

NOTE: This disposition is nonprecedential.

**United States Court of Appeals
for the Federal Circuit**

TESLA, INC.,
Appellant

v.

CHARGE FUSION TECHNOLOGIES, LLC,
Appellee

2024-1584

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2022-01217.

Decided: February 25, 2026

PAUL ISAAC MARGULIES, Tesla, Inc., Washington, DC, argued for appellant. Also represented by KRISTA MARIE CARTER, Palo Alto, CA; DAVID A. CAINE, Arnold & Porter Kaye Scholer LLP, Palo Alto, CA.

FREDERICK A. TECCE, Altima Advisors/Attorneys, LLC, Philadelphia, PA, argued for appellee. Also represented by BRADLEY D. LIDDLE, MICHAEL CLAYTON POMEROY, Cozen O'Connor, Dallas, TX.

Before DYK, REYNA, and CHEN, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* CHEN.

Dissenting opinion filed by *Circuit Judge* DYK.

CHEN, *Circuit Judge*.

Tesla, Inc. (Tesla) appeals a final written decision from the Patent Trial and Appeal Board (Board) finding that Tesla did not prove that claims 1–10 (Challenged Claims) of U.S. Patent No. 10,998,753 ('753 patent) are unpatentable. Because we agree with the Board that the Charging Control Limitation is performed by a processor executing instructions and not a person manually initiating the charging, we *affirm*.

BACKGROUND

Charge Fusion Technologies, LLC owns the '753 patent, titled "Systems and Methods for Charging Electric Vehicles." The patent seeks to "intelligently" control the timing of the charging process for an electric vehicle, creating a charging schedule for the vehicle, and then charging the vehicle in accordance with that generated schedule. *See* '753 patent col. 2 ll. 5–15. To accomplish this, the patent explains that its computerized charging system can "determine the most cost-effective schedule for charging the vehicle." *Id.* at col. 10 ll. 45–49.

Claim 1 is representative of the Challenged Claims. The claimed charging system comprises at least one processing device and a memory storing instructions that, upon execution, cause a series of operations to occur including charging an electric vehicle's battery. Claim 1 reads as follows:

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.

Id. at claim 1 (emphases added).

The portions relevant to this appeal are “instructions that when executed by the one or more processing devices, result in . . . computing . . . a charging schedule for the electric vehicle . . . comprising a scheduled start time and an indication of a scheduled stop time. . .” (Charging Schedule Limitation) and “instructions that when executed by the one or more processing devices, result in . . . increasing, in accordance with the charging schedule, a level of charge of the battery of the electric vehicle”

(Charging Control Limitation).¹ For the Charging Schedule Limitation, execution of the stored instructions by the processing device results in computing a charging schedule for an electric vehicle. *Id.* at col. 29 ll. 18–21, 28–34. For the Charging Control Limitation, execution of the instructions by the processing device results in increasing the vehicle’s battery charge level in accordance with the charging schedule. *Id.* at col. 29 ll. 18–21, 46–47. As with these limitations, the claimed instructions cause additional actions to occur, such as, for example, displaying the battery’s charging status on a user interface within the vehicle. *Id.* at col. 29 ll. 43–45.

On July 22, 2022, Tesla filed a petition requesting *inter partes* review of the Challenged Claims of the ’753 patent. Tesla contended that U.S. Patent Application Publication No. 2008/0243331 (Kato), the 2008 Tesla Roadster Touch Screen Users Manual, and U.S. Patent No. 7,671,567 render the Challenged Claims unpatentable under 35 U.S.C. § 103. *See* J.A. 53–73. The Board instituted the petition, but ultimately found that Tesla did not show by a preponderance of the evidence that any of the Challenged Claims were unpatentable. J.A. 6. In so finding, the Board determined that Kato² does not teach the execution of computer instructions that “result in” either (1) “a charging schedule

¹ The Board and the parties referred to the disputed limitations as the Charging Schedule Limitation and Charging Control Limitation. For clarity, we use these designations to refer to the disputed limitations. Although “control” does not appear in the increasing-the-battery-charge limitation, neither the parties nor the Board used that term to add any extra requirements to the limitation.

