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Paper 7
Date: November 8, 2022

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EXACTECH, INC.,
Petitioner,

v.

ZIMMER, INC.,
Patent Owner.

IPR2022-00836
Patent 10,881,462 B2

Before BARBARA A. PARVIS, SCOTT C. MOORE, and SEAN P. O'HANLON, *Administrative Patent Judges*.

O'HANLON, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. Background

Exactech, Inc. ("Petitioner") filed a Petition for *inter partes* review of claims 1–15 ("the challenged claims") of U.S. Patent No. 10,881,462 B2 (Ex. 1001, "the '462 patent"). Paper 2 ("Pet."), 1. Zimmer, Inc. ("Patent Owner") filed a Preliminary Response. Paper 6 ("Prelim. Resp.").

Institution of an *inter partes* review is authorized by statute only when "the information presented in the petition . . . and any response . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a) (2018). A decision to institute may not institute on fewer than all claims challenged in the petition. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018). If the PTAB institutes a trial, the PTAB will institute on all challenges raised in the petition. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide ("CTPG") 64 (Nov. 2019) ("The Board will not institute on fewer than all claims or all challenges in a petition.");[1] *see also AC Techs. S.A. v. Amazon.com, Inc.*, 912 F.3d 1358, 1364 (Fed. Cir. 2019) ("[I]f the Board institutes an IPR, it must . . . address all grounds of unpatentability raised by the petitioner.").

We have authority, acting on the designation of the Director, to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a). For the reasons set forth below, upon considering the Petition, Preliminary Response, and evidence of record, we conclude that the information presented shows that there is a reasonable likelihood that

[1] *Available at* https://www.uspto.gov/TrialPracticeGuideConsolidated.

Petitioner would prevail in establishing the unpatentability of at least one of the challenged claims. Thus, we institute *inter partes* review of all challenged claims based on all asserted grounds.

B. Real Parties in Interest

Petitioner identifies itself, Osteon Intermediate Holdings II, Inc., and Blue Ortho SAS as real parties in interest. Pet. 2.

Patent Owner identifies itself as the sole real party in interest. Paper 4, 1. Patent Owner states that it is a subsidiary of Zimmer Biomet Holdings, Inc. *Id.* Patent Owner further states that "Zimmer US, Inc. and ORTHOsoft ULC d/b/a Zimmer CAS are parties to [litigation involving the '462 patent identified in § I.C below] and have an interest in the outcome of this proceeding." *Id.*

C. Related Matters

The parties indicate that the '462 patent is the subject of the following district court proceeding:

> *Zimmer, Inc. v. Exactech, Inc.*, Case No. 8:21-cv-995 (M.D. Fla. filed April 27, 2021).

Pet. 2; Paper 4, 1.

D. The Challenged Patent

The '462 patent discloses a computer assisted surgery ("CAS") system and a method of using the system. Ex. 1001, 1:19–21. Typical orthopedic procedures involving replacement of portions of a bone with an implant involve determining the size, type, and shape of the implant based on the size and shape of the patient's anatomical structure. *Id.* at 1:23–28.

The ’462 patent purports to improve upon such known procedures by using a CAS system to acquire a plurality of data points from the patient’s bone and creating a best fit approximation of the acquired data points to determine a contour of the patient’s bone. *Id.* at 1:37–45. A pointer device may be used to acquire the data points. *Id.* at 1:48–52. An implant that replicates the patient’s bone structure can then be chosen. *Id.* at 1:45–46.

Figure 2 illustrates use of the pointer device and is reproduced below.

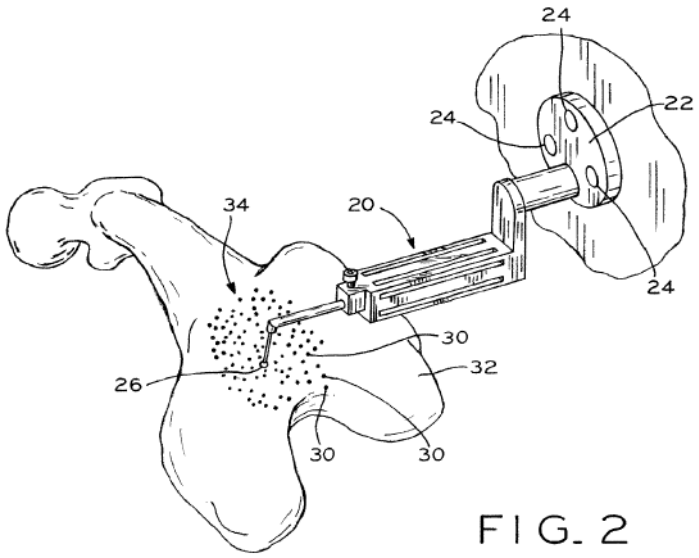

FIG. 2

Figure 2 shows pointer device 20 in use. Ex. 1001, 4:29–31, 5:15–17. The pointer device includes adapter portion 22 that allows the pointer device to be connected to the arm of a CAS system via fasteners extending through holes 24. *Id.* at 4:57–5:7. The pointer device also includes interface structure 26 for interfacing with an anatomical structure, such as femur 32. *Id.* at 5:7–9, 5:15–17. A surgeon moves the interface structure into contact with the bone to identify a point 30 of a region to be replaced with an implant. *Id.* at 5:20–24. The surgeon moves the interface structure to identify additional points 30, such as by dragging the pointer device across the surface of the femur while the CAS system periodically obtains data

points. *Id.* at 5:30–38. Alternatively, the data points can be defined by a preoperative imaging technique, such as a CT scan, an MRI scan, or x-ray image. *Id.* at 5:62–65. The location of each data point is recorded in a three-dimensional coordinate system. *Id.* at 5:40–52.

Once the data points have been acquired, the CAS system uses the data points to approximate a contour of the region using a best fit technique such as least squares fitting. Ex. 1001, 6:1–6. Optionally, the surgeon may input parameters regarding, for example, bone defects or resection limitations to be considered by the CAS system when approximating the bone contour. *Id.* at 6:15–23. The CAS system then presents to the surgeon a library of possible implants, and the surgeon selects an implant that most closely replicates the patient's existing bone contour. *Id.* at 6:35–44. The CAS system also facilitates resection and implantation of the selected implant. *Id.* at 6:55–7:8.

