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Paper 13
Entered: May 11, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

CHARGE FUSION TECHNOLOGIES, LLC,
Patent Owner.

IPR2023-00062
Patent 9,853,488 B2

Before JEREMY M. PLENZLER, CARL M. DEFRANCO, and PAUL J. KORNICZKY, *Administrative Patent Judges.*

PLENZLER, *Administrative Patent Judge.*

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

I. INTRODUCTION

A. Background and Summary

Tesla, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of claims 1–15 of U.S. Patent No. 9,853,488 B2 (Ex. 1001, "the '488 patent"). Paper 2 ("Pet."). Charge Fusion Technologies, LLC ("Patent Owner") filed a Preliminary Response. Paper 9 ("Prelim. Resp."). Upon request of the parties and pursuant to our authorization, Petitioner filed a Reply to Patent Owner's Preliminary Response (Paper 11; "Pet. Reply").

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the petition "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." For the reasons stated below, we determine that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one of the challenged claims. Thus, we institute an *inter partes* review in this proceeding. 37 C.F.R. § 42.108(a) (2022) ("When instituting inter partes review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim."). Specifically, we grant Petitioner's request to institute an *inter partes* review of claims 1–15 of the '488 patent.

B. Related Matters

The parties indicate that the '488 patent is involved in *Charge Fusion Technologies, LLC v. Tesla, Inc.*, No. 1:22-cv-00488-LY (W.D. Tex. 2021) ("Texas Litigation"). Pet. 75; Paper 4, 1. The '488 patent was also challenged in IPR2022-00519.

C. The '488 Patent

The '488 patent relates to "[s]ystems and methods for charging electric vehicles and for quantitative and qualitative load balancing of electrical demand." Ex. 1001, Abstract. The '488 patent explains that "the owner of an electrical automobile must often times adhere to a schedule of charging that renders the automobile unusable for protracted stretches of time." *Id*. at 1:24–27. The '488 patent describes reducing cost and providing more efficient charging based on scheduled charging. *See, e.g.*, 6:39–53, 8:13–25. The scheduled charging is determined by the Electric Charging System. *Id.* at 2:64–3:8, 19:50–51. The schedule may be based on user preferences, such as charging cost and desired charging level, and provider attributes, such as market rates for electricity. *See id.* at 9:57–10:50. Based on a known timeframe during which the vehicle is available for charging, the user preferences, and provider attributes, the charging schedule is determined to optimize charging (e.g., reduce cost based on market rates that vary throughout the day). *Id.* at 19:50–63.

D. Illustrative Claim

1. An electrical charging system, comprising:

a vehicle sensor;

a communication device;

a processor in communication with the vehicle sensor and the communication device; and

a memory in communication with the processor, the memory storing instructions that when executed by the processor cause the processor to:

(a) receive, from the vehicle sensor, information indicative of a presence of a vehicle in a parking space;

(b) receive, from the communication device, information indicative of one or more charging preferences

> corresponding to a desired charging of the vehicle, wherein the one or more charging preferences are defined by an operator of the vehicle;
>
> (c) determine a first value of a dynamic attribute of an electric charge provider;
>
> (d) determine, based at least on the one or more charging preferences and the first value of the dynamic attribute, a charging schedule for the vehicle;
>
> (e) initiate a charging of the vehicle in accordance with the charging schedule;
>
> (f) retrieve a second value of the at least one dynamic attribute; and
>
> (g) repeat (d) and (e), utilizing the retrieved second value of the dynamic attribute as the first value of the dynamic attribute.

Ex. 1001, 29:4–31.

E. Evidence and Asserted Grounds

Petitioner asserts that claims 1–15 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §[1]	Reference(s)/Basis
1–3, 5–8, 10, 13–15	103	Ferro[2], Lowenthal[3]
9	103	Ferro, Lowenthal, Evans[4]
4, 11, 12	103	Ferro, Lowenthal, Boll[5]

[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112-29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the application from which the '488 patent issued was filed before this date, the pre-AIA version of § 103 applies.
[2] US Patent Pub 2009/0313034 A1, published Dec. 17, 2009 (Ex. 1006).
[3] US Patent 7,956,570 B2, issued June 7, 2011 (Ex. 1007).
[4] US Patent Pub. 2009/0144622 A1, Jan. 29, 2009 (Ex. 1009).
[5] US Patent 5,623,194, issued Apr. 22, 1997 (Ex. 1008).

Petitioner submits a declaration from Arthur MacCarley, Ph.D., PE. Ex. 1002 ("MacCarley Declaration"). Patent Owner submits a declaration from Steven Goldberg, Ph.D. (Ex. 2019, "Goldberg Declaration").

II. ANALYSIS

A. Legal Standards

Petitioner bears the burden of persuasion to prove unpatentability, by a preponderance of the evidence, of the claims challenged in the Petition. 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).

