

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HALLIBURTON ENERGY SERVICES, INC.,
Petitioner,

v.

U.S. WELL SERVICES, LLC,
Patent Owner.

IPR2021-01034
Patent 10,337,308 B2

Before MEREDITH C. PETRAVICK, LYNNE H. BROWNE, and
SEAN P. O'HANLON, *Administrative Patent Judges*.

PETRAVICK, *Administrative Patent Judge*.

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

I. INTRODUCTION

Petitioner Halliburton Energy Services filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–11 of U.S. Patent No. 10,337,308 B2 (Ex. 1003, “the ’308 patent”). Patent Owner U.S. Wells Services, LLC filed a Preliminary Response (Paper 7, “Prelim. Resp.”). With our authorization, Petitioner filed a Reply to Patent Owner’s Preliminary Response (Paper 8, “Reply”) and Patent Owner filed a Sur-Reply (Paper 10, “Sur-reply”).

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the Petition and any response thereto shows “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Having considered the Petition, the arguments presented in the Preliminary Response, Reply, and Sur-reply, as well as all supporting evidence, we determine that Petitioner shows a reasonable likelihood that at least one of the challenged claims is unpatentable. Accordingly, we institute *inter partes* review.

A. Related Matters

The parties identify the following related matters in which the ’308 patent is asserted:

- *U.S. Well Services, Inc. v. Halliburton Company*, Case No. 6:21-cv-00367 (W.D. Tex.). Pet. 8; Paper 4, 1;
- *U.S. Well Services, LLC v. Tops Well Services, LLC*, Case No. 3-19-cv-00225 (S.D. Tex.), which was filed on July 3, 2019 and dismissed without prejudice on July 23, 2019. Pet. 8; Paper 4, 1; and

- *U.S. Wells Services, LLC v. Tops Well Services, LLC*, Case No. 3-19-cv-00237 (S.D. Tex.), which was filed on July 22, 2019, and which is stayed pending settlement discussions. Pet. 8; Paper 4, 1.

The parties also identify the following petitions for *inter partes* review that Petitioner filed against other patents held by Patent Owner:

- IPR2021-01032 against U.S. Pat. No. 9,410,410;
- IPR2021-01033 against U.S. Pat. No. 8,789,601;
- IPR2021-01035 against U.S. Pat. No. 9,970,278;
- IPR2021-01036 against U.S. Pat. No. 9,611,728;
- IPR2021-01037 against U.S. Pat. No. 9,745,840;
- IPR2021-01038 against U.S. Pat. No. 10,408,030; and
- IPR2021-01065 against U.S. Pat. No. 9,840,901. Pet. 8–9; Paper 4, 2.

B. The '308 Patent

The '308 patent is titled “System for Pumping Hydraulic Fracturing Fluid Using Electric Pumps” and issued on July 2, 2019. Ex. 1003, codes (54), (45). The '308 patent is a continuation of U.S. Patent Application No. 13/679,689 (now U.S. Patent No. 9,410,410) and claims priority to November 16, 2012. *Id.* at code (63).

The '308 patent describes a system for hydraulically fracturing an underground formation in an oil or gas well to extract oil or gas from the formation, where the oil or gas well has a wellbore that permits passage of fluid from the wellbore into the formation. *Id.* at Abstract. Figure 1 of the '308 patent is reproduced below.

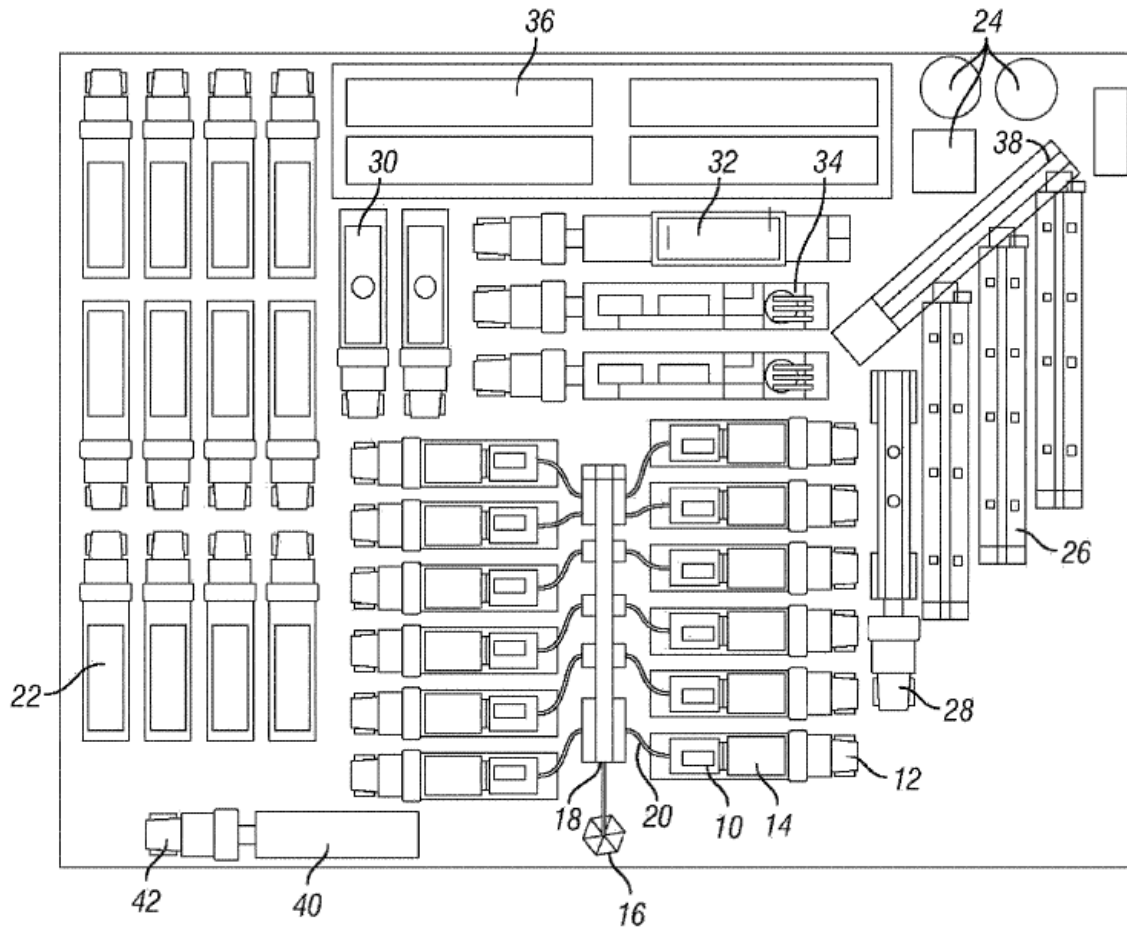


FIG. 1

Figure 1 shows a plan view of equipment used in a hydraulic fracturing operation. *Id.* at 3:29–30. Specifically, Figure 1 illustrates a plurality of pumps 10 and electric motors 14 mounted to pump vehicles 12. *Id.* at 3:30–35. The pumps 10 are fluidly connected to the wellhead 16 via the missile 18 and powered by the motor 14. *Id.* at 3:32–36. As shown, the pump vehicles 12 are positioned near enough to the missile 18 to connect fracturing fluid lines 20 between the pumps 10 and the missile 18. *Id.* at 3:36–39. The missile 18 is then connected to the wellhead 16 and configured to deliver fracturing fluid provided by the pumps 10 to the wellhead 16. *Id.* at 3:39–41.

