

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

CHARGE FUSION TECHNOLOGIES, LLC,
Patent Owner.

IPR2022-01217
Patent 10,998,753 B2

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

Opinion for the Board filed by Administrative Patent Judge KORNICZKY.

Opinion Dissenting filed by Administrative Patent Judge PLENZLER.

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 1–10 of U.S. Patent No. 10,998,753 B2 (Ex. 1001, “the ’753 patent”). Paper 2 (“Pet.”). Charge Fusion Technologies, LLC (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Upon request of the parties and pursuant to our authorization (Paper 7, “Briefing Order”), Petitioner filed a reply to Patent Owner’s Preliminary Response (Paper 8; “Pet. Reply”), and Patent Owner filed a sur-reply (Paper 9; “PO Sur-Reply”). A conference call was held on Friday, January 13, 2023, and a transcript of that call is included in the record. Ex. 1017 (“Tr.”).

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 1–10 of the ’753 patent.

B. Related Matters

The parties indicate that the '753 patent is involved in *Charge Fusion Technologies, LLC v. Tesla, Inc.*, No. 1:22-cv-00488-LY (W.D. Tex. 2021). Pet. 1¹; Paper 4, 1.

C. The '753 Patent

The '753 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 '753 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 1:34–37. The schedule may be based on user preferences. *See id.* at 10:31–34.

According to the '753 patent, “[t]he operator of the vehicle 660 may, for example, select a first menu option 668a to define settings regarding desired charge levels, charging times, desired travel distances and/or itineraries, etc.” Ex. 1001, 14:1–4. “The user may also or alternatively view and/or change the desired charge range level 720.” *Id.* at 14:54–55. An estimate of how far the vehicle can travel on a given charge amount . . . can be determined, for example, and utilized to express the desired charge level in terms of distance capable of being traveled. *Id.* at 14:55–60. “[A] user may determine a desired distance to travel (e.g., how far it is from home to work or vice versa) and may set the desired charge range level 720 to match the desired distance.” *Id.* at 14:61–64.

¹ Petitioner indicates the case number is “6:22-cv-00488-LY,” which appears to be a typographical error.

In one example, “the user may indicate a desired charging level (and/or a desired charging level may be automatically calculated) based on a desired distance of travel.” Ex. 1001, 19:36–39. “In the case that the vehicle/charging facility is located 20 miles from the driver’s home, for example, the driver (and/or the vehicle or charging station) may determine that the vehicle should be charged to have enough power to travel the 20 miles home (with or without a factor of safety and/or reserve travel capacity).” *Id.* at 40–44.

D. Illustrative Claim

Petitioner challenges all ten claims of the ’753 patent. Ex. 1001, 29–16–32:17. Claims 1 and 6 are independent. Claim 1 is reproduced below.

1. An electrical charging system, comprising:
one or more processing devices; and
a non-transitory memory device in communication with the one or more processing devices, the non-transitory memory storing instructions that when executed by the one or more processing devices, result in:
receiving information indicative of a starting location of an electric vehicle;
receiving information indicative of a desired destination of the electric vehicle;
receiving information indicative of a charging location of each of a plurality of electric charge providers;
computing, based at least in part on the starting location, the desired destination, and the charging locations of one or more of the plurality of electric charge providers, a charging schedule for the electric vehicle[,] the charging schedule comprising a scheduled start time and an indication of a scheduled stop time for charging the electric vehicle at each of one or more of the plurality of charging locations and a sequence defining an order in which the electric vehicle is to be charged at each of the

one or more of the plurality of charging locations, wherein a first charging location of the sequence is computed based, at least in part, on an ability of the electric vehicle to travel to the first charging location utilizing a charge amount stored in a battery of the electric vehicle;

displaying a charging status of the electric vehicle via a graphical user interface forming a part of the electric vehicle; and

increasing, in accordance with the charging schedule, a level of charge of the battery of the electric vehicle;

wherein the desired destination information is defined by a user of the electric vehicle via the graphical user interface adapted to display a vehicle charge indicator element comprising a first portion indicative of an amount of charge residing in a battery of the electric vehicle and a second portion indicative of an uncharged capacity of the battery of the electric vehicle and wherein the vehicle charge indicator element further comprises a slider by which an amount of charge may be specified.

