

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIVE POWER INTELLIGENCE COMPANY NA, LLC,
Petitioner,

v.

GENSCAPE INTANGIBLE HOLDING, INC.,
Patent Owner.

IPR2019-00189
Patent 6,714,000 B2

Before ERICA A. FRANKLIN, JENNIFER MEYER CHAGNON, and
WESLEY B. DERRICK, *Administrative Patent Judges*.

DERRICK, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

We have jurisdiction to hear this *inter partes* review under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed herein, Petitioner has not shown, by a preponderance of the evidence, that claims 1, 9, and 11 of U.S. Patent No. 6,714,000 B2 (“the ’000 patent”) are unpatentable.

A. *Procedural History*

Petitioner Live Power Intelligence Company NA, LLC, filed a Petition requesting an *inter partes* review of claims 1, 9, and 11 of the ’000 patent. Paper 2 (“Pet.”). Petitioner also filed the supporting Declaration of Robert G. Olsen, Ph.D., a technical declarant retained for this proceeding. Ex. 1007. Patent Owner Genscape Intangible Holding, Inc., declined to file a Patent Owner Preliminary Response.

On May 30, 2019, upon consideration of the Petition, applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review of all challenged claims on all grounds asserted. Paper 7 (“Dec.”).

In the Scheduling Order, which sets times for taking action in this proceeding, we cautioned Patent Owner that “any arguments for patentability not raised in the [Patent Owner] response may be deemed waived.” Paper 8, 7. Patent Owner declined to file a Patent Owner Response, and, following a conference call with counsel on January 22, 2020, we determined that there was no need for an oral hearing. Paper 13.

We have before us, therefore, the Petition and no Patent Owner Response. Nonetheless, Petitioner bears the burden to show, by a preponderance of the evidence, that the challenged claims are unpatentable. 35 U.S.C. § 316(e).

For the reasons that follow, we determine that Petitioner has not shown, by a preponderance of the evidence, that claims 1, 9, and 11 of the '000 patent are unpatentable.

B. Real Parties in Interest

Petitioner identifies Scottsdale Insurance Company as an additional real party-in-interest. Pet. 1. Patent Owner identifies itself as the real party-in-interest. Paper 3, 1.

C. Related Proceedings

Petitioner identifies a now-dismissed lawsuit as a related matter: *Genscape Intangible Holding, Inc. v. Live Power Intelligence Co. NA, LLC*, Case No. 1:17-cv-02452-PAB-SKC (D. Colo.). Pet. 1.

D. The '000 Patent

The '000 patent is titled “Method for Monitoring Power and Current Flow” and is directed to a method for monitoring the magnitude and direction of net electrical power and current flow that relies on detecting and measuring the magnetic field emanating from monitored line(s) and detecting an electrical field signal emanating from the monitored line(s). Ex. 1002, codes (54), (57). The '000 patent explains that it discloses “a method for determining in real-time the net electric power and current either generated or consumed by a facility or substation, and the electric power and current transported by an electric transmission line.” *Id.* at 1:63–66. To accomplish this, the '000 patent discloses the use of apparatus including “a magnetic transducer to convert the magnetic field of the current at a remote location, into a magnetically transduced signal” (*id.* at 3:54–56), “an electrical transducer to convert the electric field . . . at [a] remote location into a reference signal” (*id.* at 3:65–66), and a central computing facility in

communication with the remote apparatus (*id.* at 3:8–11). The '000 patent further discloses the use of the computing facility to process data, and to provide information to an end-user of information about the power flows or net power. *Id.* at 7:40–54. The '000 patent sets forth that “[t]he end-user includes anyone for whom information about the power flows in [monitored] lines . . . or the net power use of [a monitored] facility . . . is useful” (*id.* at 7:54–56), listing, as examples, “power marketers, energy traders, energy producers, or energy consumers” (*id.* at 7:57–58).

E. Challenged Claims

Petitioner challenges claims 1, 9, and 11 of the '000 patent, reproduced below.

1. A method for measuring electrical power dynamics of a facility, comprising:
placing at least one apparatus comprising a magnetic transducer and an electric transducer in proximity to and not connected to at least one electrical line connected to the facility;
receiving electric and magnetic fields of said at least one electrical line with said at least one apparatus;
processing said electric and magnetic fields to obtain information representative of magnitude and relative phase of said electric and magnetic fields;
transmitting said information to a central computing site;
determining said electrical power dynamics of said facility from said information at said central computing site; and
relaying data regarding said electrical power dynamics to an end-user.