C. Challenged Claims

Petitioner challenges claims 1–11. Claim 1 is an independent claim. Claims 2–11 depend from claim 1.

Claim 1 is illustrative and is reproduced below.

1. A system for hydraulically fracturing an underground formation in an oil or gas well to extract oil or gas from the formation, the oil or gas well having a wellbore that permits passage of fluid from the wellbore into the formation, the system comprising:

a pump fluidly connected to the well; and

an electric motor to power the pump;

the pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation, wherein the pump is a triplex or a quinteplex pump rated at about 2250 hydraulic horsepower or more.

Ex. 1003, 7:36–8:10.

D. Asserted Grounds of Unpatentability

Petitioner asserts the following grounds of unpatentability:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 7–9	102(a), (e)	Coli ¹
1–5, 7–11	103(a)	Coli
1–5, 7–11	103(a)	Coli, Gardner ²
6	103(a)	Coli, Stark ³
6	103(a)	Coli, Gardner, Stark

¹ Coli et al., U.S. Patent Application Publication No. 2012/0255734 A1, published Oct. 11, 2012 (Ex. 1009) (“Coli”).

² Gardner Denver Inc., *Well Servicing Pump, Model GD-2500Q Quintuplex*, Operating and Service Manual, 300FWF996 Rev 6, August 2005 (Ex. 1013) (“Gardner”).

³ Stark, U.S. Patent No. 6,116,040 A, issued Sept. 12, 2000 (Ex. 1014) (“Stark”).

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
10, 11	103(a)	Coli, Vliet ⁴
10, 11	103(a)	Coli, Gardner, Vliet

Pet. 18–19. In addition to the references listed above, Petitioner relies on the Declaration of Dr. Robert Durham (Ex. 1007).

II. ANALYSIS

A. Discretionary Denial Under 35 U.S.C. § 314(a)

Patent Owner requests that we exercise discretion under 35 U.S.C. § 314(a) to deny institution in view of *U.S. Well Services, Inc. v. Halliburton Company*, Case No. 6:21-cv-00367 in the Western District of Texas. Prelim. Resp. 8–19 (citing, *e.g.*, *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential) (“*Fintiv*”).

Fintiv sets forth the factors that we weigh in determining whether to exercise our discretion to deny institution of the *inter partes* review proceeding here under 35 U.S.C. § 314(a). *See Fintiv*, Paper 11 at 5–6.

These factors are:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and

⁴ Van Vliet et al., U.S. Patent Application Publication No. 2011/0197988 A1, published Aug. 18, 2011 (Ex. 1011) (“Vliet”).

6. other circumstances that impact the Board's exercise of discretion, including the merits.

Id. “These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* at 6. “[T]he Board takes a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.*

For the reasons discussed below, we decline to exercise our discretion to deny institution under 35 U.S.C. § 314(a).

1. *Whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted.*

Fintiv factor 1 recognizes that a stay of litigation pending resolution of a PTAB trial allays concerns about inefficiency and duplication of efforts, which strongly weighs against exercising the authority to deny institution. *Fintiv*, Paper 11 at 6.

Patent Owner contends this factor weighs in favor of discretionary denial because Petitioner has not requested a stay of the parallel district court proceeding, nor is there any evidence of record that a later-filed request for stay would be granted. Prelim. Resp. 10–12. Petitioner contends this factor favors institution as Petitioner intends to file a stay motion in the event that the present *inter partes* review proceeding is instituted. Pet. 19–20. In its Reply, Petitioner argues precedent exists to support a stay as the judge in the parallel district court proceeding has stayed at least one prior case pending the resolution of a related *inter partes* review. Reply 3.

On this record, it is unclear how the judge in district court would proceed, and we decline to speculate regarding whether the district court will

grant a stay if this proceeding is instituted. Accordingly, this factor is neutral.

2. *Proximity of the court's trial date to the Board's projected statutory deadline for a final written decision.*

Fintiv factor 2 looks to the “proximity of the court's trial date to the Board’s projected statutory deadline.” *Fintiv*, Paper 11 at 9. “If the court's trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution under *NHK*.” *Id.*

Patent Owner contends that this factor favors denial because the parallel district court proceeding, scheduled for December 19, 2022, will conclude before a final written decision is issued in the present proceeding if instituted. Prelim. Resp. 14. Patent Owner further contends that there is no reason to believe the trial date will change. Sur-Reply 3.

In its Reply, Petitioner contends that the scheduled trial date is only a few weeks earlier than the projected deadline for a final written decision, and an “early trial date” is “non-dispositive” and simply means that “the decision whether to institute will likely implicate other factors.” Reply 2 (citing *Fintiv*, Paper 11 at 5, 9). Petitioner further contends that recent data shows that district court trial dates are often delayed by several months, that the trial is likely to be rescheduled because another, earlier-scheduled trial is supposed to take place on the same day as the parallel district court proceeding, and that the uncertainty of the trial date combined with the close proximity of the current trial date to the projected final written decision deadline weigh against discretionary denial. *Id.* at 3.

Given the statutory deadlines, our latest possible date for issuance of a final written decision in this proceeding is January 21, 2023, one year and

three months after the filing date of Patent Owner's Preliminary Response. 35 U.S.C. §§ 314(b) (2018), 316(a)(11); *see also* 37 C.F.R. § 42.100(c). Thus, the time period from the district court's default trial date to our projected statutory deadline for a final written decision is approximately one month. In general, if the district court's trial date is earlier than our projected statutory deadline for a final written decision, the Board usually has weighed this fact in favor of exercising authority to deny institution under *NHK*. *Fintiv*, Paper 11 at 9. Where the trial date and the projected date of our final written decision are at or around the same time, however, as they are here, the efficiency and fairness concerns that underlie the *Fintiv* analysis are not as strong, and the decision whether to institute will instead implicate other factors. *See Fintiv*, Paper 11 at 9 ("If the court's trial date is at or around the same time as the projected statutory deadline, . . . the decision whether to institute will likely implicate other factors discussed herein, such as the resources that have been invested in the parallel proceeding.").

Further, the "Agreed Scheduling Order" states that the trial date is "TBD by the Court (default date under [Standing Order Governing Proceedings] is December 19, 2022)" and "[52 weeks after *Markman* hearing (12/20/21)]." Ex. 2002, 5. This indicates that December 19, 2022, is a default date that was calculated as being 52 weeks after the *Markman* hearing, then scheduled for December 20, 2021. *Id.* We note, however, that the *Markman* hearing has since been rescheduled to occur on January 4, 2022. Ex. 1053.