Ex. 1001, 29:16–57.

E. Evidence and Asserted Grounds

Petitioner asserts that claims 1–10 would have been unpatentable on the following ground:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–10	103	Kato ² , Tesla Roadster Manual ³ , Eberhard ⁴

Petitioner submits declarations from Christopher Wilson (Ex. 1002, “Wilson Declaration”) and Lis Fraser (Ex. 1010, “Fraser I Declaration”;

² US Patent Pub. 2008/0243331 A1, Oct. 2, 2008 (Ex. 1008).

³ 2008 Tesla Roadster Touch Screen User’s Manual (Ex. 1005).

⁴ US Patent No. 7,671,567 A1, Jan. 29, 2009 (Ex. 1009).

Ex. 1015, “Fraser II Declaration”). Patent Owner submits a declaration from Steven Goldberg, Ph.D. (Ex. 2001, “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, Mr. Wilson, 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 (ECUs),” but “[m]ore education can supplement practical experience and vice versa.” Pet. 9–10 (citing Ex. 1002 ¶ 27). Patent Owner does not contest Petitioner’s articulation of the level of skill in the art. See Prelim. Resp. 14 (“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 “for the issues presented here, all claim terms should be given their plain and ordinary meaning.” Pet. 10. 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. 13. Neither party articulates the asserted plain and ordinary meaning of any claim terms in their initial briefing.

In our Briefing Order, we required that “each party shall clearly state the requirements of ‘computing . . . a charging schedule . . .’ and the ‘vehicle charge indicator element’” Briefing Order 2. Petitioner and Patent Owner provided further discussion of claim construction in their subsequent Reply and Sur-Reply, respectively. See Pet. Reply 1–3; PO Sur-Reply 1–3.

As discussed below, however, 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. Provisional Priority

In an *inter partes* review, although Petitioner has the ultimate burden of persuasion to prove unpatentability, Patent Owner must demonstrate entitlement to a priority date when Patent Owner relies on that priority date to overcome an anticipation or obviousness argument. *See Dynamic Drinkware*, 800 F.3d at 1379–80; *see also In re NTP, Inc.*, 654 F.3d 1268, 1276 (Fed. Cir. 2011) (“[A] patent’s claims are not entitled to an earlier priority date because the patentee claims priority. Rather, for a patent’s claims to be entitled to an earlier priority date, the patentee must demonstrate that the claims meet the requirements of 35 U.S.C. § 120.” (citations omitted)).

On the current record, and for purposes of this Decision, we find Patent Owner has not shown sufficiently that the claims of the ’753 patent are entitled to the July 11, 2008 filing date of Provisional Application No. 61/134,646 (Ex. 1012, “Provisional Application”). Each claim of the ’753 patent requires “a slider by which the amount of charge may be specified.” Ex. 1001, 29:56–57, 30:66–67. Whether the Provisional Application provides support for that limitation is dispositive for the priority determination.

A patent is only entitled to claim the benefit of the filing date of its provisional application if the disclosure of the provisional application provides support for the claims in the patent in compliance with 35 U.S.C. § 112(a). *See Dynamic Drinkware*, 800 F.3d at 1381.

Patent Owner contends that “[w]ith respect to the purported ‘slider’ requirement, this requirement is also met, as the provisional provides a GUI to enter data.” PO Sur-Reply 2 (citing Ex. 1012, 8; Ex. 2001 ¶ 67). According to Patent Owner, “[t]he slider element was well known to a

[person of ordinary skill in the art], as the iPhone, which was disclosed in the Provisional, allows users to employ a slider element to specify the amount of volume while playing music.” *Id.* (citing Ex. 2001 ¶ 68); *see also* Prelim. Resp. 31–33.

Petitioner contends that the Provisional Application “does not . . . however, provide any disclosure of *how* to indicate a desired charging level, let alone to do so via the use of a ‘slider.’” Pet. 14. According to Petitioner, “[a]t best, [Patent Owner] is arguing the claimed features would have been obvious based on background knowledge of the iPhone interface, which is insufficient for written description support.” Pet. Reply 2 (citing *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)).

