



UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

IN-DEPTH GEOPHYSICAL, INC. AND
IN-DEPTH COMPRESSIVE SEISMIC, INC.,
Petitioners,

v.

CONOCOPHILLIPS COMPANY,
Patent Owner.

Case IPR2019-00849
Patent 9,632,193 B2

Before SCOTT A. DANIELS, JAMES A. TARTAL, and
SCOTT C. MOORE, *Administrative Patent Judges*.

DANIELS, *Administrative Patent Judge*.

DECISION
Denying Institution of *Inter Partes* Review
35 U.S.C. § 314(a)

I. INTRODUCTION

A. Background

In-Depth Geophysical, Inc. and In-Depth Compressive Seismic, Inc. (“Petitioners”) filed a Petition to institute an *inter partes* review of claims 1–6 of U.S. Patent No. 9,632,193 B2 (“the ’193 patent”). Paper 1 (“Pet.”). ConocoPhillips Company (“Patent Owner”) filed a Preliminary Response. Paper 9 (“Prelim. Resp.”).

Under 35 U.S.C. § 314, an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon consideration of the Petition and Preliminary Response and for the reasons explained below, we determine that Petitioners have not shown that there is a reasonable likelihood that it would prevail with respect to at least one of the challenged claims. As such, we do not institute an *inter partes* review of claims 1–6 of the ’193 patent.

B. Additional Proceedings

The parties indicate that the ’193 patent is asserted against Petitioners by Patent Owner in *ConocoPhillips Company v. In-Depth Compressive Seismic, Inc. and In-Depth Geophysical, Inc.* No. 4:18-cv-00803, in the United States District Court for the Southern District of Texas. Pet. 8, Paper 7, 1.

C. The ’193 Patent

The ’193 patent describes a computer-implemented method using compressive sensing for processing and interpreting irregularly acquired seismic data that recovers and reconstructs regularly sampled data to determine “an optimal sampling grid during seismic data reconstruction.” *Id.* at 1:28–30, Abst.

The '193 patent has an effective filing date of November 1, 2013. Ex. 1001, at [60]. Petitioners do not suggest a different priority date in their Petition.

D. The Alleged Grounds of Unpatentability

Petitioners contend that the challenged claims are unpatentable on the following specific grounds based on 35 U.S.C. § 103.

References	Basis	Claims Challenged
Li ¹ , Donoho ² , Hennenfent I ³ , and Hennenfent II ⁴	§ 103	1, 5, and 6
Li, Donoho, Hennenfent I, Hennenfent II, and Essays and Surveys ⁵	§ 103	2 and 3
Li, Donoho, Hennenfent I, Hennenfent II, and International Encyclopedia ⁶	§ 103	4

¹ Ex. 1005, Chengbo Li, Charles C. Mosher and Sam T. Kaplan, INTERPOLATED COMPRESSIVE SENSING FOR SEISMIC DATA RECONSTRUCTION, (2012) Conference Paper, SEG (Society of Exploration Geophysicists) (2012), SEG Las Vegas Annual Meeting.

² Ex. 1012, David L. Donoho, Michael Elad, and Vladimir N. Temlyakov, STABLE RECOVERY OF SPARSE OVERCOMPLETE REPRESENTATIONS IN THE PRESENCE OF NOISE, IEEE Transactions On Information Theory, Vol. 52, No. 1, (Jan. 2006).

³ Ex. 1008, Gilles Hennenfent and Felix J. Herrmann, APPLICATION OF STABLE SIGNAL RECOVERY TO SEISMIC DATA INTERPOLATION, Earth & Ocean Sciences Department, University of British Columbia, (2006).

⁴ Ex. 1010, Gilles Hennenfent and Felix J. Herrmann, SIMPLY DENOISE: WAVEFIELD RECONSTRUCTION VIA JITTERED UNDERSAMPLING, Geophysics, Vol. 73, No. 3 (June 2008).

⁵ Ex. 1013, Paola Festal and Mauricio G.C. Resende, GRASP: AN ANNOTATED BIBLIOGRAPHY, Essays And Surveys In Metaheuristics (2002).

⁶ Ex. 1015, Stochastic Global Optimization, International Encyclopedia, (2011).

Petitioners support their challenge with a Declaration of Ozgur Yilmaz, B.S. (Mathematics), B.S.E.E., Ph.D. (Mathematics), (Ex. 1014).

