

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA INC.,
Petitioner

v.

CHARGE FUSION TECHNOLOGIES, LLC,
Patent Owner

Case No. IPR2025-00152
Patent No. 11,990,788

**PETITIONER'S REPLY TO
PATENT OWNER'S RESPONSE**

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I. INTRODUCTION

Patent Owner's arguments in the Patent Owner Response (Paper 18) ("POR") (1) improperly narrow the claims to specific embodiments, (2) read-in limitations from specification embodiments, and (3) incorrectly assume that the Petition's grounds bodily incorporate secondary reference features. Because PO's contentions are contrary to claim construction and obviousness law and unresponsive to the Petition's mapping and motivations, they must be rejected.

II. PO'S CLAIM CONSTRUCTION POSITIONS ARE UNSUPPORTED

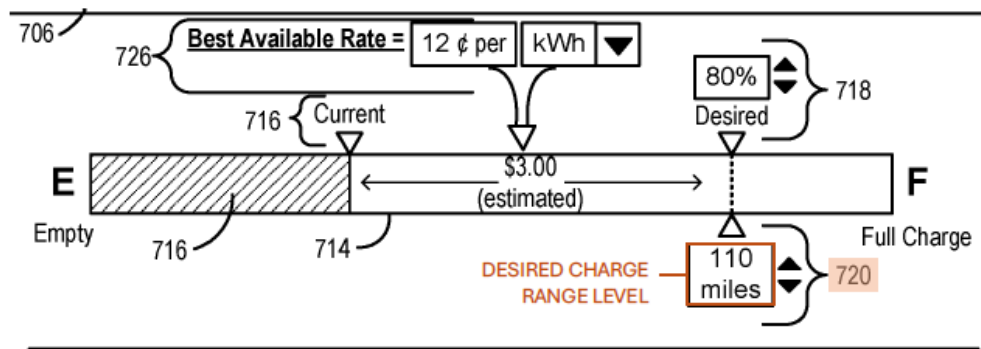
A. PO's Interpretation of "Amount of Charge" Improperly Excludes an Embodiment

Claim 1[b][iii] recites "a slider by which an amount of charge may be specified[.]"¹ EX1001. *See also id.*, Claims 6[b][iii], 11[b][iii]. PO argues the "'amount of charge' must be a percentage of charge" and not a charge level expressed in terms of travelable distance. POR, 9-14. No basis exists in the plain reading of the claims or the specification to arbitrarily limit the claims to one of the defined measures of charge level (i.e., charge percent level) and exclude the other measure of charge levels (i.e., charge range level).

¹ Patent Owner chose to renumber the claim limitations, and refers to this limitation as limitation 1[f]. For consistency, this Reply uses the same numbering as the Petition and Institution Decision.

1. *The Slider Embodiment*

The '788 Patent describes using a slider to set a “**desired charge percent level 718**” and also (or alternatively) a “**desired charge range level 720**.” EX1001, 14:63–15:19.



Pet., 4, 37 (citing EX1001, FIG. 7 (excerpt, annotated)). Figure 7 shows the “charge range level” set at 110 miles, which *also* sets the “charge percent level” at 80%. As the Board found at institution, there is “no persuasive reason to limit the claims in a manner that covers one alternative but excludes the other.” Paper 12, 18.

The '788 Patent describes a vehicle charge indicator 714 that “visually indicates a current charge level 716 of the vehicle.” EX1001, 14:66–15:1. The '788 Patent states:

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.**

EX1001, 15:8-19. Reading the '788 Patent, 14:63–15:19 collectively, the '788 Patent describes (1) determining how far the vehicle can travel on a given charge amount; (2) utilizing this determination of how far the vehicle can travel to express a desired charge level; and (3) user selection of the “desired charge level” as either a charge percent level (expressed as a percentage amount) or charge range level (expressed as a mileage amount) using a slider.

PO fundamentally misunderstands the '788 Patent's slider disclosures. PO argues “[t]here is nothing in the specification that allows a user to specify a threshold of an amount of charge based solely on an estimated travel distance[.]” POR, 13. This statement is perplexing, as a user specifying an amount of charge based on travel distance is exactly what is shown in FIG. 7 and described at the '788 Patent, 15:8-19. Likewise, PO's expert inaccurately claims FIG. 7 does not show a user-set charge range at all. EX1096, 27:1-15 (testifying 720 in FIG 7 does not “show[] that a user set a charge range of 110 miles” because it is “estimated and computed...based on the amount of charge and the charge level[.]”). Again, FIG. 7 illustrates the user using the slider to select 110 miles for the desired charge level.

2. The Claims Do Not Distinguish “amount of charge” from “charge level”

PO argues the '788 Patent “distinguishes **charge amount** from **charge level**.”

POR, 10-11. PO’s distinction fails for several reasons.

First, nothing in the '788 Specification or claims mandates construing “amount of charge” (1) to be something different from a charge level; (2) to include *only* a charge percent level; or (3) to exclude a charge range level. The '788 Patent does not use the phrase “amount of charge” other than in the claims and at 11:19-26 (describing a vehicle requiring an “amount of charge ‘A’” in the context of charging a plurality of vehicles). The only use of “amount” in terms of a charge amount is at 15:8-19, which also refers to the “desired charge level.” Nowhere in the specification did the inventor act as a lexicographer to define “amount of charge” as a percentage only, nor did the inventor disclaim the charge range level embodiment of Figure 7.