E. The Challenged Claims

Petitioner challenges claims 1–15 of the '462 patent. Pet. 1. Claims 1 and 11 are independent. Claim 1 is illustrative of the challenged claims and is reproduced below.

> 1. A method operating within a computer aided surgical (CAS) system, the method comprising:
>
> receiving, within the CAS system, identification of a region of a surface of an anatomical structure for replacement by an implant;
>
> acquiring, using data received from a tracking device within the CAS system tracking a pointer probe, a plurality of data points obtained as the pointer probe temporarily contacts at least a portion of the region of the surface of the anatomical structure, each data point of the plurality of data points

representing a discrete location on the surface of the region; and

approximating a surface contour of the region of the surface based on the plurality of data points at least in part by correlating each data point of the plurality of data points to a three-dimensional coordinate system generated by the CAS system.

Ex. 1001, 11:4–20.

F. Asserted Grounds of Unpatentability

The Petition relies on the following prior art references:

Name	Reference	Exhibit
Delp	US 5,871,018, issued February 16, 1999	1004
Lavallee	US 2005/0101966 A1, published May 12, 2005	1005

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1–5, 7, 11–13	102(b)[2]	Delp
1–5, 7–13, 15	103(a)	Delp
6, 14	103(a)	Delp, Lavallee

Pet. 5. Petitioner submits a declaration of Milan Sonka, Ph.D. (Ex. 1003, "Sonka Declaration") in support of its contentions. Patent Owner submits a declaration of Anthony M. DiGioia III, M.D. (Ex. 2004) in support of its preliminary responses.

[2] The application resulting in the '462 patent was filed prior to the date when the Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–29, 125 Stat. 284 (2011), took effect. Thus, we refer to the pre-AIA version of the code.

II. DISCRETIONARY DENIAL OF INSTITUTION

Patent Owner argues that we should discretionarily deny institution of *inter partes* review under 35 U.S.C. § 325(d) because substantially the same prior art advanced by Petitioner was presented during prosecution of the application resulting in the '462 patent. Prelim. Resp. 17–25. Petitioner argues that discretionary denial is not warranted. Pet. 7–10. For the reasons discussed below, we decline to exercise our discretion to deny institution.

A. Legal Framework

Institution of *inter partes* review is discretionary. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) ("[T]he PTO is permitted, but never compelled, to institute an IPR proceeding."); 35 U.S.C. § 314(a). Pursuant to 35 U.S.C. § 325(d), in determining whether to institute an *inter partes* review, "the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office."[3] In evaluating whether to exercise our discretion to deny institution under § 325(d), we weigh the following non-exclusive factors:

> (a) the similarities and material differences between the asserted art and the prior art involved during examination;
>
> (b) the cumulative nature of the asserted art and the prior art evaluated during examination;
>
> (c) the extent to which the asserted art was evaluated during examination, including whether the prior art was the basis for rejection;

[3] The Board institutes trial on behalf of the Director. 37 C.F.R. § 42.4(a).

> (d) the extent of the overlap between the arguments made during examination and the manner in which Petitioner relies on the prior art or Patent Owner distinguishes the prior art;
>
> (e) whether Petitioner has pointed out sufficiently how the Examiner erred in its evaluation of the asserted prior art; and
>
> (f) the extent to which additional evidence and facts presented in the Petition warrant reconsideration of the prior art or arguments.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (designated precedential in relevant part). Factors (a), (b), and (d) relate to whether the art and arguments presented in the petition are the same or substantially the same as those previously presented to the Office. *Advanced Bionics, LLC v. Med-El Electromedizinishe Geräte GMBH,* IPR2019-01469, Paper 6 at 10 (PTAB Feb. 13, 2020) (designated precedential). Factors (c), (e), and (f) "relate to whether the petitioner has demonstrated a material error by the Office" in its prior consideration of that art or arguments. *Id.*

> Thus, under § 325(d), the Board uses the following two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of [the] first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of [the] challenged claims.

Id. at 8.

B. Background

The '462 patent was filed on November 3, 2015, as Application No. 14/931,156 ("the '156 application") and had 20 claims. Ex. 1002, 16–18,

54. The Applicant filed an Information Disclosure Statement disclosing Delp. *Id.* at 40–46. The Applicant filed a preliminary amendment on February 27, 2017, canceling claims 1–20 and adding new claims 21–40, of which claims 21, 31, and 36 were independent. *Id.* at 65–68.

On May 8, 2017, the Examiner issued a Restriction, requiring the Applicant to elect to pursue claims 21–35, drawn to a method, or claims 36–40, drawn to an apparatus. Ex. 1002, 71–76. The Applicant elected to pursue claims 21–35, and claims 36–40 were withdrawn. *Id.* at 85–91.

On December 12, 2017, the Examiner issued a non-final Office Action rejecting claims 21–25, 27, and 31–33 as being obvious in view of Hodorek[4] and McGinley,[5] claims 28–30 and 35 as being obvious in view of Hodorek, McGinley, and Delp '886,[6] and claims 26 and 34 as being obvious in view of Hodorek, McGinley, and Song.[7] Ex. 1002, 106–11. The Examiner also issued rejections based on failure to comply with the written description requirement, indefiniteness, and being drawn to an abstract idea. *Id.* at 102–05. The Applicant responded on March 2, 2018, by amending the independent claims to recite acquiring data from a tracking device within a computer aided surgical system tracking a pointer probe as the probe temporarily contacts the anatomical structure and to recite that the approximating includes correlating the data points to a three-dimensional

[4] US 2007/0066917 A1, published March 22, 2007 (Ex. 1011).

[5] US 2004/0153062 A1, published August 5, 2004 (Ex. 1012).

[6] US 5,682,886, issued November 4, 1997 (Ex. 1013). Delp claims priority as a division of Delp '886. Ex. 1004, code (62).

[7] US 2008/0183086 A1, published July 31, 2008 (Ex. 1014).

coordinate system. *Id.* at 127–29. The Applicant argued that these amendments distinguished the claims over the cited references. *Id.* at 134–36. The Applicant also amended the claims to overcome the written description and indefiniteness rejections, and argued that the amendment of claim 21 to recite use of a computer aided surgical system overcame the abstract idea rejection. *Id.* at 127–29, 132–33.

