

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,
v.

CHARGE FUSION TECHNOLOGIES, LLC,
Patent Owner.

Case IPR2025-00032

Patent 11,563,338

PATENT OWNER'S RESPONSE

TABLE OF CONTENTS

TABLE OF AUTHORITIES	vii
EXHIBIT LIST.....	xi
CLAIM LISTING	xi
I. INTRODUCTION.....	1
II. SUMMARY OF THE ARGUMENT	1
III. RELATED PROCEEDINGS	3
IV. THE '338 PATENT PRESENTS A NOVEL SYSTEM AND METHOD FOR ELECTRIC VEHICLE CHARGING AND POWER MANAGEMENT.	3
V. PETITIONER'S PROPOSED OBVIOUSNESS CHALLENGES	6
VI. OVERVIEW OF THE RELEVANT ALLEGED PRIOR ART.....	7
A. Ferro (EX1004).....	7
B. Oyobe (EX1005).....	10
C. Donnelly (EX1006).....	13
D. Letendre (EX1007)	13
E. Galvez-Ramos (EX1008).....	14
F. Zeigler (EX1009).....	15
G. Knockeart (EX1010).....	16
H. Sutardja (EX1011)	16
VII. LEVEL OF ORDINARY SKILL IN THE ART	17

VIII. CLAIM CONSTRUCTION.....	17
A. Construction of “amount of charge”	17
1. The specification differentiates selection of desired range from “amount of charge”.	18
2. The claims use the term “amount of charge” in context that cannot include selection of desired range.	19
3. Petitioner’s own Expert’s testimony supports Patent Owner’s construction	24
B. Construction of “vehicle charge indicator element”	25
IX. LEGAL STANDARD	27
X. GROUND 1: PETITIONER FAILED TO ESTABLISH THAT FERRO IN VIEW OF OYOBE, DONNELLY, LETENDRE, ZEIGLER, AND GALVEZ- RAMOS RENDERS OBVIOUS CLAIMS 1-4, 6-7, 9-13, 15-16, 18-22, 24- 25, AND 27	27
A. Ferro in view of Oyobe, Donnelly, Letendre, Zeigler, and Galvez-Ramos fails to render obvious limitations 1[e], 10[b], or 19[e] of claims 1, 10, and 19, respectively.....	28
1. A POSITA would not be motivated to combine Ferro with Oyobe....	28

B. Petitioner’s “modified” Ferro in combination with Donnelly and Letendre failed to teach or disclose element 1[h], 10[e], 19[l], and 28[e] of claims 1, 10, 19 and 28, respectively.....	36
1. The Petition does not show a slider by which an amount of charge may be specified.	36
2. Petitioner’s Expert supports Patent Owner’s position.	43
3. The Petition does not show how Letendre’s slider would be combined with Ferro or Donnelly.....	43
4. Ferro, Donnelly and Letendre even when combined to not motivate a vehicle charge indicator element as claimed.....	46
C. Grounds 1 and 2: The Petition Does Not Show “send[ing] an alert to an operator of the electric vehicle” as required by Challenged Claims 1-4, 6-7,9-13,15-16, 18-22, 24-25 and 27.....	47
D.No reference cited by Petitioner establishes an electric charging system or method that has a graphical user interface adapted to display a webpage as required in Claims 2, 11 and 20.....	54
XI. GROUND 2: PETITIONER FAILED TO ESTABLISH THAT CLAIMS 5, 8, 14, 17, 23, AND 26 ARE UNPATENTABLE AS OBVIOUS OVER FERRO IN VIEW OF OYOBE, DONNELLY, LETENDRE, ZEIGLER, GALVEZ-RAMOS, AND KNOCKEART	54

A. Ground 2 should be denied for similar reasons presented for Ground 1 above.....	54
B. Petitioner has not established a motivation to combine Knockeart with the other cited references for Ground 2.	55
XII. GROUND 3: PETITIONER FAILED TO ESTABLISH THAT CLAIMS 28 AND 29 ARE UNPATENTABLE AS OBVIOUS OVER FERRO IN VIEW OF DONNELLY, LETENDRE, AND SUTARDJA.....	56
A. Petitioner’s “modified” Ferro in combination with Donnelly and Letendre failed to teach or disclose element 28[e].....	56
B. Petitioner has not established a motivation to combine the Sutardja with the other cited references of Ground 3.....	57
XIII. GROUND 1, 2, AND 3: PETITIONER HAS NOT ARTICULATED ANY MEANINGFUL MOTIVATION TO COMBINE OR A REASONABLE EXPECTATION OF SUCCESS.....	57
A. Petitioner Has Not Shown that a POSITA Would Have Been Motivated to Combine Ferro with the other cited references.....	58
B. Petitioner Has Not Shown a Reasonable Expectation of Success in Reconfiguring Ferro in view of Oyobe, Donnelly, Letendre, Zeigler, and Galvez-Ramos	65
XIV. CONCLUSION.....	67

CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(b)(1).....	69
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TABLE OF AUTHORITIES

Cases

<i>Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP</i> , 616 F.3d 1249 (Fed. Cir. 2010)	52
DataTreasury. Oral Argument, In re DataTreasury Corp., No. 2016-1250 (Fed. Cir.)	63
Ethicon Endo–Surgery, Inc. v. U.S. Surgical Corp., 93 F.3d 1572 (Fed.Cir.1996)	18
Grain Processing Corp. v. Am.-Maize Prods. Co., 840 F.2d 902 (Fed. Cir. 1988)	57
In Graham v. John Deere Co., 383 U.S. 1 (1966).....	27
In re Anova Hearing Labs, Inc., 809 Fed. App’x. 840 (Fed Cir. 2020)	62
In re Kahn, 441 F.3d 977 (Fed. Cir. 2006)	32
In re Magnum Oil Tools Int’l, Ltd., 829 F.3d 1364 (Fed. Cir. 2016).....	58, 66
In re Marosi, 710 F.2d 799, 802, 218 USPQ 289, 292 (Fed. Cir. 1983)	20
In re NuVasive, Inc., 842 F.3d 1376 (Fed. Cir. 2016).....	58
In re Wesslau, 353 F.2d 238 (CCPA 1965)	61

Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd., 821 F.3d 1359 (Fed. Cir. 2016).....	66
InTouch Techs., Inc. v. VGo Comm'cns, Inc., 751 F.3d 1327 (Fed. Cir. 2014)	62
Kinetic Concepts, Inc. v. Smith & Nephew, Inc., 688 F.3d 1342 (Fed.Cir.2012)	29
KSR Int'l v. Teleflex Inc., 550 U.S. 398 (2007).....	44, 56
KSR Int'l v. Teleflex Inc., 550 U.S. 398 (2007).	61
KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398 (2007)	27
Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co., 730 F.2d 1452 (Fed. Cir. 1984).....	58
Microsoft Corp. v. Biscotti, Inc., 878 F.3d 1052 (Fed. Cir. 2017).....	58
Microsoft Corp. v. FG SRC, LLC, 860 F. App'x 708 (Fed. Cir. 2021)	51
Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH, 139 F.3d 877 (Fed. Cir. 1998)	56
Orthopedic Equip. Co. v. United States, 702 F.2d 1005 (Fed. Cir. 1983)	58

Phillips v. AWH Corp., 415 F.3d 1303, 1327 (Fed. Cir. 2005) (en banc)	20
Phonometrics, Inc. v. N. Telecom Inc., 133 F.3d 1459 (Fed. Cir. 1998)	20
Power Mosfet Techs., L.L.C. v. Siemens AG, 378 F.3d 1396, 1408 (Fed. Cir. 2004)	20
Power-One, Inc. v. Artesyn Techs., Inc., 599 F.3d 1343 (Fed. Cir. 2010)	61
Regeneron Pharms., Inc. v. Mylan Pharms. Inc., 130 F.4th 1372 (Fed. Cir. 2025)	53
Samsung Elecs. Co., Ltd. v. Elm 3DS Innovations, LLC, 925 F.3d 1373 (Fed. Cir. 2019)	65
Sensonics Inc. v. Aerosonic Corp., 81 F.3d 1566 (Fed. Cir. 1996)	32
W.L. Gore & Assoc. v. Garlock, Inc., 721 F.2d 1540 (Fed. Cir. 1983)	32
Wonderland NurseryGoods Co. v. Thorley Indus., LLC, 988 F. Supp. 2d 479 (W.D. Pa. 2013)	29
Statutes	
35 U.S.C. § 312(a)(3)	51

35 U.S.C. § 316(e).....	27
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PTAB Decisions

<i>Nichia Corp. v. Lighting Sci. Group Corp.</i> , IPR2019-01259, Paper 45, 42 (PTAB Jan. 8, 2021).....	64
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EXHIBIT LIST

Currently Filed – Patent Owner

Ex. No.	Description
2001	Declaration of Dr. Steven Goldberg
2002	Declaration of Dr. Steven Goldberg in Support of Patent Owner Response
2003	Deposition Transcript of Scott Andrews, August 21, 2025
2004	<i>Monteiro et al.</i> , A SOURCE CODE BASED MODEL TO GENERATE GUI - GUI Generation based on Source Code with Declarative Language Extensions, Proceedings of the Third International Conference on Software and Data Technologies - Volume 1: ICSoft, 21-28, 2008 (“Montiero”)
2005	Opening Claim Construction Brief of Defendant Tesla, Inc. in case 1:22-cv-00488 (W.D. Texas) on January 9, 2023
2006	Declaration of Scott Andrews in IPR2020-01189. Apple Inc. v LBT IP I LLC, IPR2020-01189, EX1003, 7/22/2020

CLAIM LISTING

Independent Claim 1	
1[pre]	An electrical charging system, comprising:
1[a]	a vehicle sensor;
1[b]	a communication device;
1[c]	a processor in communication with the vehicle sensor and the communication device; and

1[d]	a memory in communication with the processor, the memory storing instructions that when executed by the processor cause the processor to:
1[e]	receive, from the vehicle sensor, information indicative of a presence of an electric vehicle in a parking space;
1[f]	receive, from the communication device, information indicative of one or more charging preferences corresponding to a desired charging of the electric vehicle, wherein the one or more charging preferences are defined by an operator of the electric vehicle;
1[g]	determine, based at least on the one or more charging preferences and at least one current value of a dynamic attribute of an electric charge provider, a charging schedule for the electric vehicle;
1[h]	wherein at least one of the one or more charging preferences is defined by user input received via a graphical user interface and 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;
1[i]	charge, in accordance with the charging schedule, the electric vehicle;
1[j]	receive a selection of a mode of operation of the electric vehicle that is defined by a stored temperature at which a temperature control system of the electric vehicle is to be set to maintain the interior

	temperature of the electric vehicle while the electric vehicle remains in a parked state;
1[k]	display via the graphical user interface an indication of a status of the selected mode of operation of the electric vehicle, wherein the selected mode of operation comprises maintaining the interior temperature of the electric vehicle suitable for a pet located within the electric vehicle;
1[l]	wherein the selected mode of operation comprises maintaining the interior temperature of the electric vehicle suitable for a pet located within the electric vehicle;
1[m]	operate the temperature control system of the electric vehicle in accordance with the selected mode of operation for a duration of time;
1[n]	determine that an amount of charge residing in a battery of the electric vehicle has reached a predefined threshold; and send an alert to an operator of the electric vehicle indicative of the charge residing in the battery having reached the predefined threshold.
Dependent Claim 2	
2[pre]	The electrical charging system of claim 1,
2[a]	wherein the graphical user interface is adapted to display a web page.
Dependent Claim 3	
3[pre]	The electrical charging system of claim 2,

3[a]	wherein the graphical user interface forms a part of the electric vehicle.
Dependent Claim 4	
4[pre]	The electrical charging system of claim 1,
4[a]	wherein the graphical user interface is adapted to receive a maintenance notification.
Dependent Claim 5	
5[pre]	The electrical charging system of claim 4,
5[a]	wherein the graphical user interface forms a part of a smartphone.
Dependent Claim 6	
6[pre]	The electrical charging system of claim 1,
6[a]	wherein the charging schedule for the electric vehicle is further based upon a factor of safety parameter and wherein the charging comprises transmitting a control signal to a parking space charge device that starts the charging.
6[b]	wherein the charging comprises transmitting a control signal to a parking space charge device that starts the charging.
Dependent Claim 7	
7[pre]	The electrical charging system of claim 6,
7[a]	wherein the one or more charging preferences comprise the factor of safety parameter.
Dependent Claim 8	
8[pre]	The electrical charging system of claim 1,
8[a]	wherein the alert is sent to a smartphone.
Dependent Claim 9	

9[pre]	The electrical charging system of claim 1,
9[a]	wherein the charging of the electric vehicle is conducted via a wireless charging device.
Independent Claim 10	
10[pre]	An electrical charging system, comprising:
10[a]	receiving, from a vehicle sensor, information indicative of a presence of an electric vehicle in a parking space;
10[b]	receiving, via a communication device, information indicative of one or more charging preferences corresponding to a desired charging of the electric vehicle, wherein the one or more charging preferences are defined by an operator of the electric vehicle;
10[c]	determining, by a processor and based at least on the one or more charging preferences and at least one current value of a dynamic attribute of an electric charge provider, a charging schedule for the electric vehicle;
10[d]	charging, by the processor and in accordance with the charging schedule, the electric vehicle;
10[e]	wherein at least one of the one or more charging preferences is defined by user input received via a graphical user interface and
	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;

10[f]	receiving, via the graphical user interface, a selection of a mode of operation of the electric vehicle that is defined by a stored temperature at which a temperature control system of the electric vehicle is to be set to maintain the interior temperature of the electric vehicle while the vehicle remains in a parked state;
10[g]	displaying, via the graphical user interface, an indication of a status of the selected mode of operation of the electric vehicle, wherein the selected mode of operation comprises maintaining the interior temperature of the electric vehicle suitable for a pet located within the electric vehicle;
10[h]	operating, by the processor, the temperature control system of the electric vehicle in accordance with the selected mode of operation for a duration of time;
10[i]	determining, by the processor, that an amount of charge residing in a battery of the electric vehicle has reached a predefined threshold; and
10[j]	sending, via the communication device, an alert to an operator of the electric vehicle indicative of the charge residing in the battery having reached the predefined threshold.
Dependent Claim 11	
11[pre]	The electrical charging method of claim 10,
11[a]	wherein the graphical user interface is adapted to display a web page.
Dependent Claim 12	
12[pre]	The electrical charging method of claim 11,