Second, the '788 Patent’s only slider-based disclosure is a slider used to set a “charge percent level 718” and/or a “charge range level 720.” *See* § II.A.1. There is no discussion in the '788 Specification of using the slider to set a charge “amount”; there is only description of setting a charge “level.” EX1001, 14:63–15:19. If the claimed *slider by which an amount of charge may be specified* is something different than a slider for specifying a “charge level,” as PO contends, then the Challenged

Claims have no written description support. POR, 11 (discussing construing claims to preserve validity).

Third, PO's arguments are internally inconsistent. PO alleges that "charge percent **level 718**" is an "amount of charge," while a "charge range **level 720**" is not. POR, 10-11. PO provides no basis for this distinction. The '788 Patent uses the phrase "charge level" as a broad term encompassing both a charge percent level and a charge range level, where again, the charge level can be expressed as a percentage or a range (mileage). Logically, because charge percent level and charge range level are just two different units for specifying the same value, i.e., charge level, and because charge percent level is an "amount of charge" (per PO's argument), then charge range level is equally an amount of charge.

Fourth, the '788 Patent uses the phrases "charge amount" and "charge level" interchangeably for at least two reasons. First, Figure 7 of the '788 Patent depicts the charge range level and the charge percent level as interchangeable. Second, the '788 Patent refers to "how far the vehicle can travel on a given **charge amount**" and describes the "desired **charge level** in terms of distance capable of being travelled." EX1001, 15:9-15. Reversing the bolded terms in the sentences does not change the meaning of either sentence. *Cf.* EX1001, 14:66–15:1 ("a current charge level"), 11:19-21 ("an amount of charge"). Different terms in the same patent have the same meaning when used interchangeably. *Baran v. Med. Device Techs., Inc.*, 616 F.3d

1309, 1316 (Fed. Cir. 2010); *Tehrani v. Hamilton Med., Inc.*, 331 F.3d 1355, 1361 (Fed. Cir. 2003).

Fifth, specifying a charge percent level (i.e., 80%) or charge range level (i.e., 110 miles) requires completing underlying calculations; neither value is measured directly. EX2006, 60:14–61:17 (identifying factors impacting vehicle range); EX2008, ¶35 (same); EX1001, 15:9-15 (describing use of “a general average...a specific itinerary and/or past driving habits”). The charge percent level depends on the battery capacity, which is impacted by temperature and the battery’s age, for example. EX1096, 23:6-11; EX2006, 60:20–61:4, 61:18–62:5 (“The percentage is also an estimation”), 62:15-21.

Therefore, “amount of charge” must cover *both* slider embodiments in the ’788 Patent.

3. The Claims Do Not Distinguish “amount of charge” from “charge level”

PO’s argument also contradicts the plain language of the claims. Claim 1 of the ’788 Patent states that “the desired *charge level* of the battery *represents a specific amount of charge* desired to reside in the battery after increasing the level of charge.” EX1001, 29:58-62; 30:36-40; 31:13-17. Therefore, the claims, like the specification, use the terms “level of charge” and “amount of charge” as equivalents to indicate the charge residing in the battery. Since the specification explains that the

“charge level” may be measured “in terms of a distance capable of being traveled” (EX1001, 15:9-15), an amount of charge residing in the battery may likewise be represented as a distance.

4. Mr. Andrews Testimony Does Not Support PO’s Position

PO claims Mr. Andrews testified that “amount of charge” is equivalent to “state of charge.” POR, 13-14, 28. Mr. Andrews actually testified: “you could say that [amount of charge and state of charge] are equivalent...depending on how you have specified the units.” EX2006, 59:8-13. This is true. An amount of charge may be expressed as a percentage of the battery’s capacity, according to the ’788 Patent (EX1001, 14:63–15:7, Fig. 7), and a state of charge is often represented as a percentage of the battery’s maximum capacity. EX1066, 1.

It is not Petitioner’s (or Mr. Andrew’s) position that an amount of charge cannot be expressed as a percentage.² However, in the ’788 Patent context, that is not the *only* way to express an amount of charge with a slider to meet Claim 1[b][iii].

Accordingly, the Board should reject PO’s attempt to exclude a claim embodiment.

² Thus Mr. Andrews’ prior testimony in IPR2020-01189 is wholly consistent with his positions here. *Contra* POR 14, n.5.

**B. PO's Unitary Vehicle Charge Indicator Element Arguments
Misrepresent the Petition**

PO continues to misunderstand the claim construction proposed in the Petition. The Petition states “the claim term ‘unitary vehicle charge indicator’ *at least* includes a bar graph comprising the charged, uncharged, and slider portions, such as illustrated in FIG 7.” Pet., 5 (emphasis added). In other words, the Petition explains that Figure 7 provides an *example* of a unitary vehicle charge indicator. This was expressly recognized by the Board in the Institution Decision. Paper 12 at 8 (“We discern no dispute over the meaning of ‘unitary vehicle charge indicator’ because Petitioner does not argue that the term is ‘limited’ to the embodiment shown in Figure 7, only that the term ‘at least includes’ that embodiment.”). Notably, PO’s expert agrees that Fig. 7 depicts a unitary vehicle charge indicator element. EX1097, 15:24–16:8. Therefore, there is no dispute for the Board to resolve.