Because it is dispositive of the Petition and all of the challenges presented, we address at the outset Petitioners' assertion of Li as a primary reference in each of the above noted challenges, and consider Patent Owner's arguments that Li does not qualify as prior art under 35 U.S.C. §§ 102 and 311(b) as a printed publication accessible more than a year before the purported November 1, 2012, priority date of the '193 patent. Pet. 11, Prelim. Resp. 11.

E. Printed Publications

The scope of an *inter partes* review is limited. In particular, 35 U.S.C. § 311(b) provides:

SCOPE.—A petitioner in an inter partes review may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications.

Petitioners contend Li qualifies as prior art under 35 U.S.C. § 102(a)(1), as a printed publication, because it was published more than a year before the priority date of the '193 patent.⁷ Pet. 11. Patent Owner argues that Petitioners have failed to meet their burden to show that Li, in fact, qualifies as a printed publication that was publically available more than one year prior to the effective filing date of the '193 patent in accordance with 35

⁷ Because the '193 patent has an effective filing date subsequent to March 15, 2013, the effective date of applicable amendments to the Leahy-Smith America Invents Act ("AIA"), 125 Stat. 284 (2011), we refer to the AIA version of § 102.

U.S.C. § 102(b)(1). Prelim. Resp. 10 (citing *Medtronic, Inc. v. Barry*, 891 F.3d 1368, 1380 (Fed. Cir. 2018)).

The determination of whether a given reference qualifies as a prior art “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). The key inquiry is whether the reference was “sufficiently accessible to the public interested in the art” before the critical date. *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989); *In re Wyer*, 655 F.2d 221, 226 (CCPA 1981). “A given reference is ‘publicly accessible’ upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.” *Suffolk Techs., LLC v. AOL Inc.*, 752 F.3d 1358, 1364 (Fed. Cir. 2014) (quoting *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008)). To qualify as a printed publication, a document “must have been sufficiently accessible to the public interested in the art.” *In re Lister*, 583 F.3d 1307, 1311 (Fed. Cir. 2009) (citations omitted).

1. Petitioners have not made a threshold showing that Li is a prior art printed publication

Petitioners characterize Li as a printed publication, offering the following explanation:

Li (IDG-1005) was published by September 2012 according to Researchgate (IDG-1011, at p. 1), an office action in a related foreign proceeding (IDG-1006, at p. 1) and the Patent Owner in response to the foreign office action (IDG-1007, at p. 6 (replacement specification), ¶7), making it prior art under 35 U.S.C. § 102(a)(1).

Pet. 11. We address Petitioners' specific evidence as to publication and public accessibility of Li below.

Researchgate (Ex. 1011)

Petitioners refer us to Exhibit 1011, a copy of a website page originating from www.researchgate.net, ("Researchgate exhibit"), which lists the title "Interpolated Compressive Sensing for Seismic Data Reconstruction," as "Conference Paper · September 2012 *with 45 Reads.*" Ex. 1011, 1. Researchgate exhibit lists authors Chengbo Li, Charles C. Mosher, and Sam T. Kaplan,⁸ and apparently contains an abstract of the conference paper. *Id.* The exhibit includes a representation of what would be a clickable button on the actual website below the abstract, the button states, "Request full-text." *Id.*

Related EPO Application (Ex. 1006)

Petitioners also refer to a communication from the European Patent Office, ("EPO"), in related European counterpart Application No. EP14857735.6, to the '193 patent. Ex. 1006, 4. Li is asserted by the EPO Examiner as the primary reference in combination with Hennenfent I, which together, according to the EPO Examiner, render claim 1 "not inventive."⁹ Ex. 1006, 4. Additionally, the "Background" section of the specification of the same EPO application identifies Li as "SEG Technical

⁸ Li, Mosher, and Kaplan are all named inventors of the '193 patent. Ex. 1001, 1 (72).

⁹ Claim 1 in the EPO application is basically the same as claim 1 at issue in this proceeding, except that EPO claim 1 originally included the further limitation "wherein the sample grid is determined via randomized greedy algorithm method or via stochastic global optimization method." *Compare* Ex. 1007, 2 *with* Ex. 1001, 18:5–29.

