

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner

v.

CHARGELOGIC LLC,
Patent Owner

Inter Partes Review Case No. IPR2026-00378
U.S. Patent No. 11,258,107

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 11,258,107**

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I. INTRODUCTION

Petitioner Tesla, Inc. (“Petitioner”) requests *inter partes* review (“IPR”) of Claims 1-14 (collectively, the “Challenged Claims”) of U.S. Patent No. 11,258,107 (“the ’107 Patent”).

II. THE ’107 PATENT

A. Summary

The ’107 Patent is directed to a vehicle battery charging system in which a controller enables user-defined charging schedules and communicates with remote controllers to control charging based on factors such as time of day, electricity cost, or other factors. EX1001, Abstract, 1:64-2:8.

B. Priority

The ’107 Patent claims priority to U.S. Provisional Application 61/189,353, filed August 18, 2008. For purposes of this Petition only, Petitioner applies August 18, 2008, as the priority date for the Challenged Claims.

C. Level of Skill

A POSITA at the time of the ’107 Patent 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 battery charging systems. EX1003-Dec, ¶29. 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. *Id.*

III. REQUIREMENTS UNDER 37 C.F.R. § 42.104

A. Grounds for Standing Under 37 C.F.R. § 42.104(a)

Petitioner certifies the '107 Patent is eligible for IPR.

B. Identification of Challenge Under 37 C.F.R. § 42.104(b)

Petitioner requests the Challenged Claims be found unpatentable on the following grounds.

Proposed Grounds of Unpatentability of the '107 Patent	Exhibits
Ground 1: Claims 1-5 are obvious under §103 over Sutardja, Hobbs, Kelty-078, and Anttila.	1004-1007
Ground 2: Claims 6-9 are obvious under §103 over Sutardja, Hobbs, and Kelty-078.	1004-1006
Ground 3: Claims 1 is obvious under §103 over Sutardja, Hobbs, Hunt, and Kelty-433.	1004, 1006, 1008-1009
Ground 4: Claim 4 is obvious under §103 over Sutardja, Hobbs, Hunt, Kelty-433, and Kelty-078.	1004-1006, 1008-1009
Ground 5: Claims 10-12 and 14 are obvious under §103 over Hobbs, Sutardja, and Kelty-078.	1004-1006
Ground 6: Claim 13 is obvious under §103 over Hobbs, Sutardja, Kelty-078, and Kuromame.	1004-1006, 1010

C. Claim Construction Under 37 C.F.R. § 42.104(b)(3)

In this proceeding, claims are interpreted under the same standard applied by Article III courts (i.e., the *Phillips* standard). 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*). For all terms not included below, Petitioner applies the ordinary and customary meaning of the claim terms.

1. “threshold level of charge”

Petitioner proposes the phrase “threshold level of charge” be construed as “a level of charge that is less than the charge level at which charging stops.” *See* Claims

1, 6, 10. *See e.g.*, EX1001, 2:45-50, 20:14-63 (“the controller 44 can continue to charge the vehicle battery 20, and can do so without interruption following battery charging to the minimum threshold level of battery charge”). Otherwise, Petitioner applies the plain and ordinary meaning of all claim terms.

IV. THE PRIOR ART IS ANALOGOUS TO THE '107 PATENT

The prior art is analogous to the claimed invention of the '107 Patent.

The prior art is from the same field of endeavor as the '107 Patent, namely, electric vehicle battery charging systems. EX1001, Title, Abstract, 1:64-2:8; EX1004-Sutardja, [0002], [0231]-[0233]; EX1005-Kelty-078, Abstract, 1:63-2:14, 2:39-3:4, Fig. 3; EX1006-Hobbs, Abstract, [0109]; EX1010-Kuromame, Abstract, [0003]-[0007]; EX1003-Dec, ¶¶33-35, 69, 73, 77, 90.

The prior art is also reasonably pertinent to at least one problem facing the '107 Patent's inventors, namely:

(A) controlling and managing electric vehicle charging; EX1001, 1:54-60, 16:9-19; EX1004-Sutardja, [0116], [0122], [0253]; EX1005-Kelty-078, Abstract, 7:44-14:3; EX1006-Hobbs, [0037], [0084], [0109]; EX1010-Kuromame, Abstract, [0006]-[0008];

(B) implementing user interfaces and notifications; EX1001, 8:54-63, 22:27-59, 28:11-23; EX1004-Sutardja, [0116], [0122], [0253]; EX1005-Kelty-078,

Abstract, 3:47-5:57; EX1006-Hobbs, [0037], [0084], [0109]; EX1007-Anttila, [0012], [0021]. Fig. 4; EX1008-Hunt, Abstract, [0066], [0068], [0072], [0075];

(C) battery power management; EX1001, 16:9-19, 22:5-12, Fig. 27; EX1004-Sutardja, [0116], [0122], [0253]; EX1005-Kelty-078, 6:32-7:43; EX1006-Hobbs, [0049]-[0050], [0086], [0103], [0109], Fig. 4; EX1009-Kelty-433, Abstract, [0017]-[0019], Fig. 1; EX1008-Hunt, Abstract, [0072]; EX1010-Kuromame, Abstract, [0038], [0040], Fig. 2; EX1003-Dec, ¶¶36-39, 70, 74, 78, 81, 84, 87, 91.

V. GROUND 1: CLAIMS 1-5 ARE OBVIOUS UNDER §103(A) OVER SUTARDJA, HOBBS, KELTY-078, AND ANTILA.

A. Claim 1

1. Claim 1[Pre]

To the extent the preamble is limiting, Sutardja teaches *a system for charging a battery of a vehicle*¹ (CMS 100), the system comprising a **battery charger (CMM 104-1²)**. See Claim 1[a].

¹ Claim language provided in italics. All drawing annotations and emphases added unless otherwise noted. Citations to a claim limitation (e.g., Claim 1[a]) and/or section number are to the limitations mapping such claim limitation in this Petition and are incorporated by reference, including the motivations to combine (MTC) and showing of reasonable expectation of success (REOS) provided in the cross-referenced section. All REOS include the benefits described for the respective MTC.

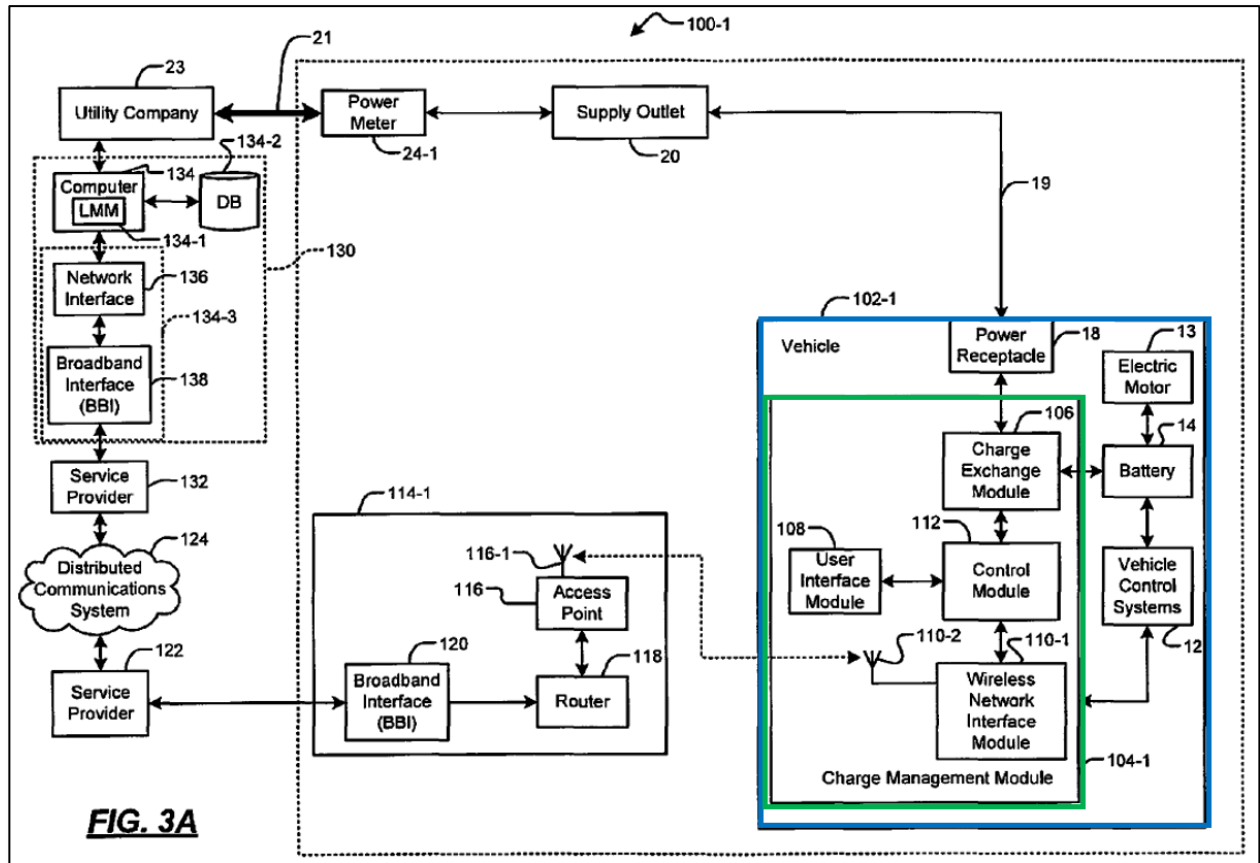
² Sutardja initially describes components and functionalities of the CMS with reference to Fig. 3A which includes CMM 104-1. Sutardja then explains that, aside

Sutardja's CMM 104-1 is a *battery charger* because it “communicate[s] with the battery 14 and the power receptacle 18 and may **manage the amount of charge** in the battery 14.” EX1004-Sutardja, [0239]. CMM 104-1 “**charges the battery 14 using the power supplied by the utility company 23 to the supply outlet 20.**” *Id.*

CMM 104-1 is in a vehicle and is part of “a charge management system (CMS)” *system for charging a battery of a vehicle*, “to coordinate charging of batteries in vehicles at multiple locations.” EX1004-Sutardja, [0231].