Under the current circumstances and especially the closeness of the scheduled trial date and projected final written decision deadline, we find that this factor is neutral.

3. *Investment in the parallel proceeding by the court and the parties.*

Fintiv factor 3 considers the “investment in the parallel proceeding by the court and parties,” including “the amount and type of work already completed in the parallel litigation by the court and the parties at the time of the institution decision.” *Fintiv*, Paper 11 at 9.

Patent Owner contends this factor favors denial because instituting the Petition would waste the considerable investment made by the parties and the district court in the parallel district court proceeding. Prelim.

Resp. 13–14. Petitioner contends this factor favors institution because, at the time of the Petition, discovery had not commenced in the parallel district court proceeding, and Patent Owner had not served infringement contentions. Pet. 19. In its Reply, Petitioner further contends that only “very limited discovery only related to claim construction” is permitted until a claim construction hearing is complete, and “it is unclear whether the parties will have received a claim construction order by the time an institution decision is due.” Reply 4.

Fintiv states that, “[i]f, at the time of the institution decision, the district court has not issued orders related to the patent at issue in the petition, this fact weighs against exercising discretion to deny institution.” *Fintiv*, Paper 11 at 10. Here, although some exchanges have taken place and some of the issues will have been briefed prior to institution, the district court has not issued any substantive orders addressing the construction, validity, or infringement of the ’308 patent. Accordingly, this factor weighs strongly against exercising our discretion to deny institution.

4. *Overlap between issues raised in the petition and in the parallel proceeding.*

Fintiv factor 4 considers whether “the petition includes the same or substantially the same claims, grounds, arguments, and evidence as presented in the parallel proceeding.” *Fintiv*, Paper 11 at 12. If the issues in the Petition overlap substantially with those raised in the parallel proceeding, “this fact has favored denial.” *Id.* “Conversely, if the petition includes materially different grounds, arguments, and/or evidence . . . this fact has tended to weigh against exercising discretion to deny institution.” *Id.* at 12–13.

Concerns about the degree of overlap may be mitigated where a petitioner agrees not to pursue in the parallel district court litigation the grounds advanced in the petition. *Sand Revolution II, LLC v. Continental Intermodal Grp. – Trucking LLC*, IPR2019-01393, Paper 24 at 11–12, 12 n.5 (PTAB June 16, 2020) (informative). A petitioner stipulating not to pursue “any ground raised or that could have been reasonably raised” weighs strongly in favor of not exercising discretionary denial. *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB Dec. 1, 2020) (precedential as to § II.A) (“*Sotera*”).

Patent Owner contends that this factor favors denial because “there is a substantial overlap between the claims, grounds, arguments, and evidence presented in the Petition and what continues to be litigated in the WDTX.” Prelim. Resp. 14–15. Specifically, Patent Owner submits that Petitioner’s preliminary invalidity contentions articulate substantially the same arguments as the Petition (*id.* at 16) and that Petitioner challenges the same claims of the ’308 patent at issue in the parallel district court proceeding. *Id.* at 16–17.

In its Reply, Petitioner stipulates that it “will not pursue the same invalidity grounds in the district court litigation as those asserted in the corresponding IPR petition” if the Board institutes an *inter partes* review. Reply 1. Patent Owner contends that, if the Board credits the stipulation, “the stipulation should weigh only ‘marginally’ against discretionary denial because it is not as encompassing as the stipulation in *Sotera*.” Sur-Reply 2 (citing *Verizon Bus. Network Svs., LLC v. Huawei Tech. Co.*, IPR2020-01278, Paper 12, 13 (PTAB Jan. 26, 2021)).

We agree with Patent Owner that there is a significant overlap between the issues raised in the Petition and in the parallel district court proceeding. Petitioner’s stipulation, however, somewhat mitigates the “concerns of inefficiency and the possibility of conflicting decisions.” We note that Petitioner’s stipulation is narrow, not a broad stipulation that includes “any ground raised, or that *could have been reasonably raised*.” See *Sotera*, Paper 12 at 19 ; see also *Sand Revolution II, LLC v. Cont’l Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24 at 12 n.5 (PTAB June 16, 2020) (informative) (noting that a broad stipulation better addresses concerns of duplicative efforts and potentially conflicting decisions in a much more substantial way). Therefore, we find that this factor weighs marginally against denying institution.

5. *Whether the petitioner and the defendant in the parallel proceeding are the same party.*

Fintiv factor 5 looks to “whether the petitioner and the defendant in the parallel proceeding are the same party.” *Fintiv*, Paper 11 at 13. “If a petitioner is unrelated to a defendant in an earlier court proceeding, the Board has weighed this fact against exercising discretion to deny institution.” *Id.* at 13–14.

Patent Owner contends this factor weighs strongly in favor of denial because Petitioner is the named defendant in the parallel district court proceeding. Prelim. Resp. 17.

Here, it is undisputed that Petitioner is a defendant in the parallel district court proceeding. Pet. 1. As noted above, it is unclear on this record when the trial in the district court proceeding will occur and whether the trial will take place prior to a final written decision being issued in this proceeding. Thus, it is unclear on this record whether any estoppel will be implicated. *See* 35 U.S.C. § 315(e). Under these circumstances and especially given the closeness of the default trial date and the projected final written decision deadline, this factor is neutral.

6. *Other circumstances that impact the Board's exercise of discretion, including the merits.*

Fintiv factor 6 looks to whether “other circumstances” exist that might “impact the Board’s exercise of discretion, including the merits.” *Fintiv*, Paper 11 at 14.

Patent Owner argues this factor favors denial because: there is a weakness in Petitioner’s merits (i.e., Petitioner has failed to show that each limitation of the challenged claims is taught by the cited references, and strong objective evidence of non-obviousness supports Petitioner’s failure to show a reasonable likelihood of success); the Office previously considered the primary reference in each of Petitioner’s grounds (i.e., Coli); and Petitioner has weaponized the *inter partes* review process, as evidenced by Petitioner’s filing of thirteen separate petitions challenging Patent Owner’s patents. Prelim. Resp. 17–19. Petitioner does not address this factor. *See generally* Pet; Reply.

We have reviewed the prior art references and the arguments of both Petitioner and Patent Owner. Petitioner's contentions and evidence about the merits are not so weak as to make *Fintiv* factor 6 weigh in favor of discretionary denial. Accordingly, we find that *Fintiv* factor 6 as applied to the circumstances of this case is neutral.

7. *Conclusion on Discretionary Denial under 35 U.S.C. § 314(a)*

Based on a holistic review of the *Fintiv* factors, we decline to exercise our discretion under § 314(a) to deny institution.