On July 26, 2018, the Examiner issued a final Office Action rejecting claims 21–25, 27, and 31–33 as being obvious in view of Hodorek and McGinley, claims 28–30 and 35 as being obvious in view of Hodorek, McGinley, and Delp '866, and claims 26 and 34 as being obvious in view of Hodorek, McGinley, and Song. Ex. 1002, 145–48. The Examiner also maintained the rejection of claims 21–35 as being drawn to an abstract idea. *Id.* at 144.

On October 26, 2018, the Applicant appealed the rejections. *Id.* at 153. The Applicant argued that Hodorek failed to disclose acquiring data points from a portion of a surface of an anatomical structure to be replaced with an implant. *Id.* at 171–72. The Applicant also argued that McGinley failed to teach using a pointer probe to obtain data points on the bone surface and Hodorek failed to disclose approximating a surface contour. *Id.* at 172–74. The Applicant argued that Delp '886 failed to disclose using surface contour as a factor in selecting an implant. *Id.* at 178–79. The Board reversed the Examiner's rejections. *Id.* at 213–24. The Board determined, in relevant part, that the Examiner did not adequately support the contention that Hodorek disclosed approximating a surface contour of the anatomical structure:

> In support of claim 21's obviousness rejection, the Examiner relies on Hodorek's paragraph 37 to disclose approximating a surface contour of an anatomical structure's surface region based on the plurality of data points. *See*, *e.g.*, Answer 6–7. However, the Examiner does not support adequately that this portion of Hodorek discloses approximating a surface contour, and thus does not support that Hodorek does so based on a plurality of data points.
>
> Hodorek's paragraph 37 is thirty-four lines in length. Neither the Final Office Action nor the Answer identifies, with specificity, which portion of the paragraph discloses approximating a surface contour of an anatomical structure's surface region. *See generally* Final Action, Answer. Although we agree with the Examiner that Hodorek's paragraph 37 discloses selecting a femoral implant, it is not clear to us that in Hodorek implant selection occurs based on a surface contour, or even that the implant approximates the surface contour.

Id. at 221–22.

On September 2, 2020, the Examiner issued a Notice of Allowance for claims 21–35. Ex. 1002, 225–31. The Examiner canceled claims 36–40, but did not provide reasons for allowance. *Id.* Claim 21 issued as claim 1, and claim 31 issued as claim 11. *Id.* at 235.

C. Analysis

1. Whether the Same or Substantially the Same Art Was Presented to the Office

Applying the *Advanced Bionics* framework, we first determine whether the same or substantially the same art or arguments were presented previously to the Office. Patent Owner argues that "Delp—the only reference [Petitioner] relies upon to challenge the independent claims—was considered by [the Examiner] during prosecution of the '462 Patent and its parent '983 Patent." Prelim. Resp. 20; *see also id.* at 1 ("Delp was cited on

an IDS signed by the Examiner during prosecution."), 14 ("During prosecution . . ., [the Examiner] initialed an IDS representing that she had reviewed Delp." (citing Ex. 1002, 122)). Patent Owner also argues that, during prosecution of the '156 application, the Examiner considered and applied Delp's parent patent (that is, Delp '886), which, Patent Owner asserts, "shares a nearly identical disclosure" with Delp. *Id.* at 20–21.

Petitioner argues that the Petition applies Delp "in a materially different manner than Delp '886, of which Delp is a divisional, was applied during prosecution." Pet. 8.[8] Petitioner notes that the "Petition relies on Delp as anticipating and/or alone rendering obvious claims 1-5, 7-13, and 15, including anticipating independent claim 1, as well as rendering obvious claims 6 and 14 in view of Lavallee," and argues that "during prosecution, Delp '886 was only applied as a tertiary reference for a limited teaching relevant to issued claims 8-10 and 15." *Id.* (citing Ex. 1002, 108–09, 147–48, 235).

Petitioner asserts Delp in all challenges, relying exclusively on Delp regarding 13 of the 15 challenged claims, including both independent claims. *See* Pet. 5. Delp was cited on an Information Disclosure Statement during prosecution of the '156 application, and the Examiner indicated that Delp was considered. Ex. 1002, 43, 122. Our precedent establishes that "[p]reviously presented art includes . . . art provided to the Office by an applicant, such as on an Information Disclosure Statement (IDS), in the prosecution history of the challenged patent." *Advanced Bionics*, Paper 6

[8] Throughout the Petition, Petitioner presents the names of the asserted references in boldface font. When quoting the Petition herein, we omit such boldface formatting.

at 7–8. Thus, we agree that Petitioner's use of Delp satisfies the first prong of the *Advanced Bionics* test.

2. Whether the Office Erred in a Manner Material to Patentability

Having determined that the first part of the *Advanced Bionics* framework is satisfied, we turn to the second part of the framework in which we consider whether Petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims. Patent Owner contends that, during prosecution of the '156 application, it argued that neither the references relied upon by the Examiner nor Delp '886 taught "the step of approximating a surface contour of the anatomical structure." Prelim. Resp. 23 (citing Ex. 1002, 134–36). Patent Owner asserts that the Examiner agreed and that "[Petitioner's] plain disagreement with the Office's prior interpretation and application of [Delp '886's] disclosure does not establish a material error." *Id.* at 23–24.

Petitioner argues that each of Delp and Delp '866 discloses a pointer 870 and the construction of a three-dimensional model of a patient's anatomy as part of its contour matching registration. Pet. 9 (citing Ex. 1004, 16:23–34, 18:25–34, 18:41–54, Figs. 18, 20). Therefore, Petitioner argues, "the Examiner erred in a manner material to the Challenged Claims by failing to consider the additional portions of Delp '886, which disclose both a pointer probe and approximating a surface contour." *Id.* at 10.

As a preliminary matter, we disagree with Patent Owner's characterization of the prosecution history. Rather than determining that Delp '886 only taught the step of comparing a contour of each of a plurality of implants to the surface contour of the anatomical structure (*see* Prelim.