Ex. 1002, 79:2–19.

9. A method for remotely delivering real-time information regarding operational status of a power system, said method comprising:

- converting magnetic field of current at a location remote to a plurality of electrical lines of said power system into magnetically transduced signals;
- conditioning said magnetically transduced signals into conditioned magnetically transduced signals;
- conditioning a reference signal for each of said conditioned magnetically transduced signals into conditioned reference signals;
- measuring magnitude of each of said conditioned magnetically transduced signals;
- measuring a phase angle between respective said conditioned magnetically transduced signals and said conditioned reference signals;
- transmitting said magnitudes and said phase angles to a central facility;
- determining said real-time information from said magnitudes and said phase angles, at said central facility;
- relaying said real-time information to an end user.

Id. at 79:42–80:16.

11. A method for providing information relating to current in an electrical line to a remote end user, comprising:

- placing an apparatus comprising a magnetic transducer in proximity of and not connected to said electrical line;
- receiving magnetic field emanating from said electrical line with said magnetic transducer;
- receiving an electrical signal synchronized to power system frequency with said apparatus;
- processing said magnetic field and said electrical signal to determine said information relating to said current in the line; and
- transmitting said information to said remote end user.

Id. at 80:21–34.

F. Asserted Prior Art and Grounds

We instituted review of claims 1, 9, and 11 of the '000 patent on the following asserted grounds:

Claim(s)	35 U.S.C. § ¹	Reference(s)/Basis
1, 9, 11	103	Libove, ² Blatt, ³ Fernandes ⁴
1, 9, 11	103	Libove, Fernandes, IEEE Std 644-1994 ⁵

Dec. 7.

II. ANALYSIS

A. Legal Principles

A claim is unpatentable under 35 U.S.C. § 103(a) 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 that subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art;

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), amended 35 U.S.C. §§ 102 and 103. Because the '000 patent was filed before March 16, 2013 (the effective date of the relevant amendment), the pre-AIA version of § 103 applies.

² Libove & Singer, U.S. Patent No. 5,473,244, issued December 5, 1995 (“Libove”) (Ex. 1003).

³ Blatt, U.S. Patent No. 5,408,176, issued April 18, 1995 (“Blatt”) (Ex. 1004).

⁴ Fernandes, U.S. Patent No. 4,709,339, issued November 24, 1987 (“Fernandes”) (Ex. 1005).

⁵ *IEEE Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields From AC Power Lines*, IEEE Std 644-1994 (“IEEE Std 644-1994”) (Ex. 1006).

(2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) if in evidence, objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)); see *In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

The Petition guides the proceeding. See *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1335–36 (Fed. Cir. 2020). Our reviewing court explains that “[f]rom the outset, we see that Congress chose to structure a process in which it’s the petitioner, . . . who gets to define the contours of the proceeding,” and that “the statute envisions that a petitioner will seek an inter partes review of a particular kind—one guided by a petition describing each claim challenged and the ground on which the challenge to each claim is based.” *Id.* at 1335 (quoting *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018) (internal quotations omitted)). “Although the Board is not limited by the exact language of the petition, see, e.g., *Sirona Dental Sys. GmbH v. Institut Straumann AG*, 892 F.3d 1349, 1356 (Fed. Cir. 2018), the Board does not ‘enjoy[] a license to depart from the petition and institute a *different* inter partes review of his own design.’” *Id.* at 1336 (quoting *SAS*, 138 S. Ct. at 1356).

To prevail, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. National Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner does not satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). A petitioner must show that “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.” *Id.* at 1381 (internal quotations and citations omitted); *see also Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”).

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art for the ’000 patent would have had “a Master’s degree in electrical engineering or

applied physics with a focus in power transmission, or a Bachelor's degree in electrical engineering or applied physics, or a similar field, with approximately two years of experience relating to power transmission.”