B. *Discretionary Denial Under 35 U.S.C. § 325(d)*

Section 325(d) provides that the Director may elect not to institute a proceeding if the challenge to the patent is based on matters previously presented to the Office. 35 U.S.C. § 325(d) states, in pertinent part, that “[i]n determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31, 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.” The Board uses a two-part framework for evaluating arguments under § 325(d):

- (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 first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential) (“*Advanced Bionics*”). “[T]he *Becton, Dickinson* factors provide useful

insight into how to apply the framework under 35 U.S.C. § 325(d).” *Id.* at 9 (footnote omitted). The non-exclusive *Becton, Dickinson* factors are:

- (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;
- (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) (precedential as to § III.C.5, first paragraph) (“*Becton, Dickinson*”). *Becton, Dickinson* factors (a), (b), and (d) relate to the first part of the *Advanced Bionics* framework (whether the same or substantially the same art or arguments previously were presented to the Office), and *Becton, Dickinson* factors (c), (e), and (f) relate to the second part of that framework (previous Office error). *Advanced Bionics*, Paper 6 at 9–11. Only if the same or substantially the same art or arguments were previously presented to the Office do we then consider whether the petitioner has demonstrated a material error by the Office. *Id.*

Under § 325(d), the art or arguments must have been previously presented to the Office during proceedings, such as examination of the underlying patent application, pertaining to the challenged patent. *Advanced Bionics*, Paper 6 at 7. Previously presented art includes art made of record

by the Examiner, and art provided to the Office by an applicant, such as on an Information Disclosure Statement (“IDS”), in the prosecution history of the challenged patent. *Id.* at 7–8.

Patent Owner contends the same or substantially the same art and arguments cited by Petitioner were already considered by the Office, and Petitioner failed to show or even suggest how the Office may have erred. Prelim. Resp. 20. Specifically, Patent Owner contends Petitioner relies on Coli, a reference that Examiners have previously considered, and accepted arguments distinguishing it, multiple times during prosecution of the ’308 patent and its family. *Id.* at 21.

Petitioner contends the only reference relied upon in the Petition that was also cited during examination is Coli. Pet. 20. Petitioner further contends the Examiner determined that Coli anticipated several of the original claims of the application that would eventually become the ’308 patent. *Id.* at 20–22 (citing Ex. 1006, 325–327). Although the Examiner allowed the claims over Coli after Patent Owner amended the claims to recite that the “the pump is a triplex or a quinteplex pump rated at about 2250 hydraulic horsepower or more,” Petitioner contends the Examiner should not have allowed the claims because Coli expressly discloses a triplex or quinteplex pump rated at about 2250 hydraulic horsepower or more. *Id.* at 22–24 (emphasis omitted).

1. Part One of the Advanced Bionics Framework

During prosecution of the ’308 patent, Coli was applied by the Examiner to reject claims as anticipated under 35 U.S.C. § 102. Ex. 1006, 325–27. Likewise, the Petition applies Coli in an anticipation ground. *See, e.g.*, Pet. 25–26. The Petition, however, additionally sets forth obviousness grounds based on combinations of prior art that were not considered by the

Examiner, in particular, combinations that include Gardner. Patent Owner does not assert that Gardner, Stark, and Vliet was previously presented to the Office or is cumulative of the art previously presented to the Office. Thus, we determine that the first part of the *Advanced Bionics* framework is not satisfied because the Petition includes grounds based on combinations of prior art not previously presented to the office, particularly combinations that include Gardner. We find that § 325(d) is not sufficiently implicated under the circumstances here, and we determine that denying the Petition under § 325(d) is unwarranted.

2. *Part Two of the Advanced Bionics Framework*

Nonetheless, we also determine that the second part of the *Advanced Bionics* framework is not satisfied with respect to the grounds based on Coli alone. Regarding *Becton, Dickinson* factors (e) and (f), we find for the reasons discussed in our analysis below that Petitioner has shown a reasonable likelihood that at least some of the challenged claims are anticipated by Coli. In particular, on this record, Petitioner has sufficiently shown that Coli's disclosure that the pump may be a "quintuplex or triplex plunger style pump, for example, the SWGS-2500 Well Service Pump sold by Gardner Denver, Inc." (Ex. 1009 ¶¶ 46, 49, 50) meets the claim requirement that "the pump is a triplex or a quinteplex pump rated at about 2250 hydraulic horsepower or more." In doing so, Petitioner demonstrates that the Examiner erred in a manner material to the patentability of the challenged claims overlooking and not applying this disclosure to the claims during prosecution, and shows sufficient cause to warrant consideration of the patentability of the challenged claims over Coli alone.

3. *Conclusion on Discretionary Denial Under 35 U.S.C. § 325(d)*

Based on our analysis within the *Advanced Bionics* framework, we determine that discretionary denial under § 325(d) is not warranted in this case.

C. *Level of Ordinary Skill in the Art*

Petitioner contends that a person of ordinary skill in the art at the time of the invention of the '308 patent would have had the following education and experience:

either (1) a Bachelor of Science in Mechanical Engineering, Electrical Engineering, Petroleum Engineering or an equivalent field as well as at least 2 years of academic or industry experience in the oil and gas industry, including well drilling, completion, or production; or (2) at least four years of industry experience in the oil and gas industry, including well drilling, completion, or production.

Pet. 24–25.

Patent Owner does not dispute this level of skill. Prelim. Resp. 6.

For purposes of this Decision, we adopt Petitioner's proposal as reasonable and consistent with the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (the prior art may reflect an appropriate level of skill in the art).

D. *Claim Construction*

For petitions filed on or after November 13, 2018, the “broadest reasonable interpretation” standard has been replaced with the federal court claim construction standard that is used to construe a claim in a civil action under 35 U.S.C. § 282(b). This is the same claim construction standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny.

Neither Petitioner nor Patent Owner provide any explicit construction of any claim terms. However, in its Reply, Petitioner contends that Patent Owner argues the claim language “the pump configured to pump fluid into the wellbore at high pressure,” recited in claim 1, requires that the fluid be maintained at a high pressure through portions of the wellbore, including “vertical and/or deviated portions of the wellbore.” Reply 6 (citing Prelim. Resp. 23) (emphasis omitted). Petitioner further contends Patent Owner’s position is contrary to the plain language of the claim, as the claim language and the specification do not mention “vertical” or “deviated” portions, and do not require maintaining a high pressure of the fluid through the “vertical and/or deviated portions of the wellbore.” Reply 6–7. According to Petitioner, the express language of the claim only requires that: (a) a pump be configured to pump fluid at high pressure; so that (b) the fluid passes from the wellborn into the formation; and (c) the fluid fractures the formation. *Id.* at 7.

Except to the extent we explain how we interpret the claims in the analysis below, we decline to otherwise expressly construe any claim terms at this time. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (citing *Vivid Techs* in the context of an *inter partes* review).

