground that independent claim 1 would have been obvious over Wycherley and Yamamoto. Patent Owner argues claims 1-15 together regarding the

combination of Wycherley and Yamamoto alone and in combination with additional references. PO Resp. 38-45. For the reasons we explained previously, we determine that Petitioner has demonstrated by a preponderance of the evidence that the challenged claims would have been obvious over Wycherley and Yamamoto.

*1. Obviousness over Wycherley, Yamamoto, and Jones*

Petitioner asserts that claims 2, 7, and 8 would have been obvious over Wycherley, Yamamoto, and Jones. Pet. 35-38. Claim 2 depends from claim 1 and further recites "the step of using the voice spoken by the call assistant to create a noise canceling signal also transmitted to the earphone of the call assistant so that the call assistant hears less of his or her own spoken voice." Independent claim 7 recites "noise attenuating means responsive to the voice spoken by the call assistant and connected to the speaker to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant."

Regarding claims 2 and 7, Petitioner relies on Jones's noise cancellation system with a headset for teaching or suggesting the recited step in claim 2 and the noise attenuating means in independent claim 7. Pet. 35-37. Jones describes a noise cancellation system that eliminates unwanted sound by destructive interference. *See* Ex. 1008, Abstract; 1:16. The noise cancellation system, which includes a headset and a microphone, detects unwanted sound and provides corresponding signals to cancel the unwanted sound. *See id.* at 1:30-39. Jones explains that "[i]deally, the . . . microphone . . . perceives the same sounds as the eardrum of the listener." *See id.* at

1:41-42; *see also id.* at 2:31-43 (describing "feedforward techniques" to cancel noise using an external microphone placed between the listener and a noise source). Petitioner, relying on statements by Mr. Occhiogrosso, explains that Jones's microphone "could pick up, for example, the call assistant's own voice in order to generate a noise canceling signal that would cause the call assistant to hear less of [the assistant's] own voice." Pet. 36 (citing Ex. 1014 ¶ 49). Further, regarding the "noise attenuating means" recited in claim 7, as discussed previously, we construe "noise attenuating means" to require earphones, or a computer provided with noise canceling sound generation software, to attenuate the noise of the voice of the call assistant from the sounds heard in the ear of the call assistant. Jones discloses a noise cancellation system with a headset and microphone.

Based on the above, we determine that Petitioner has shown by a preponderance of the evidence that Jones teaches or suggests the noise cancellation step in claim 2 and noise cancellation means in claim 7.

Claim 8, which depends from independent claim 7, additionally recites "there are separate telephone lines of the telephone system connected between the call assistant and the hearing person and the call assistant and the deaf person." Regarding claim 8, Petitioner relies on Wycherley's description of two telephone lines discussed previously with respect to claim 5, which recites "there are separate telephone lines of the telephone system used for communicate between the call assistant and the hearing person and the call assistant and the deaf person." Pet. 37 (citing Pet. 35 (citing Ex. 1001, 1:21-39)). For the reasons discussed previously, we

determine that Wycherley teaches or suggests the two telephone lines recited in claim 8.

Regarding reasons to combine the references, Petitioner further explains, relying on Mr. Occhiogrosso, that "it would have been obvious to incorporate the noise canceling technology of *Jones* into the headset of the call assistant in *Wycherley* in order to reduce" the sound of the assistant's own voice in the assistant's headset (which is called "side tone"). *Id.* at 36 (citing Ex. 1014 ¶ 50). According to Mr. Occhiogrosso, this was a well-known technique at the time of the '482 patent. *Id.* (citing Ex. 1014 ¶ 50).

We are persuaded by Mr. Occhiogrosso's testimony that noise cancellation was a well-known technique. Thus, we conclude it would have been obvious to one skilled in the art to employ the teachings of Jones's noise cancellation techniques with Wycherley's and Yamamoto's voice recognition systems used in operator-assisted telephone services, because the prior art shows a person of ordinary skill could use known elements according to their established functions to yield predictable results. *See KSR,* 550 U.S. at 416 (stating "[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results").

Relying on Mr. Ludwick, Patent Owner contends that no rationale exists to combine Wycherley and Yamamoto with Jones. PO Resp. 54 (citing Ex. 2010 ¶ 60). According to Patent Owner, side tone would not be a problem in Wycherley's system, because "the assistant in Wycherley is only typing the conversation," or in Yamamoto's operator assistance, because

there is "no indication that the operator speaks to the user or otherwise suggests that the voice of the operator is being fed back into the operator's headset." *Id.* We are not persuaded by Patent Owner's contentions, which do not address adequately the prior art use of known components according to their established functions to yield predictable results.