Pet. 12. Petitioner further contends that “[a]dditional graduate education might substitute for experience” and that “significant experience in the field of power transmission might substitute for formal education.” *Id.*

Absent opposition from Patent Owner, we adopt Petitioner's description of the level of ordinary skill in the art because it is consistent with the level of skill reflected in the Specification and the asserted prior art references. In that regard, and supporting our determination of the level of ordinary skill in the art, we determine that the prior art itself is sufficient to demonstrate the level of skill in the art at the time of the invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that “specific findings on the level of skill in the art . . . [are not required] ‘where the prior art itself reflects an appropriate level and a need for testimony is not shown’” (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985))).

C. *Claim Construction*

It is uncontested that the '000 patent has expired. Pet. 12; Paper 6. In this proceeding, in requesting a district court-type claim construction approach be applied, Petitioner set forth that the involved patent was expiring August 21, 2019. Pet. 12; *see* 37 C.F.R. § 42.100(b) (2018) (“A party may request a district court-type claim construction approach to be applied if a party certifies that the involved patent will expire within 18 months from the entry of the Notice of Filing Date Accorded to Petition.”). We deemed Petitioner's request set forth in the Petition was sufficient for us

to conditionally grant the request, which was perfected in the absence of opposition by Patent Owner within the specified time period for such. *See* Paper 6. Accordingly, we apply the claim construction standard used by district courts in this proceeding.

In district court, claim terms are given their plain and ordinary meaning as would be understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). There is a “heavy presumption,” however, “that a claim term carries its ordinary and customary meaning.” *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (citation omitted). Only those terms which are in controversy need to be construed and only to the extent necessary to resolve the controversy. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *see also U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (holding claim construction is not necessary when it is not “directed to, or has been shown reasonably to affect, the determination of obviousness”).

In the following discussion, we address claim terms as required in this decision. In our decision instituting review, we addressed the meaning of a number of claim terms for which Petitioner proposed a claim construction.

Dec. 7–12. We do so again for a subset of those as necessary, or instructive, for this decision.

1. “central computing site” and “central facility”

Petitioner argues that the terms “central computing site” and “central facility” would mean a “single physical location distinct from monitors” and that this “is consistent with the specification.” Pet. 13–14 (citing Ex. 1002, 3:35–36, 4:8–11, 4:17–26; 7:10–52, Fig. 3). In the Institution Decision, we adopted Petitioner’s construction of these terms. Dec. 7–8.

The cited portions of the Specification are generally consistent with Petitioner’s position. *See Phillips*, 415 F.3d at 1315 (“[T]he specification ‘is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term.’”). For example, the ’000 patent states that “[t]he central computing facility receives communications from all of the remote apparatuses monitoring a facility, facilities, line, or lines under measurement,” which is consistent with a “central computing site” or “central facility” being a single location. Ex. 1002, 3:35–36.

The prosecution history includes limited discussion of the concept of a central station. Ex. 1010, 120–121, 134, 146, 163, 169–170. For example, the Examiner determines that a “ground station [disclosed in cited prior art] includes provisions for conversion of data to the form and parameters required by the central station” (*id.* at 120–121, 146, 163) and applicant contests the Examiner’s position (*id.* at 134, 169–170), but the limited discussion is not particularly directed to the meaning of “central station” as being a single location.

For purposes of this Decision, we maintain our construction from the Institution Decision—construing the terms “central computing site” and “central facility” to mean a “single physical location distinct from monitors”—as this construction is consistent with the ordinary meaning of these terms, the portions of the written description of the ’000 patent cited by Petitioner, and the prosecution history of the ’000 patent.

2. “remote,” “remotely,” and “in proximity of/to”

Petitioner argues that the terms “remote,” “remotely,” and “in proximity of/to,” as applied to a monitor in relation to a power line, mean “in the vicinity of a power line, but also where someone does not need to climb a power line tower, or have access to a power line facility.” Pet. 14–15 (citing Ex. 1002, 12:31–33, 14:27–30); *see also id.* at 8–9 (citing Ex. 1010, 132–133, 143–146, 162–165, 169–170). Petitioner also cites to the prosecution history in a grandchild of the ’000 patent. *Id.* at 9–10 (citing Ex. 1009, 22–23, 73–75, 56–58, 42–44, 22–26). The ’000 patent states that in “[t]he present invention . . . [the] apparatus . . . may be located a distance from a transmission line . . . to measure remotely the current or power flow.” Ex. 1002, 5:2–6; *see also id.* at 7:5–10. The ’000 patent also refers more precisely to sensor locations that are in the vicinity of, but not in contact with, lines. *See, e.g., id.* at 12:19–25, 12:33–36.⁶

⁶ We note that claims 9 and 11 also include the term “remote”/“remotely” in the context of indicating the location of an “end user” to whom information relating to current in an electrical line is provided or to whom the real-time information is relayed. We do not understand Petitioner’s proposed claim construction to apply to these portions of the claims. *See* Pet. 14–15 (discussing proposed construction only with respect to monitor location relative to the power lines).