12[a]	wherein the graphical user interface forms a part of the electric vehicle.
Dependent Claim 13	
13[pre]	The electrical charging method of claim 10,
13[a]	wherein the graphical user interface is adapted to receive a maintenance notification.
Dependent Claim 14	
14[pre]	The electrical charging method of claim 13,
14[a]	wherein the graphical user interface forms a part of a smartphone.
Dependent Claim 15	
15[pre]	The electrical charging method of claim 10,
15[a]	wherein the charging schedule for the electric vehicle is further based upon a factor of safety parameter and
15[b]	wherein the charging comprises transmitting a control signal to a parking space charge device that starts the charging.
Dependent Claim 16	
16[pre]	The electrical charging method of claim 15,
16[a]	wherein the one or more charging preferences comprise the factor of safety parameter.
Dependent Claim 17	
17[pre]	The electrical charging method of claim 10,
17[a]	wherein the alert is sent to a smartphone.
Dependent Claim 18	
18[pre]	The electrical charging method of claim 10,

18[a]	wherein the charging of the electric vehicle is conducted via a wireless charging device.
Independent Claim 19	
19[pre]	An electrical charging system, comprising:
19[a]	a vehicle sensor;
19[b]	a communication device;
19[c]	a processor in communication with the vehicle sensor and the communication device; and
19[d]	a memory in communication with the processor, the memory storing instructions that when executed by the processor cause the processor to:
19[e]	(a) receive, from the vehicle sensor, information indicative of a presence of a vehicle in a parking space;
19[f]	(b) receive, from the communication device, information indicative of one or more charging preferences corresponding to a desired charging of the vehicle, wherein the one or more charging preferences are defined by an operator of the vehicle;
19[g]	(c) determine a first value of a dynamic attribute of an electric charge provider;
19[h]	(d) determine, based at least on the one or more charging preferences and the first value of the dynamic attribute, a charging schedule for the vehicle;
19[i]	(e) charge the vehicle in accordance with the charging schedule;
19[j]	(f) retrieve a second value of the at least one dynamic attribute; and

19[k]	(g) repeat (d) and (e), utilizing the retrieved second value of the dynamic attribute as the first value of the dynamic attribute,
19[l]	wherein at least one of the one or more charging preferences is defined by user input received via a graphical user interface and 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;
19[m]	(h) receive a selection of a mode of operation of the vehicle that is defined by a stored temperature at which a temperature control system of the vehicle is to be set to maintain the interior temperature of the vehicle while the vehicle remains in a parked state;
19[n]	(i) display via the graphical user interface an indication of a status of the selected mode of operation of the vehicle,
19[o]	wherein the selected mode of operation comprises maintaining the interior temperature of the vehicle suitable for a pet located within the vehicle;
19[p]	(j) operate the temperature control system of the vehicle in accordance with the selected mode of operation for a duration of time;
19[q]	(k) determine that an amount of charge residing in a battery of the vehicle has reached a predefined threshold; and

	(l) send an alert to an operator of the electric vehicle indicative of the charge residing in the battery having reached the predefined threshold.
Dependent Claim 20	
20[pre]	The electrical charging system of claim 19,
20[a]	wherein the graphical user interface is adapted to display a web page.
Dependent Claim 21	
21[pre]	The electrical charging system of claim 20,
21[a]	wherein the graphical user interface forms a part of the vehicle.
Dependent Claim 22	
22[pre]	The electrical charging system of claim 19,
22[a]	wherein the graphical user interface is adapted to receive a maintenance notification.
Dependent Claim 23	
23[pre]	The electrical charging system of claim 22,
23[a]	wherein the graphical user interface forms a part of a smartphone.
Dependent Claim 24	
24[pre]	The electrical charging system of claim 19,
24[a]	wherein the charging schedule for the vehicle is further based upon a factor of safety parameter and
24[b]	wherein the charging comprises transmitting a control signal to a parking space charge device that starts the charging.
Dependent Claim 25	

25[pre]	The electrical charging system of claim 24,
25[a]	wherein the one or more charging preferences comprise the factor of safety parameter.
Dependent Claim 26	
26[pre]	The electrical charging system of claim 19,
26[a]	wherein the alert is sent to a smartphone.
Dependent Claim 27	
27[pre]	The electrical charging system of claim 19,
27[a]	wherein the charging of the vehicle is conducted via a wireless charging device.
Independent Claim 28	
28[pre]	An electrical charging system, comprising:
28[a]	a communication device;
28[b]	a processor in communication with the communication device; and
28[c]	a memory in communication with the processor, the memory storing instructions that when executed by the processor cause the processor to:
28[d]	receive, from the communication device, information indicative of at least two charging preferences comprising a time by which an electric vehicle is to be charged to a predetermined amount and an indication that charging of the electric vehicle be based, at least in part, on a cost of providing electrical charge to the electric vehicle,
28[e]	wherein the at least two charging preferences are defined by an operator of the electric vehicle, and wherein at least the predetermined amount of charge is defined by user input received via

	a graphical user interface and 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 the predetermined amount of charge may be specified;
28[f]	determine, based at least on the at least two charging preferences, that the electric vehicle cannot be charged in accordance with the at least two charging preferences;
28[g]	issue an alert that charging the electric vehicle in accordance with the at least two charging preferences is not possible;
28[h]	receive an updated value for at least one of the at least two charging preferences in response to the issuance of the alert;
28[i]	determine, based at least on the updated value for the at least one of the at least two charging preferences, that the electric vehicle can now be charged in accordance with the at least two charging preferences; and
28[j]	charge the electric vehicle in accordance with the at least two charging preferences.
Dependent Claim 29	
29[pre]	The electrical charging system of claim 28,
29[a]	wherein the charging of the electric vehicle in accordance with the at least two charging preferences is conducted utilizing a wireless charging device.

I. INTRODUCTION

Charge Fusion Technologies, LLC, the owner of U.S. Patent No. 11,563,338 (“’338 Patent”), submits this Patent Owner’s Response (“Response”) to the Board’s institution decision based on Tesla, Inc.’s (“Tesla” or “Petitioner”) petition for *inter partes* review (“Petition”) of claims 1-29 the ’338 Patent (“Challenged Claims”).

II. SUMMARY OF THE ARGUMENT

The Board should determine that all Challenged Claims are not unpatentable. Petitioner failed to establish unpatentability of any Challenged Claim based on the combination of six references raised in its three grounds.

Contrary to the Institution Decision, the Challenged Claims make clear that an “amount of charge” as claimed refers to a charge percentage level of the battery rather than a user’s ability to choose a needed travel range. While Patent Owner is cognizant that the ’338 Patent discusses charge range level, nothing in these embodiments amounts to rewrite “amount of charge” to be broadened to selecting a distance and in all claimed embodiments the slider operates to specify an amount of charge. Further, as presently construed by the Board, an amount of charge would not be operable with the “predefined threshold” which allows the vehicle to automatically turn off the pet mode that operates a suitable temperature for the vehicle when parked when the battery falls below a certain threshold. The Board properly recognized that this threshold is a “battery level.” IPR2023-00063, Final

Written Decision, Paper 29 at 23-24. Specifically, the Board mentioned that the “operating” step, that was in Claims 8 and 14 of U.S. Patent 10,819,135 and is also found in all Challenged Claims besides claims 28-29 in the ‘338 Patent, requires that the “amount of charge” include “a determination of an amount of battery level required to maintain a specified operation of climate control mechanism for a particular amount of time.” *Id.*, 24. As there would be no specific relationship between a distance to travel and an amount of time the climate control mechanism can run when a vehicle is in a parked state, the “amount of charge” limitation cannot be broadened to include the selection of distance traveled.

The Petition fails to address the requirement of an at least three component vehicle charge indicator *element* which is a specific component of a graphical user interface. The Petition instead alleges separate components displayed on a GUI (e.g., a slider separate from a battery charge graph) without establishing that those separate components are integrated into a “vehicle charge indicator *element*”, where “element” has a meaning understood to the POSITA in the art in GUI technology” requiring all three components thereof integrated together when the vehicle charge indicator element is displayed on the GUI.).

Further, Petitioner fails to articulate a sufficient motivation to combine the cited references, instead relying on a generic desire to "optimize battery management" without addressing the specific technical challenges and

incompatibilities that would arise from such a combination. The proposed combinations involve disparate systems that were designed to operate independently and under differing assumptions regarding user preferences, vehicle states, and charging objectives. There is no articulated rationale, beyond hindsight reconstruction, for why a skilled artisan would have been motivated to integrate seven different references. The Petition provides no indication for why later-cited references would be combined with the *combination* of previously cited references, instead only using the claims as a roadmap and alleging motivation (that conflicts with prior alleged motivations to combine). The alleged reasoning to combine Ferro with Oyobe, to keep the operator in the vehicle, conflicts with the latter alleged motivation to combine Ferro with Zeigler and/or Galves-Ramos where the operator is not within the vehicle.

III. RELATED PROCEEDINGS

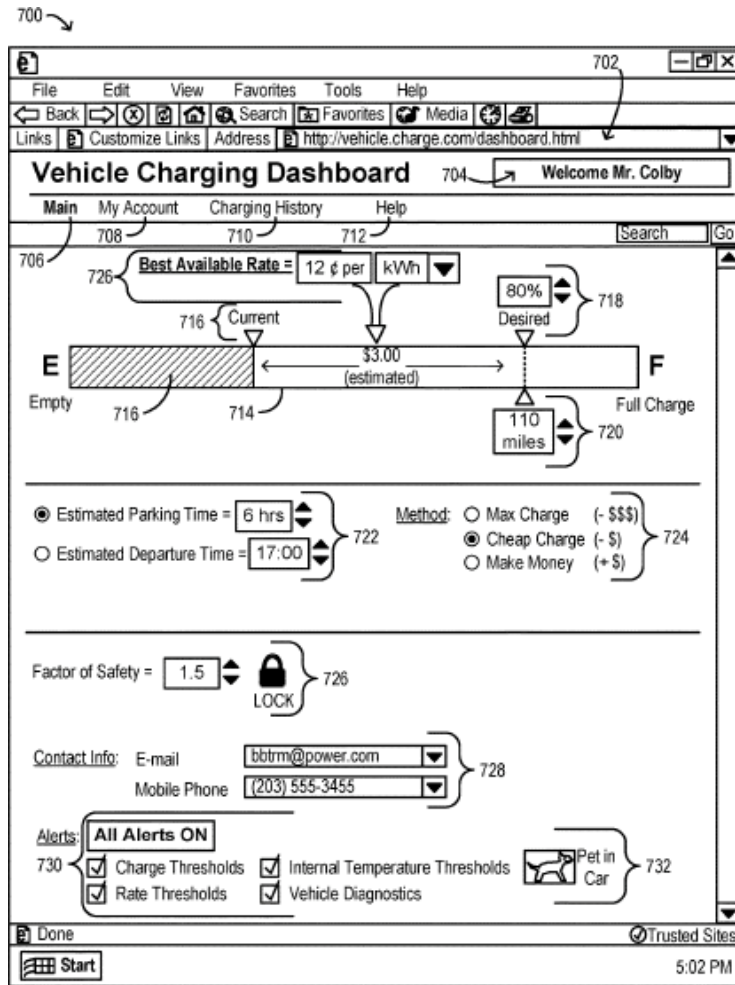
The '338 Patent is involved in *Charge Fusion Technologies, LLC v. Tesla, Inc.*, 1:22- cv-00488 (W.D. Tex.) (“Texas Litigation”).

IV. THE '338 PATENT PRESENTS A NOVEL SYSTEM AND METHOD FOR ELECTRIC VEHICLE CHARGING AND POWER MANAGEMENT

The '338 Patent, entitled “Systems and Methods for Electric Vehicle Charging and Power Management,” was filed on June 1, 2022, issued on January 24, 2023, and claims priority to Provisional Application No. 61/134,646, which was filed on

July 11, 2008. EX1001, 2. According to the ‘338 Patent, improvements in battery technology provided the potential for “economically viable” electric-powered modes of transportation. *Id.*, 1:37-50. However, electric vehicles needed to be plugged in regularly to replenish their electrical charge, which “likely require[d] more time than is typically required to fill up an automobile with a petroleum based product.” *Id.*, 1:40-45. Because of this, “the owner of an electrical automobile must oftentimes adhere to a schedule of charging that renders the automobile unusable for protracted stretches of time” *Id.*, 1:45-50. Patentee thus recognized that it would be advantageous to intelligently charge vehicles by creating a charging schedule. *Id.*, 2:16-27. Moreover, the applicants recognized the desire for a user to select the desired amount of charge (percentage) via a slider on a vehicle charge indicator element also displaying current battery charge and uncharged levels. *Id.*, 14:62-67; Fig. 7.

Figure 7 is a block diagram which illustrates a charge indicator slider allowing a user to select the desired charge (718).



EX1001, Fig 7; 14:56-67. A selected “charge amount” may be used to compute “the desired charge level in terms of distance capable of being traveled.” *Id.*, 15:2-11.

Further, the operator of a vehicle may define settings to establish alerts, such as when a pet is in the vehicle. EX1001, 14:11-32. A user may set operating conditions and interior conditions based on a pet being located inside the vehicle during charging. EX1001, 13:46-67. With this innovation, a user may safely leave a

pet in a parked vehicle with established parameters to maintain a vehicle temperature suitable for said pet as the vehicle is charging. EX1001, 15:62-16:5.