Moreover, at least with respect to Yamamoto's voice recognition system, Patent Owner appears to require motivation for the combination to be articulated within the Yamamoto reference itself, which is not required. *See KSR*, 550 U.S. at 419 ("The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents.").

We, therefore, determine that Petitioner has demonstrated by a preponderance of the evidence that claims 2, 7, and 8 would have obvious over Wycherley, Yamamoto, and Jones.

*2. Obviousness over Wycherley, Yamamoto, and Choi*

Petitioner asserts that claims 3, 10, and 11 would have been obvious over Wycherley, Yamamoto, and Choi. Pet. 42-44. Claim 3, which depends from claim 1, recites "a switch to switch the relay between one mode in which the voice of the call assistant is transmitted to the computer and another mode in which the voice of the call assistant is not transmitted to the computer but is instead transmitted over the telephone system to the hearing person." Independent claim 10, from which claim 11 depends, recites similar limitations to those recited in independent claims 1 and 7.

Independent claim 10 also recites, similarly to claim 3, "a switch to alternatively connect the voice of the call assistant to the computer or to the telephone system for transmission to the hearing person." As the Specification of the '482 patent explains, the switch "allows for the voice of the call assistant only to be directed to the hearing person at the appropriate times." Ex. 1001, 7:7-9.

Choi describes a switch controlled by an operator who performs repetitive tasks over a telephone "to reroute outbound acoustic information from the telephone microphone temporarily to a speech-recognition subsystem, while the inbound acoustic information is still routed to the telephone ear piece" of the operator. Ex. 1009, 503. Choi also indicates that "the caller does not know when the person answering the phone is talking to the speech recognition subsystem." *Id*. Petitioner relies on Choi for teaching or suggesting the switches recited in claims 3 and 10, respectively. Pet. 43-44.

Choi describes an operator-controlled switch that temporarily reroutes the operator's voice to a speech recognition subsystem while the operator continues to hear the caller through the operator's telephone earpiece. We find that Choi teaches or suggests the switch recited in claims 3 and 10.

Claim 11, which depends from independent claim 10, additionally recites "there are separate telephone lines of the telephone system connected between the call assistant and the hearing person and the call assistant and the deaf person." For the reasons discussed previously, we determine that

Wycherley teaches or suggests the recited telephone lines. *See* Pet. 44 (relying on Wycherley for the additional limitation recited in claim 11).

Regarding reasons to combine the references, according to Mr. Occhiogrosso, it would have been obvious to combine the switch of Choi with Wycherley's relay service using speech recognition software to "make the operation of the relay feel more conversational to the normally-hearing caller who may not be familiar with relay services." Ex. 1014 ¶ 53; *see also* Pet. 43 (citing Ex. 1014 ¶¶ 52-53).

Patent Owner indicates that Choi is "very similar to Yamamoto" and relies on similar reasons why there would be no motivation or reason to combine Choi with the teachings of Wycherley and Yamamoto. PO Resp. 54-55. For the reasons discussed above, we are not persuaded.

Rather, we conclude it would have been obvious to one skilled in the art to use the switch taught by Choi with Wycherley's and Yamamoto's voice recognition systems used in operator-assisted telephone services, because the prior art shows using known components according to their established functions. *See KSR*, 550 U.S. at 416.

We, therefore, determine that Petitioner has demonstrated by a preponderance of the evidence that claims 3, 10, and 11 would have obvious over Wycherley, Yamamoto, and Choi.

### *3. Asserted Ground of Obviousness over Wycherley, Yamamoto, and Vasile*

Petitioner asserts that claims 4, 13, and 14 would have been obvious over Wycherley, Yamamoto, and Vasile. Pet. 48-50 (referring to Pet. 46).

Claim 4, which depends from claim 1, recites "buffering the voice of the hearing person between the telephone system and the earphone of the call assistant selectively under the control of the call assistant." Independent claim 13, from which claim 14 depends, recites similar limitations to those recited in independent claims 1 and 7 and additionally recites a voice buffer controlled by the call assistant.