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Program Expanded Abstracts 2012, 1 September 2012 (2012-09-01), pages 1–6.” Ex. 1007, 6.

Patent Owner’s Arguments

Patent Owner argues that Petitioners’ evidence of alleged publication is insufficient to show that Li is a printed publication that was publically accessible more than one year prior to the effective filing date of the ’193 patent. Prelim. Resp. 11–18. With respect to Researchgate exhibit, Patent Owner makes four specific arguments which we summarize below.

Patent Owner first argues that the date of “September 2012” listed on Researchgate exhibit, reproduced in part below, is not identified as a publication date, and that neither the website page, nor Petitioners, provide any explanation or context as to what that date represents. *Id.* at 12–13.

Conference Paper · September 2012 *with 45 Reads*
DOI: 10.1190/segam2012-1335.1
Conference: SEG Technical Program Expanded Abstracts 2012

Ex. 1011, 1. The excerpt, above, from Researchgate exhibit, identifies certain information relevant to “Conference Paper,” including the date “September 2012.”

Second, Patent Owner points out that Li itself indicates in its legend a copyright date of simply, “2012 SEG,” (Society of Exploration Geophysicists), in conjunction with “SEG Las Vegas 2012 Annual Meeting.”

© 2012 SEG
SEG Las Vegas 2012 Annual Meeting

Ex. 1005, 1. Further, Patent Owner argues that the copy of Li provided by Petitioners includes a downloaded date of “2/25/13” which places Li well within the § 102(b), 1-year grace period. Prelim. Resp. 13–14. Reproduced below is an image of the downloaded date, and relevant text, from Li.

Downloaded 02/25/13 to 146.23.4.24. Redistribution subject to SEG license or copyright; see Terms of Use at <http://library.seg.org/>

Ex. 1005, 1. The image, above, from Li, indicates a download date of 2/25/13 and describes the redistribution of the document “subject to SEG license or copyright.” *Id.*

Third, Patent Owner argues “that [Li] was disclosed as part of the ‘SEG Las Vegas 2012 Annual Meeting.’” Prelim. Resp. 14 (citing Ex. 1005, 1). Relying on its declarant, Dr. Fred Aminzadeh, Patent Owner asserts that “historically, papers presented at SEG conferences were only made available at and after the conference.” *Id.* (citing Ex. 2007 ¶ 7). Based in part on Dr. Aminzadeh’s testimony, Patent Owner argues that Petitioners have not presented sufficient evidence to show that Li was publically available prior to the SEG Annual Conference.

Fourth, and following from its third argument, Patent Owner argues that because the SEG 2012 Annual Meeting occurred November 4–9, 2012, which is within the 1-year grace period, and based on Dr. Aminzadeh’s testimony, “*Li* was likely first made available at the SEG conference itself, which was within the one-year grace period, thereby eliminating it as prior art to the ’193 Patent.” *Id.* at 15.

Addressing Petitioners’ evidence that Li was cited in the related EPO prosecution to the ’193 patent, Patent Owner argues that “*Li* does not qualify as prior art under U.S. patent laws simply because it was referred to in

conjunction with prosecution of a foreign patent application.” Prelim. Resp. 15. Patent Owner argues that consideration of Li in the EPO does not show that Li qualifies as prior art because the EPO applies the principle of “absolute novelty,” which includes everything made available to the public prior to the date of filing or priority date. *Id.* at 17 (citing European Patent Convention Article 54(2)).

Analysis

The '193 patent claims priority to U.S. Provisional Patent Application 61/898,960, filed November 1, 2013. Ex. 1001, [60] (Related U.S. Application Data). We also keep in mind § 102(a)(1)-(b)(1)(A), and the 1-year grace period back to November 1, 2012, and consider whether Petitioners' have made a sufficient showing that that Li qualifies as a printed publication prior to that date for purposes of institution of *inter partes* review

It is apparent that Researchgate exhibit indicates a date of “September 2012.” Ex. 1011, 1. There is, however, nothing further on Researchgate exhibit that explains what this date represents, for instance whether September 2012 was the date of submission, acceptance for publication, or publication, or when the full text became available via the “Request full-text” link. *Id.* Indeed, Petitioners do not even attempt to establish, for example in the form of testimony of a witness familiar with the exhibit, the authenticity of Researchgate exhibit or that it falls within an exception to Federal Rule of Evidence 901. Pet. 11. The single sentence provided in the Petition provides no explanation or persuasive corroborating evidence explaining how, or why, the date shown on Researchgate exhibit qualifies Li as a printed publication as a result of its public accessibility to interested

persons of ordinary skill in the art. *Id.* Petitioners conclusion that, “Li [] was published by September 2012 according to Researchgate,” is not supported by the evidence presented. *Id.*