Sutardja's CMS 100-1 includes a **vehicle 102-1** having CMM 104-1:

from the location of the user interface module 108, Fig. 3B is “substantially similar.” *Id.*, [0247]. EX1003-Dec, ¶138. Sutardja describes features of Sutardja's system by “collectively refer[ing] to” all CMMS as “CMM 104.” EX1004-Sutardja, [0261], [0267], [0275]-[0278], [0282]-[0283]. Therefore, Sutardja teaches and a POSITA would have understood that Sutardja's description of CMM 104-1 applies to CMM 104-2, and vice versa. EX1003-Dec, ¶138.



EX1004-Sutardja, Fig. 3A.

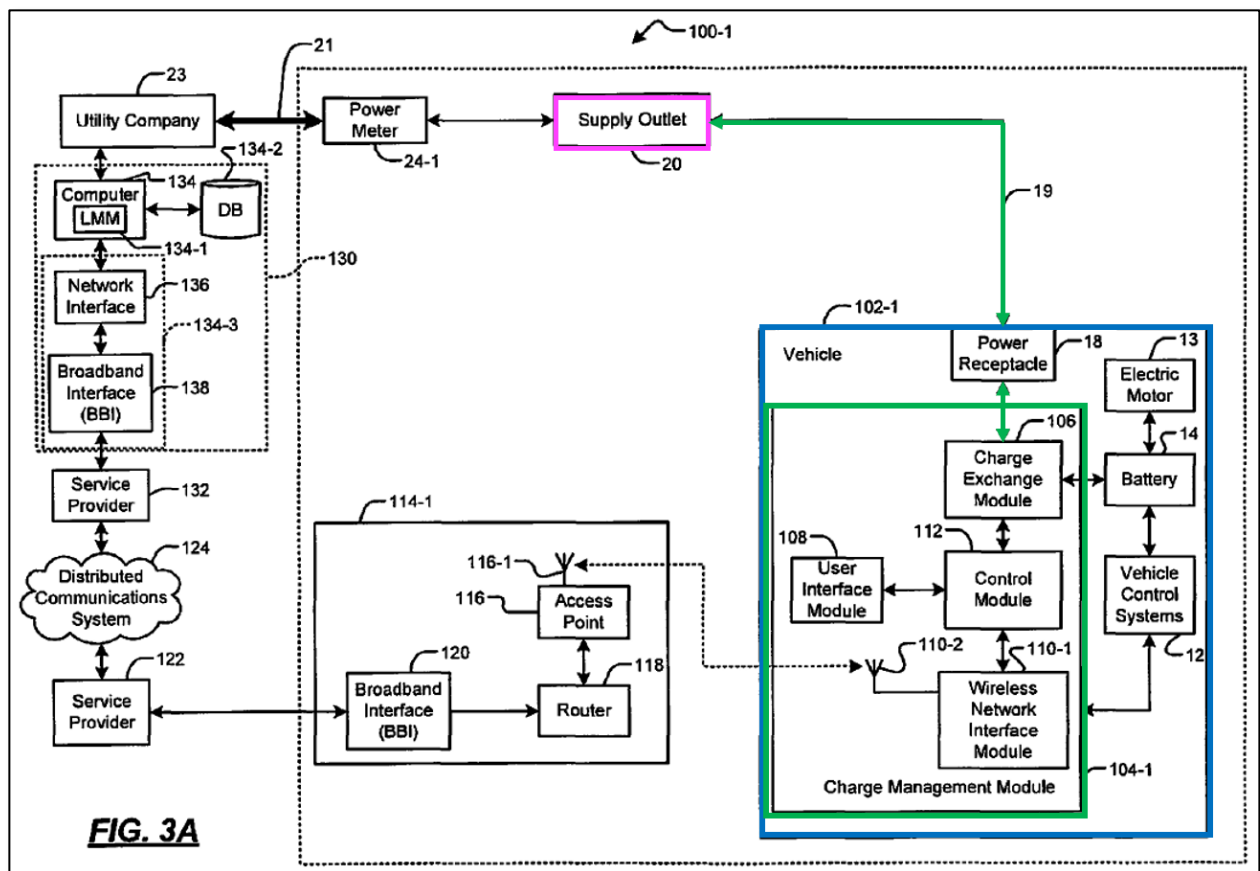
2. Claim 1[a]

Sutardja's *battery charger* (CMM 104-1 with connector/cable 19) “charges the battery 14 using the power supplied by the utility company 23 to the supply outlet 20.” EX1004-Sutardja, [0241], [0239]. *See* Claim 1[Pre].

3. Claim 1[b]

Sutardja teaches a *battery charger* (i.e., CMM 104-1 with connector/cable 19) comprising an *electrical power cord* (cable/connector 19³) releasably attachable to at least one of the *vehicle* (vehicle 102) and a *source of power* (supply outlet 20).

CMS 100-1 includes an *electrical power cord* (connector/cable 19) connecting electric vehicle 102-1 with supply outlet 20:



³ Hereinafter, “battery charger (CMM 104-1)” may be used for simplicity where the connector/cable 19 is not relevant to the mapping.

EX1004-Sutardja, Fig. 3A, [0239]-[0240]. Sutardja teaches “**cable and connector 19** may connect the **supply outlet 20** to the power receptacle 18 of the vehicle 102-1,” and a POSITA would have understood Sutardja’s cable/connector 19 is *an electrical power cord* connecting vehicle 102 and supply outlet 20. EX1004-Sutardja, [0240]; EX1003-Dec, ¶98. Sutardja’s vehicle draws “power from the supply outlet 20 to charge the battery 14[.]” EX1004-Sutardja, [0240].

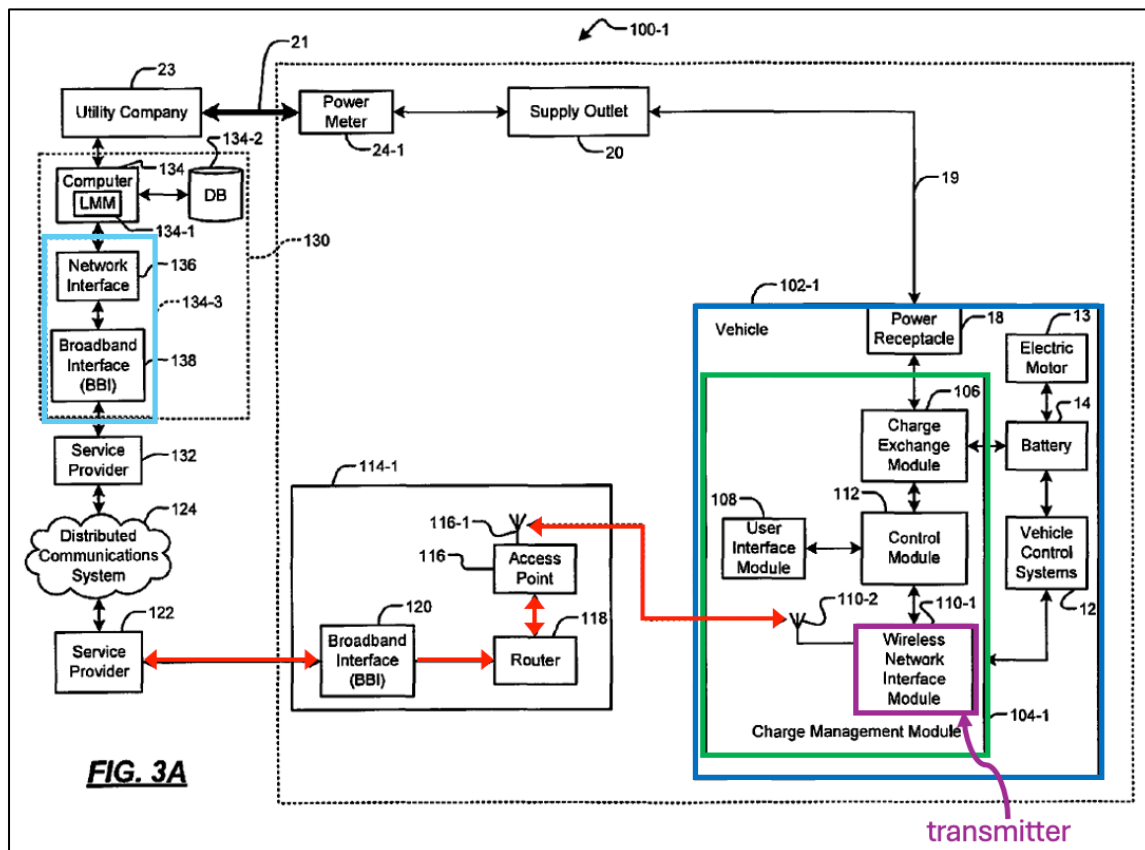
Sutardja’s **cable/connector 19 (electrical power cord)** is *releasably attachable* to **supply outlet 20**. EX1004-Sutardja, [0262] (“**user plugs** the vehicle 102 into the supply outlet 20...”), [0006] (“vehicle 10 may include a **power receptacle (a plug) 18** to receive power from the supply outlet 20 via a cable and connector 19.”). Such “plug-in” connections are detachable and re-attachable, and therefore *releasably attachable*. EX1003-Dec, ¶99. *See also* EX1004-Sutardja, Figs. 9A-9B (“Plug vehicle into supply outlet”).

4. ***Claim 1[c]***

Sutardja teaches *a battery charger (CMM 104-1) having a transmitter (WNIM 110-1 which includes a transmitter)*.