V. PETITIONER’S PROPOSED OBVIOUSNESS CHALLENGES

Ground	Challenged Claims	35 U.S.C. ¹	Reference(s)/Basis
1	1-4, 6-7, 9-13, 15-16, 18-22, 24-25, and 27	§ 103	Ferro ² in view of Oyobe, ³ Donnelly, ⁴⁵ Letendre, ⁵ Zeigler ⁶ , and Galvez-Ramos ⁷
2	5, 8, 14, 17, 23, and 26	§ 103	Ferro in view of Oyobe, Donnelly, Letendre, Zeigler, Galvez-Ramos, and Knockeart ⁸
3	28-29	§ 103	Ferro in view of Donnelly, Letendre, and Sutardja ⁹

¹ The pre-AIA version of 35 U.S.C. § 103 applies.

² U.S. Patent Pub. No. 2009/0313034 A1 (EX1004).

³ European Patent No. 1,920,968 (EX1005).

⁴ U.S. Patent No. 7,124,691 (EX1006).

⁵ The V2G Concept, A New Model for Power (EX1007).

⁶ U.S. Patent No. 6,889,762 (EX1009).

⁷ U.S. Patent Pub. No. 2009/031965 A1 (EX1008).

⁸ U.S. Patent No. 6,622,083 (EX1010).

⁹ U.S. Patent Pub. No. 2008/0136371 (EX1011).

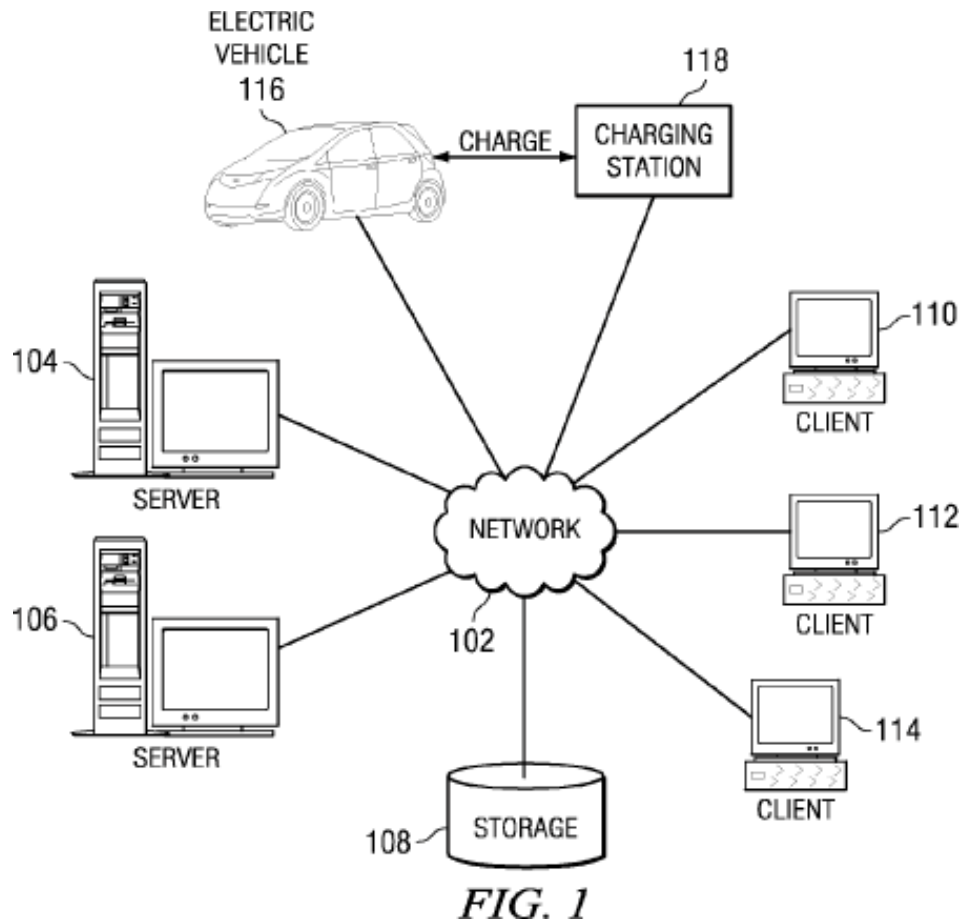
VI. OVERVIEW OF THE RELEVANT ALLEGED PRIOR ART

A. Ferro (EX1004)

Ferro discloses “[a] computer implemented method, apparatus, and computer program product for generating a dynamic energy transaction plan to manage an electric vehicle charging transaction.” EX1004, Abstract.

The dynamic energy transaction plan “comprises an identification of the electric vehicle, an identification of a principal in the set of principals to pay for the charging transaction, an identification of at least one utility associated with the charging transaction, an owner of the charging station, and a first set of terms of the charging transaction.” *Id.*, [0008]. The “process for generating dynamic energy transaction plan 424 begins when electric vehicle 400 arrives at charging station 403 and indicates an intention to charge, de-charge, or store electric energy on electric vehicle 400.” *Id.*, [0109].

Figure 1 “depicts a pictorial representation of a network of data processing system in which illustrative embodiments may be implemented”:



Id., Fig. 1, [0032]. The electric vehicle 116 and charging station 118 send and receive data associated with the charging of electric vehicle, including “the capabilities of electric vehicle, the capabilities of charging station 118, the current charge stored in electric vehicle, the rate of charging electric vehicle, the price of electricity received from a power grid, identity of the owner and/or operator of electric vehicle 116 and/or any other data relevant to charging or de-charging electric vehicle 116 over network 102.” *Id.*, [0037].

Figure 4 is a block diagram of a dynamic energy transaction planner on-board an electric vehicle 400, “an electric vehicle that relies in whole or in part on electricity to drive the vehicle, such as, without limitation, electric vehicle 116 in FIG. 1”:

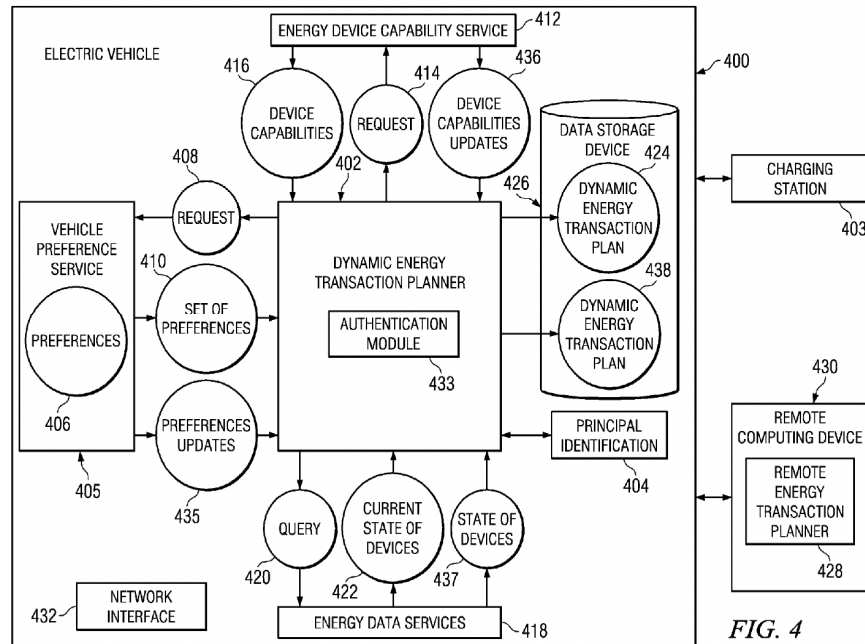


FIG. 4

Id., Fig. 4, [0076]. Dynamic energy transaction planner 402 “creates a transaction plan for controlling a charging transaction for electric vehicle 400 coupled to charging station 403, such as dynamic energy transaction planner 310 in FIG. 3.” *Id.*, [0076].

Vehicle preference service 405 “is a software component for creating, managing, storing, requesting, updating, and/or retrieving preferences 406 for electric vehicle 400” that “is included within or bolted on electric vehicle 400.” *Id.*, [0082]. When the energy preference service is located remotely, a set of preferences

may be sent to dynamic energy transaction planner 402 by the remote energy preference service using a wired or wireless network connection. *Id.*, [0091]. Ferro discloses that the dynamic energy transaction planner requests preferences from an energy preference service, which it uses to generate terms for a dynamic energy transaction plan. *Id.*, [0143].

B. Oyobe (EX1005)

Oyobe is directed to “an electric-powered vehicle that can effectively inform a user about lowering of the SOC of a battery.” EX1005, [0006]. To inform the user about lowering of the SOC of a battery, as shown in Figure 16, reproduced below, Oyobe’s vehicle 100 includes “informing apparatus 102 ... provided at the exterior of the vehicle for informing the vehicle user outside the vehicle about the necessity of charging main battery.” *Id.*, [0040]. By placing the informing apparatus 102 outside of the vehicle, Oyobe addresses a specific issue – “the vehicle user can more surely be prevented from forgetting to charge the electric power storage apparatus despite the lowered SOC of the electric power storage apparatus.” *Id.*, [0012].

FIG.16

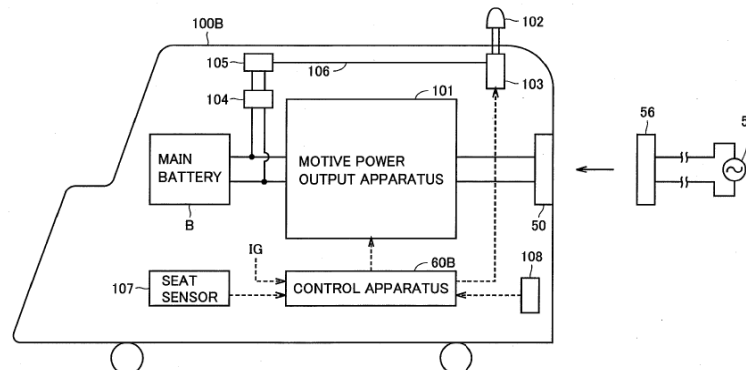


FIG.2

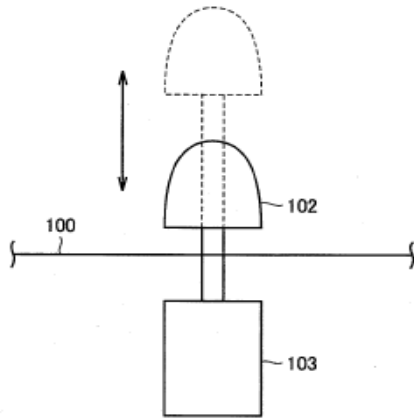
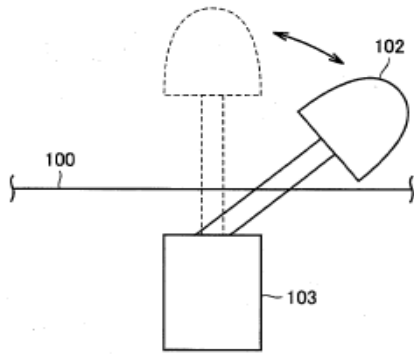


FIG.3



As shown in Oyobe's Figures 2 and 3, reproduced to the left, Oyobe's informing apparatus 102 may mechanically change positions "so as to attract the vehicle user's attention" when the battery power is low. *Id.*, [0047]. This mechanical change includes altering "projection amount" (*Id.*); "the angle of informing apparatus 102 relative to the external surface of the vehicle" (*Id.*, [0047]); by changing the "tilt amount" (*Id.*, [0048]); by changing an information pattern, such as vibrating the informing apparatus 102 (*Id.*,

[0128]); or by using "a light emitting apparatus" or "sound source". *Id.*, [0152].

Trigger conditions for actuating the informing apparatus 102 include:

1. determining "whether or not the ignition key has been turned to the OFF position" *Id.*, Figs. 1-12, [0051], [0122];
2. "whether or not the SOC of main battery B is smaller than a reference value." *Id.*, Figs. 1-12, [0046], [0124];

3. determining “whether or not the driver is seated in the driver’s seat”
thereby indicating “the driver has exited from the vehicle” using a seat
sensor 107. *Id.*, Fig. 14, [0132]-[0133];
4. detection of “whether or not hybrid vehicle 100B is parked at the location
where charging equipment is installed” *Id.*, Fig. 16, [0141]-[0145].

Condition 3 is present in all embodiments of Oyobe, where the purpose of Oyobe requires the user to be outside of the vehicle. Regarding trigger condition 4, above, Oyobe only detects when the vehicle is at an unspecified general “location where charging equipment is installed.” There is no discussion in Oyobe about what “location” means. E.g., is being at a store with a vehicle charging station somewhere on the premises the same as detecting “location where charging equipment is installed”? Oyobe never discusses detecting that a vehicle is at the specific place capable of performing the act of charging of the vehicle, but instead just discusses general and unspecified “location” based on “a car navigation apparatus” or “based on the communication with a radio apparatus (not shown) provided at the location where the charging equipment is installed.” *Id.*, [0142].

Oyobe uses these trigger conditions such that “unnecessary power consumption can be prevented” by not activating informing apparatus 102 in

situations where the driver doesn't need indication to charge the vehicle battery. *Id.*, [0020], [0022], [0030], [0145].

C. Donnelly (EX1006)

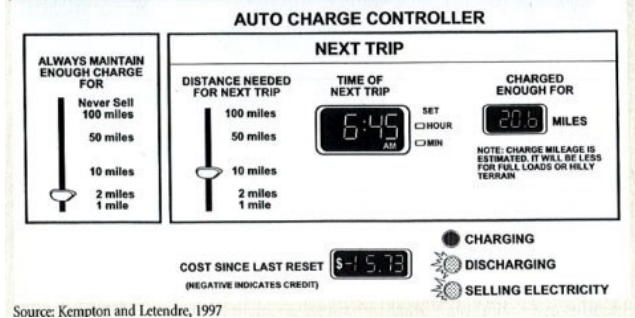
Donnelly is directed to railroad, or train locomotives and the use of energy storage batteries and a method for monitoring, controlling and optimizing electrically powered locomotives. EX1006, 1:24-35; 2:1-6. Specifically, Donnelly teaches a controller unit and system of sensors to monitor, synchronize and optimize the operation of the locomotive drive train as well as the individual axles during acceleration and braking. *Id.* at 3:42-50.