Based on the record before us, we agree with Petitioner. The only purported support for the “slider” in the Provisional Application identified by Patent Owner is:

Any other well known method incorporating a graphical user interface (GUI) may be employed to enter data into the automobile based memory or server. For example, an iPhone® interface may communicate via Bluetooth® with a memory device and processor resident in the automobile to make and/or change parameter selections. [Microsoft Sync ...]

Ex. 1012, 8. This evidence does not contain a reference to a “slider” feature of the iPhone, let alone “a slider by which the amount of charge may be specified,” as recited in the claims. Patent Owner offers no explanation as to how the passage from the Provisional Application reproduced above provides support for the “slider,” other than “the iPhone . . . allows users to employ a slider element to specify the amount of volume while playing music.” PO Sur-Reply 2.

The Provisional Application simply references use of a GUI of an iPhone in a general manner. This does not provide written description support of any and all GUI features in the particular manner described in the '753 patent when there is no discussion whatsoever in the Provisional Application. As Petitioner notes, whether the “slider” would have been obvious based on the iPhone interface does not provide the requisite written description support for the claims. *See Lockwood*, 107 F.3d at 1572 (“One shows that one is ‘in possession’ of *the invention* by *describing the invention*, with all its claimed limitations, not that which makes it obvious.”).

For at least these reasons, Patent Owner fails to establish that the claims of the '753 patent are entitled to the July 11, 2008 filing date of the Provisional Application.

E. Tesla Manual—Printed Publication

Petitioner contends that “[t]he 2008 Tesla Roadster Touch Screen Users Manual was publicly available and distributed before the priority date of the '753 patent.” Pet. 8. Petitioner further explains that “[i]t bears a 2008 copyright date, was published in the first quarter of 2008, and was included with all Roadsters.” *Id.* at 8–9 (citing Ex. 1010, Ex. 1015). In its Reply, Petitioner elaborates on the public availability and distribution of the manual, explaining that “a physical copy of the Tesla Manual as well as PDF copies of the Tesla Manual on tablets were available to anyone who went to the Tesla Showroom in Menlo Park, CA, which opened around July 2008.” Pet. Reply 5–6 (citing Ex. 1015; Ex. 1016). Petitioner provides testimony from Lis Fraser that, based on her personal knowledge as an employee of Tesla, “the Tesla Roadster, and a hard copy version of the 2008 Tesla Roadster Touch Screen Users Manual, was available for the public to inspect

at Tesla’s Menlo Park, California showroom starting in 2008 when the showroom was opened.” Ex. 1015 ¶ 7.

Patent Owner disputes whether the Tesla Manual qualifies as a printed publication. Prelim. Resp. 35–46.

“Because there are many ways in which a reference may be disseminated to the interested public, ‘public accessibility’ has been called the touchstone in determining whether a reference constitutes a ‘printed publication’ bar under 35 U.S.C. § 102(b).” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1348 (Fed. Cir. 2016) (quoting *In re Hall*, 781 F.2d at 898–99). “A given reference is ‘publicly accessible’ upon a satisfactory showing that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence, can locate it.” *SRI Int’l, Inc. v. Internet Sec. Sys., Inc.*, 511 F.3d 1186, 1194 (Fed. Cir. 2008) (quoting *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378 (Fed. Cir. 2006)).

We focus on the availability of copies of the Tesla Manual at Tesla’s Menlo Park, California showroom because, for purposes of this decision, that availability provides sufficient basis to establish the Tesla Manual as a printed publication.

Patent Owner’s contentions regarding the actual release date of the Tesla Manual (i.e., when it was released in 2008) are premised on Patent Owner establishing priority for the ‘753 patent claims to the Provisional Application. See Prelim. Resp. 37–38. Those contentions are unpersuasive because, as noted above, Patent Owner has not established entitlement to the filing date of the Provisional Application.

Patent Owner additionally contends that the assertion by Petitioner that the Tesla Manual was available in the Menlo Park showroom is a new theory presented for the first time in Petitioner's Sur-Reply and should not be considered. We disagree. Petitioner's further explanation is responsive to the dispute presented in Patent Owner's Preliminary Response, and elaborates on Petitioner's contention that "[t]he 2008 Tesla Roadster Touch Screen Users Manual was publicly available and distributed before the priority date of the '753 patent." Pet. 8.