Sutardja teaches transmitting and receiving data via WNIM 110-1. EX1004-Sutardja, [0244] (“CMM 104-1 may **transmit the data received by the control module 112** to the utility company 23 via the **wireless network interface module 110-1**.”); [0037] (“network interface means comprises...**wireless...means for**

transmitting and receiving data.”). CMM 104-1 communicates with wireless LAN 114-1 “via the wireless network interface module 110-1, which...include[s] an antenna 110-2.” *Id.*, [0245]. Sutardja’s wireless network interface means is configured to transmit data and includes transmission circuitry, i.e., *a transmitter*. Sutardja’s wireless data transmission path is annotated in red below.



EX1004-Sutardja, Fig.3A. A POSITA would have understood Sutardja's antenna 110-2 is a physical transducer that converts electrical signals into radio waves for transmission and converts received radio waves into electrical signals for reception,

and that a transmitter is an electronic circuit connected to the antenna. EX1003-Dec, ¶102.

5. Claim 1[d]

Sutardja teaches *a battery charger (CMM 104-1) having a controller comprising one or more processors, namely the collective controller control module 112 and charge exchange module 106 (“modules 112/106”), electrically coupled to the electrical power cord (cable/connector 19) and to the transmitter.*

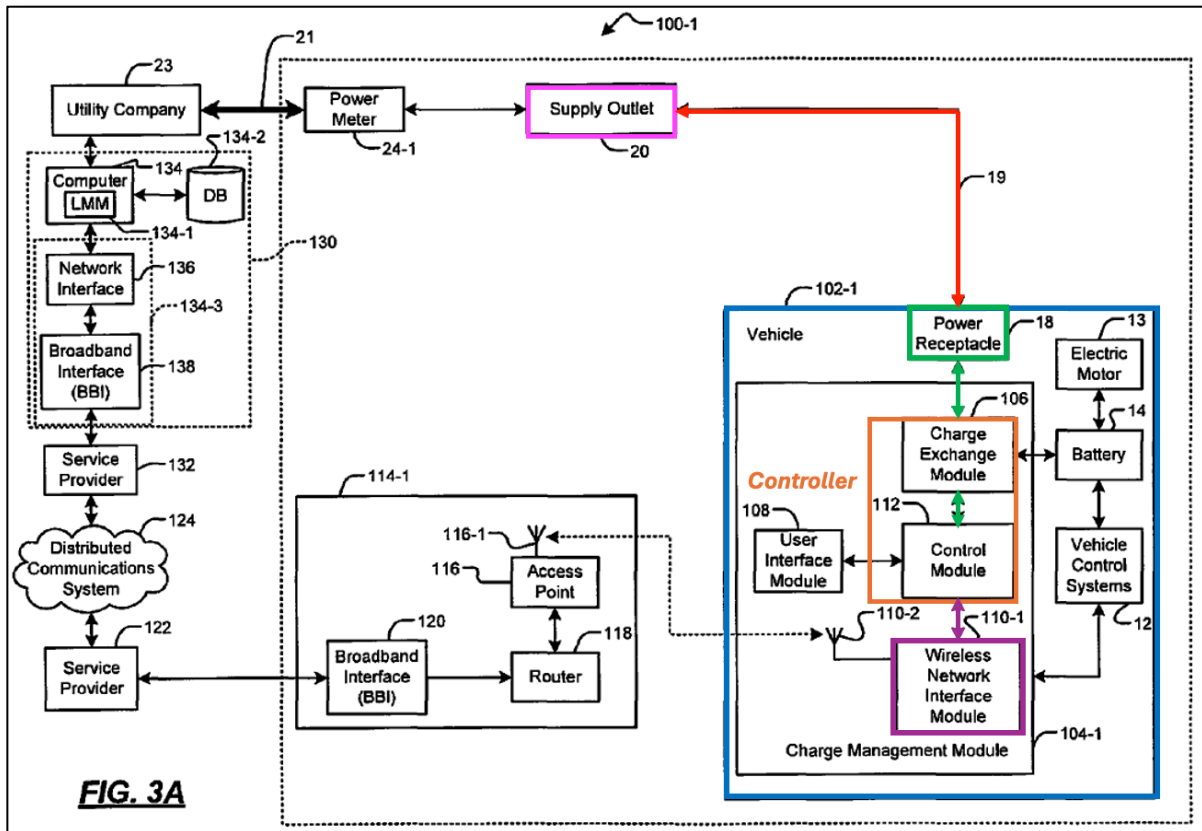
a) Sutardja’s Teachings of a controller

Per Sutardja, “**module...refers to...a processor (shared, dedicated, or group) and memory that execute one or more software...and/or other suitable components** that provide the described functionality.” EX1004-Sutardja, [0228]. Sutardja’s **controller (modules 112/106)** (1) is housed within **battery charger (CMM 104-1)**, and (2) controls charging of the vehicle battery and operation of CMM 104-1. EX1004-Sutardja, [0267], [0242]-[0244], Fig. 3A. Sutardja teaches a controller (modules 112/106). EX1003-Dec, ¶104.

b) Sutardja’s *controller* is electrically coupled to the electrical power cord and to the transmitter.

The ’107 Patent explains the terms “mounted,” “connected,” “supported,” “coupled,” and variations thereof, are used broadly and encompass both direct and indirect connections. EX1001, 6:29-35; EX1003-Dec, ¶105.

Fig. 3A depicts Sutardja's **controller (modules 112/106)** electrically coupled to **cable/connector 19** and WNIM 110-1 (which includes a transmitter, *see* Claim 1[c]) via **intervening charging circuitry**:



EX1004-Sutardja, Fig. 3A. Sutardja's **electrical power cord (cable/connector 19)** “connect[s] the **supply outlet 20** to the **power receptacle 18** of the vehicle 102-1,” to draw power from supply outlet 20 to charge the battery 14. *Id.*, [0240]. The **charge exchange module 106** charges the battery 114 using the power supplied via the supply outlet 20. *Id.*, [0242]. **Module 106** “communicate[s] data regarding the amount of charge in the battery 14 to the **control module 112**, and may exchange charge between the battery 14 and the **power receptacle 18**.” *Id.*

6. *Claim 1[e]/[i]*

Sutardja teaches *a controller (modules 112/106) configured to receive, via a user-manipulatable control (UIM 108), data indicative of a predetermined threshold level of charge* (charge level).

As explained above, a “*threshold level of charge*” means “a level of charge that is less than the charge level at which charging stops.” *See* Section III.C.

The '107 Patent describes “user-manipulatable controls” broadly as controls a user may physically operate to interact with the charging system, including buttons, switches, and similar input mechanisms. EX1001, 8:33-46. Sutardja’s UIM 108 “comprise[s] a keypad, a display” and is configured to allow a user to input charging parameters and interact with the utility company 23, Sutardja teaches *control module 112* is configured to receive charging parameters via *a user-manipulatable control*. EX1003-Dec, ¶109; EX1004-Sutardja, [0243], [0265].

Sutardja’s *control module 112* “receive[s] data input by the user for charging the battery 14...**from the user interface module 108.**” EX1004-Sutardja, [0244]. Sutardja’s UIM 108 allows a user “to set charging parameters for charging the battery 14[.]” EX1004-Sutardja, [0243]. Charging parameters include “**charge levels** of the batteries.” EX1004-Sutardja, [0180], [0191], [0235]-[0236], [0270]; EX1003-Dec, ¶110.

Control module 112 “receive[s] data relating to the amount of charge present in the battery 14 (i.e., **a charge level of the battery 14**) from the charge exchange module 106.” EX1004-Sutardja, [0244]. More specifically, **charge monitoring module 150 in charge exchange module 106** “inform[s] the **control module 112** when the amount of **charge in the battery 14 is less than or equal to a predetermined threshold** and that the battery may need to be recharged.” *Id.*, [0268]. This charge level threshold is a *predetermined* threshold level of charge because, as part of the charging parameters, it is supplied by the user before charging begins. *See, e.g., Id.*, FIG 8A (showing step 204, “receive charging parameters from ...user of a vehicle” before step 222 “supply charge to vehicle”); EX1003-Dec, ¶¶111-112.

7. *Claim 1[e]/ii*

The '107 Patent provides “percentage of full charge” and “kWh” as examples of threshold levels. EX1001, 12:47-51, 12:54-60, 23:50-54, 13:19-22, 13:46-56.