The Li reference appears on its face to be a conference or research paper that was intended, at some point, for dissemination. *See* Ex. 1005, 1. The legend “© 2012 SEG” and “SEG Las Vegas Annual 2012 Meeting,” at the bottom of each page of the paper, could arguably be evidence of public availability. In Li, however, the legend information does not provide a specific day, or even month, the paper was published or made publically available, and therefore does not persuasively corroborate the “September 2012” publication date claimed by Petitioners.

Moreover, the downloaded date of “02/25/13,” appearing on each page of the Li reference, indicates that the paper was downloaded within the 1-year grace period. Ex. 1005, 1. And rather than evidence public accessibility, the downloaded date appears with an express limitation of the use and dissemination of Li, stating “Redistribution subject to SEG license or copyright.” *Id.* Further, the Li reference does not bear, and Petitioners do not point to, any other indicia such as express publication dates, libraries, journal numbers, or International Standard Book Number (“ISBN”) codes, or Library of Congress Control Number (“LCCN”) that the Board previously has held are indicia of public availability. *See REG Synthetic Fuels, LLC v. Neste Oil, OYJ*, IPR2018-01374, Paper 11 at 6 (PTAB Feb. 19, 2019).

Petitioners’ pointing to a vague date listed on a website page is insufficient to meet Petitioners’ burden to show that Li was publicly accessible by a particular date. As discussed above, the September 2012 date, like the legend copyright notice, sheds virtually no light on whether the

document was publicly accessible prior to November 1, 2012. Additional evidence thus is necessary to support a showing of public accessibility. *See, e.g., Ford Motor Co. v. Cruise Control Techs. LLC*, Case IPR2014-00291, slip op. at 9–10 (PTAB June 29, 2015) (Paper 44) (discussing evidence of public accessibility that supported a finding that a reference was a prior art printed publication).

In addition, Patent Owner presents compelling evidence that Li was potentially first disseminated at the SEG Las Vegas 2012 Annual Meeting, November, 4–9th, 2012. Prelim. Resp. 15 (citing https://seg.org/Portals/0/SEG/Events/Annual%20Meeting/LV12_AMA.pdf, last visited June 21, 2019). November 4–9, 2012, is within the § 102(b) one-year grace period. Patent Owner offers the testimony of Dr. Fred Aminzadeh, an SEG member for over forty years, and who served as SEG President in 2007-2008, in support of its arguments and evidence that the “September 2012” date is not a publication date or indication of public availability. Ex. 2007 ¶ 3.

Dr. Aminzadeh testifies persuasively that he “presented or was a co-author of papers at the SEG conference in at least the following years: 2004, 2005, 2006, 2008, 2011, 2012, 2013, 2014, and 2016.” *Id.* ¶ 4. Dr. Aminzadeh testifies in detail as to the process used by SEG for presentation of papers at its annual meetings, explaining that “[a]uthors submit papers to the SEG several months before the SEG conference. The papers are kept confidential by the SEG at that time.” *Id.* ¶ 6. Dr. Aminzadeh explains further that

in the 2010-2013 time frame, papers accepted for presentation at the SEG annual conference were first made available to the conference attendees at the conference itself. This is usually done

by including the papers to be presented at the conference in one or more volumes of the “Annual Meeting Extended Abstracts.” The extended abstracts are usually available beginning on the start of the annual conference.

Id. ¶ 7. We give weight to Dr. Aminzadeh’s testimony because it articulates a reasonable and unrebutted explanation for the September 2012 date listed by Researchgate exhibit.¹⁰ Dr. Aminzadeh’s testimony also persuasively explains how and why the dissemination and first public availability of Li would have most likely not occurred prior to the SEG 2012 Annual Meeting from November 4-9, 2012.