Regardless, the Petition mapped Claim 1[b][iii] as a single element by “includ[ing] Letendre’s graphical slider **on the charge level bar graphic presented on the GUI**, where the operator moves the slider to specify a desired charge.” Pet., 40 (emphasis added); EX1003, ¶171. Therefore, the Petition identifies a prior art combination that satisfies the “unitary vehicle charge indicator element” limitation even under PO’s erroneous construction, as discussed further below at IV.A.

C. The First and Second Portions of the Vehicle Charge Indicator Element Are Directed to Printed Subject Matter

It is not seriously disputed that step 1 of the printed subject matter doctrine is met. The claimed first and second portions of the vehicle charge indicator—which indicate the charged and uncharged portions of the battery—claim “the content of information[.]” *Praxair Distrib., Inc. v. Mallinckrodt Hosp. Prods. IP Ltd.*, 890 F.3d 1024, 1032 (Fed. Cir. 2018). Standing alone, they provide no other function. Even PO’s expert admits that though he initially claimed that “each portion of the indicator provides functionality” he “didn’t say what the functionality was” and was unable to identify any function beyond indicating the amount of charge residing in a battery. *See e.g.*, EX1097, 17:18–19:4.

The remaining dispute is whether, at step 2, the printed matter is functionally related to its “substrate.” *i.e.*, whether the printed material is “interrelated with the rest of the claim.” *Praxair*, 890 F.3d 1032. It is not.

PO argues that there could be a functional relationship between the slider portion of the unitary vehicle charge indicator and the first and second portions, which show the charged and uncharged portions of the battery. POR, 16-19. But PO’s arguments boil down to the unremarkable observation that there are ways that a slider *could* be configured so that it would have a relationship to the first and second portions of the unitary vehicle charge indicator. That is very different from

asking whether *as claimed* there *is* a relationship between the slider and the first and second portions of the unitary vehicle charge indicator. PO points to nothing *in the claims* that requires a relationship between the slider and the first and second portions of the unitary vehicle charge indicator, and there is no such claimed relationship.

Specifically, PO summarily alleges that a user “will not select an amount of charge that is less than the current state of charge,” therefore, the first and second portions “define the scope of the charge indicator.” POR, 18 (citing EX2008, ¶42). But PO’s expert could identify no basis in the language of the claim or the specification to support this conclusion, instead stating “I was just trying to give perspective to how the unitary charge – the unitary vehicle charge indicator might be used. That’s all. I wouldn’t read too much into it.” EX1097, 21:4-11. *See also id.*, 16:13–17:2 (agreeing that the slider does not have to be placed over the first and second portions of the vehicle charge indicator). Likewise, when asked for his view of “the claimed relationship between the slider and the first portion of the unitary vehicle charge indicator, if any?” PO’s expert responded “I’m just not sure” and that he didn’t “recall specifically answering that question.” EX1097, 19:14–20:2.

Therefore, the first and second portions of the vehicle charge indicator, *as claimed*, do not “interact[] with the other elements of the claim to create a new functionality in a claimed device” or “cause a specific action in a claimed process”

C.R. Bard Inc. v. AngioDynamics, Inc., 979 F.3d 1372, 1381 (Fed. Cir. 2020). The printed subject matter doctrine applies here.

The sole case relied on by PO does not compel a different conclusion. In *In re Gulack*, the Federal Circuit found that the printed matter, a sequence of digits, was printed on a band (the substrate) in a specific way to “exploit the endless nature of the band.” 703 F.2d 1381 (Fed. Cir. 1983). In contrast, here PO argues that the first and second portions of the unitary vehicle charge indicator do *not* have to be provided in any particular way, such as a bar graph. POR, 14-15. Therefore, PO’s argument is, in essence, that the user may consider the available information on how much charge is in the vehicle when deciding how to set the slider. This is no different from a doctor considering dosage information provided with a drug when deciding how to prescribe it, but it is well established that that dosage information is not functionally related to the drug product for purposes of the printed matter doctrine. *Praxair*, 890 F.3d at 1032 (“adding an instruction sheet or other informational content to a drug product is not sufficient to create a functional relationship”). Likewise, here, information on what charge is currently in the battery is not functionally related to the slider used to set the charge.

Therefore, the claimed first and second portions of the vehicle charge indicator are printed subject matter not entitled to any patentable weight. Regardless,

Donnelly teaches a bar graph indicating the amount of charge and uncharged capacity. Pet., 33-34.

D. “determining...a charging schedule for the electric vehicle”

PO agrees that nothing in the claim invokes § 112(6). POR, 19. To the extent the Board determines that § 112(6) applies, PO provides no argument for why the Petition has not identified the corresponding structure within the cited prior art. *Id.*; Pet., 7-8.

III. DEFINITION OF A POSITA

The parties dispute whether a POSITA would have had electric vehicle experience. The '788 Patent is directed to “systems and methods for ***charging electric vehicles***” and all claims are directed to electrical charging systems and methods. EX1001, Abstract, claims 1-17. Accordingly, the Petition explains a POSITA would have “at least a bachelor’s degree in electrical or mechanical engineering (or an equivalent field) and at least two years of work experience involving automotive systems, **including electric vehicle power management.**” Pet., 2 (emphasis added); EX1003 ¶¶29.