Vasile describes a telecommunications relay system employing automated text-to-speech for conversion of a text message entered by a hearing impaired person. Ex. 1003, Abstract. Vasile describes a relay system in which a live attendant is assigned, from a pool of attendants, to a call after completion of the text-to-speech conversion. *Id.* at 1:43-50. Because of a delay in assigning a live attendant, speech of the hearing person is stored in a voice buffer. *Id.* at 1:55-68; 5:47-65. A live attendant can use control signals to retrieve spoken messages from the voice buffer and to speed up or slow down the rate of the play from the voice buffer. *Id.* at 6:4-14. We agree with Petitioner that Vasile teaches or suggests the buffering limitations recited in claims 4 and 13. Pet. 46-47, 49-50.

Claim 14, which depends from independent claim 11, additionally recites "there are separate telephone lines of the telephone system connected between the call assistant and the hearing person and the call assistant and the deaf person." For the reasons discussed previously, we determine that Wycherley teaches or suggests the recited telephone lines. *See* Pet. 49-50 (relying on Wycherley for the additional limitation recited in claim 14).

Petitioner asserts, relying on Mr. Occhiogrosso's testimony, that it would have been obvious to combine Vasile's voice buffers with Wycherley's relay service "to efficiently support multiple relay calls from a shared pool of call attendants." Pet. 49 (citing Ex. 1014 ¶¶ 55-56).

Mr. Ludwick acknowledges that Vasile discloses "a traditional relay operation well known in the art that uses buffering to store the voice data of the hearing user until a call assistant is connected to the call." Ex. 2010 ¶ 79. Mr. Ludwick, however, goes on to assert that "[i]n my opinion there is nothing in the Vasile patent that suggests or teaches any type of revoicing or speech recognition and there is no rationale to combine the Vasile reference with Wycherley and Yamamoto." *Id.*; *see also* PO Resp. 55 (repeating verbatim Mr. Ludwick's opinion).

Weighing Mr. Occhiogrosso's testimony against Mr. Ludwick's testimony, we credit Mr. Occhiogrosso's testimony, which provides a reason for combining the references ("to efficiently support multiple relay calls with a shared pool of call attendants"). Mr. Ludwick's testimony that "there is nothing in the Vasile patent that suggests or teaches any type of revoicing or speech recognition" does not provide sufficient facts to support his opinion that "there is no rationale to combine" the references. Ex. 2010 ¶ 79. Moreover, Mr. Ludwick does not challenge that Vasile's use of buffering to store the voice data of the hearing user until a call assistant is connected to the call could not be combined with Wycherley and Yamamoto according to known methods or would not yield predictable results. *See KSR*, 550 U.S. at 416 (stating "[t]he combination of familiar elements

according to known methods is likely to be obvious when it does no more than yield predictable results"). Thus, we conclude Petitioner has articulated sufficient rationale for combining Wycherley, Yamamoto, and Vasile.

For the reasons set forth above, we determine that Petitioner has demonstrated by a preponderance of the evidence that claims 4, 13, and 14 would have been obvious over Wycherley, Yamamoto, and Vasile.

*4. Obviousness over Wycherley, Yamamoto, and Liebermann*

Petitioner asserts that claim 6 would have been obvious over Wycherley, Yamamoto, and Liebermann. Pet. 53-54 (referring to Pet. 52). Claim 6, which depends from claim 1, requires that (i) a single telephone line be used to communicate between the call assistant and the hearing person and between the call assistant and the deaf person and (ii) the digital text message stream and the voice of the hearing person both be transmitted over that single telephone line.

Petitioner relies on Liebermann for teaching or suggesting the single telephone line recited in claim 6. Pet. 52-53 (citing Ex. 1010, 6:30-35; 7:10-14, 29-44, 53-54). Liebermann describes an electronic communication system that includes (i) a video apparatus for digitizing signing motions of a deaf person, (ii) an electronic translator for translating the digitized signing motions into words and phrases, and (iii) an electronic output for the words and phrases. Ex. 1010, Abstract. Liebermann's electronic communication system uses a central processing facility that processes information representative of sign language motions, made by the hearing-impaired person, to its verbal text equivalent. *Id.* at 5:7-11. The central processing

facility also transforms speech from the normally hearing person to text, which, in turn, is transformed into sign language motions for display to the hearing-impaired person. *Id.* at 5:14-34.

Liebermann further describes a telephone that "is equipped with a microphone and a speaker instead of . . . a second telephone channel" and can be used for a hearing impaired person to communicate with a hearing person in close proximity. *Id.* at 7:29-35 (indicating a single telephone line can be used). "The signing motion of the deaf person [is] processed by the [central processing facility] and is transmitted back to the device as a normal voice transmission which the speaker renders as speech to the normally hearing person." *Id.* at 7:35-39. The speech of the hearing person "is picked up by the microphone and sent to" the central processing facility for processing. *Id.* at 7:39-41; 5:18-20. The central processing facility sends the text as identifiers, which are converted into animated images, or as "animated sign language motions." *Id.* at 5:25-34. "The result is an animated content on the [display] of the communicator which portrays in sign language the spoken content of the normally hearing person." *Id.* at 7:35-43.