At this stage of the proceeding, the dispute as to the public availability of the Tesla Manual appears to be based on the testimony of Lis Fraser. See PO Sur-Reply 7 ("Ms. Fraser has not demonstrated nor attempted to claim personal knowledge that the hard copy version of the 2008 Tesla Manual was publicly accessible before the priority date of the '753 patent."). Any issues with respect to the testimony of Lis Fraser can be addressed after institution of trial.

For purposes of this decision, we determine that Petitioner has sufficiently established availability of the Tesla Manual at the Menlo Park showroom and that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence could have located it. See, e.g., Ex. 1016 (announcing 2008 opening of Menlo Park showroom).

F. Petitioner's Challenge

Petitioner asserts that claims 1–10 are unpatentable under 35 U.S.C. § 103 as obvious over Kato, the Tesla Manual, and Eberhard. Pet. 19–57. Based on the evidence of record, we conclude Petitioner has shown a reasonable likelihood of prevailing on its challenge.

1. *Kato*

Kato is a U.S. patent application titled “Stop-Off Facility Guidance Systems, Methods, and Programs.” Ex. 1008, code (54). It describes a navigation system that determines charging points for a vehicle along a planned route. *Id.* ¶¶ 49–60. Kato explains, for example, that “target battery remaining amounts SOC at each of points are calculated in such a way that the battery remaining amount SOC becomes 0% at the arrival to the next planned charging point.” *Id.* ¶ 55. Kato provides an example where “the first starting point and the last destination are both the home” and “[t]he battery 18 is full-charged at the departure at the home, so that the battery remaining amount SOC at that time is 100%, and the battery remaining amount SOC becomes 0% at the arrival at the home.” *Id.* ¶ 59. “Each of the battery remaining amounts SOC at each of the planned charging points is nearly 0% so as to charge the battery of the vehicle at the planned charging points.” *Id.* Kato further explains “when the time which can be spent at the planned charging point is shorter than the time required for charging, . . . although the battery remaining amount SOC does not reach 100%, the vehicle goes to the next destination.” *Id.*

Kato explains that its “battery remaining amount SOC . . . 100% and 0% do not indicate the physical remaining amount,” but, rather, “100% and 0% of SOC indicate the highest remaining amount and the lowest remaining amount based on the economical repeated use of the battery 18.” Ex. 1008 ¶ 60. For example, “when the battery 18 is an alkaline battery, the battery may be used until the SOC becomes very low,” but “when the battery 18 is a zinc battery, using the zinc battery until the SOC becomes excessively low causes the battery life to be shortened.” *Id.* Accordingly, “a state which a

predetermined amount of charge is still remaining in the zinc battery is set as 0% of the battery remaining amount SOC for the zinc battery.” *Id.*

2. *Tesla Manual*

The Tesla Manual describes the touch screen user interface for the Tesla Roadster. The Tesla Manual describes and illustrates a charge screen, which “displays charging status” and provides “access [to] charge settings.” Ex. 1005, 4. The charge screen can be “[t]ouch[ed] to adjust charge settings.” *Id.* at 10. The charge settings include “[t]iming of charge (charging can begin either when the vehicle is plugged in, or at a specifically scheduled time).” *Id.*

3. *Eberhard*

Eberhard is a U.S. patent titled “Multi-Mode Charging System for an Electric Vehicle.” Ex. 1009, code (54). It relates to “charging and cooling modes for the battery pack of an electric vehicle.” *Id.*, 1:17–18. Eberhard provides one example where a “dial, menu based system on a visual display, buttons, etc.[] are provided that allow the user to select the charging cut-off voltage” or “allow the user to select the average charge.” *Id.* 8:18–24. Eberhard further explains that “any of a variety of charging/operational mode means” can be used, such as “a display system . . . with a touch sensitive screen” only or in combination with “switching means (e.g., toggle switches, push button switches, slide switches, etc.).” *Id.* at 8:51–56.