B. Level of Ordinary Skill in the Art

Petitioner's declarant, Dr. MacCarley, testifies that one skilled in the art during the relevant time frame "would have had at least a bachelor's degree in electrical engineering, mechanical engineering, or physics (or an equivalent field) and at least two years of work experience involving automotive systems, including vehicle information systems, vehicle sensors, and vehicle controllers," but "[m]ore education can supplement practical experience and vice versa." Pet. 10 (citing Ex. 1002 ¶ 26). Patent Owner does not contest Petitioner's articulation of the level of skill in the art. *See* Prelim. Resp. 10 ("Because [the proposed level of ordinary skill] does not affect the ultimate analysis, Patent Owner takes no position with respect to Petitioner's proposed level of ordinary skill in the art.").

For purposes of this decision, we analyze the asserted prior art with respect to the level of skill set forth by Petitioner.

C. Claim Construction

In an *inter partes* review, we construe a patent claim "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b)." 37 C.F.R. § 42.100(b) (2021). Under this standard, the words of a claim generally are given their "ordinary and customary meaning," which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Petitioner contends that "[n]o terms here require construction and so all claim terms should be given their plain and ordinary meaning." Pet. 10–11. Similarly, "Patent Owner requests that the Board adopt the ordinary and customary meaning of the claim terms as understood by one of ordinary skill in the art." Prelim. Resp. 9. Neither party articulates the asserted plain and ordinary meaning of any claim terms in their initial briefing.

As discussed below, our determination to institute trial does not require an express construction of any particular claim terms. *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.'" (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

D. General Plastic § 314(a) Discretionary Denial

Institution of an *inter partes* review may be denied as a matter of discretion. *See Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter committed to

the Patent Office's discretion."). In *General Plastic Industrial Co. v. Canon Kabushiki Kaisha*, the Board set forth seven non-exhaustive factors considered when assessing whether to exercise discretion to deny institution of a follow-on petition under § 314(a). IPR2016-01357, Paper 19 at 16 (PTAB Sept. 6, 2017) (precedential as to Section II.B.4.i) ("*General Plastic*"). These factors are:

> 1. whether the same petitioner previously filed a petition directed to the same claims of the same patent;
>
> 2. whether at the time of filing of the first petition the petitioner knew of the prior art asserted in the second petition or should have known of it;
>
> 3. whether at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition or received the Board's decision on whether to institute review in the first petition;
>
> 4. the length of time that elapsed between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition;
>
> 5. whether the petitioner provides adequate explanation for the time elapsed between the filings of multiple petitions directed to the same claims of the same patent;
>
> 6. the finite resources of the Board; and
>
> 7. the requirement under 35 U.S.C. § 316(a)(11) to issue a final determination not later than 1 year after the date on which the Director notices institution of review.

General Plastic at 15–16 (citing *NVIDIA Corp. v. Samsung Elec. Co.*, IPR2016-00134, Paper 9 at 6–7 (PTAB May 4, 2016)). We address each factor below.

1. Factor 1

As noted above, the '488 patent was also challenged in IPR2022-00519. In IPR2022-00519, the petition was filed by Unified Patents, LLC

("Unified"), claims 13–15 of the '488 patent were challenged, and institution was denied on the merits. *Unified Patents, LLC v. Charge Fusion Technologies, LLC*, IPR2022-00519, Paper 7 (PTAB Aug. 24, 2022).

Petitioner contends that "the present petition is being filed by an unrelated party and challenges different claims based on a different primary reference." Pet. 63. Petitioner acknowledges that "the Board has applied the *General Plastic* factors in circumstances where those petitions are not filed by the same petitioner, it has generally only done so when there is a significant relationship between the current and prior petitioners." *Id.* at 64. According to Petitioner, "Tesla does not have a significant relationship with [Unified]" and "Tesla was unaware of the prior petition and had no input into the petition or any other related strategic decisions related to it." *Id.* at 65.

Patent Owner acknowledges that "Tesla and Unified Patents are different petitioners" and that "Petitioner states that Unified Patents is an 'unrelated party.'" Prelim. Resp. 13. Patent Owner contends, however, that "Unified Patents touts Tesla as a 'member' on its website" (*id.* (citing Ex. 2018)) and "Factor 1 weighs in favor of exercising the Board's discretion to deny institution given Tesla's purported membership in Unified Patents" (*id.* at 14).

Factor 1 may apply to petitions filed by two separate petitioners, taking into account "any relationship between those petitioners." *Valve Corp. v. Elec. Scripting Prods., Inc.*, IPR2019-00062, Paper 11 at 9 (PTAB Apr. 2, 2019) (precedential) ("*Valve Corp.*"). In *Valve Corp.*, the Board held that "there is a significant relationship between Valve and HTC [(the prior Petitioner)] with respect to Patent Owner's assertion of the [challenged] patent." *Valve Corp.* at 10. That determination was based on

"the petitions in these cases challeng[ing] the same claims . . . as the previous petition" and that "Valve and HTC were co-defendants in the District Court litigation and were accused of infringing the '934 patent based on HTC's . . . devices that incorporate technology licensed from Valve." *Id.* The decision also noted that "Valve was aware of Patent Owner's infringement allegations at the time HTC filed its petition." *Id.*

Although *Valve Corp.* instructs us to take into account any relationship between petitioners, the specific relationship in *Valve Corp.* was "significant" and, in combination with the same claims being challenged, was sufficient to warrant Factor 1 weighing in favor of discretionary denial.