Donnelly is not directed at electric cars. Although it does appear to disclose a touch screen (*Id.* at 21:47-58), the screen is not directed at a GUI slider mechanism as presented in the challenged claims, nor relates to any ability for a user to select an amount of charge for the railroad locomotive disclosed.

D. Letendre (EX1007)

Letendre is directed towards electric vehicles and the concept of vehicle to grid power or "V2G." EX1007, 7. Petitioner cites Letender for its GUI element, reproduced below:

Figure 1: Suggested design of vehicle dashboard control, allowing driver to limit loss of range of vehicle and monitor power transactions.



EX1007, 8. However, nothing within Letendre discloses a GUI slider that allows a user to select an amount of charge that is percentage of charge of the battery. Kempton, describing the same controller as Letendre, clarifies that only allowing the distance needed for the next trip is “intended to minimize driver concern by using controls that accommodate user needs.” EX1073, 162. Further, Letendre does not disclose a GUI slider, but instead appears to disclose a physical slider. Nothing within Letendre teaches, suggests or discloses a GUI slider directed to selecting the amount of charge related to the capacity of the battery within the electric vehicle nor is the scale of distance needed for next trip the same as a scale of Donnelly’s battery charge graph.

E. Galvez-Ramos (EX1008)

Galvez-Ramos is directed to “a string of *dedicated batteries*, that will be provide the energy for a fan blower.” EX1008, Fig. 1, [0010]; *see also* [0014]-

[0015]. Galvez-Ramos' system is expressly described as separate and distinct from "the standard A/C system or the automobile forced air ventilation system." *Id.*, [0039], [0046]. Galvez-Ramos expressly teaches away from using the "automobile's air conditioner or heater, which would require the presence of the driver, to start the vehicle and for the car to be located in an open area to avoid the fumes which can cause harm." *Id.*, [0009].

Galvez-Ramos requires a manual button "that the driver before exiting the car pushes" as one of three conditions *required* in order to activate the Galvez-Ramos system. *Id.*, [0039].

F. Zeigler (EX1009)

Zeigler, which is titled "Vehicle Air Conditioning And Heating System Providing Engine On and Off Operation" is directed to a heating, ventilation and air conditioning ("HVAC") system for on road or off-road vehicles that allows the air conditioning unit to be functional irrespective of the operational condition of the engine. EX1009, Abstract. Zeigler's HVAC system is designed to be operational independent of the state of the engine within the vehicle. EX1009, 2:24-29. The vehicle in Zeigler is not electric, but the vehicle may contain a separate battery to operate the HVAC system. EX1009, 3:11-26. Zeigler's HVAC system contains a controller, which operates the HVAC system based upon the available source of power. EX1009, 2:53-56. The HVAC system will automatically turn off in order to

preserve battery to be able to start the vehicle disclosed within Zeigler. EX1009, 2:53-65. Zeigler notably does not contemplate maintaining a temperature suitable for a pet or the ability to control the temperature of a vehicle from a remote location.

G. Knockeart (EX1010)

Knockeart is directed to “a driver information system [that] provides route planning and guidance (“navigation”) services to the operators of multiple vehicles 100.” EX1010, 4:19-21. Knockeart’s “[i]n-vehicle system 105 is configured to use a removable personal device 160 to provide certain functionality of the in-vehicle System”. *Id.*, 4:32-34.

The Petition alleges that Knockeart’s phone “provide[s] a vehicle’s GUI.” *Pet.*, 8. However, this overextends the actual disclosure of Knockeart. Knockeart is focused on using the removable portable device 160 to expand the capabilities of the guidance services of the in-vehicle driver information system, not a full vehicle GUI. EX2002, 68.

H. Sutardja (EX1011)

Sutardja is directed to “systems and methods for charging batteries in vehicles.” EX1011, [0002]. Sutardja charges based on “charging parameters”. *Id.* [0235].

VII. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner defines a person of ordinary skill in the art (“POSITA”) as an individual that “would have had 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. Additional industry experience or technical training may offset less formal education, while advanced degrees or additional formal education may offset lesser levels of industry experience” *Pet.*, 2 (internal citations omitted). Because it does not affect the ultimate analysis, Patent Owner takes no position with respect to Petitioner’s proposed level of ordinary skill in the art.

VIII. CLAIM CONSTRUCTION

In an *inter partes* review filed on or after November 13, 2018, claim terms are construed based on their ordinary and customary meaning. 37 C.F.R. § 42.100(b). For purposes of this Paper, for all claim terms, Patent Owner requests that the Board adopt the ordinary and customary meaning of the claim terms as understood by a POSITA.

A. Construction of “amount of charge”

With respect to the term “amount of charge” as recited in the Challenged Claims, Patent Owner understands that the Board stated that the amount of charge with respect to the slider can include a selection of a desired range. *Institution*

Decision, 30. Patent Owner respectfully disagrees and for the below reasons submits that an “amount of charge” cannot encompass the selection of a desired range.

1. The specification differentiates selection of desired range from “amount of charge”.

Petitioner cherry-picks disclosure from the ’338 Patent’s specification discussing “desired charge level” without citing the relevant portion of the specification which discusses “charge amount”. It is well-settled that “[t]here is an inference ... that two different terms used in a patent have different meanings.” *Ethicon Endo-Surgery, Inc. v. U.S. Surgical Corp.*, 93 F.3d 1572, 1579 (Fed.Cir.1996). The ’338 patent makes clear **charge amount** (i.e., the claimed “amount of charge”) is *different* from **charge level** (which may include distance of travel):

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.

EX1001, 15:2-7; emphasis added. That “charge amount” is used in the same sentence as “desired charge level” indicates that “desired charged level” is not the same as “charge amount” (i.e., *amount of charge*). See EX2002, 30. Petitioner’s reliance on a cherry-picked sentence in the specification stating “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” (Petitioner’s reply to POPR, Paper 09, 2) is irrelevant to the construction of the term “amount of charge”.

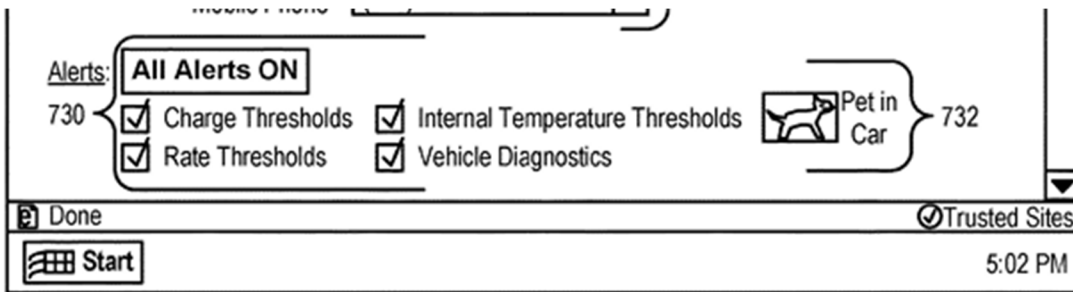
The Institution Decision relies on the Petitioner’s mischaracterization, and also references Fig. 7 of the ’338 Patent. Institution Decision, 28-29. However, Fig. 7 supports only the construction that “amount of charge” must be a percentage of charge of the battery. Fig. 7 shows not only “desired charge level 720” but also “desired charge percent level 718.” EX1001, 14:62-67. Thus, “charge ____ level” in the ’338 patent references either “charge percentage level 718” or “charge range level 720”. However, the claims do not recite “level” but instead recite “amount of charge.” The relevant disclosure distinguishes charge amount from charge level where “*charge amount* ... can be determined, for example, and utilized to express *the desired charge level in terms of distance capable of being traveled.*” EX1001, 15:2-7.

2. The claims use the term “amount of charge” in context that cannot include selection of desired range.

Claims 1-27 of the ’338 Patent include the term “amount of charge” multiple times in the Challenged Claims. It is understood that “[a] word or phrase used consistently throughout a claim should be interpreted consistently.” *Phonometrics*,

Inc. v. N. Telecom Inc., 133 F.3d 1459, 1465 (Fed. Cir. 1998). Should ambiguity remain, claims must be construed to protect their validity. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1327 (Fed. Cir. 2005) (en banc). Further, claim terms must be construed “as a whole” and not “read in a vacuum.” *See e.g., Power Mosfet Techs., L.L.C. v. Siemens AG*, 378 F.3d 1396, 1408 (Fed. Cir. 2004); *In re Marosi*, 710 F.2d 799, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). As used in the claims, constructing the term “amount of charge” to be a range is wholly inconsistent with other elements which make it clear that the vehicle is parked and that the “operator” is not in vehicle, as acknowledged by the Petitioner’s Expert. *See* EX2003, 48:25-49:3. As such, providing the “amount of charge” as a range serves no purpose and cannot be read in conjunction with the other words of the claims.

Claim 1 recites an “amount of charge” that may be specified by a user via a slider located on a vehicle charge indicator element within a graphical user interface. EX1001, Claim 1. Claim 1 further requires to “determine the “amount of charge” residing in a battery of the electric vehicle has reached a predefined threshold” when the vehicle is in a ***parked state***. EX1001, Claim 1. The purpose of determining the amount of charge for a predefined threshold is to alert the user (who is not in the vehicle) of a low battery when their vehicle is parked and has a pet in the vehicle so that the user is aware that the vehicle can continue to maintain a suitable internal temperature.



EX1001, Figure 7 (annotated); *see also* EX2003, 37:8-17.

The ‘338 discloses this scenario, stating that the operator be notified if the “charge level” falls below a certain threshold that allows the A/C to remain on for 15 minutes. EX1001, 13:45-67. The ‘338 Patent further discloses that the “pet in car” button allows users to set alerts and or charge parameters to levels conducive to maintaining the interior comfort for the safety of a pet left in a parked vehicle.” *Id.*, 15:62-16. A POSITA would recognize that these charge parameters have no relation to distance or desired travel range. EX2004, ¶34. Further, a POSITA would understand that alerting the user that the range of the vehicle has dropped to a predetermined level does not inform the operator that the car may not be able to maintain the desired or selected temperature. *Id.*

While the ‘338 Patent does disclose an option for a user to “alternatively” change the desired charge range *level* and that an “estimate” of the distance a vehicle may travel can be provided from a given charge amount (EX1001, 15:1-10), that application is not consistent with the embodiments expressly recited in the Challenged Claims.

There is nothing in the specification that allows a user to specify a predefined threshold of an amount of charge based solely on an estimated travel distance. Further, there is nothing in the patent that allows the reverse inference – that travel distance only may be input to define an “amount of charge.” This is unsurprising, as a POSITA would not recognize the selection of a specific amount of charge to include travel distance. EX2004, ¶35. A POSITA would understand that there would be additional input logic to make such a calculation based on driving conditions such as incline and outdoor climate as well as accessory usage such as air conditioning or other battery depleting factors. *Id.*

The Board in IPR2023-00063 for U.S. Patent 10,819,135 that involved the same specification came to the same conclusion that setting charge range is separate from setting charge distance, stating with respect to Figure 7 that a user “may view and/or change the desired charge range level, and thus determine a desired distance to travel and accordingly set the desired charge range to match the desired distance.” IPR2023-00063, Paper 29, FWD at 4.

Moreover, the claims themselves preclude an amount of charge be selected by desired travel distance. In addition to the charging schedule and GUI slider limitations, the charging system also refers to a mode of operation defined by a stored temperature where the interior temperature of the electrical vehicle is maintained while the vehicle remains “in a parked state.” EX1001, Claim 1; *See*

EX2003, 48:25-49:3. The claims require that the electrical charge system, while in this parked state, “determine that an amount of charge residing in a battery of the electric vehicle has reached a predefined threshold” and then, while the vehicle is parked, send an alert to an operator of the electrical vehicle that the charge residing in the battery has reached the predefined threshold¹⁰. EX1001, Claim 1; Claim limitation 1[k]-1[n]. Petitioner itself recognized that this amount of charge for determining the predefined threshold would be the in the same context as the amount of charge selected by the slider in related district court litigation. EX2005, 9 (“the amount of charge reaches a predetermined level could only refer back to the level specified by the slider.”). Tesla did not cite “charge range level 720”, but instead only refers to “item 714 and 718) when discussing “a slider by which an amount of charge may be specified.” EX2005, 8.

Further, the selection of a desired travel distance would have no bearing on the operation of the vehicle *in a parked state* and thus there would be no way to determine if the vehicle has reached a predefined threshold based upon an amount of charge. EX2002, ¶37. Alerting an operator away from the vehicle that the amount of charge may have reached a desired range would be of no relevance or use to the operator concerned (as claimed) with the temperature for a pet left inside the vehicle.

¹⁰ There would be no reason to send an “alert” to an operator who is in the vehicle.

Id. Instead, the patent requires a determination of a threshold, or electrical measurement of the battery itself, rather than a determination of distance. *Id.*

Moreover, the predefined threshold that is determined by the amount of charge is not defined as distance within the patent. Instead, in Figure 7, the charge thresholds are described as “e.g. minimum, maximum and or desired charge thresholds.” EX1001, 15:52-55. Petitioner’s proposed construction that improperly expands the scope of “amount of charge” would render the selected mode of operation while in a parked state and subsequent determination of a predefined threshold inoperable.

3. Petitioner’s own Expert’s testimony supports Patent Owner’s construction

Petitioner’s Expert supports Patent Owner’s position where Petitioner’s Expert testified that “amount of charge” is equivalent to “state of charge.” EX2003, 59:8-10. In Petitioner’s exhibits, “state of charge” is defined as “An expression of the present battery capacity as a percentage of maximum capacity.” EX1066, 1; *see* EX2002, ¶39. As discussed in further detail below, Letendre does not provide a mechanism to express or display battery capacity as a percentage or fraction of maximum capacity – as admitted by Mr. Andrews. EX2003, 74:14-75:19.

Mr. Andrews has further testified that “battery charge level may be expressed in terms of an amount of stored charge (for example, as measured in milliAmp-

hours) or in terms of a fraction of total capacity (for example as measured in a percentage).” EX2006¹¹, 48.