4. *Petitioner’s Challenge*

Petitioner contends that Kato teaches the majority of the features recited in claim 1, other than

the graphical user interface [being] adapted to display a vehicle charge indicator element comprising a first portion indicative of an amount of charge residing in a battery of the electric vehicle and a second portion indicative of an uncharged capacity of the

battery of the electric vehicle and wherein the vehicle charge indicator element further comprises a slider by which an amount of charge may be specified.

See Pet. 19–32 (addressing limitations taught by Kato), 32–39 (addressing what Kato does not expressly teach).

We have reviewed Petitioner’s contentions regarding the limitations recited in claim 1 purportedly taught by Kato, which Patent Owner does not dispute at this time, and determine that Petitioner has established sufficiently that Kato teaches those limitations. Our discussion below is directed to the disputed issues, specifically the graphical user interface features noted above and Petitioner’s rationale for the proposed combined teachings.

Petitioner contends that, although Kato teaches a GUI,

[t]here is no express disclosure in Kato that the GUI shows the vehicle’s “battery remaining amount SOC” against the capacity of its “battery 18,” such that it is “adapted to display a vehicle charge indicator element comprising a first portion indicative of an amount of charge residing in a battery of the electric vehicle and a second portion indicative of an uncharged capacity of the battery of the electric vehicle.”

Pet. 32–33. Petitioner relies on modifications to the teachings of Kato based on teachings from the Tesla Manual and Eberhard for these GUI features, as well as the slider element recited in the claims. *Id.* at 32–38.

Patent Owner’s disputes whether Petitioner has provided sufficient rationale for the proposed combination and whether Petitioner has established a reasonable expectation of success. Prelim. Resp. 15–27. The GUI features noted above are illustrated in Figure 7 of the ’753 patent, reproduced below.

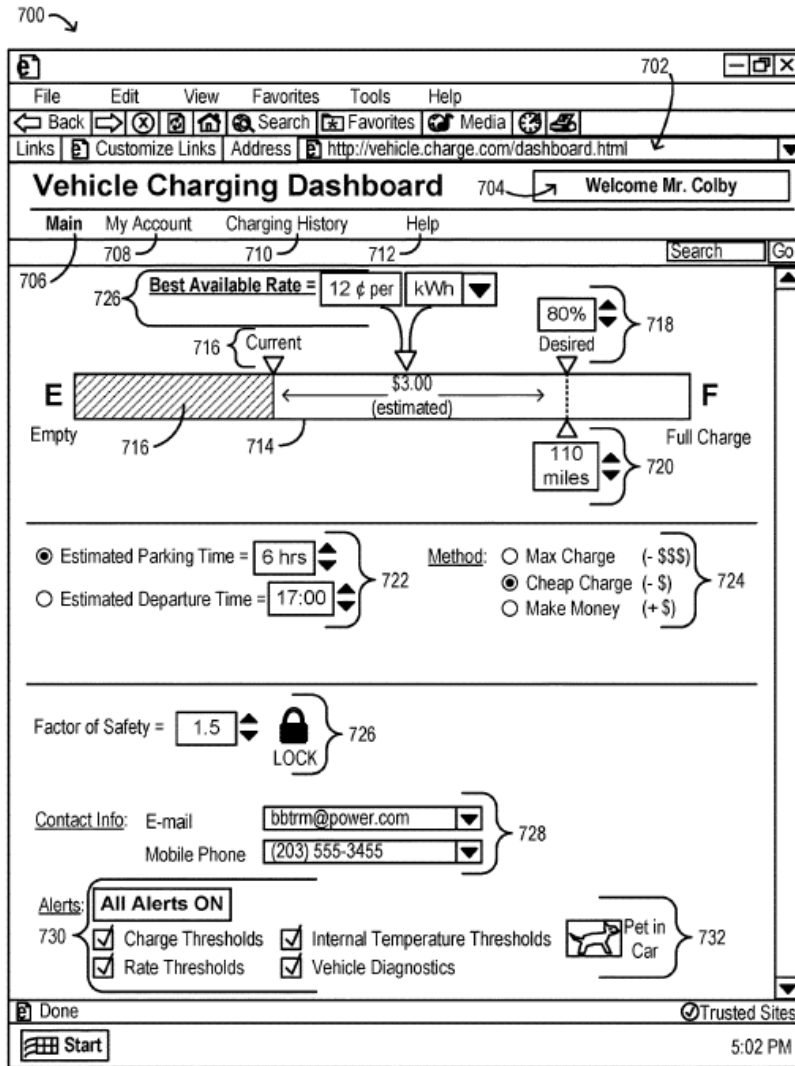


FIG. 7

Figure 7 is an illustration of a graphical user interface. The '753 patent explains:

In some embodiments, the “main” menu item 706 may comprise a “dashboard” and/or primary screen via which vehicle charging parameters may be established, stored, viewed, and/or changed. The “main” menu item 706 may comprise, for example, a vehicle charge indicator 714 that visually indicates a current charge level 716 of the vehicle. Similarly, a desired charge percent level 718 may be both shown and alterable. A user may select the desired charge percent level 718, for

example, and may slide the marker on the vehicle charge indicator 714 to a new described location and/or may utilize the exemplary up/down arrow controls to increase or decrease the desired charge percent level 718.

The user may also or alternatively view and/or change the desired charge range level 720. An estimate of how far the vehicle can travel on a given charge amount (which may be a general average and/or may be computed based on a specific itinerary and/or past driving habits) can be determined, for example, and utilized to express the desired charge level in terms of distance capable of being traveled. In such a manner, for example, a user may determine a desired distance to travel (e.g., how far it is from home to work or vice versa) and may set the desired charge range level 720 to match the desired distance.

Ex. 1001, 14:42–64. That is, the disputed GUI features are simply a visual indication of an amount of battery charge relative to total charge capacity, along with a slider element to specify how much charge a user desires. Patent Owner, itself, characterizes implementation of these features as “well-known GUI methods.” Prelim. Resp. 30; *see also id.* at 31–33 (addressing slider features).

Patent Owner contends that Kato and Eberhard propose different solutions to different problems. Prelim. Resp. 16–19. That argument does not identify any issue with Petitioner’s challenge because, as Petitioner notes, Kato and Eberhard are in the same field as Patent Owner’s purported invention (Pet. 39), which Patent Owner does not dispute. In addition, Kato and Eberhard do not need to expressly disclose Petitioner’s motivation to combine. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). Instead, as discussed above and below, we find that Petitioner sufficiently articulates a reason to combine the references with some rational underpinning to support the legal conclusion of obviousness. *Id.*

Patent Owner additionally contends that Petitioner's reason to combine lacks merit because it is based on hindsight reasoning that uses the claims as a roadmap to find the claim elements. Prelim. Resp. 19–23. That, too, is not persuasive because even Patent Owner acknowledges that such GUI features were well-known in art, as noted above.

Patent Owner's contention that Petitioner has not shown a reasonable expectation of success in reconfiguring Kato with Eberhard and the Tesla Manual (Prelim. Resp. 23–27) is also unpersuasive. Petitioner explains that “adding Eberhard's slider with the charging indicator shown in the Tesla Manual into the display of Kato's navigation apparatus is simply a matter of changing software functionality.” Pet. 44 (citing Ex. 1002 ¶ 139). This is consistent with Patent Owner's own representations, noted above, that these are simply “well-known GUI methods.”

Petitioner sufficiently provides a variety of reasons as to why one skilled in the art would have combined the teachings of Kato, the Tesla Manual, and Eberhard to arrive at the system of claim 1. One such reason we find persuasive at this stage of the proceeding is that

as Eberhard explains, there were many known means to input a user's selection (EX1009, 8:50-60), so, for a POSITA, the use of Eberhard's slider with the charge indicator of the Tesla Manual and within Kato's navigation apparatus display would be a matter of a routine design choice for vehicle interfaces among various ways to display graphical elements and for users to interact with them. EX1002, ¶141.

Pet. 45. Again, this is consistent with Patent Owner's own representations, noted above, that these are simply “well-known GUI methods.”

Based on the record before us at this stage of the proceeding, Petitioner has established a reasonable likelihood of success on at least its challenge to independent claim 1.