PO’s alternative definition of a POSITA (EX2008, ¶25) does not require any electric vehicle experience and is inappropriate given the nature of the claimed invention. Notably, while PO’s expert has additional degrees and formal training, his hands-on experience with electric vehicles is lacking. He has never worked on

the design of an electric vehicle charging system, never designed a GUI for an electric vehicle, and never designed an HVAC system for an electric vehicle. EX1096, 12:11–14:7. He has never owned an electric vehicle, never rented an electric vehicle, and never even personally plugged in an electric vehicle to charge. EX1096 , 22:19–23:5. His closest experience comes from being on the Board of an electric vehicle company where, admittedly, he “wasn’t involved with engineering.” EX1096, 12:17-18. Accordingly, the opinions of PO’s expert regarding what would have motivated a POSITA are entitled to little weight. *Ascend Performance Materials Operations LLC v. Samsung Sdi Co., Ltd.*, IPR2020-00349, Paper 53 at 11 (PTAB July 15, 2021) (“we take into account the qualifications of an expert witness—and any shortcomings revealed through cross-examination—when evaluating the weight to be given that witness's testimony[.]”).

IV. THE ’788 PATENT CLAIMS ARE UNPATENTABLE

A. The Prior Art Teaches Claim 1[b][iii]

1. It Is Undisputed that Letendre Teaches a Slider Setting a Distance and Maximum Range

Because PO’s proposed construction of “amount of charge” is incorrect, its challenge to whether Letendre teaches “a slider by which an amount of charge may be specified” as required by limitation 1[b][iii] also fails. POR, 22-28 (referring to this limitation as 1[f]). *Supra*, II.A.

Letendre teaches a slider that allows the user to specify a distance and a minimum range, which is undisputed. POR, 25. Because (1) setting an amount of charge, within the '788 Patent context, at least includes setting a charge percent or a charge range (e.g. distance) with a slider, and (2) Letendre teaches setting a distance/range with a slider to control charging, Letendre teaches a slider by which an amount of charge may be specified. Pet., 38-43.

2. PO Ignores a POSITA Being a Person of Ordinary Creativity

PO alleges the combination of Letendre's slider and Donnelly's bar graph is inoperable because the two references use different scales, attacking the Petition for not explaining how to bodily incorporate Letendre into the Sutardja-Donnelly combination. POR 29-31, 34-35. But "[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference...Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art." *MCM Portfolio LLC v. Hewlett-Packard Co.*, 812 F.3d 1284, 1294 (Fed. Cir. 2015). PO provides no reason why a POSITA, a person of ordinary creativity with at least a bachelor's degree in engineering, would have been incapable of resolving any (unclaimed) implementation details, including a unified scale, with basic math. EX1003, ¶¶176-178 (describing common use of sliders).

Relatedly, PO's argument that adding Letendre's slider to Donnelly's battery bar graph would require putting "Letendre's slider in a different position on the Donnelly display similar to how the slider is in a different position in the Letendre display" misunderstands both the combination presented in the Petition. POR, 33. The Petition explains that a POSITA would have been motivated, and would have found it obvious to include Letendre's graphical slider "on the charge level bar graph of the GUI" and explains in detail exactly why a POSITA would have been motivated to do so (Pet., 40-42; EX1003, ¶¶173-177) and why applying a slider in such a way was already a well-known technique. Pet., 43; EX1003, ¶178. Accordingly, PO's argument is unresponsive to the Petition and the question of whether it would have been obvious, and a POSITA would have been motivated to combine the teachings in the Sutarja-Donnelly-Letendre combination as outlined in the Petition to satisfy the unitary vehicle charge indicator limitation.

PO also argues that the "scale of the slider is relevant to implementing a *unitary* vehicle charge indicator as required by the Challenged Claims" because in Figure 7 the slider is set to 80% which also appears to be 4/5 of the way up the bar graph. POR, 35. But the claims do not recite any particular scale that must be used for either the portion of the vehicle charge indicator that indicates the charged and uncharged portions of the battery or for the slider. In addition, as explained above at II.C, there is no claimed relationship between the slider and the portions of the

vehicle charge indicator showing the charged and uncharged portions of the battery. Therefore, there is no requirement that the scale be the same for the first and second portions of the vehicle charge indicator as the slider scale (though, as mapped in the Petition, the same scale would be used). Accordingly, PO's argument reads limitations into the claims and should be rejected.

3. The Motivations to Combine Are Not Reliant on Hindsight

The Petition explains in detail why a POSITA would have been motivated to combine the teachings of Sutardja, Donnelly, and Letendre to arrive at a unitary vehicle charge indicator, with citation to analysis from an expert who has experience creating GUIs with sliders and with designing graphical user interfaces for electrical vehicles before the priority date (EX2009, 17:13-21, 21:6–22:3), and with citation to numerous documents describing the use of GUIs and sliders in the relevant timeframe. *See e.g.*, Pet., 34-36, 40-43; EX1003, ¶¶68-71, 171-178. PO does not substantively engage with the Petition's motivation to combine analysis, nor does its expert contradict any of the factual support underpinning the motivations to combine. POR, 31-35.