E. Overview of the Asserted Prior Art

1. Coli

Coli is a U.S. Patent Application Publication titled “Mobile, Modular, Electrically Powered System for Use in Fracturing Underground Formations,” and published on October 11, 2012. Ex. 1009, codes (45), (54).

Coli describes an electrically powered fracturing system and a system and method for providing on-site electrical power and delivering fracturing fluid to a wellbore at a fracturing operation. *Id.* ¶ 34. Coli further describes that natural gas (either supplied to the site or produced on-site) is used to drive a dedicated source of electrical power, such as a turbine generator, for hydrocarbon-producing wellborn completions. *Id.* ¶ 36.

Coli’s Figure 3 is reproduced below.

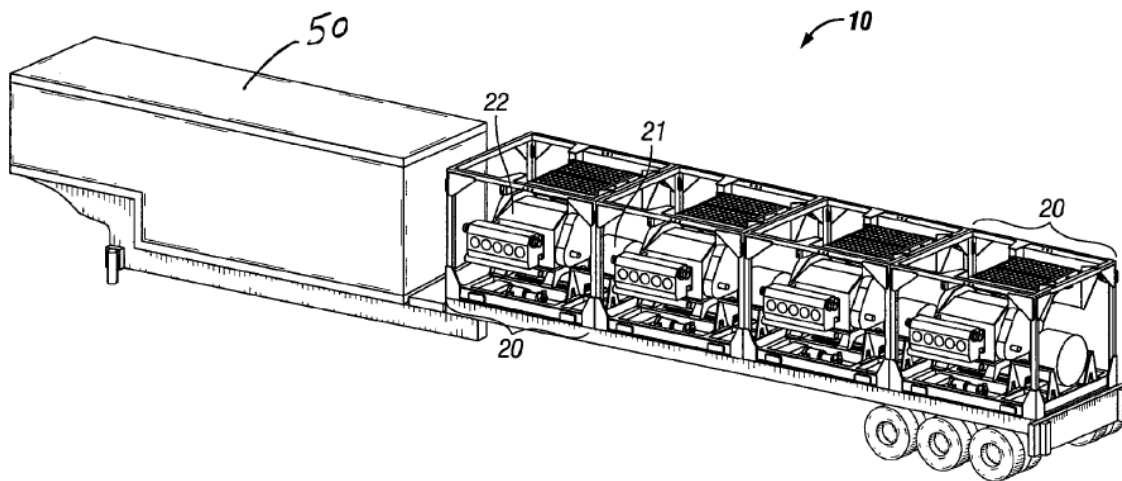


FIG. 3

Figure 3 depicts a schematic perspective view of a fracturing trailer 10 for housing fracturing modules 20 along with a transformer and driver unit 50. *Id.* ¶¶ 24, 40, 49. Each fracturing module 20 includes an electric motor 21 and a fluid pump 22 coupled thereto. *Id.* ¶ 40. Fracturing modules 20 utilize electric power from turbine generator 30 (not shown) to pump

fracturing fluid directly to a wellbore. *Id.* Coli discloses that the system can deliver a 2500 horsepower (“hp”) directly to each pump because pump 22 is directly coupled to electric motor 21. *Id.* ¶ 49. Coli further discloses that each fracturing module 20 weighs approximately 28,000 pounds (“lbs.”), which allows for placement of four pumps 22 in the same physical dimension (i.e., size and weight) as the spacing needed for a simple pump in conventional diesel systems, as well as allowing for up to 10,000 hp total to the pumps. *Id.*

2. *Gardner*

Gardner is an operating manual that describes the Gardner Denver GD-2500Q, a high horsepower, high rod load multi-purpose pump for oil and gas well fracturing. Ex. 1013, 9. Gardner further discloses that the GD-2500Q has a rated brake horsepower of 2500 bhp. *Id.* at 14.

3. *Stark*

Stark is a U.S. patent titled “Apparatus for Cooling the Power Electronics of a Refrigeration Compressor Drive,” and issued on September 12, 2000. Ex. 1014, codes (45), (54).

Stark describes a closed loop refrigeration system that includes a condenser, an evaporator, and a compressor connected in series by refrigerant lines and an expansion means in one of the refrigerant lines for throttling refrigerant moving between the condenser and the evaporator from a high pressure to a lower pressure. *Id.* at 1:60–65. “A variable frequency drive is associated with the compressor that contains heat producing power electronic components in the form of insulated gate bipolar transistors that require cooling.” *Id.* at 1:65–2:1. The power electronic components are mounted in heat transfer relation with a block of material having good heat

transfer characteristics, where the block acts as a heat sink to draw heat away from the power electronic components. *Id.* at 2:1–5.

4. *Vliet*

Vliet is a U.S. Patent Application Publication titled “Fuel Delivery System and Method,” and published on August 18, 2011. Ex. 1011, codes (54), (43).

Vliet describes a fuel delivery system including pumps, electrical equipment, and generators mounted on a trailer. *Id.* ¶ 27. The trailer makes the system portable/transportable and facilitates system operation at various fracturing well sites. *Id.* ¶¶ 3, 14.

F. *Anticipation under 35 U.S.C. § 102*

1. *Principles of Law*

A petition must show how the construed claims are unpatentable under the statutory grounds it identifies. 37 C.F.R. § 42.104(b)(4). Petitioner bears the burden of demonstrating a reasonable likelihood that it would prevail with respect to at least one challenged claim for a petition to be granted. 35 U.S.C. § 314(a).

“A claim is anticipated [under § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Calif.*, 814 F.2d 628, 631 (Fed. Cir. 1987). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, *i.e.*, identity of terminology is not required. *In re Bond*, 910 F.2d 831 (Fed. Cir. 1990).

A claim is unpatentable under § 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 said 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, objective indicia of non-obviousness (i.e., secondary considerations). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Secondary considerations may include longfelt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, and praise. *See Graham*, 383 U.S. at 17–18; *Leapfrog Enters., Inc. v. Fisher–Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007). “[A]t the institution stage, the petition must identify, with particularity, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication.” *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Paper 29 at 13 (PTAB Dec. 20, 2019) (designated precedential).

“To qualify as a printed publication, a reference ‘must have been sufficiently accessible to the public interested in the art.’” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016) (quoting *In re Cronyn*, 890 F.2d 1158, 1160 (Fed. Cir. 1989)). “A reference will be considered publicly accessible if it was ‘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.’” *Id.* (quoting *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1350 (Fed. Cir. 2008)). For a reference posted to a website, there are multiple ways that a petitioner could show that the reference was publicly accessible. For example, a petitioner could show that the website was

indexed, through search engines or otherwise. *See id.* at 1349. A petitioner also could show that the record indicates that, despite a lack of indexing, the website was well known to the community interested in the subject matter of the reference. *See Voter Verified, Inc. v. Premier Election Sols., Inc.*, 698 F.3d 1374, 1381 (Fed. Cir. 2012) (“[T]he uncontested evidence indicates that a person of ordinary skill interested in electronic voting would have been independently aware of the Risks Digest as a prominent forum for discussing such technologies. And upon accessing the Risks Digest website, such an interested researcher would have found the Benson article using that website’s own search functions and applying reasonable diligence.”).