As in the Institution Decision, we determine that the terms “remote,” “remotely,” and “in proximity of/to,” as to a monitor in relation to a power line, mean in the vicinity of a power line and physically separated from the power line. *See* Dec. 8–9. Specifically, the apparatus for sensing magnetic and electric fields is placed in proximity to the electrical line or plurality of electrical lines, but is in neither direct nor indirect physical contact. *Id.* This construction is consistent with the ordinary meaning of these terms, the written description of the ’000 patent cited by Petitioner, and the prosecution history of the ’000 patent.

3. “apparatus”

Petitioner argues a person of ordinary skill in the art “would have understood [‘apparatus’] to mean ‘monitor’” and that a “monitor” is “not a ‘system’ but a device” that is “equipped to measure magnetic and electrical fields emanating from an overhead power line.” Pet. 15. Petitioner also argues that “[t]his construction is consistent with the ’000 patent’s specification.” *Id.* (citing Ex. 1002, 2:23–24, 2:30–33, 5:34–39, 5:44–48, 5:50–53, 5:59–61, 6:58–63, 7:2–5, 8:2–6, 14:32–36, 16:15–16, 16:18, 16:20, 19:42).

The claims reciting an apparatus—claims 1 and 11—indicate that the apparatus is placed “in proximity [to/of]” electrical line(s) and that data about the electrical line(s) is transmitted to a “central facility” and an “end-user”—claim 1—or to a “remote end user”—claim 11. This, coupled with the plain and ordinary meaning of “remote,” discussed above, makes plain that the meaning of “apparatus,” consistent with Petitioner’s contentions, is something akin to what Petitioner describes as a monitor. The prosecution history of the ’000 patent is, similarly, not manifestly inconsistent with

Petitioner's contentions. *See generally* Ex. 1010. Taking into account the usage of the relevant terms in the claims themselves, the plain and ordinary meaning of the terms, and the written description of the '000 patent cited by Petitioner, as in the Institution Decision, we determine that the "apparatus" does not encompass the entire system for measuring fields, computing signals, and reporting these to an end user, but only the device placed in proximity to the electrical line(s). *See* Dec. 9. Further, as expressly recited, the "apparatus" of claim 1 includes "a magnetic transducer and an electric transducer" and is equipped to "receiv[e] electric and magnetic fields of [an] electrical line." Similarly, the "apparatus" of claim 11 expressly includes "a magnetic transducer" and is equipped to "receiv[e] magnetic field emanating from [an] electrical line" and to "receiv[e] an electrical signal synchronized to power system frequency."

D. Obviousness of Claims 1, 9, and 11 Over the Combination of Libove, Blatt, and Fernandes

Petitioner asserts that claims 1, 9, and 11 of the '000 patent are unpatentable as obvious over Libove in view of Blatt and Fernandes. Pet. 21–50.

1. Libove (Ex. 1003)

Libove is titled "Apparatus for Measuring Voltages and Currents Using Non-Contacting Sensors" and discloses "[a]n apparatus for performing non-contacting measurements of the voltage, current and power levels of conductive elements such as wires, cables and the like." Ex. 1003, codes (54), (57). Libove discloses "[a] non-contacting voltage measurement system . . . includ[ing] an arrangement of capacitive sensors for generating a first current in response to variation in voltage of a conductive element" (*id.*

at 2:2–6) and a non-contacting current measurement system “wherein the composite current [through the conductor] induces a measurement current to flow within a set of coils positioned in a predetermined manner proximate [to] the conductor” (*id.* at 2:17–20). Libove further discloses that “the measurements of both voltage and current can be combined in one instrument . . . [with] two sensors, one for voltage and one for current act[ing] independently of each other.” *Id.* at 14:18–21. Libove also discloses that voltage and current “parameters can be sensed, scaled, subjected to rectification, and then transmitted to a meter, a computer, a recording instrument or a control system.” *Id.* at 14:23–26. Libove also discloses that “[i]n the case of complex cables and multi-phase currents the electric and magnetic field configurations are such that a microcomputer integrated circuit chip can sort the electric and magnetic fields out and attribute the correct value to each conductor.” *Id.* at 4:54–58.