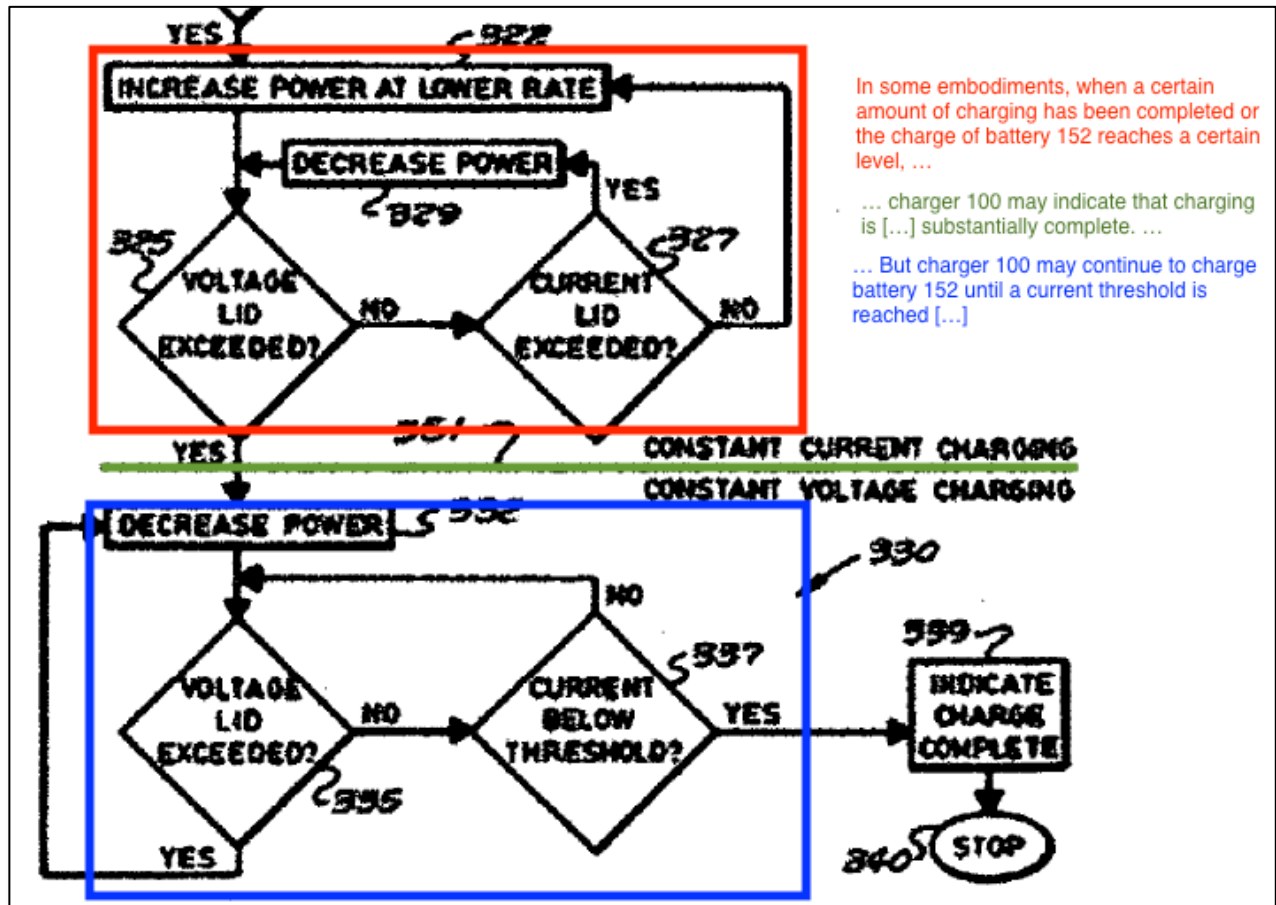
Sutardja teaches the user can input the desired charge amount (predetermined levels of charge) in terms of charge percentages via a user-manipulatable control (Sutardja’s keypad in UIM 108). EX1004-Sutardja, [0126], [0243], [0270]. Sutardja teaches the user inputting charging parameters include “charge levels of the batteries” and determining a battery is charged to “predetermined level... that may be indicated in the charging parameters.” EX1004-Sutardja, [0126], [0243], [0270]. Sutardja provides an example of a charge level as a percentage of charge level.

EX1004-Sutardja, [0231] (“Batteries in these vehicles may have charge remaining (for example, 50%, 60% or higher charge remaining”), [0237]. Thus, Hobbs-Sutardja teaches *data indicative of a predetermined threshold level of charge*.

a) Hobbs’s Teachings

Complimenting Sutardja’s desired charge amount thresholds, Hobbs teaches a second charge threshold, less than a full charge, at which the controller sends an alert. In this mapping, Hobbs’s additional threshold is referred to as the “notification threshold.” Hobbs teaches **“fast or opportunity charging may take place for a particular amount of time or energy, for example, entered by the user into key pad 104 ... when a certain amount of charging has been completed or the charge of battery 152 reaches a certain level, charger 100 may indicate that charging is ... substantially complete.”** EX1006-Hobbs, [0111], [0109]. Even after this indication point (alert) is reached, charger 100 “continue[s] to charge battery 152 until a **current threshold** is reached...” EX1006-Hobbs, [0111]. Hobbs’s current threshold is “stored in look-up table 272 for...battery 152.” EX1006-Hobbs, [0107]. Hobbs performs fast charging until the battery level reaches the notification threshold using a first charging rate which corresponds to a particular amount of energy, sends an indication (alert) when this particular amount of energy is met, and then slows down the charging rate to the second current threshold and charging **continues** at this

second, slower rate. EX1006-Hobbs, [0107]-[0111]. Thus, Hobbs's notification threshold is less than a full charge of the battery.



EX1006-Hobbs, Fig. 3 (excerpt), [0111].

Hobbs's indication of reaching the notification threshold in [0111] is done "in real time" via "indicator lights 108, screen 107, or both." EX1006-Hobbs, [0109], [0112], [0113] ("[w]hile charging is taking place (e.g., steps 313 through 339), controller...may provide a signal to...network 275 indicating the amount of energy used ...").

b) MTC

A POSITA would have been motivated to modify Sutardja's **controller (module 112/106)** to implement Hobbs's threshold-based charging alert functionality, including sending an alert to the user when the battery reaches the predetermined threshold level of charge before the battery is fully charged. EX1003-Dec, ¶117. Sutardja's controller 150, part of module 112/106, is configured to "monitor the amount of charge in the battery 14 when the battery 14 is being charged and may inform the control module 112 when the charging is completed." *Id.*; EX1004-Sutardja, [0268]. [0242], Figs. 3A-5B, 7.

Such a modification would improve user convenience by notifying users the vehicle is ready for use once a desired predetermined threshold level of charge had been reached (e.g., if the charge level was high enough to make a planned trip) while still permitting continued charging to a higher charging endpoint (e.g., to provide additional driving range) if additional charging time was available. EX1003-Dec, ¶118; EX1006-Hobbs, [0111]; *see also* EX1005-Kelty-078, 4:53-5:57 (a user checking to see if a vehicle has enough charge to drive the distance the user must travel).

Modifying Sutardja according to Hobbs's teachings would have involved use of a known technique (Hobbs's threshold-notification technique) to improve similar devices (EV charging-management systems, Hobbs's system having a current

threshold, and Sutardja's system having a user set charge level) in the same way by allowing users to receive a notification once the battery reached the specified predetermined level of charge. EX1003-Dec, ¶119. Sutardja teaches **charge monitoring module 150** informs control module 112 of the charge level in a battery, and incorporating Hobbs's threshold-based charging alert functionality into Sutardja would have involved only routine implementation of known charging-monitoring and notification functionality using existing system components performing their established functions, and a POSITA would have had a REOS in incorporating Hobbs's threshold-notification functionality into Sutardja's charging-management system and the inclusion of a second threshold, a charge level lower than a full charge level. EX1004-Sutardja, [0239], [0243]-[0247], [0262]-[0270], [0286]; EX1003-Dec, ¶120.

8. Claim 1[e][iii]

Sutardja's **controller (modules 112/106)** is configured to *compare, during charging of the battery with the **battery charger (CMM 104-1)**, a level of charge of the battery to the predetermined threshold level of charge*, per Hobbs. See Claim 1[e][i]-[ii].

a) Sutardja's Teachings

Sutardja's **charge exchange module 106 (part of controller)** in **CMM 104-1** includes a charge monitoring module 150. EX1004-Sutardja, [0242], [0268], Figs.

3A-5B, 7. Sutardja's "charge monitoring module 150 may monitor the amount of charge in the battery 14 when the battery 14 is being charged and may inform the control module 112 when the charging is completed." EX1004-Sutardja, [0268].

b) Hobbs's Teachings

As discussed in Claim 1[e][ii], Hobbs teaches charging until a certain level is reached and providing an indication to the user, while continuing to charge beyond that certain level. EX1003-Dec, ¶123.

Hobbs's battery charger's **controller 270** "control[s] the power level of alternating current 241." EX1006-Hobbs, [0049]-[0050]. **Controller 270** "may repeatedly check the charging voltage (step 325) and current (step 327) and either increase (step 322) or decrease (step 329) the power level to keep the charging current (e.g., direct current 293) substantially at the current lid." EX1006-Hobbs, [0103], [0086]. Hobbs teaches controller 270 of charger 100 "monitor[s] whether the charging current has dipped below a current threshold (step 337)." EX1006-Hobbs, [0107]. Controller 270 compares "the charging voltage with the voltage lid (step 335)" and compares "the charging current with the current threshold (step 337)" until "the rate of charge (e.g., direct current 293) decreases until the charging current drops below the **threshold** (step 337)." EX1006-Hobbs, [0108].

c) MTC

Modifying Sutardja's controller (modules 112/106) to compare Sutardja's charge level to Hobbs's notification threshold (in addition to Sutardja's predetermined threshold level of charge) to enable alerting a user when the battery meets the predetermined threshold level of charge would have been obvious to a POSITA based on the express teachings of Hobbs. EX1003-Dec, ¶124; EX1006-Hobbs, [0111]. A POSITA would have appreciated once the user inputs Sutardja's desired charge amount (predetermined levels of charge), Hobbs would look up the associated current threshold in Hobbs's look-up table to Sutardja's charge amount. EX1003-Dec, ¶124; EX1006-Hobbs, [0107].

Comparing Sutardja's current charge level to Hobbs's notification threshold would have been the use of a known technique (comparing and alerting a user about battery charge levels) to improve similar devices (Sutardja's CMM 104-1) in the same way. EX1003-Dec, ¶125. This implementation would have applied Hobbs's known functionality of comparing a battery charge level to a notification threshold and providing a notification upon reaching the notification threshold to Sutardja's similar battery charging system, which receives user charging level parameters, monitors battery charge level, and controls charging based on those parameters. EX1004-Sutardja, [0243]-[0244], [0267]-[0270]; EX1006-Hobbs, [0111]; EX1003-Dec, ¶125.

A POSITA would have had a REOS modifying Sutardja based on Hobbs's teachings because the modification would have required only routine reprogramming of Sutardja's software and hardware already present. EX1003-Dec, ¶126. In the combination, Sutardja's charge monitoring module 150 in charge exchange module 106 would monitor the amount of charge in battery 14 during charging and provide charge-level information to control module 112 to use that information to determine whether the monitored charge level had reached Hobbs's notification threshold to then alert the user via Hobbs's indication. EX1004-Sutardja, [0268]-[0270]; EX1003-Dec, ¶126. The proposed modification would improve convenience and charging flexibility by alerting the user when the battery reached a useful charge level without requiring manual checks or waiting for charging to stop, while allowing charging to continue toward a later endpoint. EX1003-Dec, ¶126.