We analyze the asserted grounds with these principles in mind.

2. *Ground 1: Alleged Anticipation of Claims 1–5 and 7–9 over Coli*

a) *Claim 1*

Regarding the preamble, Petitioner contends that Coli discloses it because Coli discloses a “system...for hydraulic stimulation of underground hydrocarbon-bearing formations” wherein “hydraulic stimulation” corresponds to “fracturing operations” in which “pressurized fluid” is delivered to a wellbore. Pet. 25–26 (citing Ex. 1009 ¶¶ 5, 6, 13, 40).

Patent Owner does not dispute Petitioner’s assertion.

The first limitation recites “a pump fluidly connected to the well; and.” Petitioner contends that Coli discloses this limitation because Coli discloses one or more fracturing modules containing an electric motor and fluid pump, whereby the modules use electric power “to pump the fracturing fluid directly to the wellbore.” Pet. 26–27 (citing Ex. 1009 ¶¶ 5, 40, 46, 55, 65, 72, Fig. 3).

Patent Owner does not dispute Petitioner’s assertion.

The second limitation recites “an electric motor to power the pump.” Petitioner contends that Coli discloses this limitation because Coli discloses that the fracturing modules “utilize electric power . . . to pump the fracturing fluid directly to the wellbore.” Pet. 27 (citing Ex. 1009 ¶¶ 3, 40, 46, Fig. 3)

Patent Owner does not dispute Petitioner’s assertion.

The third limitation recites “the pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation.” Petitioner contends that Coli discloses this limitation because Coli discloses that the fracturing fluid is “delivered to the wellbore under pressure and injected into the wellbore” using “high pressure” discharging equipment for “fracturing the wellbore.” Pet. 28 (citing Ex. 1009 ¶¶ 5, 6, 35, 40, 46, 77, 83, claim 12) (emphasis omitted).

Patent Owner disputes Petitioner’s assertion. Specifically, Patent Owner contends that Coli is silent about a pump configured to pump fluid into the wellbore at high pressure to fracture the formation, as recited in claim 1, and that “contrary to Petitioner’s suggestion, *Coli* expressly teaches pumps configured to transfer fluid ‘at *medium pressure and high rate* . . . via multiple high pressure, plunger style pumps.” Prelim. Resp. 21–24.

The final limitation of claim 1 recites “wherein the pump is a triplex or a quinteplex pump rated at about 2250 hydraulic horsepower or more.” Petitioner contends that Coli discloses this limitation because Coli expressly discloses that the pump may be a “quintuplex or triplex plunger style pump, for example, the SWGS-2500 Well Service Pump sold by Gardner Denver, Inc.,’ which is rated at 2500 bhp (brake horsepower).” Pet. 28–29 (citing Ex. 1009 ¶¶ 46, 49, 50).

Patent Owner does not dispute Petitioner's assertion.

We find on this record that Petitioner has made a sufficient showing for purposes of institution that claim 1 is anticipated by Coli. We now turn to the disputed limitation of claim 1.

That Coli discloses operating the pump at mid pressure does not negate the fact that it is also configured for high pressure applications. Indeed, Coli discloses that the pump may be a “a quintiplex or triplex plunger style pump, for example, the SWGS-2500 Well Service Pump sold by Gardner Denver, Inc.” (Ex. 1009 ¶ 46) and that “[e]ach fracturing module 20 sits on trailer 10 which houses the necessary mounts and manifold systems for low pressure suctions and *high pressure discharges*.” *Id.* ¶ 77 (emphasis added). Patent Owner does not dispute that such pumps are capable of or configured to operate at high pressure. Furthermore, claim 1 is directed to a system that only requires that the pump be “configured to” pump fluid at high pressure; that is, the recited operation is functional in nature. Because we find that the pump disclosed in Coli is a high pressure pump designed to operate at “high pressure discharges” and rated at 2500 bhp⁵, we determine that Petitioner has made a sufficient showing for purposes of institution that Coli discloses the pump “configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation,” as recited in claim 1.

b) Dependent Claims 2–5 and 7–9

Petitioner argues that dependent claims 2–5 and 7–9 are anticipated by Coli. Pet. 29–33. Patent Owner does not address the additional elements of

⁵ Patent Owner does not contest this.

these dependent claims, but appears instead to rely on its arguments provided for claim 1. Prelim. Resp. 22–24. On this record, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claims 2–5 and 7–9 are anticipated by Coli.

3. *Ground 2A: Alleged Obviousness of Claims 1–5 and 7–11 Over Coli*

Petitioner contends that claims 1–5 and 7–11 are unpatentable over Coli. Pet. 33–38. Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 21–29, 36–58.

a) *Independent Claim 1*

To the extent Patent Owner disputes that Coli anticipates the system of claim 1, Petitioner contends claim 1 is also rendered obvious by Coli because “Coli expressly discloses the use of (i) a ‘quintuplex or triplex plunger style pump, for example, the SWGS-2500 Well Service Pump sold by Gardner Denver’ and (ii) an electric motor that ‘can deliver a true 2500 hp directly to each pump 22 because pump 22 is directly coupled to electric motor 21.’” Pet. 34 (citing Ex. 1009 ¶¶ 46, 49 and 50). Specifically, Petitioner submits that “a [person of skill in the (“POSITA”)] would have understood and found it obvious to use such a pump *solely* based on the disclosure of the Gardner Denver pump in the specification...because the Gardner Denver SWGS-2500 Well Service Pump is rated at 2500 hp.” Pet. 35 (citing Ex. 1009 ¶ 46).

Patent Owner does not dispute that Coli renders obvious using a triplex or a quinteplex pump rated at about 2250 hydraulic horsepower or more, as recited in claim 1. Rather, Patent Owner contends that Coli does not teach or suggest a “pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation,

and fractures the formation,” as recited in claim 1, because Coli expressly teaches pumps configured to transfer fluid “at medium pressure and high rate.” Prelim Resp. 24–28 (emphasis omitted). These are the same arguments advanced by Patent Owner in response to Petitioner’s assertions under Ground 1.

On this record, we determine, for the same reasons articulated with respect to Ground 1 above, that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claim 1 of the ’308 patent is obvious over Coli.

b) Dependent Claims 2–5 and 7–11

Citing its arguments presented under Ground 1, Petitioner argues that dependent claims 2–5 and 7–9 are obvious over Coli. Pet. 35. Petitioner further argues that claims 10 and 11 are also rendered obvious by Coli. *Id.* at 36–38. Patent Owner does not address the additional elements of these dependent claims, but appears instead to rely on its arguments provided for claim 1. Prelim Resp. 24–28. On this record, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claims 2–5 and 7–11 are obvious over Coli.

c) Secondary Considerations

Patent Owner contends Petitioner has failed to rebut the objective evidence of non-obviousness raised during the prosecution of the ’410 patent, the parent of the ’308 patent. Prelim. Resp. 36–38. Specifically, Patent Owner contends that the objective evidence: (i) corresponds to its Clean Fleet® product, which embodies the challenged claimed features and is coextensive with the challenged claims; and (ii) strongly supports the non-obviousness of the challenged claims, including: meeting a long-felt, unmet need; failure of others to meet this need; industry praise; copying of the

claimed invention; and commercial success of the claimed invention. *Id.* at 38.