Resp. 23), the Examiner only relied on Delp '886 to teach what she determined to be missing from Hodorek and McGinley, namely comparing implant contours to the contour of the patient's anatomical structure. Ex. 1002, 108–09, 147–48, 197. The Examiner did not, however, determine that this comparing step was the only recited feature that was disclosed or taught by Delp '886 as suggested by Patent Owner. We also note that, when considering an appeal of the Examiner's final rejection of the claims, the Board did not review the Examiner's reliance on Delp '886, instead determining that the Examiner erred in not explaining persuasively how Hodorek disclosed the approximating step. *Id.* at 221–24.

As discussed above, the Examiner issued a Notice of Allowance after the Board determined that the Examiner did not explain adequately how Hodorek disclosed or taught approximating a surface contour of an anatomical structure's surface region. Ex. 1002, 221–23, 225–31. Delp discloses a "contour matching" process in which its computer-assisted surgical system fits mathematical functions to data points taken from a patient's bone to make a smooth curve, and matches the curve to curvature data obtained from a three-dimensional model of the patient's bone created by the system prior to surgery. Ex. 1004, 18:25–47. As explained in more detail below, this constitutes approximating a surface contour as recited in the challenged claims. By failing to consider this disclosure of Delp or the substantially similar disclosure of Delp '886 (*see* Ex. 1013, 18:22–51), we determine that the Examiner erred in a manner material to patentability.

D. Conclusion

After considering the framework set forth in *Advanced Bionics* and the underlying *Becton, Dickinson* factors, we find that § 325(d) is not sufficiently implicated under the circumstances here, and we determine that denying institution under § 325(d) is unwarranted.

III. PATENTABILITY ANALYSIS

A. Principles of Law

1. Inter Partes Review

"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")). Petitioner bears the burden of persuasion to prove unpatentability of each challenged claim by a preponderance of the evidence. 35 U.S.C. § 316(e). This burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). The Board may authorize an *inter partes* review if we determine that the information presented in the Petition and Patent Owner's Preliminary Response shows that there is a reasonable likelihood that Petitioner will prevail with respect to at least one of the claims challenged in the petition. 35 U.S.C. § 314(a).

2. Anticipation

"Under 35 U.S.C. § 102 a claim is anticipated 'if each and every limitation is found either expressly or inherently in a single prior art reference.'" *King Pharm., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010) (quoting *Celeritas Techs. Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1360 (Fed. Cir. 1998)). "Anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim." *Therasense, Inc. v. Becton, Dickinson & Co.*, 593 F.3d 1325, 1332 (Fed. Cir. 2010) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

A reference inherently discloses an element of a claim "if that missing characteristic is necessarily present, or inherent, in the single anticipating reference." *Schering Corp. v. Geneva Pharm.*, 339 F.3d 1373, 1377 (Fed. Cir. 2003) (citing *Cont'l Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1268 (Fed. Cir. 1991)). "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *Therasense*, 593 F.3d at 1332 (quoting *Cont'l Can*, 948 F.2d at 1269).

3. Obviousness

A patent 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 the invention was made to a person having ordinary skill in the art to which the subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying

factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) when in evidence, any objective evidence of nonobviousness.[9] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

The level of ordinary skill in the art is "a prism or lens" through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In determining the level of ordinary skill in the art, we may consider certain factors, including: "(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field." *Best Med. Int'l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353 (Fed. Cir. 2022) (citations omitted). "The patent's purpose can also be informative." *Id.* (citation omitted).

Petitioner contends that a person having ordinary skill in the art at the time of the invention ("POSITA") would have "had a bachelor's degree in Electrical Engineering, Computer Engineering, Controls Engineering or an equivalent field, with approximately 2-3 years of academic or industry

[9] At this stage of the proceeding, the parties have not directed us to any such objective evidence.

experience with computer aided surgical systems such as surgical planning or navigation systems or a related area." Pet. 17 Petitioner further contends that "[a]dditional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education." *Id.*

Patent Owner does not contest Petitioner's definition of the ordinary level of skill or offer its own definition. *See generally* Prelim. Resp.

We find Petitioner's description to be consistent with the problems and solutions disclosed in the patent and prior art of record, and adopt it as our own for purposes of this Decision. *See, e.g.*, *In re GPAC Inc.*, 57 F.3d at 1579 (approving the determination of the level of ordinary skill in the art by appeal to the references of record).

C. Claim Construction

In an *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b), including construing the claims in accordance with the ordinary and customary meaning of such claims as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b). "[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention" and "after reading the entire patent." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 1321 (Fed. Cir. 2005) (en banc). In addition to the specification and prosecution history, we also consider use of the terms in other claims and extrinsic evidence including expert and inventor testimony,

dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Id.* at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

Neither party proposes definitions for any claim terms. *See* Pet. 18; Prelim. Resp. 2–3.

For purposes of this Decision, and based on the record before us, we determine that no construction of any term is necessary. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.'" (alteration in original) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). We note that this determination does not preclude the parties from arguing their proposed constructions of the claims during trial. Indeed, the parties are hereby given notice that claim construction, in general, is an issue to be addressed at trial. A final determination as to claim construction will be made at the close of the proceeding, after any hearing, based on all the evidence of record. The parties are expected to assert all of their claim construction arguments and evidence in the Petition, Patent Owner's Response, Petitioner's Reply, or otherwise during trial, as permitted by our rules.

D. Overview of the Asserted Prior Art

1. Delp

Delp discloses a computer-assisted surgical system and method of using the system to plan and perform surgery, such as knee arthroplasty.

Ex. 1004, 1:8–13, 4:34–37, 4:51–54. The system includes two subsystems: a planning subsystem and a procedure subsystem. *Id.* at 8:10–12. In the first step of using the planning subsystem, the operator gathers image data of the patient's leg, preferably via CT scans. *Id.* at 8:36–52. The system uses the data to generate a three-dimensional computer model of the patient's bones. *Id.* at 8:66–9:1. The system includes modeling means that uses algorithms to define edges in the captured images, which includes the operator specifying a series of points on the boundary of a first image and the system shifting the points to the edges of subsequent images. *Id.* at 9:37–10:30. The system connects the points in each image to form a continuous boundary called an active contour. *Id.* at 9:37–39. After the bone has been outlined, the modeling means uses the data points to create surface patches, which are three-dimensional surfaces, and tessellates the surface patches (that is, resurfaces them with polygons) to form polygonal meshes that represent the surface of the bone and together form a three-dimensional computer model of the bone. *Id.* at 10:31–45. The planning subsystem uses the three-dimensional model to create a plan for the surgery, including angular correction of the femur and tibia (*id.* at 11:9–12:63), selection of femoral and tibial prostheses (*id.* at 12:64–13:65), prostheses positioning (*id.* at 13:66–14:44), and jig positioning (*id.* at 14:45–64).