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 '753 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. The parties should (1) explain why the “charging schedule limitation” should not be construed under 35 U.S.C § 112(f) as discussed in the dissent, and (2) where written description exists for this limitation in the Specification of the '753 patent.

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 1–10 in the '753 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.

PLENZLER, *Administrative Patent Judge*, DISSENTING.

I agree with the majority that express construction of “computing . . . a charging schedule” (hereinafter “the charging schedule limitation”) is not necessary to resolve the dispute presented in the Petition and Patent Owner’s Preliminary Response regarding whether Patent Owner has established that the ’753 patent is entitled to priority to the provisional filing date. I also agree that, in its Preliminary Response, Patent Owner does not yet dispute that Kato teaches the charging schedule limitation.

Nevertheless, as explained below, because I determine that the charging schedule limitation should be construed under 35 U.S.C § 112(f), and because Petitioner believes that no written description exists for that limitation in the Specification of the ’753 patent, I would deny institution.

Although neither party alleges that 35 U.S.C § 112(f) should apply, as discussed in more detail below, their express statements make clear that a construction pursuant to that section of the statute is the appropriate construction. *See Tr., generally*. Because this claim construction issue may arise during trial⁵, I would address it now. Patent Owner acknowledges the controversy surrounding the charging schedule limitation and lack of meaningful construction of that limitation from Petitioner. *See Tr.* 26:12–27:2, 27:20–28:7.

⁵ In a footnote in its Reply Petitioner notes: “Neither limitation invokes 35 U.S.C. § 112(f).” Pet. Reply 1 n1. In the Claim Construction section, the Petition states: “Petitioner expressly reserves the right to challenge in district court litigation one or more claims of the ’753 Patent for failure to satisfy the requirements of 35 U.S.C. §112.” Pet. 10 n5. Patent Owner states: “If trial is instituted . . . Patent Owner reserves the right to propose more specific constructions of one or more claim terms.” Prelim. Resp. 13.

Section 112(f) states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The standard for determining whether a limitation is a means-plus-function term is not based merely on the presence or absence of the word “means,” but, rather, is based on “whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015). Although there is a presumption that a limitation lacking the word “means” is not subject to § 112(f), that presumption is overcome when it is “demonstrate[d] that the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’” *Id.*

Petitioner contends that “there’s nothing here that rebuts th[e] presumption” that the charging schedule limitation is not subject to § 112(f). Tr. 17:22–23, 19:22–20:6. But as a tribunal with the authority to decide whether a challenger has met its burden to demonstrate the unpatentability of the challenged claims, which depends on the resolution of a claim construction issue, the Board necessarily can decide that claim construction issue based on record evidence. *See Markman v. Westlaw Inst., Inc.*, 52 F.3d 967, 996 n.7 (“A claim must be construed before determining its validity.”) Claim construction is a question of law with evidentiary underpinnings. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 838 (2015). We are simply performing our duty when construing a claim term. *Cf. ACTV, Inc. v.*

Walt Disney Co., 346 F.3d 1082, 1090 (Fed. Cir. 2003) (the appellate court construing terms the constructions of which were not appealed from the trial court); *Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555 (Fed. Cir. 1995) (“[T]he trial judge has an independent obligation to determine the meaning of the claim, notwithstanding the views asserted by the adversary parties.”).

The charging schedule limitation requires computer instructions (i.e., computer code), as the claim recites “[a]n electrical charging system” including “non-transitory memory storing instructions that when executed by the one or more processing devices, result in . . . computing . . . a charging schedule.” Ex. 1001, 29:19–31; *see also* Tr. 14:17–18 (Patent Owner explaining that “it would just be based on conventional coding techniques”). There is no meaningful structure associated with that limitation.

Although the claim recites “instructions,” those instructions are merely a black box that manipulate inputs in some unspecified way to provide outputs that result in the charging schedule and are no different than a generic “module,” which has been held to be a well-known nonce word. *Williamson*, 792 F.3d 1350. Both Petitioner and Patent Owner agree that there is no detail regarding the charging schedule instructions required by the claim.