2. Blatt (Ex. 1004)

Blatt is titled “Monitoring and Fault Protection of High Voltage Switch Yards” and discloses the use of magnetic field sensors located a safe distance away from high voltage conductors to monitor currents flowing through the conductors. Ex. 1004, codes (54), (57). Blatt further discloses a control center including a central control computer that is connected to radially remote stations near the magnetic field sensors. *Id.* at 2:3–5, 2:10–11, 2:17–20, 3:25–27, 3:36–37.

3. Fernandes (Ex. 1005)

Fernandes is titled “Electrical Power Line Parameter Measurement Apparatus and Systems, Including Compact Line-Mounted Modules” and discloses sensor modules for mounting directly upon electrical power lines

and measuring both voltage and current on the associated conductor, and determining their phase relationships. Ex. 1005, codes (54), (57), 2:45–46, 4:38–40. Fernandes also discloses transmission of sampled values from the sensors to ground stations, which include a microprocessor for calculations, and transmission of “[t]he data . . . to a central data receiving and control facility.” *Id.* at 5:15–21; *see also id.* at 1:35–40 (“Data from several ground stations is then transmitted to a central control station where it is processed and used to assist in control of the power supplied to the various transmission lines in accordance with the measured parameters.”). Fernandes also discloses use of “a conventional [Supervisory Control and Data Acquisition (SCADA)] system . . . at a power substation to monitor alarm status, receive control signal inputs from a central SCADA master computer or Energy Management System (EMS),” and that system at the power substation and the computer at its central control station in two-way communication. *Id.* at 11:30–31, 11:33–41, 12:3–25.

4. Analysis

Petitioner relies on Libove as “teach[ing] virtually all of the elements and features recited in the challenged claim[s].” Pet. 21. Petitioner relies on Blatt as supporting the obviousness of “positioning the monitor at a location that is ‘remote to’/‘not connected to’/‘in proximity to/of’ the transmission line” and “transmitting the processed data from the monitor to a central control site,” to the extent that the Board determines that Libove does not teach these features. *Id.* (citing Ex. 1004, 1:35–41, 3:29–44, 4:45–56, 5:32–45; Ex. 1007 ¶¶ 97–99, 122–125). Petitioner relies on Fernandes for supporting the obviousness of “transmitting,” including “transmitting ‘real-time information’/‘electrical power dynamics’/‘information relating to

current in the line’ to an ‘end user.’” *Id.* at 21–22 (citing Ex. 1005, 1:67–2:3, 5:19–23, 11:33–41; Ex. 1007 ¶¶ 78–83).

Petitioner contends that “Libove, Blatt and Fernandes are all generally directed to systems and methods for measuring fields around a conductor, such as a power transmission line,” and that they “share common goals, such as doing so while avoiding contact with the conductors” and “measuring power transmission line information, and providing it to central stations so they can control the power systems in response to the measured data.” *Id.* at 23, 26; *see also id.* at 22–26 (discussing reasons to combine). Petitioner further contends that a person of ordinary skill in the art would have found it obvious to apply both Blatt’s teaching to make measurements from a safe distance and to transmit measurement data to a central control computer and Fernandes’ teaching to use a central control computer to transmit control information to a substation to the power measuring apparatus of Libove. *Id.* at 22–26.

Petitioner identifies what it contends are corresponding limitations of claims 1, 9, and 11, and sets these forth in a chart, reproduced below.

	Claim 1	Claim 9	Claim 11
[Pre]	A method for measuring electrical power dynamics of a facility, comprising:	A method for remotely delivering real-time information regarding operational status of a power system, said method comprising:	A method for providing information relating to current in an electrical line to a remote end user, comprising