The surgical procedure subsystem allows the surgeon to implement the surgical plan by guiding placement of the jigs onto the patient's bones. Ex. 1004, 14:65–15:2. The procedure subsystem includes registration means for registering the three-dimensional computer model of the body. *Id.* at 15:2–6. "Registration is the process of defining a geometric transform between the physical world and a computer model." *Id.* at 3:57–59.

Preferably, the registration means is a coordinate measuring machine ("CMM") that provides data regarding the pose of a probe portion of the registration means to a system computer. *Id.* at 15:18–20, 15:34–37. Figure 18 illustrates the coordinate measuring machine and is reproduced below.

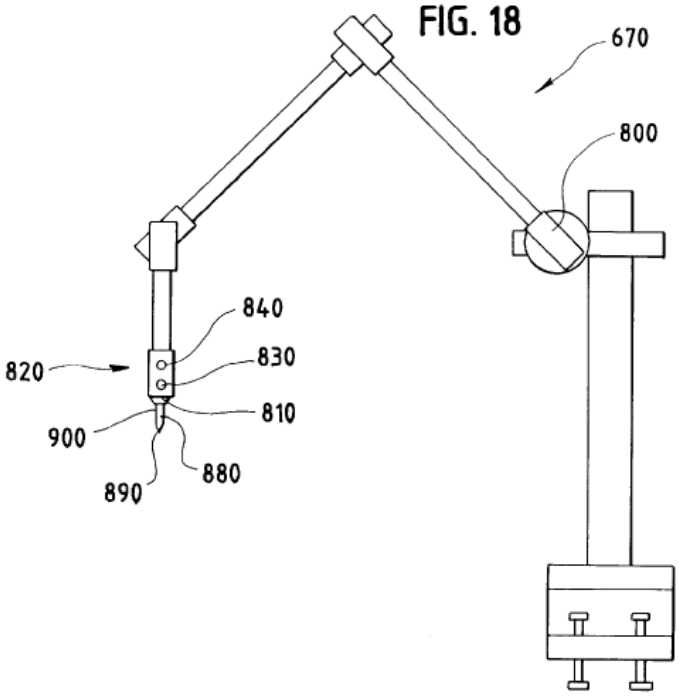

Figure 18 shows coordinate measuring machine 670. *Id.* at 15:40–42. The CMM includes fixed end 800 and free end 810. *Id.* A pointer having body 880 and tip 890 is attached to the free end. *Id.* at 16:30–34. To register the three-dimensional computer model, the surgeon first makes an incision and fixes the patient's leg in place. *Id.* at 16:5–9. The surgeon then samples data points by touching the pointer to desired points on the patient's bone to be registered. *Id.* at 16:23–27. The surgeon can capture the data points, for example, via signaling device 820, which includes two buttons 830, 840. *Id.* at 15:42–47, 16:27–30. After capturing data points,

the surgeon then aligns the CMM with a predefined pose displayed by the computer-assisted surgical system, and the system computes a rough registration transform. *Id.* at 16:46–61. Next, the surgeon uses the CMM to sample a number of points on the surface of the patient's bone that are contained on a surface on the three-dimensional model of the patient's bone being displayed by the system. *Id.* at 17:15–22. The system uses optimization algorithms to relate the sampled points to the model to more accurately register the surgical plan to the patient's bone. *Id.* at 17:38–64. After registration, the system guides the surgeon in placing jigs on the patient's bones (*id.* at 18:55–21:8), the surgeon performs femoral and tibial resection (*id.* at 21:9–57), and secures the implants to the patient's bones (*id.* at 21:58–22:31).

Alternatively, registration can be performed via contour matching. Ex. 1004, 18:25–54. In contour matching, the surgeon obtains a number of data points from a curve, referred to as a "characteristic curve," that defines the major shape of the bone surface. *Id.* at 18:27–31. The system fits mathematical functions to the data points to smooth the curve and matches the curve to curvature data obtained from the three-dimensional model. *Id.* at 18:41–47.

2. Lavallee

Lavallee discloses a computer-based system for determining the proper position for placement of a prosthesis. Ex. 1005 ¶ 1. Known computer-assisted surgery systems track a patient's bones using position sensors in a tridimensional positioning system. *Id.* ¶ 5. "By means of these position sensors, a palpation device may be used to digitize points on the

surface of the structures equipped with a position mark, and motions between two bones equipped with position marks may also be recorded." *Id.* Figure 2A, reproduced below, illustrates a femur with a locatable element and a palpation device sensor.

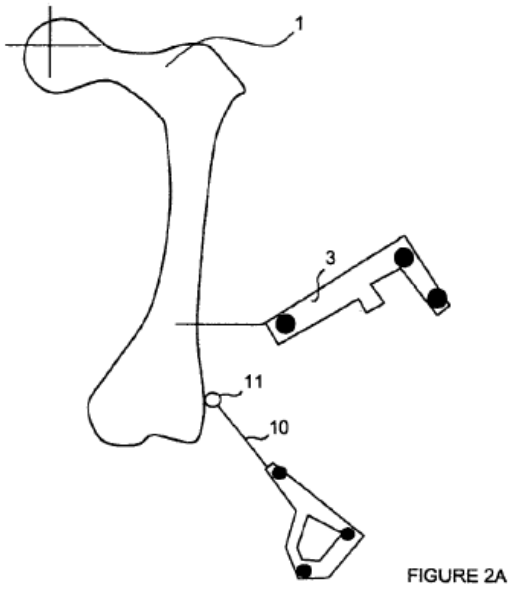

FIGURE 2A

Figure 2A shows femur 1 with locatable element 3 attached thereto, and a palpation device including sensor 10. *Id.* ¶¶ 72, 76. The sensor has a spherical end that contacts the surface of an area of the bone to be detected. *Id.* ¶ 76. The surgeon sends an order to obtain data points and slides the spherical end of the sensor along the bone surface so that many points can be captured. *Id.*

E. Asserted Anticipation Based on Delp

Petitioner argues that claims 1–5, 7, and 11–13 are anticipated by Delp. Pet. 23–50. In support of its showing, Petitioner relies upon the Sonka Declaration. *Id.* (citing Ex. 1003). We have reviewed Petitioner's assertions and supporting evidence. For the reasons discussed below, and

based on the record before us, we determine that Petitioner demonstrates a reasonable likelihood of prevailing in showing that at least one challenged claim is anticipated by Delp.