Thus, even Petitioner’s Expert’s testimony contradicts Petitioner’s expanded construction and analysis of “amount of charge.” For at least the above reasons, Patent Owner respectfully requests the Board construe “amount of charge” according to its plain ordinary meaning such as a quantity (including in percentage) of electrical charge residing in the battery that is measurable by the electric vehicle – not as a user selected travel distance.

B. Construction of “vehicle charge indicator element”

The Petition ignores the term “element” in addressing limitation 1[h], and alleges

Ferro’s collective display 214 and input/output unit 212 is modified to be a touchscreen presenting a graphical user interface (“GUI”) having the claimed vehicle charge indicator with first and second portions, per Donnelly; and (2) the Ferro-Oyobe-Donnelly GUI is modified to include a slider for inputting desired charge, per Letendre.

Pet., 30. It is not enough that the claimed “first portion”, “second portion” and “slider” be displayed separately on a GUI. Instead, the “first portion”, “second portion” and “slider” must be a component of a “vehicle charge indicator *element*.”

¹¹ Declaration of Scott Andrews in IPR2020-01189. Apple Inc. v LBT IP I LLC, IPR2020-01189, EX1003, 7/22/2020

In GUI technology, as known to the POSITA at the time of invention, the term “element” has an understood meaning:

GUIs are composed of various graphical elements ...
When developing GUIs, both the presentation and
behavior aspects of those elements are to be considered...
each GUI element is mapped to a component and
presentation or behavior aspects are defined by its
properties, methods and events.

EX2004, 21; EX2002, ¶42. When a GUI element is displayed in a GUI, the components thereof are presented according to its code-defined attributes. *Id.*

The specification is consistent with this meaning of the term “element.” The specification shows “vehicle charge indicator 714” having components “current charge level 716”, “desired charge percent level 718”, and “desired charge range level 720” all in the same location of the interface 700. A POSITA would understand that vehicle charge indicator 714 is a GUI element having sub-components 716/718/720 all integrated together when the vehicle charge indicator 714 is displayed on interface 700. EX2002, ¶43. *Contra*, items 722, 724, 726, 728, and 732 are separately called out components the GUI 700 in Fig. 7, but not components of “vehicle charge indicator 714”. EX1001, 14:56-15:66; EX2002, ¶43.

For at least these reasons, Patent Owner respectfully requests the Board construe “vehicle charge indicator element” according to its plain ordinary meaning

such as a GUI interface element comprising at least components of a “first portion”, “second portion” and “slider” as claimed – not separate GUI components that are separately displayable on a GUI. EX2002, ¶44.

IX. LEGAL STANDARD

Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e). A patent claim is unpatentable for obviousness if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) In *Graham v. John Deere Co.*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of nonobviousness such as “commercial success, long felt but unsolved needs, failure of others, etc.” 383 U.S. at 17–18; *KSR*, 550 U.S. at 407.

X. GROUND 1: PETITIONER FAILED TO ESTABLISH THAT FERRO IN VIEW OF OYOBE, DONNELLY, LETENDRE, ZEIGLER, AND GALVEZ-RAMOS RENDERS OBVIOUS CLAIMS 1-4, 6-7, 9-13, 15-16, 18-22, 24-25, AND 27

Petitioner has failed to show that Ferro in view of Oyobe, Donnelly, Letendre, Zeigler, and Galvez-Ramos renders obvious independent Claims 1, 10, and 19 (and dependent claims 2-4, 5-7, 9, 11-13, 15-16, 18, 20-22, 24-25 and 27) and has not articulated any meaningful motivation to combine or a reasonable expectation of success. For the reasons stated below, Ground 1 fails, and the claims should be upheld.

A. Ferro in view of Oyobe, Donnelly, Letendre, Zeigler, and Galvez-Ramos fails to render obvious limitations 1[e], 10[b], or 19[e] of claims 1, 10, and 19, respectively.

Claims 1, 19 and respective dependent claims require a “vehicle sensor” and “receive, from the vehicle sensor, information indicative of a presence of an electric vehicle in a parking space.” In limitations 1[a] and 1[e] and limitations 19[a] and 19[e]; and claim 10[a] and respective dependent claims requires “a vehicle sensor ... receiving, from a vehicle sensor, information indicative of a presence of an electric vehicle in a parking space” (hereinafter collectively referred to as the “vehicle sensor limitations”). *See* EX2002, ¶¶70-103.

1. A POSITA would not be motivated to combine Ferro with Oyobe.

One of skill in the art would not combine Ferro with Oyobe to render obvious the vehicle sensor limitations, which require “a vehicle sensor” and “receive, from

the vehicle sensor, information indicative of a presence of an electric vehicle in a parking space”, respectively.

- i. Reliance on hindsight is evidenced because the alleged features incorporated into Ferro from Oyobe are redundant to Ferro’s system.*

The Federal Circuit has confirmed that where the primary reference already includes the function of the secondary reference, an allegation to incorporate that function into the primary reference is improper hindsight and no motivation to combine exists. *See Wonderland NurseryGoods Co. v. Thorley Indus., LLC*, 988 F. Supp. 2d 479, 498–99 (W.D. Pa. 2013), *aff’d*, 644 F. App’x 1011 (Fed. Cir. 2016); *citing Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1368 (Fed.Cir.2012)). Here, the Petition alleges:

Providing Oyobe’s wireless detecting to detect the vehicle parked at the charging station advantageously ***allows a user to instruct charging without exiting the vehicle and physically interacting with a charging station.*** *Dec.*, 151-152.

Pet., 12. However, Petitioner’s expert acknowledges “Ferro discloses employing “wireless” charging to charge the vehicle 116/400. *Ferro*, [0036].” EX1003, 151. Petitioner’s expert further opines “[i]n wireless charging, the charging station provides energy to the vehicle wirelessly, ***without a user having to get out***

of the vehicle.” *Id.*; emphasis added. Therefore, the alleged motivation of including Oyobe’s vehicle sensor 108 in Ferro’s system – to allow charging “without exiting the vehicle” – is redundant to the Ferro system. EX2002, ¶73-75. Petitioner invents a problem that Ferro does not have. *Id.*, ¶73.

Hindsight is evidenced by the functionality relied on from Oyobe in the alleged combination, namely Oyobe’s “communicating with a ‘radio apparatus’ located at the charging equipment”. Pet., 11. Ability to communicate between a vehicle and a charging station is already found in Ferro – another indication of the Petitioner inventing a problem in Ferro reference. EX2003, 53:16-54:7. Petitioner’s expert acknowledges: “Ferro ... already discloses communication of information between the charging station and vehicle.” EX1003, 150. Petitioner’s expert acknowledges Ferro’s “network interface 432 allows vehicle 116/400 to access/communicate with station 118/403 via network 102. *Ferro*, [0037], [0106].” *Id.*, 153. Thus, a POSITA would not incorporate Oyobe’s additional sensor that is redundant to the functionality already provided by Ferro and such combination is hindsight. EX2002, ¶75.

ii. *Oyobe’s teaching is not the same as the ’338 patent’s wireless interrogation vehicle sensor example, and reliance on said example is hindsight.*

The Petition, and Institution Decision, highlight a fundamental mischaracterization of the prior art and the ’338 patent; namely that Oyobe’s

teaching is “akin to the wireless interrogation vehicle sensor example.” Pet., 11; *Institution Decision*, 18-19. The claimed vehicle sensor, as described in the “wireless interrogation vehicle sensor example” enables “detect[ion of] an arrival, proximity, and/or presence of the vehicle 460... the vehicle sensor 454 may comprise a communication device such as a Bluetooth® and/or passive-inductive device.” EX1001, 9:60-10:3. The sensor in the ’338 patent thus more detailed than the Oyobe vehicle position detecting apparatus 108 because the ’338 patent sensor example is described as determining “whether the vehicle is properly positioned, oriented, and/or outfitted for charging services”. EX1001, 16:45-51; EX2002, ¶76. Mere communication between a first communication device and second communication device (such as (i) Ferro’s network interface 432 that “allows vehicle 116/400 to access/communicate with station 118/403 via network 102” (*EX1003*, 153) or (ii) Oyobe’s vehicle sensor 108 that communicates “with a radio apparatus (not shown) provided at the location where the charging equipment is installed” (*EX1005*, [0142])), identifies if a charging station is nearby, but not whether the charging station can actually charge. EX2002, ¶76.

Comparison to the wireless interrogation vehicle sensor example in the ’338 patent, is evidence of hindsight gleaned solely from the present patent: “[t]o draw on hindsight knowledge of the patented invention, when the prior art does not contain or suggest that knowledge, is to use the invention as a template for its own

reconstruction—an illogical and inappropriate process by which to determine patentability.” *Sensonics Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570 (Fed. Cir. 1996) (citing *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)). Accordingly, Oyobe’s vehicle sensor 108 may detect that it is at the general location where a charging station is installed because it can communicate with the charging station, but nothing in Oyobe establishes that Oyobe’s vehicle sensor 108 provides information that the vehicle is in position to charge, which is required by the functionality of indicating an “intention to charge” as alleged by Petitioner. *Institution decision*, 19; Pet., 11-12. EX2002, ¶76-78.

iii. *Oyobe’s vehicle position detection sensor does not provide information that enables identifying an intention to charge.*

Petitioner’s proposed motivation to add Oyobe to Ferro to “detect a vehicle parked *at the charging station*” (see Pet., 11-12) overstates Oyobe’s capabilities. EX2002, ¶79. In analyzing motivation to combine, one must look at “the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.” *In re Kahn*, 441 F.3d 977, 987-988, (Fed. Cir. 2006) Oyobe is directed towards alerting the user when the battery is low not identifying that the vehicle is in a position ready to charge. See EX1005 at [0047]. Petitioner’s proposed combination is analogous to illuminating the low on fuel indicator in a standard

gasoline powered vehicle only when the driver has pulled into a filling station and parked next to a gas pump, which is nonsensical. EX2002, 79.

Ferro discloses “[a] computer implemented method, apparatus, and computer program product for generating a dynamic energy transaction plan to manage an electric vehicle charging transaction.” EX1004, Abstract. The Petition paraphrases, *incorrectly*, a key portion of the Ferro reference by alleging Ferro combined with Oyobe “combines prior art elements (wireless interrogation, EV charging stations) according to known methods to yield predictable results of enabling “an intention to charge” without an operator leaving the vehicle.” *Pet.*, 12. This paraphrase illustrates the flaw in the Petition’s analysis. EX2002, ¶80. Reading Ferro, the POSITA would understand that the nature of the problem solved by Ferro is creating a dynamic energy transaction plane that is initiated when (i) the vehicle is actually at a charging station 403 in a position to charge, and (ii) the operator has “an intention to charge, de-charge, or store electric energy on electric vehicle 400.” *Id.*; EX1004, [0109].

Oyobe’s disclosure to prevent a driver from forgetting to charge, is informative to the capability of Oyobe’s “vehicle position detecting apparatus 108” and indicates the data generated by Oyobe’s device is not even useable by Ferro’s system because Oyobe’s device is not capable of identifying whether the vehicle is in a position to charge. EX2002, ¶81. Oyobe reminds the driver of potential desire

to charge the vehicle by triggering “an operation command of informing apparatus 102 to actuator 103”. *EX1005*, [0144]; *EX2002*, ¶81. Thus, the informing apparatus 102 signals to the driver that a charge is needed, *not that a charge is capable of being provided at the currently parked location*. *EX2002*, ¶81. Were the Oyobe vehicle in the parking space next to a charging station, the Oyobe operator would need no reminder because that parking space is dedicated to a vehicle using the charging station and the driver is intentionally pulling into said parking space to charge the vehicle. Oyobe’s desire to “not unnecessarily operate” (*see EX1005*, [0020], [0022], [0030], [0145]) indicates that Oyobe would not desire to inform the driver of need to charge (and thus output a signal from detecting apparatus 108 to operate informing apparatus 102) when the Oyobe “vehicle is parked at a charging station” as incorrectly stated by the Petition (*Pet.*, 11). *See EX2002*, ¶81.

The Institution Decision alleges “regardless of the reason that Oyobe provides for including its vehicle position detecting apparatus, Oyobe undeniably describes a vehicle sensor that can provide “information indicative of a presence of an electric vehicle in a parking space” ***near a charging station.***” Institution Decision, 21; emphasis added. However, Petitioner’s entire premise of combining Oyobe with Ferro is “enabling ‘an intention to charge’ without the operator leaving the vehicle.” *Pet.*, 12. Being *near a charging station* is not enough to allow for *charging* the vehicle (e.g., a vehicle is near a charging station even if behind or to the side of the

charging station). EX2002, ¶82. Instead, the vehicle must be in a specific location with respect to the charging station to enable actual charging of the vehicle and thus allowing it to indicate an intention to charge. *See* EX2003, 11:24-12:16; Matsuo EX1052; EX2002, ¶77. Oyobe doesn't indicate the vehicle *is in position to start charging*. EX2002, ¶82.

Accordingly, the signal output from Oyobe's detecting apparatus 108 *is unusable in Ferro's system in the manner required to evidence the Petition's alleged motivation to combine*— information needed for “an intention to charge, de-charge, or store electric energy on electric vehicle 400” so that the generation of the Ferro dynamic energy transaction plan can be initiated. EX1004, [0109]. As such a POSITA would not be led to include the output of Oyobe's detecting apparatus, or any other portion of Oyobe, in Ferro's system. EX2002, ¶79-83.

iv. The purpose of Oyobe contradicts the alleged reason to combine Oyobe with Ferro

Petitioner alleges that the Ferro-Oyobe combination would “yield predictable results of enabling ‘an intention to charge’ *without an operator leaving a vehicle.*” *Pet.*, 12. However, nothing in Ferro discusses “without an operator leaving a vehicle.” Petitioner has manufactured this alleged problem in the Ferro system. EX2002, ¶84. The only use of Oyobe's detecting apparatus is as “disposed at a location where it can easily be seen by the driver *when the driver has exited from*

the vehicle.” EX1005, Fig. 14, [0132]-[0133]; emphasis added. Thus, the entire purpose of Oyobe occurs when the user has exited the vehicle, which is the opposite of the alleged motivation to combine Oyobe with Ferro (e.g., to keep the user in the vehicle). Therefore, Petitioner mischaracterizes both Ferro and Oyobe, and presents a factually incorrect and conclusory motivation to combine. *See* EX2002, ¶84-85.