	Claim 1	Claim 9	Claim 11
[A]	placing at least one apparatus comprising a magnetic transducer and an electric transducer in proximity to and not connected to at least one electrical line connected to the facility;	converting magnetic field of current at a location remote to a plurality of electrical lines of said power system into magnetically transduced signals;	placing an apparatus comprising a magnetic transducer in proximity of and not connected to said electrical line;
[B]	receiving electric and magnetic fields of said at least one electrical line with said at least one apparatus;	conditioning said magnetically transduced signals into conditioned magnetically transduced signals;	receiving magnetic field emanating from said electrical line with said magnetic transducer;
[C]		conditioning a reference signal for each of said conditioned magnetically transduced signals into conditioned reference signals;	receiving an electrical signal synchronized to power system frequency with said apparatus;
[D1]	processing said electric and magnetic fields to obtain information representative of magnitude and	measuring magnitude of each of said conditioned magnetically transduced signals;	

	Claim 1	Claim 9	Claim 11
[D2]	relative phase of said electric and magnetic fields;	measuring a phase angle between respective said conditioned magnetically transduced signals and said conditioned reference signals;	
[E]	transmitting said information to a central computing site;	transmitting said magnitudes and said phase angles to a central facility;	
[F]	determining said electrical power dynamics of said facility from said information at said central computing site; and	determining said real-time information from said magnitudes and said phase angles, at said central facility;	processing said magnetic field and said electrical signal to determine said information relating to said current in the line; and
[G]	relaying data regarding said electrical power dynamics to an end-user.	relaying said real-time information to an end user.	transmitting said information to said remote end user.

Pet. 10–11.

Each of the claims requires providing data or information obtained in accordance with the method to an end user. Claim 1 sets forth “[a] method for measuring electrical power dynamics of a facility, comprising[] . . . relaying data regarding said electrical power dynamics *to an end user*.” Claim 9 sets forth “[a] method for remotely delivering real-time information regarding operational status of a power system, said method comprising[] . . . relaying said real-time information *to an end user*.” Claim 11 sets forth

“[a] method for providing information relating to current in an electrical line to a remote end user, comprising . . . transmitting said information *to said remote end user.*”

Petitioner contends that Libove in view of Blatt and Fernandes teaches limitations 1[G], 9[G], and 11[G] of claims 1, 9, and 11, respectively. *Id.* at 47–50.

For each of the claims, the data or information that is relayed or transmitted is that determined in accordance with the corresponding limitation [F]. Petitioner relies on the combination of Libove and Blatt for the power calculations of Libove being “performed at the central computing site/facility.” *Id.* at 47; *see id.* at 46 (“Because the currents and power calculations are calculated at the central computer of Blatt, Libove in view of Blatt teaches the ‘electrical power dynamics’ and ‘real-time information’ are determined at the central computing site/facility as recited in 1[F], 9[F], and 11[F].”).

Petitioner then expressly relies on Fernandes for the further limitations 1[G], 9[G], and 11[G] “that the calculations and other information determined at the central computing site/facility are transmitted or relayed to an end user.” *Id.* at 48 (stating that “this feature is obvious in view of Fernandes”). Petitioner does so despite having also set forth—in discussing limitation 11[Pre]—that “Libove teaches a method for providing information relating to current in an electrical line to a remote end user, as recited in 11[Pre],” in that “Libove teaches that its ‘system of current determination . . . applies to transmission lines where noncontacting current measurement is very helpful since the current monitoring values can be telemetered to the generating or the sub-station to provide control

information which can be utilized for energy conservation.” *Id.* at 27 (quoting Ex. 1003, 8:45–50; citing Ex. 1003, 4:57–65, 8:50–54).

Contending Fernandes renders limitations 1[G], 9[G], and 11[G] obvious, Petitioner relies on Fernandes as disclosing a Supervisory Control and Data Acquisition (SCADA) system in which “sensors transmit data relating to transmission lines to a central computer (*i.e.*, a ‘master computer’),” that the “central computer will then analyze the data and make decisions,” and that a “system receiver can be employed at a power substation to receive information from a ‘master computer.’” *Id.* at 48 (citing Ex. 1005, 11:33–41; Ex. 1007 ¶ 139). Petitioner also contends that information transmitted from the SCADA central computer to the SCADA system receiver at a substation includes “alarms and control signal inputs.” *Id.* at 48–49 (citing Ex. 1005, 11:33–41, 12:3–25; Ex. 1007 ¶¶ 139–140).