1. Independent Claim 1

a. The Preamble

Claim 1 recites "[a] method operating within a computer aided surgical (CAS) system." Ex. 1001, 11:4–5. Petitioner argues that Delp discloses a CAS system including a planning subsystem and a procedure subsystem. Pet. 23.

Patent Owner does not contest this aspect of the Petition. *See generally* Prelim. Resp.

Delp discloses a computer-assisted surgical system and method of using the system to plan and perform surgery. Ex. 1004, 1:8–11, 4:34–37, 4:51–54; *see also id.* at 5:29–31 ("Another object of the invention is to provide a computer-assisted surgical system method that decreases patient complications."). The computer-assisted surgical system includes a planning subsystem and a procedure subsystem. *Id.* at 8:10–12.

Accordingly, for the foregoing reasons and on this preliminary record, to the extent the preamble is limiting, Delp supports Petitioner's contentions.

b. The Receiving Recitation

Claim 1 recites "receiving, within the CAS system, identification of a region of a surface of an anatomical structure for replacement by an implant." Ex. 1001, 11:6–8. Petitioner argues that Delp's system receives the identification of a femur condyle to be replaced with an implant by the surgeon identifying the condyle in Delp's three-dimensional model of the

patient's bone. Pet. 24–25 (citing Ex. 1004, 10:49–53, 11:65–66). Petitioner also argues that the surgeon can identify the patient's condyle by contacting it with a pointer probe. *Id.* at 25 (citing Ex. 1004, 16:56–58, Fig. 10; Ex. 1003 ¶¶ 85–86).

Patent Owner does not contest this aspect of the Petition. *See generally* Prelim. Resp.

Delp discloses modeling means that forms a three-dimensional computer model of the bone. Ex. 1004, 10:31–45. "The modeling means also may be used to identify the relevant anatomical structures. In one such embodiment, the user highlights relevant anatomical structures directly on the image data using a pointer, such as a mouse." *Id.* at 10:49–53. Delp also discloses that a first step of the registration process involves aligning the CMM with a predefined pose displayed by the computer-assisted surgical system, such as by placing the CMM pointer tip on the patient's femoral "condyle involved in the operation" and aligning the CMM parallel to the femur longitudinal axis. *Id.* at 16:46–61.

Accordingly, for the foregoing reasons and on this preliminary record, Delp supports Petitioner's contentions.

c. The Acquiring Recitation

Claim 1 recites,

> acquiring, using data received from a tracking device within the CAS system tracking a pointer probe, a plurality of data points obtained as the pointer probe temporarily contacts at least a portion of the region of the surface of the anatomical structure, each data point of the plurality of data points representing a discrete location on the surface of the region.

Ex. 1001, 11:9–15. Petitioner argues that Delp discloses registration means 750 that includes a wand with LEDs that are tracked by external cameras and reports when data points are sampled by touching a pointer 870 to desired points on the patient's bone. Pet. 29 (citing Ex. 1004, 15:17–23, 16:23–27, 18:27–40).

Patent Owner does not contest this aspect of the Petition. *See generally* Prelim. Resp.

Delp discloses that its procedure subsystem includes registration means 750 for registering the three-dimensional computer model of the body. Ex. 1004, 15:2–6. "The registration means 750 is a device that reports to the computer 770 the three-dimensional pose of a movable probe. Suitable registration means 750 include . . . optical devices (such as a wand with LEDs that are sensed by external cameras)." *Id.* at 15:18–23. Preferably, registration means 750 is a coordinate measuring machine that provides data regarding the pose of a probe portion of the registration means to a system computer. *Id.* at 15:18–20, 15:34–37. A second step of the registration process involves the surgeon sampling a number of points on the surface of the patient's bone. *Id.* at 17:15–22, 18:27–31. Preferably, the surgeon obtains ten to twenty data points. *Id.* at 18:38–41.

According, for the foregoing reasons and on this preliminary record, Delp supports Petitioner's contentions.

d. The Approximating Recitation

Claim 1 recites "approximating a surface contour of the region of the surface based on the plurality of data points at least in part by correlating each data point of the plurality of data points to a three-dimensional

coordinate system generated by the CAS system." Ex. 1001, 11:16–20. Petitioner argues that Delp approximates the surface contour of a patient's bone in its contour matching registration method by processing sampled points into smooth curves and fitting the curves to a three-dimensional image model of the patient's bone. Pet. 32–33 (citing Ex. 1004, 18:25–54). Petitioner argues that an ordinarily skilled artisan "would have understood that fitting polynomials or other mathematical functions to data points to generate a set of smooth curves representing a condyle and/or fitting the curves to the three-dimensional image model in an iterative process is approximating a surface contour." *Id.* at 33 (citing Ex. 1003 ¶ 108).

Patent Owner argues that, rather than approximating a surface contour of an anatomical structure based on acquired data points, "Delp teaches registering a previously created three-dimensional model to a patient's bone." Prelim. Resp. 26 (citing Ex. 1004, 16:21–23); *see also id.* at 28 (arguing that Delp's "three-dimensional model is based on pre-operative CT scan data, not based on 'the plurality of data points,' as claimed"). Patent Owner argues that Delp's planning subsystem builds a three-dimensional model using "well known radiant energy devices, such as a CT, MR imaging, and X-ray devices." *Id.* at 26–27 (citing Ex. 1004, 8:36–45). Patent Owner contends that "Delp's intraoperative process focuses on collecting data to register the pre-operative image data model to the intraoperative pose of the patient's anatomy," but "does not approximate a surface contour." Prelim. Resp. 27–28 (citing Ex. 1004, 16:43–61; Ex. 2004 ¶¶ 48, 51, 54). According to Patent Owner, "The claimed method and system are unlike Delp's process because they generate anatomic imaging from the collected data points. Delp's process merely collects data points

used to register the pose of the patient to the model." Prelim. Resp. 27 (citing Ex. 2004 ¶¶ 51, 53).