Instead, PO contends that the Petition should not be allowed to point to a combination of multiple references for the “unitary vehicle charge indicator” limitation. POR, 32 (arguing “the ’788 Patent is the *only* document of record that shows a slider displayed *on* a bar graph”) (emphasis original). PO does not identify

any authority supporting this proposition, which is contrary to Federal Circuit precedent. *See e.g., Bot M8 LLC v. Sony Interactive Ent. LLC*, 66 F.4th 1380, 1386 (Fed. Cir. 2023) (affirming obviousness finding based on the combined teachings of the prior art though no single prior art reference disclosed executing a program on two different CPUs, as required by the claim); *REC Solar Pte. Ltd. v. Hanwha Sols. Corp.*, No. 2023-1508, 2025 WL 251574, at *2 (Fed. Cir. Jan. 21, 2025) (affirming obviousness finding though no single prior art reference disclosed the claimed central cross-connector as a single assembly).

B. PO Misunderstands How a POSITA Would Have Been Motivated to Apply Seelig’s Teachings³

PO’s claim that Seelig does not teach “transmitting a control signal to a parking space charge device that starts a charging, in accordance with the charging schedule” as required by claim 5 misrepresents the claim requirements and misunderstands the combination presented in the Petition.

PO does not dispute that the “charge initiation signal” of Seelig is transmitted to a parking space charge device. POR, 37-38. Further, PO admits that it is the “charge initiation signal, which *starts charging*[.]” POR, 37 (emphasis added). Nothing else is required of Seelig in the combination.

³ For clarity, the Petition does not rely on the prior art reference Ferro for any ground. *Contra* POR, 36, 39, 40, 41.

Nevertheless, PO argues that Seelig's charge initiation signal is "merely reactionary to adequate coupling of the 'charging element 1' and 'transmission element 2.'" POR, 38. Dependent claims 5, 10, and 15 do not recite any details regarding a cause or trigger of the control signal's transmission, only that the transmitted control signal starts charging.

Likewise, PO points to other steps in Seelig's charging process—such as the deposit of a coin—and argues that as a result there is no advantage to the combination of Seelig and Sutardja. POR, 38. Not so. First, the portions of Seelig's charging process that involve the deposit of a coin are irrelevant to the combination. Seelig's charging process is not bodily incorporated into Sutardja as PO incorrectly assumes. Second, in the combination, the wireless charging process would allow the user to avoid having "to plug the vehicle into the power supply" which provides "less opportunity for human error," advantages not challenged by PO. Pet., 60-61.

Finally, PO argues that in the combination, charging would not happen on a schedule, but this argument misunderstands the combination presented in the petition. POR, 38. Sutardja already teaches a charge control signalling protocol, and already teaches that Sutardja's vehicle is charged in accordance with a charging schedule. Pet., 61. In the combination, "Seelig's wireless charge initiation signal LA" would be incorporated "into Sutardja's charge control signaling protocol to transmit Sutardja's charge control signal generated by the control module 112 to the

parking space charge device, per Seelig, that starts a charging according to the charging schedule, per Sutardja.” Pet., 61, EX1003, ¶¶224-232. Therefore, PO’s argument is unresponsive to the combination in the Petition.

V. PO’S MOTIVATION TO COMBINE CHALLENGES FAIL

PO provides additional, generic allegations that Petition improperly uses “hindsight.” POR, 39-45. But PO does not direct the Board “to any knowledge *gleaned only from application’s disclosure* that Petitioner allegedly relies upon.” *Uber Tech, Inc. v. LBT IP II LLC*, IPR2022-00880, Paper 29, 54-55 (PTAB Dec. 6, 2023) (emphasis original); *Google LLC v. Ecofactor, Inc.*, IPR2020-01504, Paper 55, 43 (PTAB Aug. 1, 2024) (rejecting hindsight argument as “not fully developed” because “there is no detailed discussion as to how Petitioner is allegedly using hindsight.”). For this reason, and the reasons below, PO’s further motivation to combine challenges fail.

A. The Petition’s Detailed Motivations to Combine Are Sufficient

PO complains that the obviousness combination presented in the petition modifies Sutardja in “too many ways” but identifies multiple references and modifications that have nothing to do with the ’788 Patent. Notably, Petitioner’s argument refers to Ferro, Zeigler and Galvez-Ramos, none of which are used in any of the grounds in the ’788 Petition. POR, 40-41.

PO argues the motivations are “only general,” (POR, 40) without substantively engaging with any of the Petition’s many pages of specific reasoning, including:

- Donnelly’s battery charge bar graphic, with Letendre’s slider (Pet., 40-42; EX1003, ¶¶170-178);
 - Seelig’s control signal (Pet., 60-61; EX1003, ¶¶229-232);
 - Knockeart’s mobile display device (Pet., 63-65; EX1003, ¶¶236-242);
- and

The Petition’s motivations are specific, and “virtually none of the substance of [Mr. Andrews’] testimony [is] unsupported by objective evidence.” Paper 12, 21. This is far afield from simply arguing “all of the elements of the claims disparately existed in the prior art.” *InTouch Techs., Inc. v. VGo Comm’cns, Inc.*, 751 F.3d 1327, 1348-49 (Fed. Cir. 2014); POR, 42-44⁴.