² The Board noted that Tesla relied only on the express teachings of Kato to show that the Charging Schedule Limitation and Charging Control Limitation are taught by the prior art and therefore limited its analysis to that basis. *See* J.A. 19–21.

for the electric vehicle . . . comprising a scheduled start time and an indication of a scheduled stop time for charging the electric vehicle” or (2) “increasing, in accordance with the charging schedule, a level of charge of the battery of the electric vehicle.” ’753 patent col. 29 ll. 18–21, 28–34, 46–47; *see* J.A. 18–19, 21.

DISCUSSION

On appeal, Tesla asserts that the Board misconstrued both the Charging Schedule Limitation and the Charging Control Limitation, and consequently erred in finding that Kato does not teach both limitations. We disagree that Kato teaches the Charging Control Limitation, and therefore affirm the Board’s finding that the ’753 patent is not unpatentable on that ground alone.

I.

Kato is directed to a system that determines charging locations for an electric vehicle along a planned route. *See* J.A. 502 at Abstract; *id.* at 511–12 ¶¶ 49–60. The navigation system takes as input an “activity schedule indicating a travel plan,” which may include “starting points, destinations, . . . and scheduled arrival times at the destinations.” *Id.* at 509 ¶ 18; *id.* at 511 ¶¶ 46–47. The navigation apparatus uses this input to plan charging locations along the user’s route and set the desired target battery charge level for each location. *Id.* at 512 ¶ 54.

Relevant to our analysis, Kato discloses a CPU that executes “energy control determination processing” to create a “charging schedule.” *Id.* ¶ 55. The charging schedule is calculated such that “the target battery remaining amounts [] at each of [the charging] points are calculated in such a way that the battery remaining amount [] becomes 0% at the arrival to the next planned charging point.” *Id.* Tesla argues that Kato discloses the Charging Control Limitation because the battery charge level increases in accordance with Kato’s generated charging schedule when a user follows the schedule by manually

plugging in their vehicle at each charging location. *See* J.A. 20–21; J.A. 65 (citing J.A. 511–12 ¶ 50).

II.

The Board determined that Kato does not teach the Charging Control Limitation because the plain and ordinary meaning of this limitation excludes “the user manually starting and stopping the charging.” J.A. 9. Rather, the limitation requires the claimed electric charging system to execute computer instructions that automatically manage the charging of the electric vehicle. *Id.* We agree.

The claim language requires “one or more processing devices” to “execute” “instructions” that “result in” the increase of, “a level of charge of the battery of the electric vehicle.” ’753 patent col. 29 ll. 20–21, 46–47. This means that the claimed system is directed to an automated process in which a processor executes computer instructions that cause an increase in the battery charge level. In other words, the time when the battery charging begins is computer-driven and not triggered simply when a user manually plugs the car into a charging station. The other limitations of claim 1, which recite other computer-driven operations, support this understanding. *See Pause Tech., LLC v. TiVo, Inc.*, 419 F.3d 1326, 1331 (Fed. Cir. 2005) (citations omitted) (“Proper claim construction . . . demands interpretation of the entire claim in context, not a single element in isolation.”).

The Charging Schedule Limitation, for example, requires the claimed charging system to execute stored instructions that “result in” computing a charging schedule. ’753 patent col. 29 ll. 28–42. Similarly, the stored instructions, when executed, also “result in” “displaying a charging status of the electric vehicle;” that displaying operation is an automated one without any user intervention. *Id.* at col. 29 ll. 43–45. Moreover, the claim recites that the charging system “receiv[es]” information regarding the starting location, desired destination, and charging locations, but

those actions do not occur until, again, the stored instructions are executed. *See id.* at col. 29 ll. 22–27. The overall picture of the claim makes clear, then, that all the recited operation steps—whether it is generating a charging schedule, displaying a battery charge level, or increasing the battery charge level—likewise occur without any human intervention when the claimed processing device executes the claimed instructions. In all these limitations, execution of the computer instructions directly causes, or “result[s] in,” the outcomes disclosed. *Id.* at col. 29 l. 21. Nothing in the claim distinguishes the Charging Control Limitation from the other limitations. There is therefore no basis to ignore the context of the claim and construe the Charging Control Limitation differently.