Based on the previous description of Liebermann, we determine that an embodiment of Liebermann's communicator, through which a hearing impaired person communicates with a normally hearing person, uses a single telephone line (i) to communicate with a central processing facility to transmit the voice of the hearing person to the central processing facility,

and (ii) to receive information equivalent to the animated content portraying sign language from the central processing facility.

Thus, we conclude this embodiment of Liebermann's communicator teaches or suggests a single telephone line used in communication between the call assistant (at Liebermann's center) and a hearing person, and between the call assistant (at Liebermann's center) and a deaf person. Liebermann also teaches or suggests text identifiers equivalent to animated content portraying sign language (the digital text message stream) are transmitted over the single telephone line. Liebermann further teaches or suggests transmitting the voice of the hearing person to the central processing facility. Accordingly, Liebermann teaches or suggests the additional limitation recited in claim 6—"a single telephone line of the telephone system used to communicat[e] between the call assistant and the hearing person and the call assistant and the deaf person, the digital text message stream and the voice of the hearing person both being transmitted over that single telephone line."

Patent Owner challenges this conclusion, indicating that Liebermann discloses a system involving two telephone lines. PO Resp. 46-47 (citing Ex. 1010, 6:64-7:3, Fig. 2). Patent Owner, however, does not acknowledge or otherwise sufficiently address Liebermann's express teaching of a single telephone line embodiment (Ex. 1010, 7:29-44), on which Petitioner relies.

Petitioner, relying on Mr. Occhiogrosso's testimony, contends it would have been obvious to combine Liebermann's communicator with Wycherley's relay "to improve the speed and efficiency with which the

communicator of *Liebermann* could facilitate a conversation between a deaf person and a hearing person." Pet. 54 (citing Ex. 1014 ¶¶ 58-59).

Patent Owner challenges Petitioner's reason (PO Resp. 55-56), relying on Mr. Ludwick's testimony that the Liebermann reference teaches an "extremely complicated system" and, based on his personal knowledge, "Mr. Liebermann's invention was universally perceived to be non-workable" (Ex. 2010 ¶ 86). Accordingly, Patent Owner asserts that "a [person of ordinary skill in the art] would have dismissed the Liebermann reference out of hand." PO Resp. 55 (citing Ex. 2010 ¶ 86).

We find credible Mr. Occhiogrosso's articulated reasoning that has some rational underpinning. *See KSR*, 550 U.S. at 418 ("there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness"). We are not persuaded by Mr. Ludwick's reasoning, which broadly criticizes Mr. Liebermann's *invention* without providing underlying data or facts to support Mr. Ludwick's conclusion about the Liebermann *reference*. *See* 37 C.F.R. § 42.65 (indicating expert testimony that does not disclose underlying facts or data on which the opinion is based is entitled to little or no weight).

Moreover, Mr. Ludwick alternatively bases his opinion that a person of skill in the art would have no reason to consider Liebermann on the "party" call embodiment of Liebermann that used two telephone lines. PO Resp. 56. The asserted combination of Wycherley, Yamamoto, and Liebermann, however, does not involve the two telephone line "party" call embodiment of Liebermann. Rather, the asserted combination relies on

Liebermann's single telephone line embodiment. Thus, Mr. Ludwick's alternative rationale is not persuasive because it does not address sufficiently the combination asserted by the Petitioner.

We, therefore, determine that Petitioner has demonstrated by a preponderance of the evidence that claim 6 would have been obvious over Wycherley, Yamamoto, and Liebermann.

*5. Obviousness over Wycherley, Yamamoto, Liebermann, and Other References*

Each of dependent claims 9, 12, and 15 further recites a single telephone line limitation substantially similar to the limitation recited in claim 6. Petitioner asserts each of claims 9, 12, and 15 would have been obvious over Wycherley, Yamamoto, Liebermann, and another reference.