Board decisions have routinely determined Factor 1 does not weigh in favor of exercising discretion to deny institution when Unified was the earlier challenger and the Petitioner in the second Petition was a member of Unified. *See, e.g.*, *Toyota Motor Corp. v. Intellectual Ventures II LLC*, IPR2022-00708, Paper 12 (PTAB Oct. 12, 2022); *Uber Tech's, Inc. v. LBT IP II LLC*, IPR2022-00926, Paper 9 (PTAB Dec. 7, 2022). We have no evidence that there is a significant relationship between Unified and Petitioner in this case. Consistent with past Board decisions, we consider this lack of relationship as weighing against denying institution.

Also weighing against denying institution in Factor 1 in this proceeding is that the same claims are not challenged. Fewer claims were challenged in IPR2022-00519 than in this proceeding. Patent Owner notes the similarities between the subset of claims challenged in IPR2022-00519 and the remaining claims of the '488 patent. Nevertheless, the same claims are not challenged and the lack of complete overlap of claims weighs against institution.

For the reasons set forth above, Factor 1 weighs against discretionary denial of institution.

2. Factor 2

With respect to Factor 2, Petitioner simply states that "[t]he Board has held that, as here, 'an unrelated Petitioner presenting some new references . . . weighs against denying institution under §314(a) quite heavily'" and concludes that "[a]s such, this factor weighs against denying institution." Pet. 65 (citing *LG Elecs., Inc. v. Bell N. Research, LLC*, IPR2020-00319, Paper 15 at 15 (June 23, 2020)).

The Board decision cited by Petitioner is not designated precedential or informative, and held that Factor 2 was neutral based on the particular circumstances in that case. *See* IPR2020-00319, Paper 15 at 9. But based on the lack of significant relationship between Petitioner and Unified discussed above, and lack of any evidence on this issue, we have no reason to believe that Petitioner even knew of the first petition at the time that petition was filed.

Accordingly, Factor 2 weighs against discretionary denial of institution.

3. Factors 3 and 4

There is no dispute that "at the time of filing of the second petition the petitioner already received the patent owner's preliminary response to the first petition" and "received the Board's decision on whether to institute review in the first petition." Accordingly, Factor 3 weighs in favor of discretionary denial.

There is also no dispute that Petitioner knew of the references asserted in this Petition by at least April 1, 2022, when it served its initial invalidity contentions in the related District Court proceeding. *See* Pet. 66–67; Prelim.

Resp. 19–20. Petitioner acknowledges that it "discovered the prior art asserted when preparing these invalidity contentions." Pet. 67. Petitioner's delay (from the initial April 1, 2022, invalidity contentions to the October 21, 2022, filing of the Petition) is particularly significant here because the same references we already applied to invalidity contentions on April 1, 2022. Accordingly, Factor 4 weighs in favor of discretionary denial.

When weighing the circumstances surrounding the delay in filing the Petition, the combination of Factors 3 and 4 weighs in favor of discretionary denial.

4. Factor 5

Petitioner addresses Factor 5 by asserting that "the present petition is directed to all 15 claims of the '488 patent while the prior petition only addressed three of those claims," and that it "has adequately explained the timing of this Petition: Petitioner discovered the asserted prior art while preparing invalidity contentions, and upon service of those contentions, Petitioner began preparing the present IPR petition." Pet. 67. But this does not provide adequate explanation for the significant delay discussed above.

Accordingly, this factor weighs in favor of discretionary denial, and is at best neutral.

5. Factors 6 and 7

We consider the finite resources of the Board and our ability to issue a final decision within a year of institution to be neutral.

6. Summary

As noted above, Factors 1 and 2 weigh in favor of institution, but Factors 3–5 weigh in favor of discretionary denial. Factors 6 and 7 are neutral. The lack of any significant relationship between Petitioner and

Unified, however, ultimately overcomes any of the other factors that favor discretionary denial.

Accordingly, weighing all factors, the *General Plastic* analysis favors institution.

E. Fintiv § 314(a) Discretionary Denial

Fintiv[6] instructs us to consider whether to deny institution in certain circumstances when there is parallel district court litigation, upon consideration of six factors:

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

Fintiv at 6. Our analysis of *Fintiv* is guided by the USPTO Director's Memorandum issued on June 21, 2022, titled "Interim Procedure for Discretionary Denials in AIA Post Grant Proceedings with Parallel District Court Litigation" ("Director's Memo").[7]

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[6] *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (designated precedential May 5, 2020) ("*Fintiv*").