We agree with Patent Owner that Delp generates a three-dimensional model of the patient's bones using images taken prior to surgery. *See* Ex. 1004, 8:36–52, 8:66–9:1. Claim 1, however, does not require otherwise. Rather, claim 1 recites that the system approximates a surface contour of a region of the patient's bone by correlating acquired data points "to a three-dimensional coordinate system generated by the CAS system" without specifying how or when the three-dimensional coordinate system is generated. Ex. 1001, 11:16–20. Notably, claim 1 does not recite building a three-dimensional model of the patient's bones as suggested by Patent Owner. Delp generates a three-dimensional coordinate system by generating a three-dimensional model of the patient's bones using pre-operative images. *See, e.g.*, Ex. 1004, 8:36–9:1.

Patent Owner next argues that "Delp's contour matching does not approximate a *surface* contour because Delp only discloses creating curves." Prelim. Resp. 28 (citing Ex. 1004, 18:41–43). Petitioner argues that "Delp collects data points and fits data points with curves" that "reflect the data points fit along a continuous line," but "[e]ven multiple lines do not constitute a 'surface,'" which "is a plane that has both length and breadth." *Id.* at 28–29 (citing Ex. 1004, 18:41–43; Ex. 2004 ¶¶ 49, 54). Patent Owner asserts that "the '462 Patent claims . . . fitting the data to a surface, not a curve." *Id.* at 29. Continuing, Patent Owner asserts that "Delp's contour matching is merely a registration process; it does not approximate a surface contour of the region of the surface based on the plurality of data points." *Id.* (citing Ex. 1004, 18:20–54; Ex. 2004 ¶ 49). Patent Owner argues that

Delp compares curve data to a three-dimensional model "to determine the pose to register the model to the patient," but "does not use the curve data to approximate an anatomical surface or to alter the pre-operative model." *Id.* at 29–30 (citing Ex. 1004, 18:43–46, 18:50–54; Ex. 2004 ¶¶ 48, 53). According to Patent Owner, "[t]he curves are merely used to identify the bone's position in relation to the previously constructed three-dimensional model. . . . While these curves are created from data sampled on, for example, the condyle, they do not represent a condyle." *Id.* at 30 (citing Ex. 1004, 18:43–46; Ex. 2004 ¶¶ 50, 55). "Instead," Patent Owner argues, "these curves are merely compared to curvature data obtained from the pre-operative image data without regard for the particular underlying anatomical structure (e.g., condyle)." *Id.* (citing Ex. 1004, 18:43–44; Ex. 2004 ¶ 55).

In contour matching, the surgeon obtains ten to twenty data points from a curve, referred to as a "characteristic curve," that defines the major shape of the patient's bone surface. *Id.* at 18:27–31, 18:38–41. Delp's system fits mathematical functions to the data points to generate a smooth curve and matches the curve to curvature data obtained from the three-dimensional model of the patient's bone. *Id.* at 18:41–47. Thus, Delp approximates a surface contour of the patient's bone region by correlating the data points to a three-dimensional coordinate system as required by claim 1.

Patent Owner's arguments do not inform us why Delp's curve fitting of the acquired data points is not approximating a surface contour as recited in claim 1. Contrary to Patent Owner's assertion (*see* Prelim. Resp. 28–29), claim 1 recites approximating a *contour* of a surface, not approximating a surface. Ex. 1001, 11:16–20. Delp's system does this by obtaining ten to

twenty data points along a major shape of the patient's bone and fitting a curve to these data points. Ex. 1004, 18:38–43. Furthermore, as conceded by Patent Owner, Delp correlates the fitted curve to a three-dimensional representation of the bone created by the system. Ex. 1004, 18:44–47; Prelim. Resp. 29 ("The curve data is merely compared to the pre-operative three-dimensional model.").

For similar reasons, Patent Owner's reference to Delp's use of the approximated major shape of the patient's bone as part of its registration process (*see* Prelim. Resp. 29–33) fails to distinguish the challenged claims from Delp. For example, Patent Owner concedes that Delp discloses that "[t]he operator samples data points on 'characteristic curves from the patient's anatomy,' such as curves over the sides of the condyles," and argues that, "[w]hile these curves are created from data sampled on, for example, the condyle, they do not represent a condyle." *Id.* at 30 (citing Ex. 1004, 18:27–34; Ex. 2004 ¶ 55). Both Patent Owner and its declarant fail to provide any explanation for this assertion. To the contrary of this conclusory statement, data points taken from "the major shape of a surface" of the patient's bone, such as "the sides and top of one of the condyles" (Ex. 1004, 18:27–34), would appear to represent the patient's condyle. We credit the testimony of Petitioner's declarant, who testifies that "[an ordinarily skilled artisan] would have understood that fitting polynomials or other mathematical functions to data points to generate a set of smooth curves representing a condyle and/or fitting the curves to the three-dimensional image model in an iterative process is approximating a surface contour." Ex. 1003 ¶ 108.

e. Conclusion

Accordingly, at this stage of the proceeding, we determine that Petitioner has established a reasonable likelihood of prevailing on its assertion that claim 1 is anticipated by Delp.

2. Independent Claim 11

Claim 11 recites a non-transitory computer-readable medium including instructions to cause a computing system to perform the operations recited in claim 1. Ex. 1001, 12:9–30. Petitioner largely relies on its arguments presented for claim 1 in arguing that claim 11 is unpatentable. *See* Pet. 46–48. Petitioner argues that Delp discloses a non-transitory computer-readable medium including instructions via its planning software and procedure software. *Id.* at 46–47 (citing, *inter alia*, Ex. 1004, 8:30–35, 17:38–41, 18:44–49).

Patent Owner does not contest Petitioner's challenge to claim 11 apart from its arguments advanced for claim 1 and discussed above. *See* Prelim. Resp. 25–33.