9. *Claim 1[e][iv]*

The '107 Patent gives an example of a "wireless signal" transmitted using "wireless communication." EX1001, 22:37-50, 10:18-25; EX1003-Dec, ¶127. Kelty-078 similarly sends signals (e.g., text) using wireless communication (e.g., Bluetooth). EX1005-Kelty-078, 4:53-58, 4:58-5:1, 4:24-31. Dependent claim 4, below, limits the "signal indicative of the predetermined threshold level of charge" to a "text or email automatically generated to the user."

Sutardja-Hobbs-Kelty-078 teaches Sutardja's **controller (modules 112/106)** *responsive to the level of charge of the battery reaching the predetermined threshold level of charge of the battery* (Sutardja's user-set charge level measured by Hobbs's current threshold), *send before, the charging of the battery is complete* (Hobbs's continuing to charge after Hobbs's indication), *at least one signal as the alert* (Hobbs's alert via Kelty-078's transmitting a text) *via Sutardja's transmitter* (Claim [1][c]), *the at least one signal indicative of the predetermined threshold level of charge of the battery*. See Claims 1[c]-[e][iii]. The claimed alert is sent to Kelty-078's portable controller, as discussed in Claim 1[f].

a) Kelty-078's Teachings

Hobbs teaches an alert (signal) *indicative of the level of charge being reached* displayed to the user, as discussed in Claim 1[e][iii]. Complementing this, Kelty-078 provides implementation details as to how *to send a signal (text) indicative of the level of charge being reached*.

Kelty-078 teaches the electric vehicle contacts "user 20 via the user interface device 24 by any known mobile device or desktop, laptop, etc." to control and monitor the battery charger, including providing notifications of charge level and/or problems. EX1005-Kelty-078, 4:53-58, 5:9-26.

Kelty-078 discloses that the user monitors the electric vehicle battery's state of charge to determine if "the battery 26 is charged to the level set by the user and

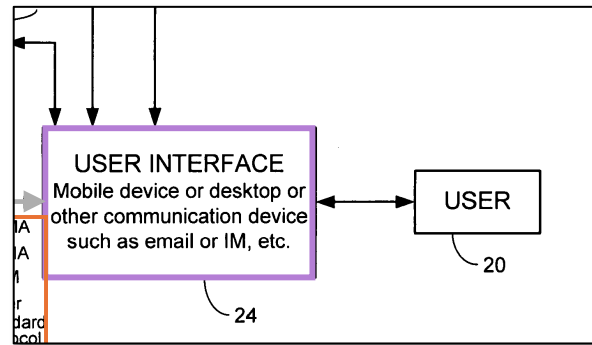
capable of a maximum mileage trip based on the battery installed therein.” EX1005-Kelty-078, 5:9-21. Kelty-078 also teaches notifying the user the battery has reached a certain charge level. EX1005-Kelty-078, 5:9-21. A POSITA would understand that Kelty’s “notification” alert signal to the user would include similar relevant information *indicative of the predetermined threshold level of charge (i.e., whether the battery is charged to the level set by the user and capable of traveling the desired mileage)*. EX1003-Dec, ¶130. Kelty’s alert signal is also *automatically generated* (required by claim 4) at least because Kelty separately discusses and distinguishes the user manually “querying” the state of charge from the electric vehicle from the electric vehicle “notifying” the user of a reaching a charge level. *Cf.* EX1005-Kelty-078, 5:11-13 *with id.*, 5:18-21.

Kelty-078’s user can communicate with vehicle 12 (including VMS 32) bidirectionally using “any known **text messaging** device...” and via “**text message** gateway 27.” EX1005-Kelty-078, 4:58-63, 8:15-17, Fig. 2. Kelty’s contacting the user via a “known communication protocol” over a “text message gateway” to a “text messaging device” would teach the claimed “text message.” EX1003-Dec, ¶131.

Kelty-078 teaches communications (such as Kelty-078’s user notifications discussed above) between VMS 32 and user device 24 occur through wireless communication protocols, including “CDMA,” “GSM,” “BlueTooth,” and “ZigBee”

using a communication chip like Sutardja's transmitter as discussed in Claim 1[c].

EX1005-Kelty-078, 4:19-39.



EX1005-Kelty-078, Fig. 1 (excerpt). EX1003-Dec, ¶132. A POSITA would have appreciated that, in the combination, Kelty-078's signal (text) is sent at Hobbs's indication point *before the charging of the battery is complete*, based on Hobbs's teachings of detecting and indicating that charging is substantially complete, and then continuing to charge. EX1006-Hobbs, [0111]; EX1003-Dec, ¶132.

b) MTC

A POSITA would have been motivated and found it obvious to implement Kelty-078's known text messaging alert functionality to transmit Hobbs's alert as a signal (per Kelty-078 teachings) so the driver of the vehicle advantageously would be notified when the charge was nearing completion so the user would return to their car. EX1003-Dec, ¶133. Such modification would eliminate the need for the user to remain with the vehicle during charging. *Id.* A POSITA would have been motivated and readily able to make all the necessary firmware/software modifications needed to be able to transmit messages to capture these benefits. *Id.*

Modifying Sutardja-Hobbs according to Kelty-078's teachings would have involved the use of a known technique (signals in the form of text message) to improve similar wireless communication and charging-notification devices (Sutardja's battery charger) in the same way (so the user can be alerted regarding charging status when away from their vehicle). EX1003-Dec, ¶134.

A POSITA would have had a REOS modifying Sutardja-Hobbs according to Kelty-078's teachings. Sutardja teaches presenting information to the user. EX1004-Sutardja, [0257]; EX1003-Dec, ¶135. Sutardja teaches bidirectionally communication wirelessly, and a POSITA would be motivated to look towards text protocols to communicate with a user via the communication protocols with which they were familiar. EX1004-Sutardja, [0037] ("network interface means comprises ...wireless...interface means for transmitting and receiving data."); EX1003-Dec, ¶135. A POSITA would have reasonably looked to conventional cellular messaging techniques, including SMS, as predictable options for utilizing Sutardja's existing wireless transceiver capable of bidirectional communication for remotely notifying the user of charging completion, rather than requiring the user to remain near the vehicle, repeatedly check the vehicle display, or maintain an active data application. EX1003-Dec, ¶135. Modifying Sutardja's wireless transceiver to incorporate these techniques would have been a routine software modification of Sutardja's system and well within the capabilities of a POSITA. *Id.*

10. Claim 1[f]

Kelty-078 teaches a *portable controller remote from the vehicle* (phone), and Sutardja teaches a *controller outside from the vehicle* (UIM-WNIM⁴). As combined, Sutardja-Kelty-078 teaches a *portable controller* (Kelty-078's phone⁵ implementing Sutardja's UIM-WNIM) *remote from the vehicle and battery charger, the portable controller configured to wirelessly communicate with the controller (modules 112/106) of the battery charger via Sutardja's transmitter*. EX1003-Dec, ¶136; Claim 1[c].

a) Sutardja's Teachings

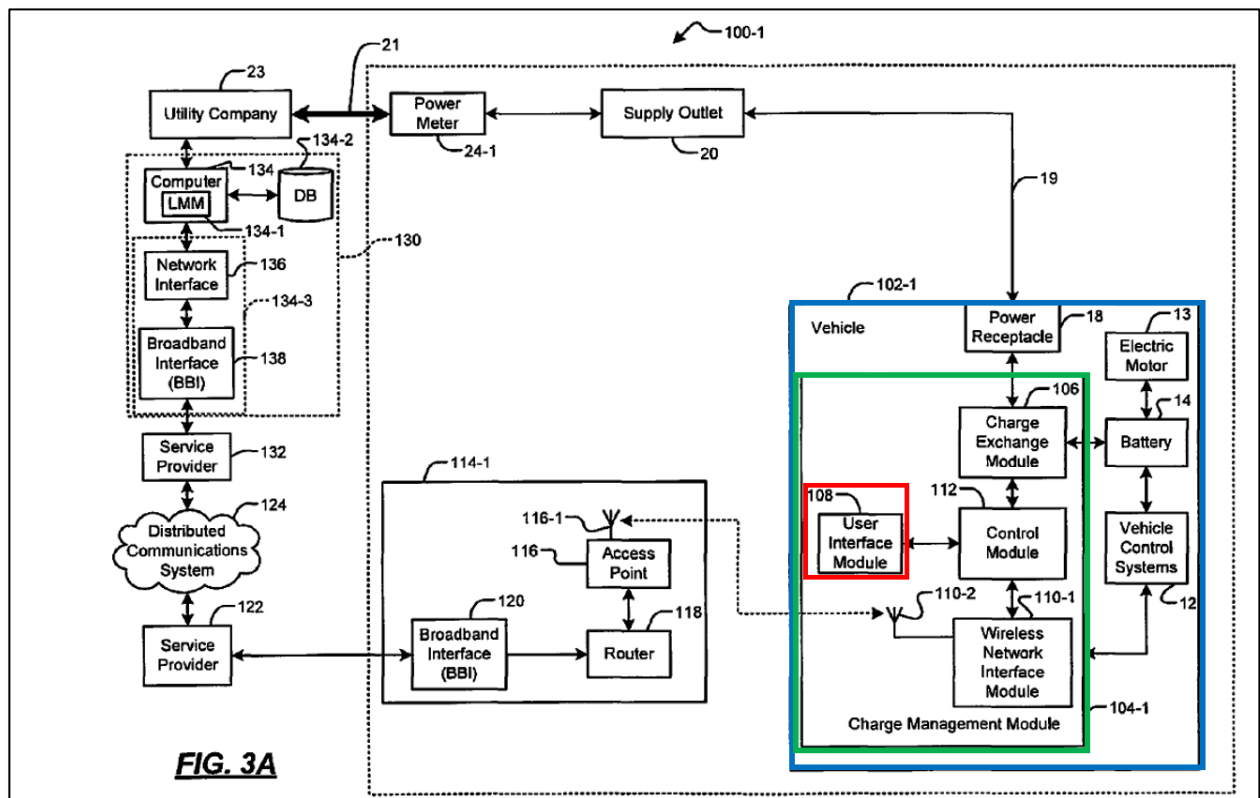
Sutardja teaches a *controller remote from the vehicle* (UIM-WNIM) *configured to wirelessly communicate with the controller (modules 112/106) of the battery charger via Sutardja's transmitter*.