The claims should be upheld under Ground 1 for at least these reasons.

B. Petitioner’s “modified” Ferro in combination with Donnelly and Letendre failed to teach or disclose element 1[h], 10[e], 19[l], and 28[e] of claims 1, 10, 19 and 28, respectively.

For all challenged grounds, Petitioner’s attempt to cobble together disparate references to arrive at the claimed invention is misguided, fails to disclose all of the claim limitations, and is undermined by hindsight bias. Even assuming that a POSITA would be motivated to combine Ferro (as modified by Petitioner), Donnelly, and Letendre, which they wouldn’t, the combination still does not teach or suggest all of the elements of the claim at least because Petitioner hasn’t shown (1) an amount of charge and (2) a “vehicle charge indicator element”. Petitioner fails to describe how the system would achieve the claimed system with reasonable success.

1. The Petition does not show a slider by which an amount of charge may be specified.

Claims 1, 10, 19, 28¹² and respective dependent claims require a user interface that contains a vehicle charge indicator element comprising: (1) a first portion indicating the amount of charge left in the battery of an electric vehicle, (2) a second portion indicating the uncharged capacity of the battery of the electric vehicle, and (3) a slider element which allows a user to select, via the graphical user interface (e.g. touchscreen). While the institution decision preliminarily determined that “amount of charge” that is selected by user can be performed by a user selecting a desired travel distance, for the reasons explained in the Claim Construction section above, Patent Owner respectfully disagrees.

The Vehicle Charging Dashboard of the ‘338 Patent discloses *using a graphical user interface element* to select the desired amount of charge for a single charge amount:

¹² Claim 28 recites a slider which a “predetermined amount of charge” as opposed to an amount of charge in the other independent claims. Patent Owner submits that Petitioner’s proposed combination for the selection/specification of an amount of charge fails regardless of whether it is an amount of charge or a predetermined amount of charge that is specified by a user.

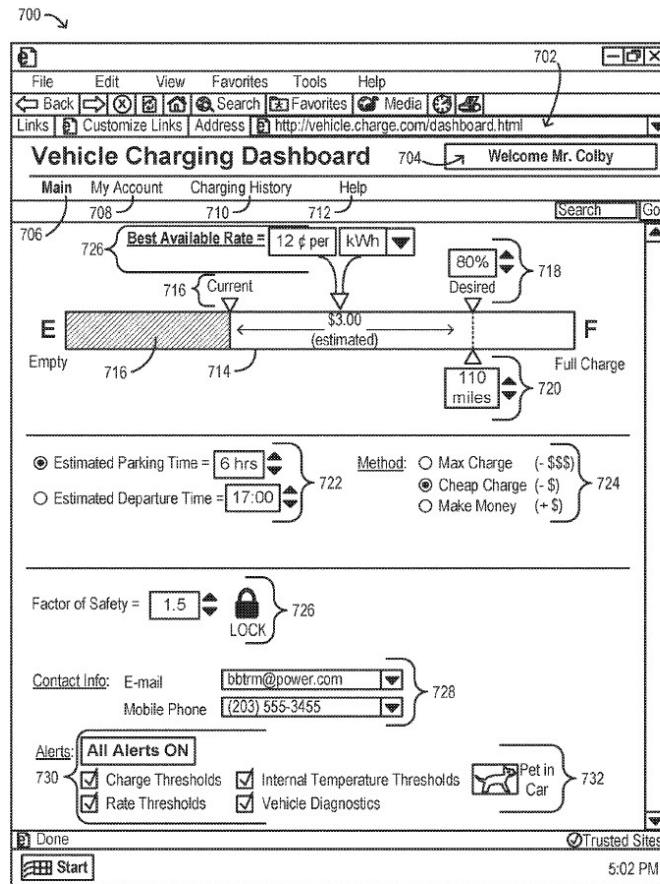


FIG. 7

EX1001, Figure 7.

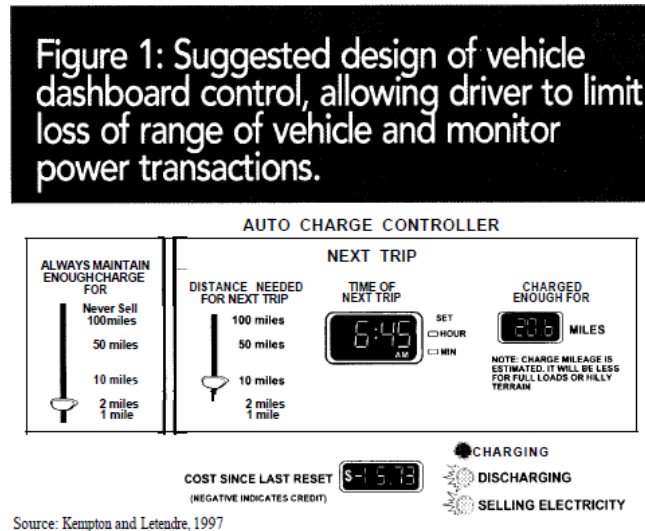
As explained above, the amount of charge as read by a POSITA would not include a user selecting a desired travel range. EX2002, ¶87. As the patent discloses, a user may select, via the vehicle charge indicator element, a “desired charge percent level 718.” EX1001, 14:40-51. The patent further teaches a “current charge range level 720” that is calculated using a “charge amount”. EX1001, 15:1-10. Tesla did not cite “charge range level 720”, but instead only refers to “item 714 and 718) when discussing “a slider by which an amount of charge may be specified.” EX2005, 8.

With respect to the “amount of charge that can be specified”, Petitioner solely relies upon Letendre. Pet. at 39-40. Letendre’s disclosure is insufficient. *See* EX2002, ¶88. Petitioner’s expert testified Letendre “does not provide enough information about the system to ... determine or to set a percentage of total charge or total range.” EX2003, 75:14-19; *see also*, 74:14-75:13.

When first describing the teachings of Letendre, Tesla states “Letendre teaches a user interface comprising a slider by which a user specifies parameters managing the charge of an electric vehicle’s battery.” Pet., 6. It is precisely because the user does not know a desired amount of charge that the user is unable to specify it, but instead only a distance needed for next trip and minimum mileage to maintain. EX2002, ¶90-95. Any amount of charge is determined ***by the system*** in the background (and never displayed) in response to a desired travel distance condition specified by the user. *Id.*

Letendre receives a user specified mileage condition and then ***estimates*** a corresponding charge amount that will likely meet the condition. Were the user to actually wish to specify a charge amount, the GUI interface of Letendre ***would actually prevent the user from doing so***. EX2002, 93; *citing* EX1073, 162-163. For example, a user of *Letendre* would be unable to specify a 70% charge amount. As such, Letendre does not teach specifying an amount of charge, but, rather, explicitly

teaches parameters measured in units that cannot inform a user as to the *amount of charge*. *Id.*



Describing the above figure, Letendre clearly states:

An example control panel is shown in Figure 1. Whether the control is physical, on the dash, or on a Web page, the idea is basically the same. The driver has two parameters to set—the length of the expected next trip (in the case shown in Figure 1, 10 miles at 6:45 the next morning), and the minimum range that must always be maintained, e.g. for an emergency room trip, two miles.

EX1007, 19-20.

As Letendre makes clear, the two parameters to be set. i.e., “specified,” are length (measured in miles) and minimum range (again, measured in miles). EX2002, ¶92. Kempton, cited by Petitioner’s Expert (but not included in the Petition), is

acknowledged to “describe the same auto charge controller” as Letendre.” EX1003, 243. However, Kempton evidences that Letendre’s charge controller would never be modified to allow the user to select anything but distance in terms of miles:

The illustrative control panel in Fig. 1 is intended to minimize driver concern by using controls that accommodate user needs. ... Rather, the driver specifies what his or her travel needs are. The utility determines the timing of charging and discharging within those constraints. ***This is the key principle behind the controller design in our proposal.***

EX1073, 162-163; EX2002, ¶93. A user utilizing a slider such as that illustrated in Letendre that desires to be able to travel 50 miles can easily move the slider to the markings on the slider scale corresponding to “50 miles.” EX2002, ¶93. In such an instance, the user does not, and indeed cannot, know what percentage of the battery will be charged in order to meet the specified 50-mile requirement, as acknowledged by Petitioner’s own expert. EX2003, 74:14-75:3. The Petition suspiciously ignores Kempton, which was cited by the Petitioner’s Expert but not in the Petition, and the non-motivating statements thereof.

Letendre itself has no relation to a vehicle charge indicator that displays the charged and uncharged portion of the battery of an electric vehicle, but instead is just a mechanism for a user to select a desired travel distance and the vehicle does the rest - intentionally. EX1007, 11; EX1073, 163.

Letendre's figure used by Petitioner makes clear that "Charge mileage is estimated. It may well be less for full loads or hilly terrain." *Id.*; EX2003, 60:14-61:16. Because the distance one can travel on a given charge is highly variable based, for example, on loads, terrain characteristics, age of battery, battery cycles, temperature, etc., it is not possible to specifically equate an expected charge range with an amount of charge. *Id.* Petitioner's logic is flawed by stating that setting a "length", comprising "10 miles", is adequate to disclose specifying an *amount of charge*. EX2002, ¶¶92-93. And Petitioner offers no explanation as to how a POSITA would derive this information.

In short, Letendre teaches the diametric opposite of specifying a charge amount. It is precisely because the user does not know how much charge he needs to meet his requirements that he cannot specify the amount of charge and, as a result, Letendre uses a slider to specify the conditions to be met by an amount of charge he is incapable of specifying.

It is therefore inaccurate when Petitioner asserts:

Letendre teaches *a slider by which an amount of charge may be specified*, namely an "auto charge controller" "control panel" including a movable slider to "set [] the length of the expected next trip" (here, 10 miles) (the specified *amount of charge*).

Pet., 39; EX2002, ¶95. It is precisely because the user of Letendre’s interface is fundamentally incapable of knowing what charge amount they need that Letendre’s interface exists and operates to allow the user to specify something other than a charge amount. *Id.* Tesla fails to explain how specifying the number of miles equates to specifying an amount of charge, or how to reconcile the two scales (battery vs. non-linear mileage). *Id.*

For at least this reason, all Challenged Claims should be upheld.

2. Petitioner’s Expert supports Patent Owner’s position.

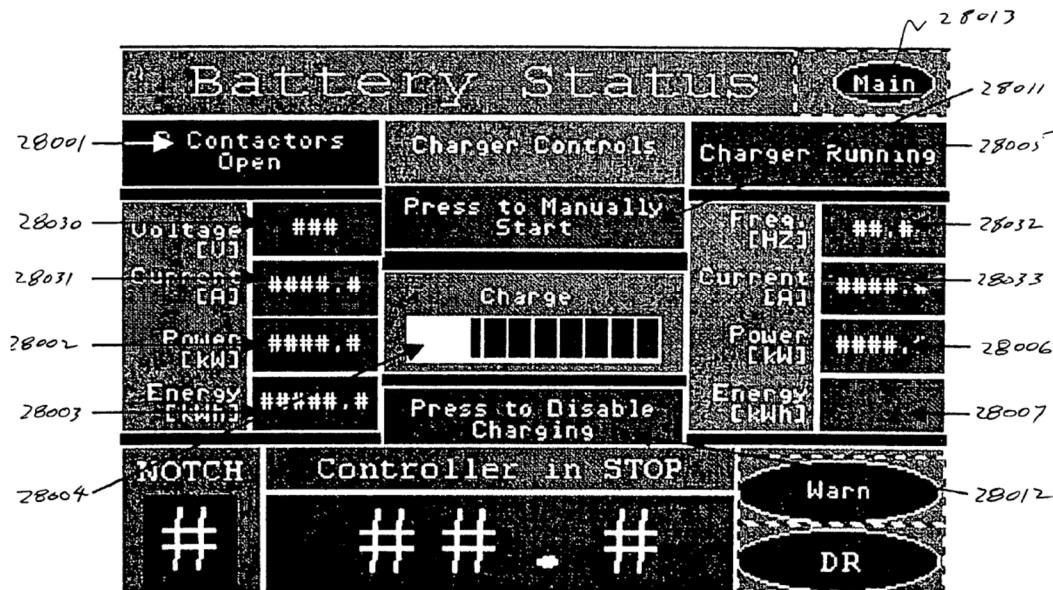
Mr. Andrews’ testimony is consistent with Patent Owner’s position. Mr. Andrews testified that “amount of charge” is equivalent to “state of charge.” EX2003, 59:8-10. Mr. Andrews further testified ““state of charge” is defined as “An expression of the present battery capacity as a percentage of maximum capacity.” EX1066, 1; EX1003, 231. Mr. Andrews testified that, in Letendre, “there is not enough information to determine how to set the charging level to 60 percent” of *maximum range level or maximum charge level*. EX2003, 75:14-19. Thus, the Petitioner’s Expert’s own testimony conclusively establishes that Letendre’s slider cannot specify an “amount of charge.”

For at least this additional reason, all Challenged Claims should be upheld.

3. The Petition does not show how Letendre’s slider would be combined with Ferro or Donnelly.

Obviousness requires a showing of how and why references would be combined. *See KSR*, 550 U.S. at 418, 127 S.Ct. 1727. The claims recite that the amount of charge selection is a charging preference which is used, along with a dynamic attribute, to determine a charging schedule for the electric vehicle. Tesla fails to explain how Ferro would determine a charging schedule based upon Letendre's selection of distance using the Letendre V2G model.

Further, Tesla fails to explain how Letendre's distance-based slider would be combined with Donnelly's locomotive figure. Petitioner relies on Donnelly's picture of a battery to meet the limitations of the claimed first and second portions of the vehicle charge indicator element.