Notably, PO does not rebut the Petition’s showing that the applied prior art is analogous and reasonably pertinent to the problems addressed by the ’788 Patent. Pet., 8-14. Indeed, the phrases “analogous art” and “reasonably pertinent” do not appear in the POR. Instead, PO inaccurately complains that Donnelly describes

⁴ PO relies on outdated law; *In re Wesslau*, 353 F.2d 238 (CCPA 1965) predates and is superseded by *KSR. Ex Parte Stephanie Hoyas*, Appeal 2024-001144, at 9 (PTAB Mar. 5, 2025).

systems “designed for locomotives” ignoring that (1) Donnelly states that its teachings are application to “vehicles other than locomotives, such as cars” and that (2) the ’788 patent specifically states that its teachings are applicable to “any vehicle that utilizes, stores, and/or provides electrical power” including “trains.” EX1001, 3:36-40. *See also* Pet., 1, 28. Likewise, PO fails to rebut the Petition’s showing that Knockart is analogous art from the same field of endeavor as the ’788 Patent (“managing vehicle systems, including communication of a user’s personal device with the vehicle’s information system”) and reasonably pertinent to the problems purportedly addressed by the ’788 Patent. Pet., 15.

PO’s claim that “four or more references...require[s] additional inquiry” is legally incorrect. POR, 43. “[A] large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention.” *In re Gatabi*, No. 2022-1580, 2023 WL 3477285, at *3 (Fed. Cir. May 16, 2023).

PO misunderstands the standard for obviousness in multi-reference combinations. POR, 45. “There is no per se rule that requires each subset of prior art references to be independently combined[.]” *Ericsson Inc. v. Intellectual Ventures II LLC*, IPR2014-01195, Paper 37, 18-19 (PTAB Jan 29, 2016). When “two discrete combinations” are involved, “independent articulations addressing the combination[s]...sufficiently address the combination of the relevant teachings.” *Nichia Corp. v. Lighting Science Group Corp.*, IPR2019-01259, Paper 45, 42 (PTAB

Jan. 8, 2021). Where vehicle features are not disparate (e.g., slider on GUI), the Petition addresses the “proposed combination as a whole.” *Samsung Electronics Co., Ltd. v. Smart Mobile Tech. LLC*, IPR2022-01249, Paper 13, 25-26 (PTAB Jan. 24, 2023).

Finally, Dr. Goldberg’s conclusory motivation to combine statements mirror the conclusory statements in the POR and should be afforded “little weight.” *Cf.* POR, 40-42, with EX2008, ¶¶96-102; *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper 9, 15 (PTAB Aug. 24, 2022). Because Dr. Goldberg has never even personally plugged in an electric vehicle to charge it is questionable whether he can credibly speak to what would or would not be beneficial to a POSITA when charging an electric vehicle at all.

VI. THE UNREBUTTED REASONABLE EXPECTATION OF SUCCESS FOR EACH MODIFICATION

PO does not explain how any REOS is deficient, instead generically stating designing the claimed system “is extremely challenging” and finding the right balance “requires careful experimentation and engineering.” POR, 46. This “argument” absent “any actual evidence” of a challenge is “insufficient” to rebut the evidence of record. *Livanova, Inc. v. Neuro and Cardiac Tech., LLC*, IPR2019-00264, Paper 32, 40 (PTAB May 18, 2020).

VII. CONCLUSION

For the reasons provided above and in the Petition and supporting evidence, Petitioner Tesla Inc. requests cancellation of the Challenged Claims.

Respectfully submitted,

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COUNSEL FOR PETITIONER TESLA,
INC.

APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 11,990,788 to Ambroziak et al. (“the ’788 Patent”)
Exhibit 1002	U.S. Patent No. 11,990,788 File History (“the ’788 File History”)
Exhibit 1003	Declaration of Scott Andrews
Exhibit 1004	<i>Intentionally left blank</i>
Exhibit 1005	<i>Intentionally left blank</i>
Exhibit 1006	U.S. Patent No. 7,124,691 to Donnelly, et al. (“Donnelly”)
Exhibit 1007	Letendre, S.E. and Kempton, W. <i>The V2G Concept: A New Model for Power?</i> Public Util. Fortn. February 2002, 140, pp. 16-26. (“Letendre”)
Exhibit 1008	<i>Intentionally left blank</i>
Exhibit 1009	<i>Intentionally left blank</i>
Exhibit 1010	U.S. Patent No. 6,622,083 to Knockeart et al. (“Knockeart”)
Exhibit 1011	U.S. Patent Publication No. 2008/0136371 to Sutardja (“Sutardja”)
Exhibit 1012	Willett Kempton and Jasna Tomić. <i>Vehicle-to-grid power fundamentals: Calculating capacity and net revenue</i> . Journal of Power Sources. 2005. 144. pp. 268–279 (“Kempton 2005 – Revenue”)
Exhibit 1013	Chan, <i>The State of the Art of Electric and Hybrid Vehicles</i> , February 2002, Vol. 90, No. 2, IEEE (“Chan”)
Exhibit 1014	<i>Electric Vehicle Battery Systems</i> , Sandeep Dhameja, Newnes, 2002 (“Sandeep”)
Exhibit 1015	U.S. Patent No. 5,573,090 to Ross (“Ross”)
Exhibit 1016	Weed, R. <i>Electric Vehicles: Copper Applications in Electrical</i> . February 1998. (“Weed”)
Exhibit 1017	<i>Rawson, Kateley</i> , Electric Vehicle Charging Equipment Design and Health and Safety Codes, SAE Intl., 1999 (“Rawson”)
Exhibit 1018	U.S. Patent No. 7,693,609 to Kressner et al. (“Kressner”)
Exhibit 1019	U.S. Patent No. 7,084,859 to Pryor (“Pryor”)
Exhibit 1020	U.S. Patent Publication No. 2008/0039980 to Pollack et al. (“Pollack”)