Moreover, the specification is entirely consistent with this straightforward reading of the claim. It discloses embodiments where the charging system itself “intelligently” charges vehicles by conducting the charging process in accordance with a charging schedule. *Id.* at col. 2 ll. 5–15. The specification also teaches embodiments where the charging system interacts with a wireless charging location to control when to charge the vehicle. *See id.* at col. 18 l. 26 – col. 20 l. 42. One embodiment, for example, describes a vehicle “pulling up to a space enabled/operable to provide electricity in a wireless fashion.” *Id.* at col. 19 ll. 9–10. In this embodiment, while a vehicle can be charged immediately when it “is positioned within a distance suitable for the provision of wireless electrical power,” *id.* at col. 18 ll. 56–57, the charging system controls the charging process to “wait[] for [a specific duration] before charging” to take advantage of a lower price per kilowatt-hour, *id.* at col. 19 l. 65 – col. 20 l. 3. Here, there is a “predefine[d] [] charging profile that is read and acted upon [by] the [charging system] without requir[ing] further input from the user/driver.” *Id.* at col. 20 ll. 37–39. Such intelligent charging management goes beyond mere manual plug-in and instead requires the system to execute instructions that

control the charging process, consistent with the claim language.

Tesla's arguments to the contrary are unpersuasive. It relies on *CollegeNet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225 (Fed. Cir. 2005) to argue that the '753 patent "comprising" claims are broad enough to include a user initiating charging or increasing the charge. Appellant Br. 36–38; Appellant Reply 12. This misses the point. The Board's plain and ordinary reading of the "comprising" claims did not exclude a user from manually starting and stopping the charging. Instead, the Board correctly held that Kato did not disclose the Charging Control Limitation because it is not enough to satisfy *that limitation* for Kato to show that "the user [can] manually initiat[e] the charging." J.A. 20. In other words, while a user can manually plug in their vehicle, this is not enough to increase the battery level upon execution of computer instructions as required by the claim.³ The claim requires the computer instructions to trigger the charging process, in accordance with the charging schedule.

CONCLUSION

We agree with the Board that Tesla did not provide sufficient evidence to show that Kato teaches the Charging Control Limitation of the '753 patent. We have considered Tesla's remaining arguments and find them unpersuasive. For the foregoing reasons, we *affirm*.

AFFIRMED

³ For the reasons explained above, *see supra*, Discussion Section II, we disagree with the dissent and Tesla's interpretation of the Charging Control Limitation. And Tesla did not argue below that Kato teaches that limitation under its proper reading.

NOTE: This disposition is nonprecedential.

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DYK, *Circuit Judge*, dissenting.

Contrary to the majority, I think that U.S. Patent Application Publication No. 2008/0243331 (“Kato”) discloses the Charging Control limitation under the correct construction of claim 1 of U.S. Patent No. 10,998,753 (“’753 patent”).

The ’753 patent is directed to “systems and methods for charging electric vehicles.” J.A. 109. Representative claim 1 describes an electrical charging system comprising “one or more processing devices” that execute instructions that “result in:” “computing . . . a charging

schedule . . . comprising a scheduled start time and an indication of a scheduled stop time” (the Charging Schedule limitation) and “increasing, in accordance with the charging schedule, a level of charge of the battery of the electric vehicle” (the Charging Control limitation). ’753 patent, claim 1.

With respect to the Charging Schedule limitation, the majority does not conclude that Kato fails to disclose this limitation. Kato calculates a “charging schedule” based in part on “a time spent on charging at each planned charging point between the arrival at the point and the departure from the point.” J.A. 512 ¶ 55. Neither respondents, nor the Board, identifies a compelling reason why a scheduled arrival at a charging station does not constitute “a scheduled start time.” ’753 patent, claim 1.