See Pet., 34-36. Petitioner explicitly states the bar graph, which isn't on a touch screen, satisfies a vehicle charge indicator element. Donnelly describes

“battery state of charge 28004” which Petitioner relies upon as “the state of charge of the energy storage unit by measuring the am-hours in and the amp hours out.” EX1006, 23:31-34. As combined, Petitioner proposes to take Letendre’s slider that selects distance from 1 mile to 100 miles for the next trip and put that slider on Donnelly’s graph. Pet., 40. However, Petitioner fails to explain how the distance selection in the Letendre would be combined with the battery indications of Donnelly. EX2002, ¶96-100.

To the extent Petitioner asserts that the combination the “minimum/maximum charge” or Ferro placed on top of the Donnelly battery image, again Petitioner fails to explain how this would allow a user to select a specific amount of charge or how this would result in a *vehicle charge indicator element*. The claim requires a slider where an amount of charge may be specified. A POSITA would understand that this allows a user to specify any amount of charge between 1% and 100%, not just to select between two choices. EX2002, ¶101. Limiting the selections as described in Ferro to “minimum” and “maximum” would defeat the purpose of implementing a slider where Ferro’s choices are between two options.

To the extent Petitioner asserts that the combination is just the slider of Letendre on top of Donnelly battery image (*see* Pet., 40), again Petitioner fails to explain how this would occur. The Letendre slider uses a scale that does not match percentage scale of Donnelly. These two scales are incompatible because, for

example, scale of Letendre shows “10 miles” as approximately 1/3 up the slider, and “50 miles” as approximately 2/3 up the slider. EX2002, ¶100. However, there is no indication that 10 miles is 33.3% of the charge percentage of the battery and 50 miles is approximately 66.6% of the charge percentage of the battery, and in fact the POSITA would understand this is not the case. *Id.* Therefore, the Petition does not provide definition of how one of skill in the art would reconcile these scale differences. Thus, the Petition’s allegations to “include Letendre’s graphical slider on the charge level bar graphic” is non-sensical because the scale differences do not match and thus would be nonintuitive to the user. *Id.* Mr. Andrews agreed testified that “I’m not suggesting you would take this scale and superimpose it on Donnelly’s graph.” EX2003, 72:15-18. Petitioner is unable to decipher the combination of references alleged.

As a result, the POSITA is not motivated to combine Ferro, Donnelly and Letendre to teach the limitation of *a slider by which an amount of charge may be specified*. *Id.*, ¶102. For at least this additional reason, all challenged claims should be upheld.

4. Ferro, Donnelly and Letendre even when combined to not motivate a vehicle charge indicator element as claimed.

Even were Letendre’s distance-travelled slider considered an “amount of charge”, which it is not, the resulting combination would still not be a “vehicle

charge indicator *element*” as per the claim construction above. *Id.* ¶103. As discussed in the claim construction section above, GUI *elements* are a known term of art having a specific construction. At best, *arguendo*, the Petition only discusses displaying separate components of Ferro, Donnelly, and Letendre’s separate GUI’s into a single GUI, but does not explain how one of skill in the art would combine these separate components into a single GUI *element* as required by the “vehicle charge indicator element” of the claims that is individually callable to generate the GUI. *Id.*

Putting together the input and output mechanisms into a single “vehicle charge indicator element” is an important feature of the ‘338 patent. *Id.*, ¶104. Petitioner ignores these specifics of the claim and *never discusses why each reference would be combined into* “vehicle charge indicator *element*” limitation. Pet., 33-41. Simply displaying “the graphical slider on the charge level bar graphic” is not enough to establish a three-component vehicle charge indicator *element* that is a GUI element as claimed. EX2002, ¶104.

For at least this additional reason, all Challenged Claims should be upheld.

C. Grounds 1 and 2: The Petition Does Not Show “send[ing] an alert to an operator of the electric vehicle” as required by Challenged Claims 1-4, 6-7,9-13,15-16, 18-22, 24-25 and 27.

Claims 1-4, 6-7,9-13,15-16, 18-22, 24-25 and 27 require an alert to be sent to the operator of the electric vehicle in response to the vehicle reaching a predefined threshold when in a parked state. The claims require that the vehicle receives a selected mode of operation to maintain the internal temperature of the electric vehicle in a parked state. The claims further require that the status of operation is displayed via the claimed GUI and that the mode of operation must be suitable for a pet located within the vehicle, and further that the temperature must be maintained such that the temperature is suitable for the pet. This mode is operated for a duration of time, and the vehicle at the same time determines if the amount of charge within the vehicle reaches a predefined threshold or minimum battery amount. If the vehicle reaches a predefined threshold, an alert is sent to the operator of the vehicle. The context of the claims are clear that the operator of the vehicle at the time of the alert *is not in the vehicle*. See EX2002, ¶ 105; EX2003, 37:10-12.

As this Board correctly summarized in the Final Written Decision of IPR2023-00063:

According to the '135 patent, the “main” menu item 706 may comprise a “pet in car” button 732. Ex. 1001, 15:45–55. The “pet in car” button 732 may automatically set alerts and/or charge parameters to levels conducive to maintaining the comfort and safety of a pet left in a parked vehicle. *Id.* Thus, a user may safely leave a pet in a parked vehicle by establishing and/or setting charging parameters

designed to keep the air conditioning on to maintain a cool vehicle and/or to keep the heat on to maintain a warm vehicle (e.g., depending upon the relevant season and/or external weather conditions). *Id.* The '135 patent explains that “the operator [may] be notified if the current charge level of the vehicle 660 falls ***below a level*** that allows the Air Conditioning (A/C) to remain on for [a time, such as] fifteen (15) minutes” or “the operator [may] be notified if the temperature inside the vehicle 660 climbs above [a temperature, such as] seventy (70) degrees.” *Id.* at 13:43–50.

See IPR2023-00063, Paper 29 at 4-5 (emphasis added). The '135 Patent and currently challenged '338 Patent share identical specifications. The Board correctly recognized that the purpose of the alerts is to “maintain the comfort and safety of a pet left in a parked vehicle” and that these alerts are for users/operators who have left a pet in a parked vehicle, not remained within the vehicle along with the pet. The claims require that an alert be sent to an operator when the vehicle reaches a predefined threshold which can be a charge amount that may no longer be able to maintain a temperature suitable for a pet.

As the '338 patent describes:

The "pet in car" button 732 may, for example, automatically set alerts and/or charge parameters to levels conducive to maintaining the comfort 65 and safety of a

pet left in a parked vehicle. In such a manner, for example,
a user may safely leave a pet in a parked vehicle.

EX1001, 15:62-16.

The claim language requires that the claimed system “send an alert to the operator of the electric vehicle” rather than “display via the graphical user interface” as required elsewhere in the same claim. Petitioner’s interpretation asks this Board to rewrite “send an alert” to “display via the graphical display.” Petitioner ignores the requirements of the claim limitation and relies on Donnelly, stating that Donnelly’s display of warnings meets this limitation. Pet., 57. Petitioner does not explain how Donnelly’s systems send a warning to the user but instead relies on a single paragraph for this limitation:

Donnelly thus teaches Claim 1[n], namely determining the battery voltage or state of charge (*amount of charge residing in a battery*) is “below the lower set point” (*has reached a predefined threshold*), and sending a “warning” via the display (*send an alert to an operator*) indicating the battery voltage is low (*indicative of the charge residing in the battery having reached the predetermined threshold*). Donnelly, 18:65-67, 25:15-16, FIG. 34; Dec., 298.

Petition at 57.

First, Petitioner fails to explain how “sending a warning” via the display meets the claimed “send an alert to the operator of a vehicle.” Indeed, the Federal Circuit has cautioned that “[i]t is of the utmost importance that petitioners . . . adhere to the requirement that the initial petition identify ‘with particularity’ the ‘evidence that supports the grounds for the challenge to each claim.’” *Intelligent Bio-Systems*, 821 F.3d at 1369 (citing 35 U.S.C. § 312(a)(3)). Arguments that are not “particularly” asserted in a petition are not to be given any weight. *See Microsoft Corp. v. FG SRC, LLC*, 860 F. App’x 708, 713 (Fed. Cir. 2021). The Petition is silent about how the display of a warning meets the limitation that requires an alert be sent to an operator and instead forces Patent Owner to guess Petitioner’s logic behind this interpretation.

However, Petitioner’s interpretation exceeds the proper scope as understood given the specification. EX2002, ¶106-108. As the Board has noted, the patent describes that the alert is for an operator who has left a pet in the vehicle and thus is not located in the vehicle. A POSITA would recognize that sending an alert to an operator requires the electric vehicle to send an alert to an operator via means other than displaying the status of the vehicle on the dash. EX2002, ¶109.

Petitioner’s apparent interpretation also conflates its own understanding of the claims. Petitioner, when asserting a motivation to combine Ferro’s display with Donnelly and Zeigler. Pet. at 50. Petitioner states:

a driver may confirm the HVAC mode is on before *leaving a passenger in the parked vehicle*, providing peace-of-mind the passenger will stay comfortable *while they are away*.

Pet. at 50 (emphasis added). Here Petitioner clearly understands the purpose of the claims allows the driver/operator to leave the vehicle and have “peace of mind.” EX2002, ¶110.

Moreover, the claims already separately require “*display via the graphical user interface*.” ‘338 Patent, Claim 1[k], 10[g], 19[n]. Petitioner points to displaying the mode of operation on the electric vehicle through the Donnelly GUI. Pet., 49. However, the claims require an additional limitation of “sending an alert” which Petitioner appears to ignore and instead equate to displaying. Pet., 73.

Patentee claimed two separate words and intended separate functions. EX2002, ¶111. This is clear under Petitioner’s assertion for Claim 8, where Petitioner states that “[t]he GUI in the modified system is adapted to display an alert.” Pet., 73. A bedrock claim construction principle is that “[w]here a claim lists elements separately, ‘the clear implication of the claim language’ is that those elements are ‘distinct component[s]’ of the patented invention.” *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1255 (Fed. Cir. 2010). A claim is not satisfied when it “requires two separate structures and one such structure is

missing.” *Regeneron Pharms., Inc. v. Mylan Pharms. Inc.*, 130 F.4th 1372, 1377 (Fed. Cir. 2025).

Here, Petitioner alleges in a conclusory manner that displaying a warning on a GUI within the vehicle and sending an alert to an operator are the same function despite the patent claiming display and send in distinct manner. EX2002, ¶ 112; EX2003, 39:4-16. By doing this, Petitioner is asking the Board to improperly rewrite the claims to ignore what they clearly recite, which is a claimed system that sends an alert to the operator as opposed to what Petitioner has shown, which is display a warning within the vehicle whether or not the operator is located within the vehicle. *Id.*

Petitioner provides no argument or reasoning as to why displaying a warning within an electric vehicle would meet the required limitation of sending an alert to an operator as required in all Challenged Claims besides Claims 28-29. Petitioner even alleges motivation for this operator/driver to leave the vehicle with peace of mind earlier in Grounds 1 and 2. As Petitioner’s construction improperly disregards the patentee’s intentional choice to recite separate functions and distinguish “displaying” a status from “sending” an alert to an operator who is not in the vehicle, it must be rejected as legally erroneous.

D. No reference cited by Petitioner establishes an electric charging system or method that has a graphical user interface adapted to display a webpage as required in Claims 2, 11 and 20.

Claims 2, 11 and 20 require the claimed graphical user interface within the electrical charging system or method to be adapted to display a web page. The Petition fails to point to any reference that contains a GUI that displays a webpage. Instead, Petitioner relies on the fact that Letendre mentions that it can display its purported slider on a web page. Pet., 60. However, Petitioner fails to establish how the claimed GUI is adapted to display a web page. Petitioner's motivations further fail, as Petitioner fails to provide any reasoning as to why its modified system would be motivated to display a web page other than now further modifying the GUI to be web-based and at a remote server. However, Petitioner fails to explain why moving the GUI to a remote location would be beneficial, as the claimed slider is on the vehicle is designed to allow a user to select an amount of charge. EX2002, ¶ 113. Claims 2, 11 and 20 should be upheld.

XI. GROUND 2: PETITIONER FAILED TO ESTABLISH THAT CLAIMS 5, 8, 14, 17, 23, AND 26 ARE UNPATENTABLE AS OBVIOUS OVER FERRO IN VIEW OF OYOBE, DONNELLY, LETENDRE, ZEIGLER, GALVEZ-RAMOS, AND KNOCKEART

A. Ground 2 should be denied for similar reasons presented for Ground 1 above.

Sections X.A-X.D above are incorporated by reference here in their entirety, Petitioner has failed to show that Ferro in view of Oyobe, Donnelly, Letendre, Zeigler, Galvez-Ramos, and Knockart renders obvious at least limitations 1[e], 1[h], 10[b], 10[e], 19[e], or 19[l] of claims 1, 10, and 19. For the same reasons, and because claims 5, 8, 14, 17, 23, and 26 depend, directly or indirectly, from one of claims 1, 10, and 19, Petitioner has also not shown that renders any of claims 5, 8, 14, 17, 23, and 26 unpatentable as obvious over Ferro in view of Oyobe, Donnelly, Letendre, Zeigler, Galvez-Ramos, and Knockart. *See* EX2002, ¶115-116. Accordingly, the claims should be upheld.

B. Petitioner has not established a motivation to combine Knockart with the other cited references for Ground 2.

For Ground 2, Petitioner adds Knockart's removable personal device to the six references already listed in Ground 1 without describing how a POSITA could be motivated to configure this additional piece in addition to the other five references used to alter the Ferro vehicle. *See Pet.*, 72-73. Petitioner only notes that "[a] POSITA would have appreciated displaying the GUI on a removable device would allow the user to view charging information when they are away from the vehicle," while again relying on their expert to carry Petitioner's burden. *See* EX2002, ¶115.