[7] USPTO, Memorandum on Interim Procedure for Discretionary Denials in AIA Post-grant Proceedings with Parallel District Court Litigation (June 21, 2022), available at uspto.gov/sites/default/files/documents/

As indicated above, the parties identify the co-pending Texas Litigation. Patent Owner asks that we deny institution under 35 U.S.C. § 314(a) and *Fintiv* in view of the Texas Litigation. Prelim. Resp. 29–32. Patent Owner contends that "Petitioner has not provided any assurance that it will not pursue in the Texas Litigation the same grounds as in the Petition or any grounds that could have reasonably been raised in the petition" (Prelim. Resp. 31–32) and "[e]ven if it did, Factors 2, 3, 5, and 6 would still favor denial" (*id.* at 32 n.5). Petitioner argues that all *Fintiv* factors weigh against exercising discretion to deny institution. Pet. 68–69; Paper 11, 1–3.

We address each *Fintiv* factor below.

1. Factor 1

Patent Owner contends that "[a]lthough Tesla has recently filed an opposed motion to stay, the parallel district court proceeding is not stayed, and Petitioner has presented no evidence that a stay may be granted if trial is instituted." Prelim. Resp. 29. Petitioner disagrees with Patent Owner's characterization of stay in the Texas Litigation. Paper 11, 1–2. Specifically, Petitioner explains:

> [T]he litigation was stayed on May 19, 2022 after it was transferred from the Waco Division of W.D. Tex. to the Austin Division. Ex. 1018; Ex. 1010. On August 2, 2022, the district court lifted the stay only "to the extent necessary to comply with this Scheduling Order" (only contentions and claim construction). Ex. 1013. And since the POPR was filed, the district court has entered a stay until the PTAB issues institution decisions in this and a parallel IPR addressing another patent asserted in the district court. Ex.1019.

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interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo20220621.pdf ("Guidance Memo").

The cited exhibits support Petitioner's position that the Court granted a stay in the Texas Litigation. *See* Ex. 1019.

Accordingly, Factor 1 weighs against exercising our discretion to deny institution.

2. Factor 2

The parallel litigation began in the U.S. District Court for the Western District of Texas in the Waco Division, but was transferred to the Austin Division. Pet. 68. No trial date has been set. Pet. 8; Prelim. Resp. 30. Patent Owner argues that we should deny institution based on the expected trial date using the median time to trial from when the case was filed in the Western District of Texas. *See, e.g.*, Prelim. Resp. 56; Paper 10, 2.

Fintiv Factor 2 discusses consideration of a *trial date*. The Director's Memo states that it may be useful to compare a trial date with evidence of a median time to trial. Director's Memo 8. The purpose is to ascertain the likelihood of the scheduled trial date actually occurring on or around that date. *Id.* at 8 ("Stakeholders correctly noted that scheduled trial dates are unreliable and often change[,]" and a "scheduled trial date . . . is not by itself a good indicator of [when] the district court trial will occur."). The Director's Memo does not state that median time-to-trial statistics are themselves a trial date, or otherwise replace consideration of a trial date under *Fintiv* Factor 2. In the circumstances here, the usefulness of the median time to trial statistics is less clear and we will not speculate on when a trial may be scheduled.

Accordingly, Factor 2 weighs against exercising our discretion to deny institution.

3. Factor 3

Patent Owner contends that "[b]y the time the Board's institution decision is likely to issue in mid-May 2023, the Parties and the district court will have already expended considerable time and resources into the claim construction process and discovery, and Judge Yeakel will have already conducted the March 2, 2023, *Markman* hearing." Prelim. Resp. 30. Petitioner responds that "Patent Owner's contentions regarding investment for factor 3 are not correct in light of the district court stay" because "[o]nly minimal investment in the district court proceeding (and no Markman Hearing) will have occurred prior to this institution decision." Paper 11, 3. In view of the stay in the Texas Litigation, we agree with Petitioner that considerable time and resources will not have been expended before our decision on institution.

Accordingly, Factor 3 weighs against exercising our discretion to deny institution.

4. Factor 4

Petitioner indicates that it "has sent a letter to Patent Owner that it will not rely on the grounds used in its Petition in the District Court litigation." Paper 11, 3 (citing Ex 1023; *Sand Revolution II, LLC v. Cont'l Intermodal Group-Trucking LLC*, IPR2019-01393, Paper 24 at 12 (PTAB June 16, 2020) (informative) ("*Sand Revolution*")). The letter referenced by Petitioner indicates that "if *inter partes* review is instituted, [Petitioner] will not assert invalidity of the '488 patent in the litigation based on the grounds instituted in the inter partes review." Ex. 1023. As noted above, Patent Owner contends that "Petitioner has not provided any assurance that it will not pursue in the Texas Litigation the same grounds as in the Petition *or any*

grounds that could have reasonably been raised in the petition." Prelim. Resp. 31–32 (emphasis added).

Petitioner offers a *Sand Revolution*-type of stipulation. We are not aware of any precedent that *Sand Revolution*-type stipulations are no longer valid or not entitled to weight in the *Fintiv* analysis. *Sand Revolution* stipulations are narrower in scope than *Sotera*-type stipulations. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 18–19 (PTAB Dec. 1, 2020) (precedential as to § II.A) (finding that a broad stipulation not to pursue any ground raised or that could have been reasonably raised in the parallel litigation weighs strongly toward institution) ("*Sotera*"). Petitioner's stipulation eliminates specific overlap with the parallel proceeding. As in *Sand Revolution*, we weigh this factor as favoring not exercising our discretion to deny institution. *Sand Revolution* at 12.