Exhibit 1021	<i>Installation Guide for Electric Vehicle Charging Equipment</i> , Massachusetts Division of Energy Resources, September 200 (“Massachusetts Division of Energy Resources”)
Exhibit 1022	U.S. Patent No. 5,467,006 to Sims (“Sims”)
Exhibit 1023	U.S. Provisional Application 61/134,646 (“’646 Provisional”)
Exhibit 1024	U.S. Patent Publication No. 2009/0312903 to Hafner et al. (“Hafner”)
Exhibit 1025	U.S. Patent No. 6,081,205 to Williams (“Williams”)
Exhibit 1026	U.S. Patent No. 6,614,204 to Pellegrino et al. (“Pellegrino”)
Exhibit 1027	Brooks, Gage, <i>Integration of Electric Drive Vehicles with the Electric Power Grid – a New Value Stream</i> , EVS 18 Berlin, 2001 (“Brooks”)
Exhibit 1028	U.S. Patent Publication No. 2008/0312782 to Berdichevsky et al. (“Berdichevsky”)
Exhibit 1029	U.S. Patent No. 5,487,002 to Diller et al. (“Diller”)
Exhibit 1030	U.S. Patent No. 2,309,941 to Drummond (“Drummond”)
Exhibit 1031	U.S. Patent Publication No. 2003/0230443 to Cramer et al. (“Cramer”)
Exhibit 1032	Aylor et al., <i>A Battery State-of-Charge Indicator for Electric Wheelchairs</i> , IEEE Transactions on Industrial Electronics, Vol. 39, No. 5, October 1992 (“Aylor”)
Exhibit 1033	Nadal, M and Birbar, F. <i>Development of a Hybrid Fuel Cell/Battery Powered Electric Vehicle</i> . Iht. J. Hydrogen Energy. 1996. Vol. 21, No. 6. pp. 491-505. (“Nadal”)
Exhibit 1034	2006 Civic Hybrid Online Reference Owner’s Manual, Honda (“2006 Honda Civic Manual”)
Exhibit 1035	2000 Insight Online Reference Owner’s Manual, Honda (“2000 Honda Insight Manual”)
Exhibit 1036	Owners Manual: 2008 Tesla Roadster, Tesla (“2008 Tesla Roadster”)
Exhibit 1037	<i>The Human-Computer Interaction Handbook: Tangible User Interfaces</i> , Second Edition, 2007, Hiroshi Ishii, MIT Media Laboratory, (“Ishii”)
Exhibit 1038	<i>The Graphical User Interface: An Introduction</i> , Jansen, Computer Science Program University of Maryland, 1998, SIGCHI Bulletin (“Jansen”)
Exhibit 1039	Johnsgard et al., <i>A Comparison of Graphical User Interface Widgets for Various Tasks</i> , Proceedings of the Human Factors

	and Ergonomics Society, 39 th Annual Meeting, 1995 (“Johnsgard”)
Exhibit 1040	Olsen Jr. et al., <i>Input/Output Linkage in a User Interface Management System</i> , ACM, Vol. 19, No. 3, 1985 (“Olsen”)
Exhibit 1041	U.S. Patent No. 6,577,928 to Obradovich (“Obradovich”)
Exhibit 1042	<i>Intentionally left blank</i>
Exhibit 1043	<i>Intentionally left blank</i>
Exhibit 1044	<i>Intentionally left blank</i>
Exhibit 1045	<i>Proper Handling Helps Make the Most of Li-Ion Batteries</i> , Maxim Integrated, Application Note 663, January 24, 2001 (“Proper Handling”)
Exhibit 1046	<i>Proper Care Extends Li-Ion Battery Life</i> , Fran Hoffart, Linear Technology, April 1, 2008, https://www.electronicdesign.com/markets/mobile/article/21190344/proper-care-extends-li-ion-battery-life (“Proper Care”)
Exhibit 1047	<i>Battery Monitoring Considerations for Hybrid Vehicles and Other Battery Systems with Dynamic Duty Loads</i> , Andrew Kallfelz, Battery Power Products and Technology, Vol. 10, No. 3, June 2006 (“Kallfelz”)
Exhibit 1048	U.S. Patent Application Publication No. 2003/0004662 to Mitchell et al. (“Mitchell”)
Exhibit 1049	U.S. Patent No. 5,698,967 to Baer et al. (“Baer”)
Exhibit 1050	U.S. Patent No. 5,563,491 to Tseng (“Tseng”)
Exhibit 1051	U.S. Patent No. 6,154,005 to Hyogo et al. (“Hyogo”)
Exhibit 1052	<i>Sakamoto et al.</i> , Large Air-Gap Coupler for Inductive Charger, IEEE Transactions on Magnetics, Vol. 35, No. 5, September 1999 (“Matsuo”)
Exhibit 1053	<i>Intentionally left blank</i>
Exhibit 1054	<i>Intentionally left blank</i>
Exhibit 1055	<i>Intentionally left blank</i>
Exhibit 1056	<i>Intentionally left blank</i>
Exhibit 1057	<i>Intentionally left blank</i>
Exhibit 1058	<i>Intentionally left blank</i>
Exhibit 1059	<i>Intentionally left blank</i>
Exhibit 1060	<i>An Introduction to Graphical User Interfaces and Their Use by CITIS</i> , Sherrick, Susan, U.S. Dept. of Commerce, 1992 (“Sherrick”)
Exhibit 1061	U.S. Patent No. 5,555,502 to Opel (“Opel”)