This recitation of the limitation in the claim as a problem to be solved is a hindsight motivation. *Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139

F.3d 877, 881 (Fed. Cir. 1998). Petitioner only relies on the fact that Knockeart describes a PDA and does not specify how a POSITA would utilize Knockeart's PDA to monitor or input selected modes of operation as claimed in the '338 Patent. EX2002, ¶116. Knockeart's PDA *does not control any mode of operation of the vehicle remotely*. *Id.* Petitioner has not met its burden in establishing a motivation to combine. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (“[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the prior art.”).

Accordingly, the claims should be upheld.

XII. GROUND 3: PETITIONER FAILED TO ESTABLISH THAT CLAIMS 28 AND 29 ARE UNPATENTABLE AS OBVIOUS OVER FERRO IN VIEW OF DONNELLY, LETENDRE, AND SUTARDJA

A. Petitioner's “modified” Ferro in combination with Donnelly and Letendre failed to teach or disclose element 28[e]

Addressing claim 28[e], and thus claim 29 dependent therefrom, the Petition relies on the discussion of limitation 1[h]: “The mappings and motivations provided for Claim 1[h] are incorporated herein.” *Pet.* 75-76. Ferro, Donnelly, and Letendre do not render obvious the subject matter of limitation 28[e] for similar reasons discussed above in sections X.B-X.D, which are incorporated by reference here. The inclusion of Sutardja does not change or alter the analysis presented in sections X.B-X.D, and thus Sutardja does not remedy the deficiencies of Ferro, Donnelly, and

Letendre with respect to limitation 28[e]. *See* EX2002, ¶117-118. Accordingly, the Challenged Claims are patentable over Ground 3.

B. Petitioner has not established a motivation to combine the Sutardja with the other cited references of Ground 3.

With respect to Ground 3, Petitioner again uses four separate references – Ferro, Donnelly, Letendre and Sutardja. Petitioner dedicates only a single paragraph on motivation to combine without providing *any* particularity as to why a POSITA would actually combine these references, instead providing generic allegation that a POSITA would have recognized a user would “want to know ASAP that charging preferences were unacceptable.” *Pet.*, 81-82. Again, Petitioner provides no motivation within the Petition other than improper conclusory hindsight. *See* EX2002, ¶118.

Accordingly, the Challenged Claims should be upheld over Ground 3.

XIII. GROUND 1, 2, AND 3: PETITIONER HAS NOT ARTICULATED ANY MEANINGFUL MOTIVATION TO COMBINE OR A REASONABLE EXPECTATION OF SUCCESS

That Petitioner asserts several references for each Ground demonstrates that Petitioner is improperly relying on hindsight, further confirming that Petitioner has not met its burden. *See Grain Processing Corp. v. Am.-Maize Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988). (“Care must be taken to avoid hindsight reconstruction by

using ‘the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.’” (quoting *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1012 (Fed. Cir. 1983))). The Federal Circuit has established that “claims cannot be “treated ... as mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning” *Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052 (Fed. Cir. 2017)(citing *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 1459 (Fed. Cir. 1984)). For reasons established above, each of Grounds 1, 2, and 3 are wrought with conclusory statements on motivation to combine without actual support, and rely on incorporating by reference whole portions of the Andrews Declaration. The alleged motivations to combine are simply using the claims as a roadmap without establishing how or why the POSITA would actually combine these references.

A. Petitioner Has Not Shown that a POSITA Would Have Been Motivated to Combine Ferro with the other cited references

To satisfy its burden of proving obviousness, a petitioner must articulate specific reasoning why a person of ordinary skill in the art would have combined or modified prior art references. *In re NuVasive, Inc.*, 842 F.3d 1376, 1382 (Fed. Cir. 2016); *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016)

Petitioner provides only general declarations that a POSITA would be motivated to combine the references.

Overall, Petitioner uses six references for Ground 1, seven references for Ground 2 and four references for Ground 3. As admitted Petitioner, Ferro fails to disclose a number of limitations, such as the vehicle charge indicator comprising a slider, the selected mode of operation to allow the claimed electric vehicle to maintain an internal temperature suitable for a pet, or the claimed vehicle sensors, among other missing limitations. To address this, the Petition creates a fictional electric charging system, wherein Ferro is modified in almost too many ways to count. For Ground 1, Petitioner proposes to:

- 1) Take the Ferro system and add a vehicle sensor from Oyobe, despite the Ferro system having no need for a vehicle sensor and the vehicle sensor of Oyobe being superfluous of Ferro's functionality. Pet. at 10-12.
- 2) Further modify the now modified "Ferro-Oyobe" system to add in a Graphical User Interface from a reference directed at trains solely due to the fact that (1) the Donnelly displays a picture of a charge status in bar graph format (Pet. at 34-36) and (2) the Donnelly reference displays a picture of a warning when the train battery is low that Petitioner has improperly construed as meeting the limitation of sending an alert to the operator. Pet. at 56-59.

- 3) Further modifying the new “Ferro-Oyobe-Donnelly” system to include Letendre for the purpose of adding in a slider based on a single figure in a magazine article. Pet. at 39-40.
- 4) Modify the new “Ferro-Oyobe-Donnelly-Letendre” system with Zeigler as none of the previous four references teach or suggest selecting a mode of operation relating to maintaining the interior temperature of the electric vehicle while in a parked state. Pet. at 43-46.
- 5) Modify the new “Ferro-Oyobe-Donnelly-Letendre-Zeigler” system with Galvez-Ramos, as none of the previous five reference teach or suggest anything related to maintaining a temperature in a vehicle suitable for pets as required by the Challenged Claims.

The proposed combination (and sub combinations in Grounds 2 and 3) create an incoherent proposed electrical charging system or method where you have systems designed for locomotives attempting to communicate with electric vehicles with respect to combining Donnelly with Ferro, combining an HVAC system built for a non-electric vehicle from Zeigler with the electric based system in Ferro, and then combining this Frankenstein creation from Petitioner and adding Galvez Ramos, a five page application that Petitioner plugs in as it mentions both climate control and pets. *See* EX2002, ¶120.

It is well established that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR Int’l v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). A claim cannot be found obvious where Petitioner does “not provide a plausible rational as to why the prior art references would have worked together to render the claims [] obvious.” *Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1352 (Fed. Cir. 2010). Moreover, “[i]t is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.” *In re Wesslau*, 353 F.2d 238, 241 (CCPA 1965).

However, this is exactly what Petitioner and its expert have done. Petitioner relies on hindsight using the ‘338 Patent as a blueprint. There is no other motivation to add a reference for its disclosure of a single word – “pet,” which is Petitioner’s true reasoning for adding Galvez-Ramos. *See* EX2002, ¶123.

Even if Petitioner’s Grounds 1, 2 and 3 were not deficient for the reasons discussed above, they should still be denied because all three fail to establish that it was obvious to combine this large number of references to allegedly meet the claims.

It is improper to combine these references “like separate pieces of a simple jigsaw puzzle” without “explain[ing] what reason or motivation one of ordinary skill

in the art at the time of the invention would have had to place these pieces together.” *InTouch Techs., Inc. v. VGo Comm’cns, Inc.*, 751 F.3d 1327, 1349 (Fed. Cir. 2014). The Petition does not sufficiently show why the POSITA would have been motivated (or able) to combine all these selected features of all these references as claimed. EX2002, ¶124.

The Federal Circuit has repeatedly indicated that appropriate obviousness combinations with four or more references are out of the ordinary and require additional inquiry for obviousness rejections based on them to be upheld. For example, in *In re Anova Hearing Labs, Inc.*, 809 Fed. App’x. 840, 842 (Fed Cir. 2020), the Federal Circuit vacated and remanded a PTAB obviousness determination in inter partes reexamination combining “aspects of” devices described in five different references. The Court held, inter alia, it was “unclear why the Board found a skilled artisan would be motivated to combine the five separate references,” and concluded that “[t]he Board failed to sufficiently articulate a reason why a person of ordinary skill in the art would be motivated to combine the [various different] devices.” *Id.* at 843. At oral argument, now-Chief Judge Moore explained why this part of the Board’s obviousness analysis was “troubling”:

I feel like the Board’s opinion, for me, is troubling because it’s five references with wildly differently designed hearing aids. And, I don’t even understand really what it’s picking from some of the references that it says are

missing in the primary reference. I don't understand why it's motivated to go to some of those references. And, I feel like there is a lot of hand-waving. And, what I'm worried about in a five-reference rejection is the hindsight bias concern of just picking and choosing elements from lots of different random prior art and saying they work together. Oral Argument¹³, 24:30 (Moore)

Here, the facts are even more concerning, where in the present Petition the references consist of a patent on an electric charging system, a reference directed at alerting a user *that is outside of the vehicle* when a vehicle has lower battery, a reference on locomotives or trains, a magazine article (“Letendre”), a reference on an HVAC system that is not for electric vehicles, and a reference Petitioner plucks because it says “pet.” See EX2002, ¶123. For Ground 2, Petitioner throws in a reference that has no relation to electric vehicles, but is instead directed at using a cellphone in conjunction with a driver information system for a vehicle that has no bearing on being electric powered or electric charge systems. EX1010, 1:39-50.

Judge Moore has repeated this theme of lack of credibility in *DataTreasury*. Oral Argument¹⁴, *In re DataTreasury Corp.*, No. 2016-1250 (Fed. Cir.), 3:01-3:26 (“When you’ve got to pick elements from five different references and combine

¹³ *Anova* oral argument recording available at http://www.cafc.uscourts.gov/oral-argumentrecordings?title=Anova+Hearing+Labs&field_case_number_value=&field_date_value2%5Bvalue%5D%5Bdate%5D=

¹⁴ *Data Treasury* Oral Argument found at http://www.cafc.uscourts.gov/oralargument-recordings?title=&field_case_number_value=2016-1250&field_date_value2%5Bvalue%5D%5Bdate%5D=.

them, is that starting to strain the credibility of the obviousness determination) (Moore, J.).

The Board has applied the same principle in IPR proceedings, explaining that “a motivation to combine A with B and A with C is not a motivation to combine A with B and C.” *Nichia Corp. v. Lighting Sci. Group Corp.*, IPR2019-01259, Paper 45, 42 (PTAB Jan. 8, 2021).

The Petition fails to explain why the POSITA would combine *all* the proposed references in each of the three Grounds to arrive at the claimed invention, not just the selected subsets of the references needed to follow the roadmap of the claims. However, Petitioner has focused solely on specific combinations and combines motivation to combine in relation only to the combination asserted against a particular element. For example, with respect to modifying Ferro with Oyobe, Petitioner states the motivation is to allow the user to conduct charging without exiting the vehicle. Pet., 12. However, with respect for modifying Ferro with Zeigler, Petitioner (1) ignores Oyobe and other modifications and then (2) states that the motivation would be to display a confirmation of the selected mode so that the user can leave the vehicle with “peace of mind.” Pet., 50; EX2002, ¶124. Petitioner’s expert admits he really only looked at Ferro for each combination as opposed to looking at the combination as a whole. EX2003, 77:15-78:4. Mr. Andrews even

stated there isn't a motivation because the claims in his opinion are "a hot mess." *Id.*, 78:12-13; *see also* EX2002, ¶124.

Petitioner makes a similar contradictory motivation to combine in Ground 2, alleging the to include Knockart for the purpose of allowing "the user to view the charging information when they are away from the vehicle." Pet., 73. Petitioner fails to explain why a POSITA would want to combine Zeigler or Knockart that purportedly allows a user to leave the vehicle with the previously alleged combination of Ferro-Oyobe, which was made under the *directly opposite* premise of the user staying in the vehicle. The Petition instead is silent about these specific combinations and Petitioner fails to explain why a POSITA would be motivated to combine *all* six references for Ground 1, seven references for Ground 2 and four references for Ground 3. EX2002, ¶125.

B. Petitioner Has Not Shown a Reasonable Expectation of Success in Reconfiguring Ferro in view of Oyobe, Donnelly, Letendre, Zeigler, and Galvez-Ramos

As the Federal Circuit and the Board have repeatedly confirmed, to assert obviousness by combining prior art references, a petitioner must prove that (1) a motivation to combine the references exists; and (2) a POSITA would have had a REOS in combining the references. *See, e.g., Samsung Elecs. Co., Ltd. v. Elm 3DS Innovations, LLC*, 925 F.3d 1373, 1380–81 (Fed. Cir. 2019) (upholding Board's

finding of nonobviousness when Petitioner failed to present reasonable expectation of success). The requirement for proving reasonable expectation of success refers to achieving what is claimed in the patent-at-issue. *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016).

Designing an electric charging system that performs all the functions of the challenged claims is extremely challenging. Finding the right balance between a charging system and HVAC system that can integrate multiple sensors and thresholds requires careful experimentation and engineering. Here, Petitioner's explanations are just conclusory statements. For example, for adding a touchscreen GUI via Donnelly and Letendre to the modified Ferro-Oyobe combination, Petitioner merely states there would be a REOS given the ubiquity of touchscreens in vehicles. Pet., 33. Such conclusory statements are legally insufficient, and similar testimony should be given no weight. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). See also EX2002, 126.

Moreover, Petitioner fails to actually present a reasonable expectation of success for each of the combinations as a whole, but instead takes specific additions in a vacuum. For example, Petitioner looks at the REOS for combining Ferro with one other reference, as opposed to taking into consideration the multitude of modifications and reconfigurations proposed. Petitioner's failure to provide a REOS analysis for all combined references fails. See EX2002, ¶126-127.

XIV. CONCLUSION

For the reasons stated above, Patent Owner respectfully asks the Board to uphold patentability of all Challenged Claims.

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Respectfully submitted,

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CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(b)(1)

I, the undersigned, do hereby certify that the foregoing Patent Owner Response, including footnotes, contains no more than 14,000 words, as measured by the Word Count function of Microsoft Word as specified by 37 C.F.R. § 42.24(b)(1).

/s/ Bradley D. Liddle

Bradley D. Liddle

CERTIFICATE OF SERVICE

I hereby certify that on August 25, 2025, a true and correct copy of the foregoing PATENT OWNER'S RESPONSE was served by electronic mail upon the following counsel of record for Petitioners:

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