⁴ Petitioner refers to Sutardja's user interface module (UIM) 108 and wireless network interface module (WNIM) 110-3 as "UIM-WNIM" throughout the rest of the petition.

⁵ Petitioner refers to "Kelty-078's phone implementing Sutardja's UIM-WNIM" as "Kelty-078's phone" throughout the rest of the petition.

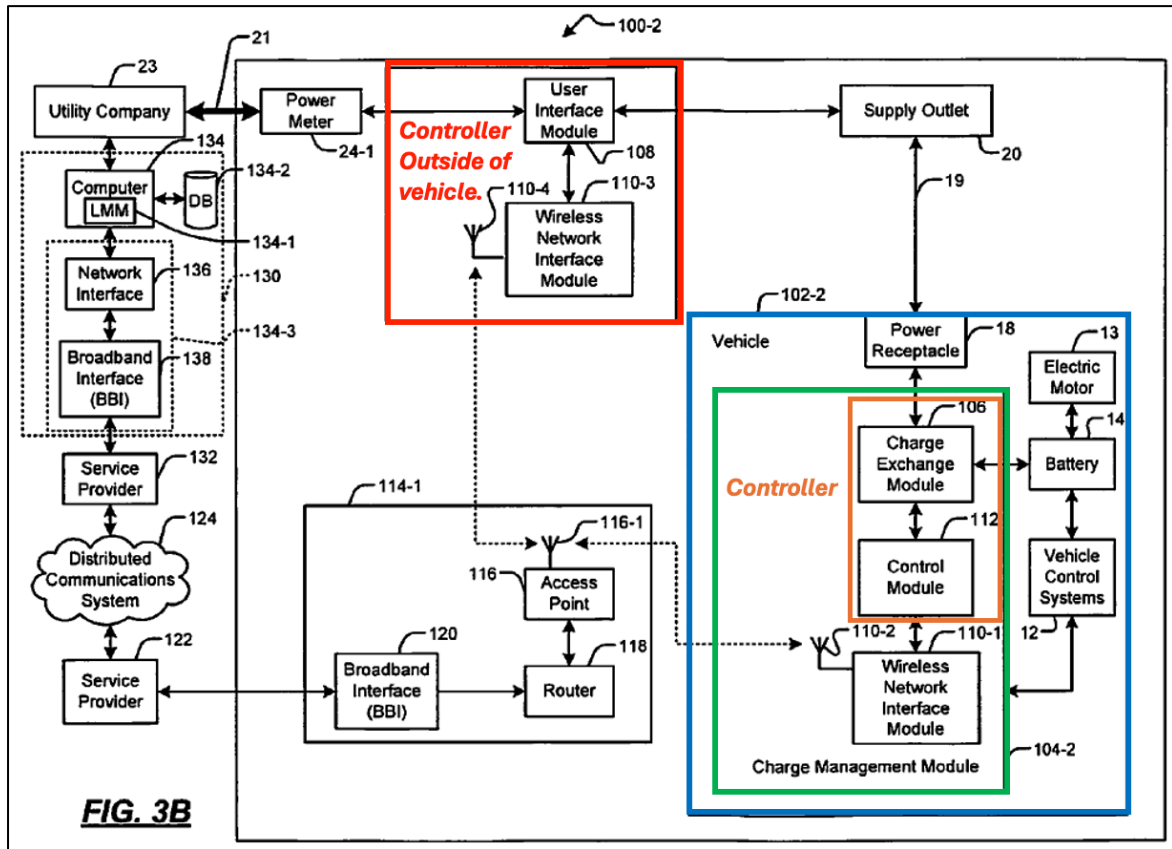
Sutardja's embodiments in Figs. 3A and 3B are "substantially similar," other than placement of UIM 108 and WNIM 110. EX1004-Sutardja, [0247]; EX1003-Dec, ¶138.

In the Fig. 3A embodiment, UIM 108 is integrated within CMM 104-1 (battery charger), enabling local interaction with the CMM system.



EX1004-Sutardja, Fig. 3A.

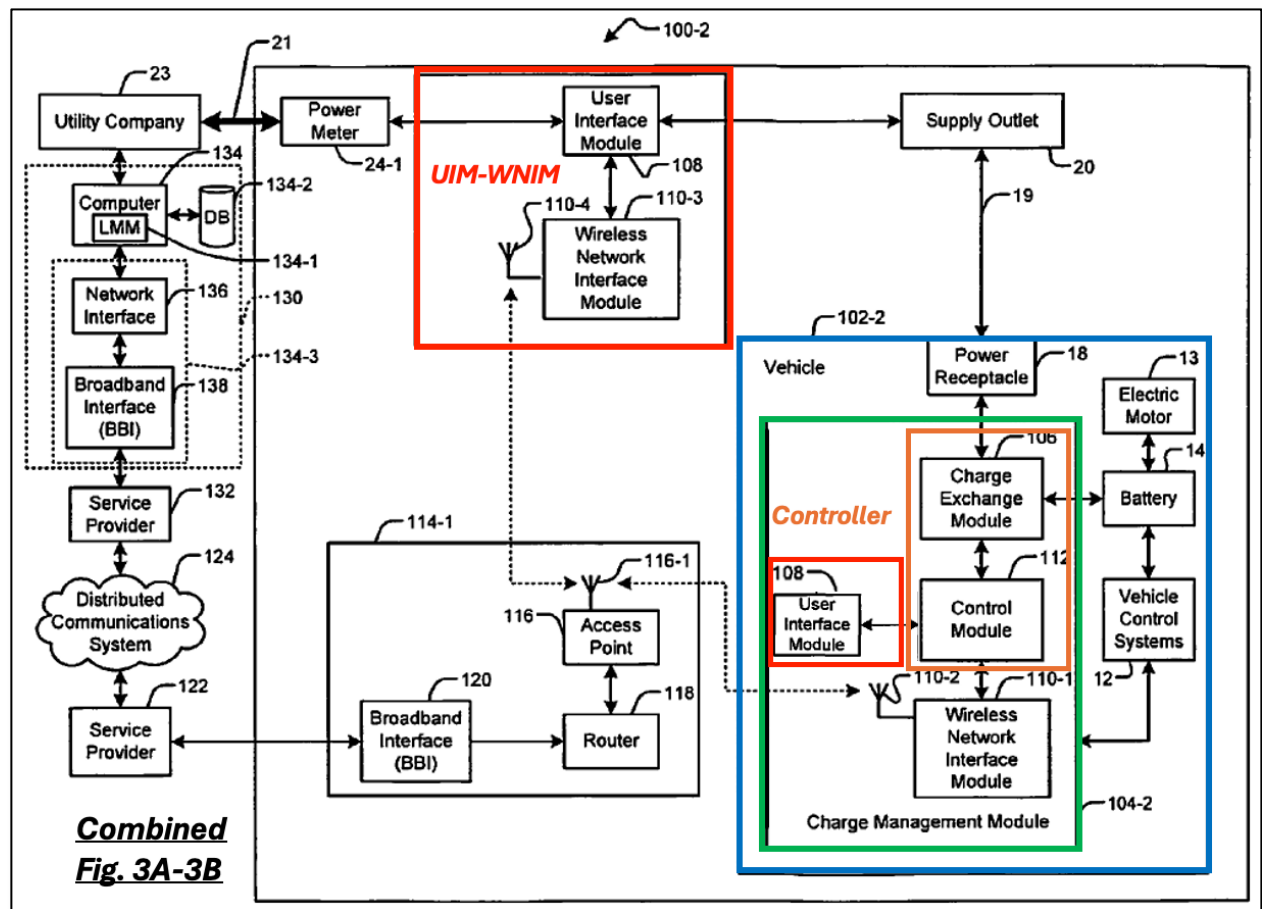
In the Fig. 3B embodiment, UIM 108 and WNIM 110-3 are located outside the vehicle and controller, vehicle charger, enabling wireless communication with CMM 104-1:



EX1004-Sutardja, Fig. 3B, [0247]. In Fig. 3B, Sutardja teaches the **UIM-WNIM** is (1) “arranged outside a vehicle” (EX1004-Sutardja, [0247]) and (2) allows a user to input charging parameters (*id.*, [0243]-[0244]). UIM 108 includes input elements such as a keypad, and output elements, including a display. EX1004-Sutardja, [0243]. WNIM 110-3 includes an antenna 110-4 to wirelessly communicate with a vehicle charger having an antenna 110-2 and utility company 23. EX1004-Sutardja, [0243], [0247]. Sutardja teaches the vehicle charger is *adapted for wireless communication with UIM-WNIM*. EX1004-Sutardja, [0243]-[0244], [0241].

For Claims 1[Pre]-1[e][iv], Petitioner relies on Figure 3A, in which **UIM 108** is integrated within **CMM 104-1**. Henceforth, Petitioner relies on the combined

teachings of Figures 3A and 3B, As explained in detail below, a POSITA would have been motivated to implement the local UIM 108 of Fig. 3A within the system of Fig. 3B, resulting in a system having both the local UIM 108 of Figure 3A and the external UIM-WNIM of Figure 3B. This combined embodiment is referred to as “Combined Fig. 3A-3B”:



EX1004-Sutardja, Combined Fig. 3A-3B; EX1003-Dec, ¶141.

b) Internal Motivation to Include the UIM of Sutardja Fig. 3B in the System of Fig. 3A

A POSITA would have been motivated and found it obvious to modify the charging system of Sutardja Figure 3B to include a UIM inside the vehicle, as expressly taught in Figure 3A. EX1003-Dec, ¶142. Sutardja explains other than the placement of the UIM and WNIM, the embodiments in Fig. 3A and 3B are “substantially similar.” EX1004-Sutardja, [0247]; EX1003-Dec, ¶142. Both embodiments perform the same underlying functions, including receiving user-defined charging parameters, communicating with external systems (e.g., utility providers and remote computing devices), and controlling charging of the vehicle battery based on those parameters. EX1004-Sutardja, [0247], [0250]-[0253], [0261]-[0267]; EX1003-Dec, ¶142.