Patent Owner contends it is entitled to a presumption of nexus because its objective evidence corresponds to its Clean Fleet® product, which embodies the challenged claimed features and is coextensive with the challenged claims. Prelim. Resp. 39–40 (citing *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019)). Specifically, Patent Owner contends that independent claim 1 recites

a pump . . . and an electric motor to power the pump; . . . the pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation, wherein the pump is a triplex or a quinteplex pump rated at about 2250 hydraulic horsepower or more,

where the Clean Fleet® product has an electric pump, electric motor to power the pump, and wherein the pump is a triplex or a quinteplex pump rated at about 2250 hydraulic horsepower or more. *Id.* at 40–41 (emphasis omitted).

Notwithstanding whether Patent Owner is entitled to a presumption of nexus, Patent Owner contends there is a strong nexus between the claimed invention and the secondary considerations evidence. *Id.* at 41–42.

Specifically, Patent Owner contends the independent claims are directed to a system for fracturing a formation at high pressure comprising at least a pump and an electric motor to power the pump. *Id.* at 42. Patent Owner further contends that there is evidence that: (i) the commercial success of the present invention is due to the “pumps” that are powered by the electric motor; (ii) others in the industry copied the claimed product by introducing competing fleets with pumps and electric motors to power the pump; (iii) the

claimed invention (i.e., the Clean Fleet® product) received widespread industry praise and recognition due to the pumps powered by the electric motor; and (iv) the claimed invention succeeded where others had failed. *Id.* at 42–43.

Petitioner contends that Patent Owner’s secondary considerations arguments advanced during the prosecution of the ’410 patent do not establish non-obviousness of the challenged claims because they lack the requisite “nexus.” Pet. 51–52.

In its Reply, Petitioner contends Patent Owner is not entitled to a presumption of nexus under step one of *Fox Factory* because Patent Owner has not demonstrated that its Clean Fleet® product is coextensive with the ’308 patent. Reply 9–11. Petitioner further contends Patent Owner also has not demonstrated an actual nexus exists under step two of *Fox Factory* because: (i) Patent Owner relies largely on its declarant, yet its declarant has a significant interest in the proceeding, and its declarant’s testimony has not been tested; and (ii) even taking the testimony of Patent Owner’s declarant at face value, it does not demonstrate nexus because it does not demonstrate that the “offered second consideration actually results from . . . what is both claimed and novel in the claim.” *Id.* at 11–12.

Patent Owner bears the burden of showing that a nexus exists. *WMS Gaming, Inc. v. International Game Tech.*, 184 F.3d, 1339, 1359 (Fed. Cir. 1999). On this record, Patent Owner does not sufficiently demonstrate that it is entitled to a presumption of nexus. To establish nexus Patent Owner cites to arguments and evidence of objective indicia of nonobviousness submitted during prosecution of the application resulting in the ’410 patent. Prelim. Resp. 39–40 (citing Ex. 1005).

Further, in as much as Patent Owner largely relies upon the declarations of Messrs. Broussard (Ex. 2016) and Schaaf (Ex. 2005) to supports its arguments of nexus, we do not find their testimony sufficient to establish nexus as it is untested at this stage of the proceeding. We also note that Mr. Broussard is Patent Owner's President and Chief Executive Officer (Ex. 2016 ¶ 2) and Mr. Schaaf relies on the Broussard Declaration (*see, e.g.*, Ex. 2005 ¶ 91). A final determination as to the veracity of Patent Owner's evidence and arguments is best reserved for trial.

d) Conclusion

For the foregoing reasons, and on the record presently before us, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claims 1–5 and 7–11 of the '308 patent are obvious over Coli.

4. Ground 2B: Alleged Obviousness of claims 1–5 and 7–11 Over Coli and Gardner

Petitioner contends that claims 1–5 and 7–11 are obvious over Coli and Gardner. Pet. 39–41. Patent Owner disputes Petitioner's contentions. Prelim. Resp. 28–29, 33–36.

a) Independent Claim 1

To the extent Patent Owner disputes that Coli sufficiently discloses or render obvious “a triplex or quinteplex pump rated at about 2250 hydraulic horsepower or more,” as recited in claim 1, Petitioner further contends that this limitation is rendered obvious by Coli and Gardner. Pet. 39.

Specifically, Petitioner contends that Gardner teaches or suggests this element because Gardner discloses that the GD-2500Q pump is rated at 2500 bhp. *Id.* at 39–41. Petitioner submits that Gardner is prior art to the '308 patent at least under at least under 35 U.S.C. §§ 102(a) and 102(b) because

(1) Gardner was published in August 2005 and “publicly available shortly thereafter” (Pet. 15 (citing Ex. 1008 ¶¶ 48–51)) and (2) the GD 2500Q Manual was available on the Internet no later than September 17, 2012. Pet. 15 (citing Ex. 1031; Ex. 1008 ¶ 50).

Patent Owner does not dispute that Coli sufficiently discloses or renders obvious using a triplex or a quinteplex pump rated at about 2250 hydraulic horsepower or more, as recited in claim 1. Rather, Patent Owner contends that Coli does not teach or suggest a “pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation,” as recited in claim 1 because Coli expressly teaches pumps configured to transfer fluid “at medium pressure and high rate.” Prelim Resp. 28–29. Patent Owner contends that Gardner does not cure this deficiency (*id.*) and further contends that Petitioner has failed to establish a reasonable likelihood that Gardner is a printed publication. *Id.* at 33–36.

Patent Owner’s arguments regarding the disclosure of Coli are the same as those advanced in response to Petitioner’s assertions under Ground 1. We find for the same reasons articulated above under Ground 1 that Coli discloses a “pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation,” as recited in claim 1.

We determine that, at this point in the proceeding and for purposes of institution, and based on the totality of the evidence to date, Petitioner has established a reasonable likelihood that Gardner is a printed publication. The face of Gardner bears the indicia “August, 2005.” Ex. 1013, 1. Petitioner submits a declaration of Sylvia D. Hall-Ellis, Ph.D., who testifies that Gardner was published in August 2005 and publicly available shortly

thereafter. Ex. 1008 ¶¶ 48–51 (citing <http://www.quincieoilfield.com/pdf/3.0%20Gardner%20Denver/2500/GD2500Q%20Op%20&%20Service%20Manual.pdf>8). Dr. Hall-Ellis testifies that Gardner was downloaded from Quincie Oilfields corporate website. Ex. 1008 ¶ 49. Internet Archives’ Records Request Processor Duncan Hall testifies that Gardner was available on the Internet no later than September 17, 2012. Ex. 1031; *see also* Ex. 1008 ¶ 50. Coli, which was published on October 11, 2012, expressly mentions that Gardner Denver, Inc. sells the “SWGS-2500 Well Service Pump.” Ex. 1009, code (43), ¶ 46.