5. Factor 5

"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 . . . ." *Fintiv* at 13. There is no dispute that Petitioner is a defendant in the Texas Litigation. But this factor is of little value when the circumstances of the related litigation are similar to those discussed above in Factors 1–4.

Accordingly, based on the specific facts of this case, we consider this factor neutral. To the extent this factor should weigh in favor of exercising our discretion to deny institution, that weight is marginal at best.

6. Factor 6

Patent Owner argues that Petitioner has failed to establish compelling merits because "Petitioner has failed to show [even] a reasonable likelihood that it would prevail on Grounds 1–3." Prelim. Resp. 32. The Director's

Memo does not require a Petitioner to establish compelling merits to avoid discretionary denial. *See* Director's Memo 4–5 (explaining that compelling merits can overcome what would otherwise warrant a discretionary denial under *Fintiv* analysis); *see also CommScope Techs. LLC v. Dali Wireless, Inc.*, IPR2022-01242, Paper 23 at 6 (PTAB Feb. 27, 2023) (precedential) ("[t]he Board should first assess *Fintiv* factors 1–5; if that analysis supports discretionary denial, the Board should engage the compelling merits question.").

Because *Fintiv* Factors 1–5, when weighed together, do not favor exercising our discretion to deny institution, there is no need to determine whether the Petition establishes compelling merits.

7. Summary

For the reasons stated above, the *Fintiv* Factors do not support exercising our discretion to deny institution.

F. § 325(d) Discretionary Denial

35 U.S.C. § 325(d) states, in relevant part: "In 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* 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* at 9–11. Below, we use this framework to evaluate which, if any, of Petitioner's grounds of unpatentability implicate § 325(d).

Patent Owner contends that "[b]oth parts of § 325(d)'s two-part framework support denying institution of the Petition." Prelim. Resp. 21. With respect to the first part of the *Advanced Bionics* framework, Patent Owner contends that "[b]ecause Petitioner has not shown that Ferro is materially different than Hafner[8], or that materially different arguments previously were presented to the Office, the first part of the *Advanced Bionics* framework is satisfied." Prelim. Resp. 25. We disagree.

Patent Owner does not contend that either Hafner or Ferro were before the Examiner during examination. Rather, Patent Owner contends that the Board previously addressed Hafner in IPR2022-00519, and that there is significant overlap between Ferro and Hafner when addressing the first part of the *Advanced Bionics* framework. Prelim. Resp. 22–25. Patent Owner's contentions are not persuasive.

As discussed below in our analysis of Petitioner's challenges in the Petition before us, there are portions of Ferro that are materially different from Hafner. Those portions are relevant to our decision to institute trial in this proceeding because they teach features we determined missing from the challenge to the '488 patent in IPR2022-00519 based on Hafner.

We do not reach the second part of the *Advanced Bionics* framework because neither the same or substantially the same art or arguments were previously were presented to the Office.

Accordingly, we decline to exercise our discretion to deny institution under 35 U.S.C. § 325(d).

[8] Ex. 2006 (US Patent 8,531,162 B2) (applied in place of Ferro in IPR2022-00519).

G. Petitioner's Challenge

Petitioner asserts that claims 1–15 are unpatentable under 35 U.S.C. § 103 as obvious over various combinations of Ferro, Lowenthal, Evans, and Boll. Pet. 11–63. As noted above, the challenge to claim 1 relies on the combined teachings of Ferro and Lowenthal. Patent Owner's contentions at this stage of the proceeding focus on claim 1 and Petitioner's rationale to combine the teachings of Ferro and Lowenthal.

Based on the evidence of record, we conclude that there is a reasonable likelihood that Petitioner will prevail with respect to at least its challenge to claim 1 in the Petition.

1. Ferro

Ferro "is directed to . . . generating dynamic energy transaction plans for controlling charging an electric vehicle, de-charging the electric vehicle, and/or storing of electric power in an electric vehicle in real-time during an electric vehicle charging transaction." Ex. 1006 ¶ 2. Ferro explains that "[d]uring the pre-charge phase of decision enablement, a charging plan is generated and all parties are presented with the conditions governing the charging transaction." *Id.* ¶ 51.

Ferro's "dynamic energy transaction planner generates a dynamic energy transaction plan based on charging transaction information." *Id.* ¶ 66. In Ferro,

> [the] dynamic energy transaction plan comprises an identification of the electric vehicle, an identification of a principal in a set of principals to pay for the charging transaction, an identification of at least one utility associated with the charging transaction, an owner of the charging station, and a first set of terms of the charging transaction.