Petitioner acknowledges that the claim “has inputs and outputs and doesn’t necessarily provide detail as to how to get from the beginning to the end . . . the claim does not provide that information.” Tr. 16:2–7. Patent Owner contends that “one or more processing devices” and “a non-transitory memory device” are the structure recited in the claims, without identifying any particular instructions in the claims. Tr. 12:14–16. Patent Owner

contends that “conventional coding techniques . . . could be applied.” *Id.* 13:9–10; *see also id.* at 14:4–10 (“a person of ordinary skill in the art could use the information in the specification, along with these inputs, and the one or more processing devices and the computer code to determine -- to compute the charging schedule”). Patent Owner’s reference to “conventional coding techniques” refers to known computer programming languages, not off the shelf code, as explained below. It is not enough, however, that one skilled in the art would be able to write a program that generates the charging schedule. *See Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1385 (Fed. Cir. 2009).

Patent Owner points us to *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003 (2018). Tr. 25:1–7. The situation before us, however, is easily distinguished from *Zeroclick*. In *Zeroclick*, the terms “program” and “user interface code” were at issue and determined not to be nonce words in that particular case. *Zeroclick*, 891 F.3d at 1008. The decision in *Zeroclick* held that “a person of ordinary skill in the art could reasonably discern from the claim language that the words ‘program[]’ and ‘user interface code[]’ as used in [the] claim[s] . . . are used not as generic terms or black box recitations of structure or abstractions, but rather as specific references to conventional graphical user interface programs or code, existing in prior art at the time of the inventions.” *Id.* The opposite is true in this case.

Both Petitioner and Patent Owner agree that the charging schedule limitation is not a specific reference to a conventional program or code existing in prior art at the time of the invention. When asked if “there exists code off the shelf that you just plug these inputs into” (Tr. 13:18–20), Patent Owner responded that they are “not aware of anything that existed at the time of the invention that would do this that you could pull off-the-shelf type

computer software” (*id.* at 13:24–14:3). Similarly, Petitioner explained that “the set of instructions is a specific reference to non-conventional programming or code.” *Id.* at 16:16–18. Moreover, both Petitioner and Patent Owner agree that there is nothing simple about the programming required. *See id.* at 14:25–15:2 (Patent Owner explained that they are “not aware of any sort of basic algorithm or anything that could do that.”), 16:19–22 (Petitioner explained that “it’s not just simple programming, it’s not just a simple equation. It’s quite sophisticated to be able to create that.”).

For at least these reasons, I would determine that § 112(f) applies to the charging schedule limitation, as the charging schedule limitation would not have been understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.

Once it is determined that § 112(f) applies, the next step is to “determine whether the specification discloses sufficient structure that corresponds to the claimed function.” *Williamson*, 792 F.3d at 1351. For computer-related inventions so construed, “the specification [must] disclose an algorithm for performing the claimed function,” which “may be expressed as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.” *Id.* (citations omitted). “Where there are multiple claimed functions . . . the patentee must disclose adequate corresponding structure to perform all of the claimed functions.” *Id.* at 1351–52 (citation omitted); *see also Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1341 (Fed. Cir. 2008); *see also Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008).

Petitioner does not identify corresponding structure or equivalents for the charging schedule limitation, and therefore, has not shown where the asserted art teaches the charging schedule limitation. Instead, Petitioner has

taken the position that there is no corresponding structure in the Specification. See Tr. 16:6–14 (“[T]he claim does not provide that information” on how to get from the inputs to the outputs. “As far as whether it’s in the specification, you know, the specification does make a few passing references to a charging schedule, but the exact detail of what’s recited in the claim we do not believe is in the spec.”), 18:7–9 (“that the specification does not provide additional detail in the instructions”), 21:6–9 (“It’s our view that there is no written description support[] in the specification for this limitation.”). Accordingly, I would deny the Petition. See *Samsung Elecs. Am., Inc. v. Prisia Eng’g Corp.*, 948 F.3d 1342, 1353 (Fed. Cir. 2020) (finding “the proper course for the Board to follow, if it cannot ascertain the scope of a claim with reasonable certainty for purposes of assessing patentability, is to decline the IPR or, if the indefiniteness issue affects only certain claims, to conclude that it could not reach a decision on the merits with respect to whether petitioner had established the patentability of those claims under sections 102 or 103.”).

For at least these reasons, I respectfully dissent.

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