On the record in this case, Researchgate exhibit in light of Dr. Aminzadeh’s testimony suggests that if Li was distributed at all in September 2012, it was only in a restricted and limited fashion to persons who were determining what papers would be distributed at the SEG Annual Meeting. *See* Ex. 2007 ¶¶ 6–7. Accordingly, we look to whether Petitioners have provided other evidence or argument to support its contention that Li was publicly accessible.

Petitioners point out that the Applicant’s replacement specification in a related EPO application to the ’193 patent describes Li as, “SEG Technical Program Expanded Abstracts 2012, 1 September 2012 (2012-09-01).” Pet. 11, (citing Ex. 1007, 6). We note also that Li was considered by the

¹⁰ We note that Petitioners sought authorization to file a reply brief to Patent Owner’s Preliminary Response, which we authorized. Papers 11, 12. In the telephone conference of July 2, 2019 which the Board conducted with the parties to discuss Petitioners’ request for the reply brief, Petitioners expressed their desire to respond to an unforeseen issue of service-of-process under 35 U.S.C. § 315(b), and did not raise the issue, or request to respond to, Patent Owner’s arguments and evidence with respect to the public availability of Li. *See* Paper 11.

EPO examiner as “particularly relevant if combined with another document in the same category.” Ex. 1006, 7. Although the “1 September 2012” date may be indicative of something, without any further information or explanation, and similar to Researchgate exhibit, the “1 September 2012” date provides no explanation as to how and when Li was disseminated and available such that interested and ordinarily skilled persons could locate it exercising reasonable diligence. *See SRI Int’l.*, 511 F.3d 1197 (Fed. Cir. 2008) (In *SRI* the Federal Circuit determined that “the Live Traffic paper was still subject to pre-publication review.”). In addition, as Patent Owner argues persuasively, the disclosure by applicant and the examiner’s consideration of Li in the EPO prosecution is not compelling evidence of a specific publication date because of the EPO’s absolute novelty provisions, specifically European Patent Convention Article 54 (2), that does not contain a 1-year grace period. *See Prelim. Resp. 17, and see European Patent Convention*, 16th edition/June 2016.

Collectively, Petitioner’s evidence amounts to little more than a bare allegation that Li was published in September 2012. *See Pet. 11.* Petitioners bear the burden to show a reasonable likelihood that the reference is a printed publication. *See 35 U.S.C. § 314(a).* In the face of Dr. Aminzadeh’s persuasive testimony we have insufficient evidence that Li was published, disseminated, or otherwise made available to interested persons of ordinary skill in the art, exercising reasonable diligence, prior to the critical date, such that Li qualifies as a prior art, printed publication. Consequently, we conclude that Petitioners have not met their burden of showing a reasonable likelihood that Li (Ex. 1005) is a printed publication as contemplated by 35 U.S.C. §§ 102 and 311(b) or 37 C.F.R. § 42.104(b)(2).

F. Asserted Grounds of Unpatentability

Because Petitioners have not presented sufficient persuasive information in the Petition and accompanying evidence to show a reasonable likelihood that Li is a prior art printed publication, Petitioners fail to demonstrate a reasonable likelihood of prevailing on the ground that any of the subject matter of claims 1–6 of the '193 patent would have been obvious over Li, Donoho, Hennenfent I, and Hennenfent II, or Li, Donoho, Hennenfent I, and Hennenfent II, in combination with either Essays and Surveys or International Encyclopedia.

II. CONCLUSION

The only grounds of unpatentability asserted by Petitioners against the '193 patent in the Petition rely upon Li; and, as discussed above, Petitioners have not presented sufficient persuasive information in the Petition and accompanying evidence to show a reasonable likelihood that Li is a prior art printed publication. Accordingly, for the foregoing reasons, the information presented in the Petition and accompanying evidence does not establish a reasonable likelihood that Petitioners would prevail in showing the unpatentability of any challenged claim of the '193 patent.

III. ORDER

For the reasons given, it is

ORDERED that the Petition is denied and no *inter partes* review is instituted.

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PETITIONERS:

William P. Jensen
James E. Hudson
CRAIN, CATON & JAMES
wjensen@craincaton.com
jHUDSON@craincaton.com

PATENT OWNER:

Dion M. Bregman
Rick L. Rambo
MORGAN, LEWIS & BOCKIUS LLP
dion.bregman@morganlewis.com
rick.rambo@morganlewis.com