Specifically, Petitioner asserts claim 9, which depends from independent claim 7, would have been obvious over Wycherley, Yamamoto, Jones, and Liebermann. Pet. 55-56. Petitioner also asserts claim 12, which depends from independent claim 10, would have been obvious over Wycherley, Yamamoto, Choi, and Liebermann. *Id.* at 56–57. Petitioner further asserts claim 15, which depends from independent claim 13, would have been obvious over Wycherley, Yamamoto, Vasile, and Liebermann. *Id.* at 59.

For dependent claims 9, 12, and 15, Petitioner substantially relies on the same analysis and supporting evidence described previously that (i) claim 6 would have been obvious over Wycherley, Yamamoto, and Liebermann and (ii) each of independent claims 7, 10, and 13 would have

been obvious over Wycherley, Yamamoto, and various other references.[14] *See id.* at 55-56, 57, 59. Petitioner also asserts that it would have been obvious to combine Liebermann with the references purportedly rendering each of the independent claims obvious for the same reasons it would have been obvious to combine the references asserted against each independent claim. *See* Pet. 55-56, 57, 59.

For the reasons we explained previously, we determine that Petitioner has demonstrated by a preponderance of the evidence that (i) claim 9 would have been obvious over Wycherley, Yamamoto, Jones, and Liebermann; (ii) claim 12 would have been obvious over Wycherley, Yamamoto, Choi, and Liebermann; and (iii) claim 15 would have been obvious over Wycherley, Yamamoto, Vasile, and Liebermann.

## III. CONCLUSION

Patent Owner's Motions to Exclude the testimony of Mr. Occhiogrosso and the Yamamoto reference are denied. Petitioner has proven by a preponderance of the evidence that claims 1-15 of the '482 patent are unpatentable on the following grounds:

A. Claims 1 and 5 as anticipated under 35 U.S.C. § 102(e) by Ryan;

[14] Specifically, Petitioner asserts that independent claim 7 would have been obvious over Wycherley, Yamamoto, and Jones; independent claim 10 would have been obvious over Wycherley, Yamamoto, and Choi; and independent claim 13 would have been obvious over Wycherley, Yamamoto, and Vasile.

B. Claims 1 and 5 as unpatentable for obviousness under 35 U.S.C. § 103(a) over the combination of Wycherley and Yamamoto;

C. Claims 2, 7, and 8 as unpatentable for obviousness under 35 U.S.C. § 103(a) over the combination of Wycherley, Yamamoto, and Jones;

D. Claims 3, 10, and 11 as unpatentable for obviousness under 35 U.S.C. § 103(a) over the combination of Wycherley, Yamamoto, and Choi;

E. Claims 4, 13, and 14 as unpatentable for obviousness under 35 U.S.C. § 103(a) over the combination of Wycherley, Yamamoto, and Vasile;

F. Claim 6 as unpatentable for obviousness under 35 U.S.C. § 103(a) over the combination of Wycherley, Yamamoto, and Liebermann;

G. Claim 9 as unpatentable for obviousness under 35 U.S.C. § 103(a) over the combination of Wycherley, Yamamoto, Jones, and Liebermann;

H. Claim 12 as unpatentable for obviousness under 35 U.S.C. § 103(a) over the combination of Wycherley, Yamamoto, Choi, and Liebermann; and

I. Claim 15 as unpatentable for obviousness under 35 U.S.C. § 103(a) over the combination of Wycherley, Yamamoto, Vasile, and Liebermann.

## IV. ORDER

Accordingly, it is hereby:

ORDERED that Petitioner has demonstrated by a preponderance of the evidence that claims 1-15 of U.S. Patent No. 5,909,482 are unpatentable;

FURTHER ORDERED that Patent Owner's Motion to Exclude the testimony of Mr. Occhiogrosso (Paper 43) is denied;

FURTHER ORDERED that Patent Owner's Motion to Exclude the Yamamoto reference (Paper 44) is denied; and

FURTHER ORDERED that, because this is a final written decision, the 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.

IPR2013-00541
Patent 5,909,482

PETITIONER:

Brian W. Oaks
Bryant C. Boren Jr.
Harper S. Batts
Adam F. Smoot
Joseph Gray
BAKER BOTTS L.L.P.
brian.oaks@bakerbotts.com
bryant.c.boren@bakerbotts.com
harper.batts@bakerbotts.com
adam.smoot@bakerbotts.com
joseph.gray@bakerbotts.com

PATENT OWNER:

Michael Jaskolski
Martha Snyder
Nikia L. Gray
Michael J. Curley
QUARLES & BRADY LLP
michael.jaskolski@quarles.com
martha.snyder@quarles.com
nikia.gray@quarles.com
Michael.curley@quarles.com