Id. Ferro explains that "[t]he dynamic energy transaction planner receives updated charging transaction information during execution of the charging transaction and updates the dynamic energy transaction plan based on the updated charging transaction information to form an updated dynamic energy transaction plan." *Id.* ¶ 67. "The updated dynamic energy transaction plan comprises a second set of terms" and "[a] second portion of the charging transaction is implemented in accordance with the second set of terms in the updated dynamic energy transaction plan." *Id.*

Ferro describes the first and second sets of terms as being first and second sets of charging transaction time driven sequences. Ex. 1006 ¶ 70. Ferro explains that "[c]harging transaction time driven event sequences specifies charging, discharging, or storing of power at a given rate during a particular time interval," which "may be denoted by a start time and a stop time or by a length of time to continue charging, discharging, or storing." *Id.*

In Ferro's system, "[a] principal may create preferences for managing parameters of the electric vehicle's charging transactions." Ex. 1006 ¶ 93. The "[d]ynamic energy transaction plan comprises a set of terms for governing all aspects of the charging transaction based on the set of preferences." *Id.* ¶ 97. "[D]uring the charging transaction, the operator may update preferences." *Id.* ¶ 98. Ferro provides an example where the operator "indicate[s] that instead of leaving the charging station at 5:00 p.m., the operator will not be leaving until 7:30 p.m." *Id.* In this example:

> As a result, dynamic energy transaction planner 402 may alter dynamic energy transaction plan 424 to permit electric vehicle 400 to discharge electric power in the afternoon when electric power usage is higher and then charge electric vehicle 400 beginning at 6:00 p.m., when electricity rates are lower so that

> electric vehicle will have sufficient charge to return to the operators home when the operator is ready to leave at 7:30 p.m.

Id. That is, the dynamic energy transaction planner determines when to charge or discharge the electric vehicle based on an available time window specified by the operator and the varying cost of electricity during that time window.

2. Lowenthal

Lowenthal "relates to the field of systems and methods for recharging electric Vehicles and to network-controlled electrical outlets used in Such systems." Ex. 1007, 1:14–16. According to Lowenthal, "[t]here is a need for a communication network which facilitates finding the recharging facility, controlling the facility, and paying for the electricity consumed." *Id.* at 1:33–36.

Lowenthal describes its system as including "electrical outlets, called Smartlets™" and explains that "[s]ome system[s] may be enhanced with a device for detecting the presence of a vehicle occupying the parking space in front of the Smartlet™ . . . includ[ing] sonar, TV camera and induction coil devices." Ex. 1007, 3:37–38, 59–62. Lowenthal explains that the "vehicle detector . . . may be used to determine whether a parking space is available." *Id.* at 4:62–64.

3. Asserted Teachings and Proposed Modifications

Petitioner contends that Ferro teaches, or at least suggests, the majority of the features recited in claim 1, other than those related to the "vehicle sensor." *See* Pet. 11–40. Petitioner contends that Lowenthal teaches the features related to the recited "vehicle sensor" that are missing from Ferro and reasons that it would have been obvious to modify Ferro's system based on those teachings. *Id.* at 12–19, 21–25, 26–28. We have

reviewed Petitioner's contentions regarding the teachings of Ferro and Lowenthal, as well as the rationale for the proposed modifications to Ferro's system and determine they are sufficient to warrant institution of *inter partes* review. We specifically address only Patent Owner's disputes below.[9]

Patent Owner disputes whether Ferro teaches that its system "determine[s] a first value of a dynamic attribute of an electric charge provider" (the "dynamic attribute limitation"; Prelim. Resp. 34–36) and "determine[s], based at least on the one or more charging preferences and the first value of the dynamic attribute, a charging schedule for the vehicle" (the "charging schedule limitation"; *id.* at 36–40). Patent Owner also disputes Petitioner's rationale for the proposed modifications to Ferro's teachings and whether there would have been a reasonable expectation of success. *Id.* at 47–59.

a) dynamic attribute

Petitioner contends that "Ferro discloses one or more dynamic attributes of an electric charge provider—including many of the same dynamic attributes considered by the '488 patent." Pet. 31–32 (citing Ex. 1002 ¶ 81). Petitioner includes a footnote explaining that "'[d]ynamic attributes' are not defined in the '488 patent" but notes that "during the prosecution history of the '488 patent, the applicant explained the term dynamic attribute as 'descriptive of the numerous instances in which we refer to the price per kilowatt hours changing and very explicitly changing the charging schedule based on that attribute.'" *Id.* at n.5 (citing Ex. 1005, 431). Petitioner contends that Ferro teaches the dynamic attribute limitation

[9] We address only claim 1 because Patent Owner's remaining contentions regarding the other challenged claims and grounds simply point to its disputes regarding claim 1. *See* Prelim. Resp. 41–47.

because "Ferro discloses or suggests determining a value for a price per kilowatt hour that is received from a power grid ('a first value of a dynamic attribute') of a charging kiosk or a utility ('an electric charge provider')." *Id.* at 33. Petitioner cites Dr. MacCarley's testimony and a number of passages from Ferro to support this position. *See* Pet. 32–33 (citing Ex. 1002 ¶¶ 82, 83; Ex. 1006 ¶¶ 37, 52, 54, 59, 80, 88, 119).