Accordingly, at this stage of the proceeding, for the reasons provided above regarding claim 1, we determine that Petitioner has established a reasonable likelihood of prevailing on its assertion that claim 11 is anticipated by Delp.

F. Asserted Obviousness Based on Delp

Petitioner argues that claims 1–5, 7–13, and 15 would have been obvious in view of Delp. Pet. 50–58. In support of its showing, Petitioner relies upon the Sonka Declaration. *Id.* (citing Ex. 1003). We have reviewed

Petitioner's assertions and supporting evidence. For the reasons discussed below, and based on the record before us, we determine that Petitioner demonstrates a reasonable likelihood of prevailing in showing that at least one challenged would have been obvious in view of Delp.

Regarding independent claims 1 and 11, Petitioner relies on the same disclosures of Delp as relied upon in the anticipation-based challenge, and argues, "under an abundance of caution," that "[i]t would have been obvious to combine the cited teachings because Delp teaches, at the very least, that they are all directed to closely related variations of the same processing methods and interchangeable registration tools." Pet. 51 (citing Ex. 1004, 14:65–18:55).

Patent Owner argues that Petitioner's "fallback obviousness argument" is unpersuasive because Petitioner relies on "a single conclusory contention" that is unsupported by expert testimony. Prelim. Resp. 33–35 (citing Pet. 51).

Having found that Delp anticipates claims 1 and 11 as explained in § III.E above, we also determine that Delp renders obvious claims 1 and 11. "It is well settled that 'anticipation is the epitome of obviousness.'" *In re McDaniel*, 293 F.3d 1379, 1385 (Fed. Cir. 2002) (quoting *Connell*, 722 at 1548). "Though it is never necessary to so hold, a disclosure that anticipates under § 102 also renders the claim invalid under § 103, for 'anticipation is the epitome of obviousness.'" *Connell*, 722 at 1548 (quoting *In re Fracalossi*, 681 F.2d 792, 794 (CCPA 1982)).

Accordingly, at this stage of the proceeding, we determine that Petitioner has established a reasonable likelihood of prevailing on its assertion that claims 1 and 11 would have been obvious in view of Delp.

G. Asserted Obviousness Based on Delp and Lavallee

Petitioner argues that claims 6 and 14 would have been obvious in view of Delp and Lavallee. Pet. 58–64. In support of its showing, Petitioner relies upon the Sonka Declaration. *Id.* (citing Ex. 1003). We have reviewed Petitioner's assertions and supporting evidence. For the reasons discussed below, and based on the record before us, we determine that Petitioner demonstrates a reasonable likelihood of prevailing in showing that at least one challenged claim would have been obvious in view of the combination of Delp and Lavallee.

Claim 6 depends from claim 1 through claims 2 and 4. Ex. 1001, 11:43–45. Claim 2 recites that the acquiring recitation includes receiving a first indication that the pointer probe is positioned in a first position and determining a first data point including a first coordinate of the first position. *Id.* at 11:21–26. Claim 4 recites that the acquiring recitation includes receiving a second indication that the pointer probe is positioned in a second position and determining a second data point including a second coordinate of the second position. *Id.* at 11:31–37. Claim 6 recites "wherein receiving the second indication includes receiving an indication of a predetermined time interval from acquisition of the first data point." *Id.* at 11:43–45. Claim 14 depends from claim 11 through claim 12 and contains substantially similar recitations. *Id.*at 12:48–50.

Petitioner argues that Delp discloses obtaining first and second data points with the pointer in contact with the patient's bone when the surgeon presses button 820. Pet. 35 (citing Ex. 1004, 16:21–30), 41 (citing Ex. 1004, 16:21–30), 61. Petitioner argues that Lavallee discloses obtaining many data points "on the fly" as the surgeon moves the palpation device along the

patient's bone surface. *Id.* at 62 (citing Ex. 1005 ¶¶ 72, 75–76). Petitioner argues that these data points are acquired "at predetermined intervals because the measurement is performed using a digital system, and it would have been obvious to do so." *Id.*at 60 (citing Ex. 1005 ¶ 76; Ex. 1003 ¶ 72). Petitioner further argues that it would have been obvious to apply Lavallee's teachings to Delp's device to "allow a surgeon to gather more data points in a given period, thereby increasing the accuracy of the surface contour approximation without increasing the manual workload." *Id.* (citing Ex. 1003 ¶ 72).

Patent Owner does not contest this aspect of the Petition. *See generally* Prelim. Resp.

Lavallee discloses a computer-based system for determining the proper position for placement of a prosthesis. Ex. 1005 ¶ 1. The system includes a palpation device used to obtain data points of the surface of a patient's bone. *Id.* ¶ 75. The palpation device includes a spherically-shaped sensor. *Id.* ¶ 76. "From a time when the surgeon or another operator sends an order by a pressure on a foot or hand control, or by voice control, many points can . . . be digitized on the fly by sliding the spherical portion on the bone surface . . . ." *Id.*

According, for the foregoing reasons and on this preliminary record, Delp and Lavallee support Petitioner's contentions. We determine that Petitioner sets forth reasoning with rational underpinning as to why a person having ordinary skill in the art would have combined the teachings of Delp and Lavallee. *See, e.g.*, Pet. 60 (asserting that applying Lavallee's teaching of obtaining data points on the fly would "allow a surgeon to gather more

data points in a given period, thereby increasing the accuracy of the surface contour approximation without increasing the manual workload").

Accordingly, at this stage of the proceeding, we determine that Petitioner has established a reasonable likelihood of prevailing on its assertion that claims 6 and 14 would have been obvious in view of the combination of Delp and Lavallee.

IV. CONCLUSION

For the foregoing reasons, we determine that the information presented establishes a reasonable likelihood that Petitioner would prevail in showing that at least one of claims 1–15 of the '462 patent is unpatentable. At this preliminary stage, we have not made a final determination with respect to the patentability of the challenged claims or any underlying factual and legal issues. *See TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (noting that "there 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").

Accordingly, *inter partes* review is instituted as to all challenged claims and all proposed grounds of unpatentability. *See SAS*, 138 S. Ct. at 1359–60; *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require "a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition"); CTPG 64 ("The Board will not institute on fewer than all claims or all challenges in a petition.").

V. ORDER

Accordingly, it is:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–15 of the ’462 patent is instituted with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

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