We determine based on the evidence of record, that Petitioner has established a reasonable likelihood that Gardner is a printed publication. Accordingly, we find that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claim 1 of the ’308 patent is obvious over Coli and Gardner.

b) Dependent Claims 2–5 and 7–11

Petitioner argues that dependent claims 2–5 and 7–11 are obvious over Coli and Gardner. Pet. 39–41. Patent Owner does not address the additional elements of these dependent claims, but appears instead to rely on its arguments provided for claim 1. Prelim. Resp. 28–29, 33–36. On this record, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claims 2–5 and 7–11 are obvious over Coli and Gardner.

5. Ground 3A: Alleged Obviousness of Claim 6 Over Coli and Stark

Petitioner contends that claim 6 is obvious over Coli and Stark. Pet. 41–44. Specifically, Petitioner argues that Stark teaches “‘cooling the power electronics components of a variable frequency drive for the motor of a refrigerant system compressor’ to prevent damage from excessive heat”

(Pet. 42 (citing Stark, code (57))) and that “a POSITA would have been motivated to incorporate the heat sink and associated hardware/functionality of the variable frequency drive in Stark into the variable frequency drive described in Coli to prevent damage caused by excessive heat, without affecting the other functionalities in Coli.” Pet. 43 (citing Ex. 1007 ¶ 342) (emphasis omitted).

Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 29–33. Specifically, Patent Owner contends that: (1) Petitioner fails to show that Coli teaches “pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation,” as recited in claim 1 (*id.* at 30); (2) Petitioner fails to address how the “heat sink and associated hardware/functionality of the [VFD] in Stark” would be or could be combined to arrive at the claimed invention (*id.* at 31–33); and (3) Petitioner relies on hindsight to justify its proposed combination. *Id.* at 33.

Patent Owner’s first argument is the same as the one advanced in response to Petitioner’s assertions under Ground 1. We find for the same reasons articulated above under Ground 1 that Coli discloses a “pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation,” as recited in claim 1.

As to Patent Owner’s second argument that Petitioner failed to show how a POSITA would have combined the teachings of Coli and Stark, we find that this argument is tantamount to a bodily incorporation argument. “The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of those

references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Any modification of a prior art device will result in changes thereto, as a matter of course; the question, rather, is whether there existed sufficient motivation for a person of ordinary skill to make the proposed modifications in light of the evidence of record. We find that Petitioner’s evidence of the benefits resulting from the combination, i.e., to prevent damage caused by excessive heat, provide sufficient motivation to make these changes, and that Patent Owner’s arguments regarding ambiguity as to which elements of Stark Petitioner believes could be combined with the VFD of Coli without affecting the other functionalities in Coli (Prelim Resp. 32–33) are insufficient to defeat the evidence of motivation to combine

As to Patent Owner’s argument that Petitioner relies on hindsight to arrive at the claimed invention, we are unpersuaded that Petitioner’s rationale is grounded in impermissible hindsight.

As Petitioner notes, Stark expressly teaches that it is desirable to prevent a VFD from overheating: “VFD typically contains power electronics that require cooling in order for the drive to operate under optimum conditions over the operating range of the system” (Pet. 42 (citing Stark, 2:58–60)) and that it is known in the art to use a heatsink to prevent such overheating. Pet. 42 (citing Stark, 1:65–2:5). Accordingly, we find on this preliminary record, that Petitioner’s rationale for combining is properly derived from the asserted prior art and not the product of impermissible hindsight.

Based on the foregoing, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claim 6 is obvious over Coli and Stark.

6. *Ground 3B: Alleged Obviousness of Claim 6 Over Coli, Gardner, and Stark*

Petitioner contends that dependent claim 6 as unpatentable over Coli, Gardner, and Stark. Pet. 45. Patent Owner relies on the same arguments provided for Ground 3A to dispute Petitioner's obviousness argument (Prelim. Resp. 29–33) and further argues, as it did in response to Ground 2B, that Petitioner has failed to establish a reasonable likelihood that Gardner is a printed publication. *Id.* at 33–36.

On this record, we determine, for the same reasons articulated with respect to Ground 3A above, that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claim 6 is obvious over Coli, Gardner, and Stark. We further determine for the same reasons articulated with respect to Ground 2B above, that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that Gardner is a printed publication.

Based on the foregoing, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claim 6 is obvious over Coli, Gardner, and Stark.

7. *Ground 4A: Alleged Obviousness of Claims 10 and 11 Over Coli and Vliet*

Petitioner contends that claims 10 and 11 are obvious over Coli and Vliet. Pet. 46–50. Patent Owner does not address the additional elements of these dependent claims, but instead relies on its arguments provided for Coli and submits that Vliet does not cure the alleged deficiencies in Coli. Prelim. Resp. 28–29.

Patent Owner's arguments regarding the disclosure of Coli are the same as those advanced in response to Petitioner's assertions under Ground

1. We find for the same reasons articulated above under Ground 1 that Coli discloses a “pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation,” as recited in claim 1.

On this record, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claims 10 and 11 are obvious over Coli and Vliet.

8. *Ground 4B: Alleged Obviousness of Claims 10 and 11 Over Coli, Gardner, and Vliet*

Petitioner contends that claims 10 and 11 are obvious over Coli, Gardner, and Vliet. Pet. 50–51. Patent Owner does not address the additional elements of these dependent claims, but instead relies on its arguments provided for Coli and Gardner and submits that Vliet does not cure the alleged deficiencies of Coli. Prelim. Resp. 28–29, 33–36.

Patent Owner’s arguments regarding Coli and Gardner are the same as those advanced in response to Petitioner’s assertions under Ground 2B. We find for the same reasons articulated above under Ground 2B that Coli discloses a “pump configured to pump fluid into the wellbore at high pressure so that the fluid passes from the wellbore into the formation, and fractures the formation,” as recited in claim 1 and that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that Gardner is a printed publication.

Based on the foregoing, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing in demonstrating that claims 10 and 11 are obvious over Coli, Gardner, and Vliet.

III. CONCLUSION

After considering the evidence and arguments presented in the Petition and the Preliminary Response, we determine that Petitioner has demonstrated a reasonable likelihood of prevailing with respect to at least one of the challenged claims, and thus, we institute an *inter partes* review of all challenged claims on all presented challenges. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018); *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”).

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim or any underlying factual and legal issues.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–11 of U.S. Patent No. 10,337,308 B2 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(b), *inter partes* review of U.S. Patent No. 10,337,308 B2 shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

IPR2021-01034
Patent 10,337,308 B2

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