Patent Owner responds that "Petitioner appears to suggest that a preference purportedly set by the user, such as the 'maximum price per kilowatt hour of electricity to be paid by a party,' satisfies the 'dynamic attribute of an electric charge provider.'" Prelim. Resp. 34 (citing Pet. 32–33). This is not a fair characterization of Petitioner's challenge.

The Petition explains that "Ferro's attributes of the set of principals 'may include, without limitation, a maximum price per kilowatt hour of electricity to be paid by a party, . . . or any other preferences associated with charging an electric vehicle.'" Pet. 32 (citing Ex. 1006 ¶ 54). But the Petition goes on to further explain that "Ferro's disclosure related to the price of electricity [received from a power grid] is a dynamic attribute because Ferro describes numerous instances where the price of electricity changes." *Id.* That is, we read the Petition as asserting that the price of electricity *charged by the provider* in Ferro corresponds to the dynamic attribute limitation, not the price limit *set by the operator of the vehicle*. Accordingly, Patent Owner's alleged dispute with the Petition does not address the actual challenge to the claims.

Ferro describes the electric vehicle receiving "the price of electricity . . . from a power grid." Ex. 1006 ¶ 37. Ferro further describes a transaction plan that governs charging. *Id.* ¶¶ 542, 54, 59. The vehicle operator may specify limits on the charging price as part of the transaction

plan. *Id.* ¶ 88. But it is clear that Ferro teaches the price of electricity *charged by the provider* is dynamic because it expressly contemplates that price changing. *See id.* ("[P]references may indicate that charging when the price per kilowatt hour is less than thirteen cents is to be maximized and charging when prices are higher than thirteen cents per kilowatt hour is to be minimized or prohibited all together."); *see also id.* ¶ 119 ("[I]f a user charges an electric vehicle at night when the price of the electricity is only nine cents per kilowatt hour, the user may wish to de-charge or provide electricity from the electric vehicle back to the charging station at noon when the price per kilowatt hour is fifteen cents.").

The disclosure from Ferro above is similar to what occurs in the '488 patent. The '488 patent describes determining when to charge the vehicle based on an available charging window specified by the user and price of electricity during that time. *See* Ex. 1001, 19:50–63. The '488 patent explains, for example, that "[t]he ECS, via communication with the power supplier, determines that the present cost of electricity is $0.12/kWh but will fall to $0.09/kWh in two hours," and "[t]he system therefore waits for two hours before charging the automobile for approximately three hours." Ex. 1001, 19:58–63. As discussed above, Ferro's system also maximizes charging during lower cost times.

Accordingly, based on the record before us at this stage of the proceeding, we agree with Petitioner that Ferro sufficiently teaches the dynamic attribute limitation.

b) charging schedule

Petitioner contends that Ferro's transaction plan includes a charging schedule. Pet. 33–35. Patent Owner does not dispute that Ferro teaches a transaction plan or that its plan is based on charging preferences of a vehicle

operator. Patent Owner contends that Ferro's transaction plan is not a charging schedule because "Ferro's network-based energy preference service creates a 'transaction ***plan***' based solely on ***user preferences*** *and the* ***current price*** *of electricity*, and charging (or de-charging) is initiated," but "not at a particular time determined by Ferro's system that takes into account fluctuations in energy rates." Prelim. Resp. 37–38.

Patent Owner acknowledges paragraph 98 of Ferro, cited by Petitioner. Prelim. Resp. 39–40; Pet. 34–35. Yet, after even reproducing portions of Ferro's paragraph 98, which teach its system determining when to charge based on a time window and price variations, Patent Owner concludes that this is not the same as the charging schedule limitation. Based on the record before us, we do not see what is missing from Ferro's teachings that is required by the charging schedule limitation.

Ferro explains:

> [T]he operator may update preferences to indicate that instead of leaving the charging station at 5:00 p.m., the operator will not be leaving until 7:30 p.m. As a result, dynamic energy transaction planner 402 may alter dynamic energy transaction plan 424 to permit electric vehicle 400 to discharge electric power in the afternoon when electric power usage is higher and then charge electric vehicle 400 beginning at 6:00 p.m., when electricity rates are lower so that electric vehicle will have sufficient charge to return to the operator[']s home when the operator is ready to leave at 7:30 p.m. In this manner, dynamic energy transaction plan 424 is able to change in response to changing conditions to maximize the benefits of charging, discharging, and/or storing electricity associated with electric vehicle 400 at charging station 403.

Ex. 1006 ¶ 98. We fail to see how this is different from even the particular example in the '488 patent cited by Patent Owner. *See* Prelim. Resp. 37

(citing Ex. 1001, 19:50–63). The portions of the '488 patent cited by Patent Owner explain:

> Once the information is received, the ECS operates to determine an appropriate charging schedule. For example, a driver parks his car in a space having an ECS. The driver knows that his car will sit in the space all work day, hence the chosen charging duration of eight hours. The ECS, perhaps relying on other retrieved information specifying the charging characteristics of the automobile, computes that it will take approximately three hours of charging to charge the automobile to a minimum of 80% charged. The ECS, via communication with the power supplier, determines that the present cost of electricity is $0.12/kWh but will fall to $0.09/kWh in two hours. The system therefore waits for two hours before charging the automobile for approximately three hours.