A POSITA would have recognized the UIM 108 of Fig. 3A (providing a local display/input interface coupled to the charger) and the user interface outside of the vehicle configuration of Fig. 3B are complementary, and combining them would allow both local and remote interaction with the same charging system. EX1003-Dec, ¶143. Such a combination would have been consistent with well-known EV charging system design practices prior to the priority date of the '107 Patent. *Id.*

First, it was well known users may be charging a vehicle away from home and would wish to sit in their vehicle while it charges; in this scenario, the user would greatly benefit from a user interface inside the vehicle. EX1003-Dec, ¶144. Other

times, the user may be at home or in an office, and there they would want to be able to control charging parameters while away from the vehicle using an external device, such as a computer. *Id.*

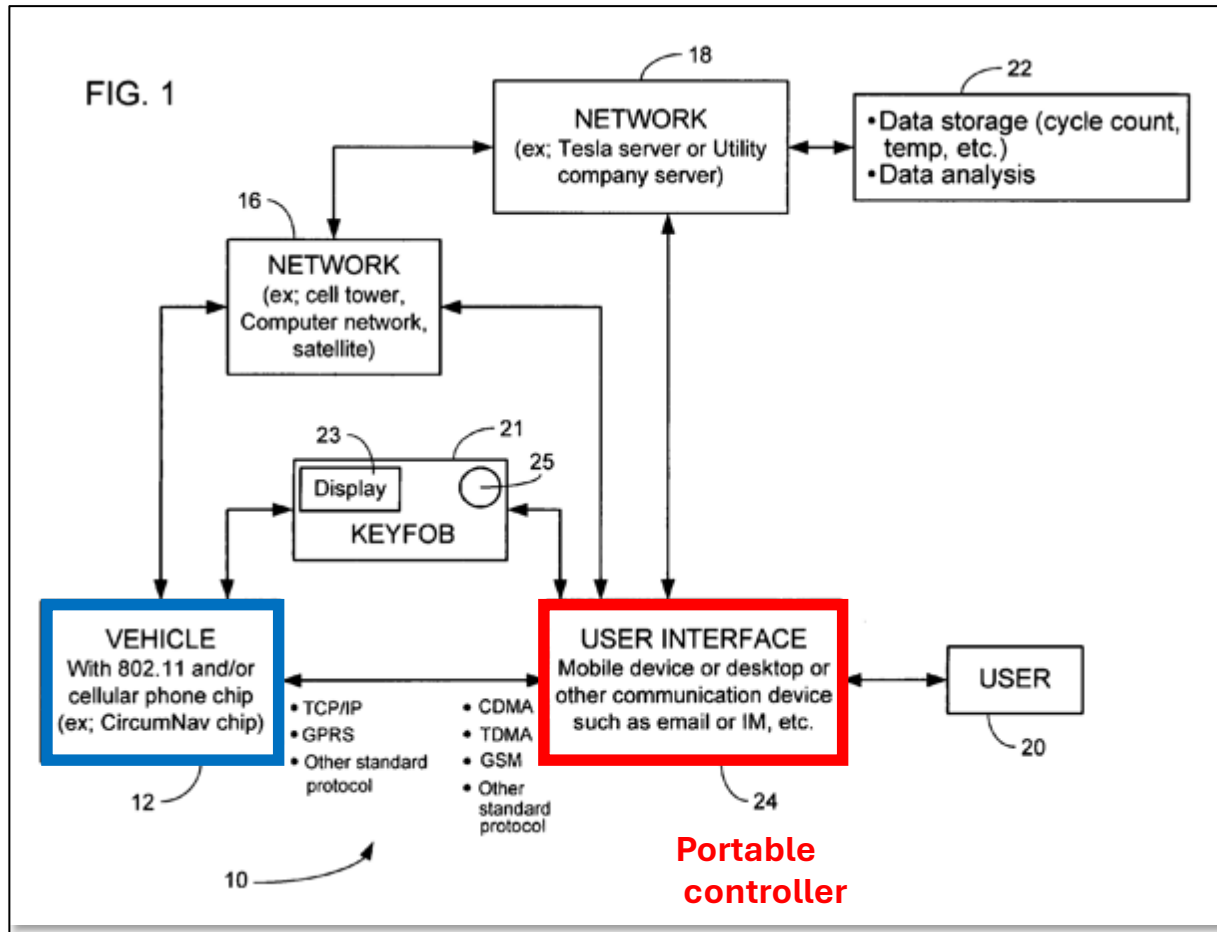
Second, it would improve system flexibility by enabling both local control by the user and remote coordination with utility systems, which were known to manage charging based on load and cost considerations. EX1003-Dec, ¶145. Third, it would facilitate more efficient implementation of user-defined charging preferences—such as scheduling and cost-based charging—which were known to depend on both user input and communication with external systems. *Id.*

A POSITA would have had a REOS in making this modification because it merely combines known components performing their known functions within the same system architecture. Sutardja's embodiments disclose the same core system and control logic, and combining their interface configurations would require only routine implementation without altering the underlying operation of the charging system. EX1003-Dec, ¶146. Such a modification would have involved only routine design choices, such as configuring the control module 112 to communicate with both local and remote interface components, each performing its known function. *Id.* Sutardja expressly discloses each separate embodiment, and the modifications would not conflict with each other. *Cf.* FIG 3A *with* 3B (showing compatible signal paths). *Id.*

c) Kelty-078's Teachings

Complementing Sutardja's teachings of a *controller remote from the vehicle (UIM-WNIM)*, Kelty-078 teaches a *portable controller*, namely a processor in a phone...*remote from the vehicle and the vehicle charger*. EX1005-Kelty-078, 3:47-4:39, Fig. 1.

Kelty-078 discloses an electric vehicle communication interface 10 enables wireless communication between electric vehicle 12 and remote portable communication devices such as user interface device 24, for monitoring and controlling vehicle charging operations and battery conditions. EX1005-Kelty-078, Abstract, Fig. 1, 1:28-2:11.



EX1005- Kelty-078, Fig. 1. Kelty-078 explains user interface device 24 includes “mobile devices, such as cell phones, PDAs, handheld devices, desktop computers, laptop computers...” EX1005-Kelty-078, 4:19-24. As one specific example of user interface device 24, Kelty-078 gives a “Treo,” a contemporary smartphone, including a processor and transceiver. *Id.*, FIG 2; EX1003-Dec, ¶148. Thus, Kelty-078 teaches a phone including one or more processors and, as such, teaches a portable controller remote from the vehicle and the battery charger, as disclosed in the ’107 Patent. EX1001, 8:57-9:12; EX1003-Dec, ¶148.

d) MTC

A POSITA would have been motivated and found it obvious to implement Sutardja's UIM-WNIM in Kelty-078's mobile phone so users would be able to remotely monitor and control vehicle charging operations. EX1003-Dec, ¶149. Sutardja teaches a UIM-WNIM is "arranged outside of a vehicle" and wirelessly communicates with CMM 104-1 through WNIMs 110-1 and 110-3 to exchange charging-related information and user-entered charging parameters. EX1004-Sutardja, [0243]-[0249], [0267]; EX1003-Dec, ¶149.

Modifying Sutardja would have involved applying a known portable wireless communication and remote-monitoring technique to a similar EV charging-management and communication system ready for improvement. EX1003-Dec, ¶150. Kelty-078's communication interface allows users to remotely "control[] and monitor[] the battery system," determine the battery "state of charge," receive notifications about battery status and remotely select charging options through portable devices such as "cell phones[.]" EX1005-Kelty-078, 4:53-7:43. Kelty-078's communication interface improves charging flexibility by permitting users to remotely select charging options and monitor charging conditions without requiring physical interaction with the vehicle. *Id.*

A POSITA would have had a REOS in making such a modification, at least because Kelty-078 teaches implementing charge management functionality using

wireless communication from a phone using wireless communication and Sutardja teaches implementing charge management functionality using wireless communication from a charge management module outside the vehicle. EX1003-Dec, ¶151. Making the modification would thus be a matter of software implementing the known wireless protocols used by Sutardja's UIM-WNIM on the mobile phone of Kelty-078. *Id.*

11. Claim 1[g]

For “wireless signal” *see* Ground 1, Claim 1[e][iv].