Exhibit 1062	<i>All Volkswagens Built after 2008 to get touchscreen system</i> , Rory Jurnecka, MT, November 12, 2007 (“Jurnecka”)
Exhibit 1063	<i>Intentionally left blank</i>
Exhibit 1064	<i>Intentionally left blank</i>
Exhibit 1065	U.S. Patent No. 8,405,618 to Colgate et al. (“Colgate”)
Exhibit 1066	<i>A Guide to Understanding Battery Specifications</i> , MIT Electric Vehicle Team, December 2008 (“Electric Vehicle Team”)
Exhibit 1067	U.S. Patent No. 7,904,219 to Lowrey et al. (“Lowrey”)
Exhibit 1068	<i>Intentionally left blank</i>
Exhibit 1069	<i>Intentionally left blank</i>
Exhibit 1070	<i>Intentionally left blank</i>
Exhibit 1071	U.S. Patent Application Publication No. 2005/0278079 to Maguire (“Maguire”)
Exhibit 1072	<i>Intentionally left blank</i>
Exhibit 1073	Kempton et al., <i>Electric Vehicles as a New Power Source for Electric Utilities</i> , Transpn Res., Vol. 2, No. 3, Elsevier, 1997 (“Kempton”)
Exhibit 1074	<i>Webster’s New World Telecom Dictionary</i> , Ray Horak, Wiley Publishing, 2008 (“Webster’s New World Telecom Dictionary”)
Exhibit 1075	Eick, SG. <i>Data Visualization Sliders</i> , ACM UIST, November 2004, (“Eick”)
Exhibit 1076	U.S. Patent No. 5,615,347 to Davis et al. (“Davis”)
Exhibit 1077	Patent Owner’s Preliminary Response IPR2022-01217
Exhibit 1078	U.S. Patent No. 5,654,621 to Seelig (“Seelig”)
Exhibit 1079	<i>Intentionally left blank</i>
Exhibit 1080	<i>Pervasive Computing: The Smart Phone – Customizing User Interaction in Smart Phones</i> , Korpipää et al., IEEE CS, 2006 (“Pervasive Computing: the Smart Phone”)
Exhibit 1081	<i>Spotlight: The Rise of the Smart Phone</i> , Pei Zheng et al., IEEE Computer Society, Vol. 7, No. 3, March 2006 (“Zheng”)
Exhibit 1082	<i>Intentionally left blank</i>
Exhibit 1083	<i>Intentionally left blank</i>
Exhibit 1084	<i>Intentionally left blank</i>
Exhibit 1085	<i>Intentionally left blank</i>
Exhibit 1086	Declaration of June Ann Munford (“ <i>Munford Dec.</i> ”)
Exhibit 1087	Charge Fusion Technologies, LLC v. Tesla, Inc., 1:22-cv-00488, No. 79 Plaintiff Charge Fusion Technologies, LLC’s Motion For Leave to Amend Complaint (W.D.Tex. Jun. 5, 2024)

Exhibit 1088	Charge Fusion Technologies, LLC v. Tesla, Inc., 1:22-cv-00488, No. 74 Order to Stay (W.D.Tex. Feb. 23, 2023)
Exhibit 1089	<i>Intentionally left blank</i>
Exhibit 1090	<i>Happy Birthday, Palm Pilot</i> , Gary Krakow, March 22, 2006, (“Krakow”)
Exhibit 1091	<i>Your Palm Treo 700p Smartphone User Guide</i> , Palm, 2006 (“PALM Treo 700P Manual”)
Exhibit 1092	U.S. Patent No. 5,596,261 to Sunyama (“Sunyama”)
Exhibit 1093	Charge Fusion Technologies, LLC v. Tesla, Inc. 1:22-cv-00488, No. 100 Order Denying Plaintiff’s Opposed Motion for Leave to File First Amended Complaint (W.D.Tex. Oct. 31, 2024)
Exhibit 1094	Microsoft Press, <u>Microsoft Computer Dictionary</u> (5 th ed. 2002) (“Microsoft Computer Dictionary”)
Exhibit 1095	Steven Leibson, <i>Customizable Processors and Processor Customization</i> , in <i>Processor Design: System-on-Chip Computing for ASICs and FPGAs</i> 149 (Jari Nurmi ed., 2007) (“Leibson”)
Exhibit 1096	Deposition Transcript of Dr. Steven Goldberg November 3, 2025
Exhibit 1097	Deposition Transcript of Dr. Steven Goldberg December 10, 2025

CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. § 42.24 that the foregoing Petitioner's Reply to Patent Owner's Response, excluding any table of contents, mandatory notices under 37 C.F.R. § 42.8, certificates of service or word count, or appendix of exhibits, contains 4975 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: December 22, 2025

/s/ Jennifer C. Bailey

Jennifer C. Bailey, Reg. No. 52,583

ATTORNEY FOR PETITIONER

CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.6

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on December 22, 2025, the foregoing *Petitioner's Reply To Patent Owner's Response* was served via electronic filing with the Board and via Electronic Mail on the following practitioners of record for Patent Owner:

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