Ex. 1001, 19:50–63.

As seen above, both the '488 patent and Ferro adjust (i.e, schedule) charging based on the time window available for charging and the variation in price of electricity during that charging time window. That is, both create a charging schedule in generally the same manner.

Accordingly, based on the record before us at this stage of the proceeding, we agree with Petitioner that Ferro sufficiently teaches the charging schedule limitation.

c) modifications

The combination of teachings proposed by Petitioner with respect to claim 1 is quite simple. Specifically, Petitioner explains that "although Ferro's system describes functionality for determining that a vehicle is in a certain location (e.g., parked at a charging station), it does not explicitly provide the implementation details as to how this may be accomplished." Pet. 14. Patent Owner agrees with Petitioner. *See* Prelim. Resp. 50 ("[I]t is

evident that Ferro's system already knows the location of the vehicle and whether the vehicle is charging.").

Petitioner cites Lowenthal for its "explicit disclosure of a vehicle detector that 'is used to detect the presence of a vehicle in [a] parking space.'" Pet. 14 (citing Ex. 1007, 7:61–8:12, 11:39–42, 4:63–64). Petitioner further notes that "[t]his detector can determine the availability of charging outlets, e.g., by determining whether the parking space corresponding to the charging outlet is available." *Id.* (citing Ex. 1007, 9:38–44). Patent Owner does not dispute Petitioner's contentions regarding the teachings of Lowenthal. *See* Prelim. Resp. 32–41.

Patent Owner contends that Petitioner has not shown that one skilled in the art would have combined Lowenthal's teachings with those of Ferro or that such a combination would have a reasonable expectation of success. *Id.* at 47–59. We disagree.

Petitioner notes that "Ferro's charging station may be 'any station, kiosk, garage, power outlet, or other facility for providing electricity to electric vehicle 116.'" Pet. 13–14 (citing Ex. 1006 ¶ 35). Petitioner contends, for example, that "[a] POSITA would have understood the benefits of incorporating Lowenthal's vehicle detector into the charging stations of Ferro (or, implemented as a separate component to Ferro's system)," such as "allow[ing] for the combined system to detect vehicles, detect availability of parking spaces, and detect available outlets at charging locations." *Id.* at 14 (citing Ex. 1007, 9:38–44; Ex. 1002 ¶ 49). There is no dispute Lowenthal teaches these benefits.

Patent Owner contends that "nothing in Lowenthal describes, nor does Petitioner or its expert argue, that Lowenthal's vehicle detector provided superior vehicle detection or greater efficiencies over the vehicle-detection

mechanism already employed in Ferro." Prelim. Resp. 51. This is not an accurate representation of Petitioner's challenge. As noted above, both Petitioner and Patent Owner agree that Ferro already identifies the presence of a vehicle. But, as noted above, at least one benefit identified by Petitioner in its proposed combination is that the addition of Lowenthal's sensor identifies available parking spaces. *See* Pet. 14. Patent Owner expressly acknowledges this benefit. *See* Prelim. Resp. 52, 56. This rationale is sufficient for institution.

As for the reasonable expectation of success, the modification required is simply to use Lowenthal's sensors and provide the data indicating the presence of a vehicle in a parking spot. Patent Owner alleges that "[t]he Petition lacks sufficient discussion or facts to meet this requirement, not to mention sufficient evidence to support a reasonable expectation of success in reconfiguring Ferro with Lowenthal to meet the limitations of the '488 Patent." Prelim. Resp. 57. To the extent Patent Owner implies that there is some sort of detail lacking from the Petition that one skilled in art would have needed to implement the proposed modification, such an implication is countered by the lack of detail regarding such implementation in the '488 patent, itself, which describes its system at a high level of detail.

Based on the record before us at this stage of the proceeding, we determine that Petitioner has provided sufficient basis to combine the teachings of Lowenthal with those of Ferro as proposed in the Petition.

III. CONCLUSION

After considering the evidence and arguments presented in the current record, we determine that Petitioner demonstrates a reasonable likelihood of prevailing in establishing that at least independent claim 1 of the '488 patent

is unpatentable. We, therefore, institute trial on all challenged claims and grounds raised in the Petition.

At this stage of the proceeding, we have not made a final determination as to the patentability of any challenged claim or as to the construction of any claim term. Any final determination will be based on the record developed during trial. We place Patent Owner on express notice that any argument not asserted in a timely-filed Response to the Petition, or in another manner permitted during trial, shall be deemed waived, even if that argument was presented in the Preliminary Response. Similarly, if the parties do not present their proposed claim constructions in their briefs, or in another manner permitted during trial, they will be precluded from presenting such arguments and their arguments shall be deemed waived.

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 1–15 in the '488 patent is instituted on all challenges included in the Petition; and

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

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