However, the Board found, and the majority agrees, that the Charging Control limitation was not disclosed by Kato. The Charging Control limitation requires “instructions that when executed by the one or more processing devices, result in . . . increasing, in accordance with the charging schedule, a level of charge of the battery of the electric vehicle.” ’753 patent, claim 1. The Board found that Kato did not disclose this limitation because “it is the instructions executed by the processor that *control* charging, not simply the user manually initiating charging.” J.A. 20 (emphasis added). The majority correctly points out that claim 1 requires “computer-driven operations,” not just manual determinations. Majority Op. 7.

If Kato only disclosed a user manually charging a vehicle in accordance with the charging schedule, I would agree that Kato does not disclose the Charging Control limitation. But that is not all Kato discloses. Nor was that the theory of the petition, which argued that Kato discloses this limitation because “Kato’s charging schedule setting process is predicated on increasing . . . a level of charge of the battery of the electric vehicle in order to

charge the battery sufficiently at each charging location to get to the subsequent location.” J.A. 65. Claim 1 requires that the processor executes instructions that “result in” an increase in charge. ’753 patent, claim 1. Kato discloses a processor that, when the user manually plugs in the vehicle, calculates the amount of time required to charge the vehicle to power it to the next scheduled charge point, permits increasing the level of charge until sufficient charge has been achieved, and notifies the user when such charging is completed. *See* J.A. 512 ¶ 55, 515 ¶ 91. While the specification contemplates wireless embodiments, it also contemplates physical coupling, stating: “some embodiments herein may be practiced utilizing plug in and/or physical coupling to provide energy transmission.” ’753 patent, col. 18, ll. 49–51.¹ Accordingly, the

¹ The majority appears to agree that claim 1 does not preclude manual plug in:

The Board’s plain and ordinary reading of the “comprising” claims did not exclude a user from manually starting and stopping the charging. Instead, the Board correctly held that Kato did not disclose the Charging Control Limitation because it is not enough to satisfy *that limitation* for Kato to show that “the user [can] manually initiat[e] the charging.” J.A. 20. In other words, while a user can manually plug in their vehicle, this is not enough to increase the battery level upon execution of computer instructions as required by the claim. The claim requires the computer instructions to trigger the charging process, in accordance with the charging schedule.

Majority Op. 9. The majority’s statement that the computer must “trigger the charging process” is incorrect. *Id.* Claim 1 only requires that “instructions . . . when executed by the one or more processing devices, result in: . . .

processor executes instructions (determining the amount of charge required and permitting charging to continue up to that point) that result in the required increase in charge.

Nor do the claims require intelligent charging, as the majority appears to suggest. Majority Op. 8. According to the specification, an intelligent charging system is one that starts and stops charging automatically, without assistance from the user, to take account of considerations like energy cost.

The majority refers to an embodiment where a vehicle or server sends a sensor “information regarding parameters defining how the automobile is to be charged” such as “a maximum rate willing to be paid for electricity.” ’753 patent, col. 19 ll. 25–30. In such cases, the system may predict how energy prices will change throughout the day and “wait[] . . . before charging the automobile.” *Id.* at col. 19 l. 65–col. 20 l. 3. It is true that these embodiments comport with how the majority reads the Charging Control limitation. But they do not comport with the plain language of the claim. Despite being used extensively in the specification, the claim does not recite “intelligent” charging. “[W]e have repeatedly warned against confining the claims to . . . embodiments.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc); *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001) (stating that reading an embodiment into the claims is one of the “cardinal sins” of patent law).

In my view, the plain language of the Charging Control limitation does not require intelligent charging, and

increasing, in accordance with the charging schedule, a level of charge of the battery of the electric vehicle.” ’753 patent, claim 1.

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Kato clearly discloses the computer's executing instructions that result in an increase in charge by determining the amount of charge that will be sufficient to enable the user to travel to the next destination. I respectfully dissent.