Petitioner further contends that a person of ordinary skill in the art “would have further understood that the central computing site/facility in Blatt could operate as a SCADA central computer . . . that communicates with the SCADA system receiver.” *Id.* at 49 (citing Ex. 1005, 11:33–41, 12:3–25; Ex. 1007 ¶ 140). As discussed above, this central computer, as Petitioner has set forth the combination, is what undertakes the calculations to determine the “electrical power dynamics” and “real-time information” that Petitioner contends meets limitations 1[F], 9[F], and 11[F]. *Id.* at 46–47. Petitioner also contends that a person of ordinary skill in the art “would have understood Fernandes teaches relaying/transmitting data from a central computer (*i.e.*, the SCADA master computer), to an end user (*i.e.*, the SCADA system receiver) as recited in 1[G], 9[G], [and] 11[G].” *Id.* (citing Ex. 1007 ¶ 140).

Petitioner contends that a person of ordinary skill in the art would have been motivated to make the combination set forth in order “to send substations alerts and control signals from the central computing site/facility . . . based on measurements received from the monitors surveilling the power transmission network” because it “would enable the central computer to detect and react to faults in the power transmission system” and that doing so “would have merely involved combining well-known prior art elements (*e.g.*, Libove and Blatt’s central computer), using well-known computer transmission and networking techniques, to achieve a predictable result (*e.g.*, sending alerts and control signals to a SCADA system reciever [sic]).” *Id.* at 49–50 (citing Ex. 1005, 1:35–40; Ex. 1003, 8:45–50, 14:23–27; Ex. 1007 ¶¶ 141–142).

As set forth by Petitioner, the challenge is grounded on a combination in which data or information is transmitted from a central computing site or facility to a power substation, specifically, to a SCADA receiver located at a power substation. *Id.* at 48–50. The purpose of doing so, as set forth by Petitioner, is to send alerts and control signals. *Id.* at 49–50. The difficulty is that Petitioner fails to address what is, in fact, an end user according to the claims, and how that element is met by the combination. *See generally id.*

The ’000 patent sets forth that “[t]he end-user includes *anyone* for whom information about the power flows in lines 11 or 12 or the net power use of facility 10 is useful.” Ex. 1002, 7:54–56 (emphasis added). It also sets forth exemplary end-users, and further provides that information is transmitted to the end-user’s location via some form of communications equipment. *Id.* at 7:60–64. Petitioner does not address this disclosure of the ’000 patent that relates to the meaning of “end user.” *See generally* Pet.

Indeed, while Petitioner set forth certain claim terms that required construction, and identified others disputed during the related litigation for which construction was not required, it did not address “end user” in any meaningful fashion. *Id.* at 12–13.

Petitioner likewise does not provide a basis for *anyone* meeting the description of an end-user being present at the power substation. *Id.* at 21–22, 47–50. As noted above, Petitioner asserts that a SCADA receiver teaches or suggests the recited “end user,” however, Petitioner has not explained, nor is it is not apparent from Fernandes or elsewhere, that a power substation having a SCADA receiver to receive alerts and control signals requires a “user” be present to effect the required control. Indeed, having a “user” at the power substation that receives an alert or control signal appears contrary to Petitioner’s position that, in such a system, “sensors transmit data relating to transmission lines to a central computer (*i.e.*, a ‘master computer’),” that the “central computer will then analyze the data and make decisions,” and that a “system receiver can be employed at a power substation to receive information from a ‘master computer.’” *Id.* at 48 (citing Ex. 1005, 11:33–41; Ex. 1007 ¶ 139). If the central computer analyzes the data and makes decisions, as Petitioner contends, it is not apparent that there is any need for any “user” to receive the alert or control signals at the power substation.

In sum, the deficiencies outlined above undercut Petitioner’s position that the combined prior art teaches or suggests the inventions of the challenged claims. The conclusory statements by Petitioner and Dr. Olsen as to the recited end user, as discussed above, fail to address how the relied upon element in Fernandes, *i.e.*, the SCADA receiver, meets the recited

limitation of transmitting to an “end user,” and are thus insufficient to satisfy Petitioner’s burden of proving obviousness.⁷ *Magnum Oil Tools*, 829 F.3d at 1380–81.

Accordingly, we determine that Petitioner has not carried its burden to present sufficient evidence and support that the combination of Libove, Blatt, and Fernandes teaches or suggest limitations 1[G], 9[G], and 11[G].

For the foregoing reasons, and after having analyzed the entirety of the record and assigning appropriate weight to the cited supporting evidence, we determine that Petitioner has not established by a preponderance of the evidence that claims 1, 9, and 11 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Libove, Blatt, and Fernandes.

E. Obviousness of Claims 1, 9, and 11 Over the Combination of Libove, Fernandes, and IEEE Std 644-1994

Petitioner asserts that claims 1, 9, and 11 are unpatentable as obvious over Libove in view of Fernandes and IEEE Std 644-1994. Pet. 22, 50–61.

⁷ There is nothing contrary in this determination here to that in the Institution Decision that there was a sufficient showing for institution of *inter partes* review. For instituting an *inter partes* review, 35 U.S.C. § 314(a) requires that there is a “reasonable likelihood that the petitioner would prevail.” To prevail in an instituted *inter partes* review, however, 35 U.S.C. § 316(e) requires petitioner to meet “the burden of proving a proposition of unpatentability by a preponderance of the evidence.” See *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (“[T]here is a significant difference between a petitioner’s burden to establish a ‘reasonable likelihood of success’ at institution, and actually proving invalidity by a preponderance of the evidence at trial The Board’s findings in its Final Written Decision were thus not inconsistent with those in its Institution Decision; they were made under a qualitatively different standard.”).

IEEE Std 644-1994 discloses “[u]niform procedures for the measurement of . . . electric and magnetic fields from alternating current (ac) overhead power lines.” Ex. 1006, i.; *see id.* at 14, 21, Fig. 7.

Petitioner relies on the disclosed procedures from IEEE Std 644-1994, contending that it would have been obvious “to apply the uniform measurement techniques . . . to the [modified] apparatus of Libove.” Pet. 51–52. Petitioner’s reliance on IEEE Std 644-1994 is limited to procedures and techniques for measuring power frequency electric and magnetic fields from alternating overhead power lines and calibrating the meters used. *Id.* at 50–61. Petitioner relies on Libove in view of Fernandes and IEEE Std 644-1994 only for limitation 1[A], 9[A], and 11[A]. *Id.* at 53–56.

Petitioner expressly relies on Libove in view of Fernandes for all other elements. *Id.* at 50–61. Petitioner separately sets forth a basis for limitations 1[E] and 9[E] (*id.* at 56–59) and limitations 1[F], 9[F], and 11[F] (*id.* at 59–61), but refers back to and relies on its discussion for the ground based on Libove, Blatt, and Fernandes, discussed above, for every other limitation, including limitations 1[G], 9[G], and 11[G] (*id.* at 52–53).

As to limitations 1[F], 9[F], and 11[F], Petitioner relies on a combination in which the calculations are carried out at the central control station. *Id.* at 60–61 (citing Ex. 1003, 8:45–50; Ex. 1005, 1:35–40, 5:23–28; Ex. 1007 ¶¶ 168–170).

As to limitations 1[G], 9[G], and 11[G], Petitioner relies wholly on its showing set forth in the first ground. *Id.* at 52–53. Having relied on the same showing, and for the same purpose where the calculations are likewise carried out at the central control station, we likewise determine, as with the

first ground, that Petitioner has not established by a preponderance of the evidence that “relaying data regarding said electrical power dynamics to an end-user” (claim 1), “relaying said real-time information to an end user” (claim 9), or “transmitting said information to said remote end user” (claim 11) would have been obvious to one of ordinary skill in the art.

For the foregoing reasons, and after having analyzed the entirety of the record and assigning appropriate weight to the cited supporting evidence, we determine that Petitioner has not established by a preponderance of the evidence that any of claims 1, 9, and 11 are unpatentable under 35 U.S.C. § 103(a) as obvious over the combination of Libove, Fernandes, and IEEE Std 644-1994.

III. CONCLUSION⁸

For the foregoing reasons, we conclude that Petitioner has not established, by a preponderance of the evidence that claims 1, 9, and 11 are unpatentable.

⁸ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

Claims	35 U.S.C. §	References	Claims Shown Unpatentable	Claims Not shown Unpatentable
1, 9, 11	103	Libove, Blatt, Fernandes		1, 9, 11
1, 9, 11	103	Libove, Fernandes, IEEE Std 644-1994		1, 9, 11
Overall Outcome				1, 9, 11

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has not demonstrated by a preponderance of the evidence that claims 1, 9, and 11 of the '000 patent are *unpatentable*; and

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

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