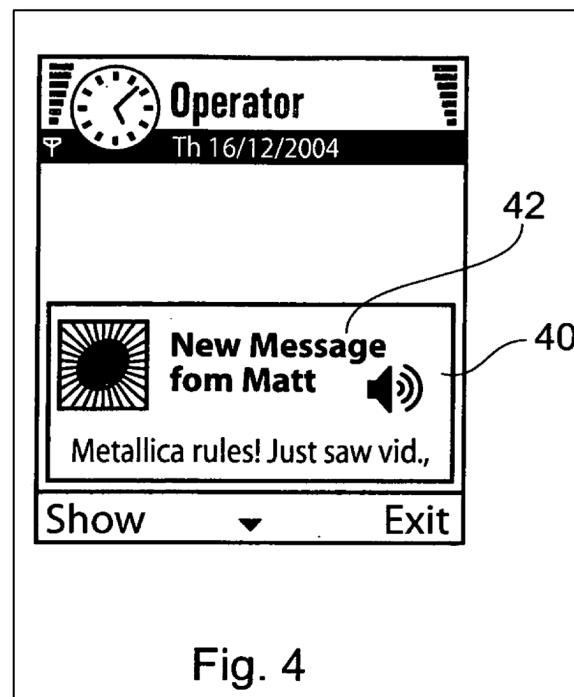
a) Sutardja-Hobbs-Kelty-078's Teachings

Sutardja-Hobbs-Kelty-078-Anttila teaches *the portable controller (Kelty-078's phone) generates a notification* (Anttila's pop-up of Kelty-078's text) *to a user indicating the predetermined threshold level of charge of the battery following and as the result of receiving the at least one signal indicative of the predetermined threshold level of charge of the battery* (per Hobbs-Kelty-078's text alert signal). *See* Claims 1[e][iv]-1[g]. EX1003-Dec, ¶¶153-154.

a) Anttila's Teachings

Complementing Kelty's **communications** of SMS alerts, Anttila discloses a mobile communications device 10 configured to generate **notifications** of received messages, and a POSITA would be motivated to look to Anttila for implementation details of generating notifications of received alert signals. EX1007-Anttila, Abstract, Figs. 1-4, [0001]-[0005]. Anttila discusses notifications of various

message types, including SMS and MMS (i.e., text messages as discussed by Kelty-078; *see* EX1003-Dec, ¶155). EX1007-Anttila, [0002], [0018], [0021]. Anttila teaches an incoming message is used to “creat[e] a pop-up notification” (step 60). *Id.*, Fig. 3, [0023]-[0032]. Anttila’s pop-up notification includes “message content.” *Id.*, [0020]-[0032]. Figure 4 illustrates exemplary pop-up notification 40 displayed on a mobile device:



Id., Fig. 4. EX1003-Dec, ¶155.

b) MTC

A POSITA would have been motivated and found it obvious to implement Anttila’s known mobile-device notification functionality within the Kelty-078’s phone (implementing Sutardja’s UIM-WNIM) to improve user convenience and

charging awareness by enabling users to receive notifications of received charging message signals when a predetermined charging threshold condition was reached, without having to open a text app on the phone. EX1003-Dec, ¶156.

Modifying Sutardja-Hobbs-Kelty-078's battery charging system according to Anttila's teachings would have involved applying a known technique (mobile-device notifications) to a known device (phone of the Sutardja-Hobbs-Kelty-078 battery charging system), ready for improvement, to yield predictable results (mobile-device notifications of charging events). EX1003-Dec, ¶157.

A POSITA would have had a REOS in implementing this modification at least because Sutardja-Hobbs-Kelty-078 teaches wireless transmission of charging alerts via SMS responsive to threshold charging conditions and, as such, incorporating Anttila's known pop-up notification functionality into Sutardja-Hobbs-Kelty-078's would have involved only routine implementation of known message-processing and user-notification functionality using known system components performing their established functions. EX1003-Dec, ¶157.

B. Claim 2

Sutardja-Hobbs-Kelty-078-Anttila teaches *the notification is an indicator on a display viewable by the user*. See Claim 1[f]-[g]; EX1003-Dec, ¶159. In the combination, the notification would be displayed on the display of Kelty-078's

phone (implementing Sutardja's UIM-WNIM). *Id.* This display is "viewable by a user" since the user can interact with the display. *Id.*; EX1004-Sutarjda, [0243].

C. Claim 3

As discussed, Sutardja-Hobbs-Kelty-078 teaches a *portable controller (Kelty-078's phone)*. See Claim 1[f]. Sutardja-Hobbs-Kelty-078-Anttila teaches *the display is electrically coupled to the portable controller*. Sutardja's UIM includes a display and is therefore coupled to the *portable controller*. EX1004-Sutardja, [0243] ("user interface module 108 may comprise...a display[.]"); EX1003-Dec, ¶¶160-161; Claim 1[d], (EX1001, 6:29-35).

D. Claim 4

Sutardja-Hobbs-Kelty-078-Anttila teaches a *portable controller (Kelty-078's phone)* that *generates a notification* (Anttila's pop up of a Kelty-078's text), *wherein the notification is at least one of a group consisting of a text and an e-mail automatically generated to the user*. See Claim 1[e][iv], 1[g]. Anttila's pop up *notification is of a text* (Kelty-078's text). EX1003-Dec, ¶162. Sutardja-Hobbs-Kelty-078's alert signal is *automatically generated* at least because Kelty-078 separately discusses and distinguishes the user manually "querying" the state of charge from the electric vehicle from the electric vehicle automatically "notifying" the user of reaching a charge level. Cf. EX1005-Kelty-078, 5:11-13 *with id.*, 5:18-21. Following the automatically generated alert signal, Anttila *automatically*

generate[s] the pop-up notification for the incoming message. EX1007-Anttila, [0009].

E. Claim 5

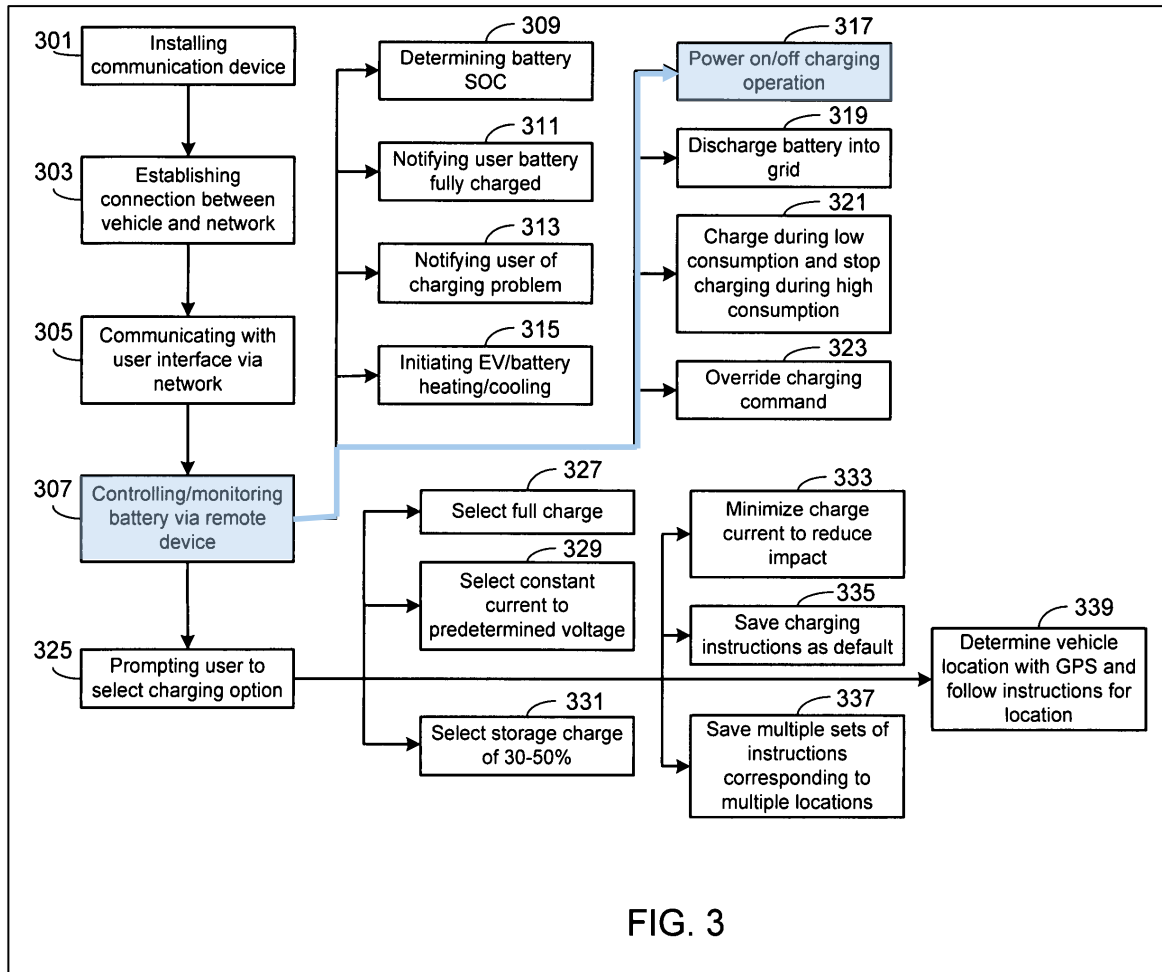
The '107 Patent gives an example of a “wireless signal” transmitted using “wireless communication.” EX1001, 22:37-50, 10:18-25; EX1003-Dec, ¶163. Kelty-078 similarly sends signals (e.g., instructions) using wireless communication (e.g., Bluetooth). EX1005-Kelty-078, 4:53-58; 4:58-5:1; 4:24-31.

Sutardja-Hobbs-Kelty-078-Anttila teaches a **portable controller (Kelty-078's phone)** configured to wirelessly communicate with the controller of the **battery charger (control module 112/106)**. *See* Claim 1[c]-1[g]; EX1004-Sutardja, [0241], [0243]-[0244]. Sutardja-Hobbs-Kelty-078-Anttila teaches *the portable controller is configured to send signals to the controller of the battery charger to start and stop charging of the battery.*

a) Kelty-078's Teachings

Kelty-078 teaches “the user...of the vehicle is...capable of communicating with the electric vehicle 12 from their portable device such as a cell phone...to program and **send specific instructions** to the electric vehicle 12 for controlling and monitoring the battery system 26 arranged within the electric vehicle 12 (step 307).” EX1005-Kelty-078, 4:58–5:1, FIG. 3; EX1003-Dec, ¶165.

VMS 32 (*controller of the battery charger*) “monitors, controls and coordinates various systems in the electric vehicle 12 including” ESS 26 (the electric vehicle battery). EX1005-Kelty-078, 7:44-51, 4:53-58, 8:44-48. Examples of such “instructions” are illustrated in FIG. 3, including user 20 “powering on and off” charging of battery 26 and “discharging the battery 26 into the electricity or electric grid.” EX1005-Kelty-078, 4:66, 5:40-52, FIG. 3 (*see steps 317/319*). Thus, Kelty-078 teaches the VMS (*controller of the battery charger*) receiving instructions (*signals*) to power off or on charging of the battery, i.e., *to start and stop charging*. EX1005-Kelty-078, 4:66, 5:40-52, FIG. 3 (*see steps 317/307*); EX1003-Dec, ¶166.



EX1005-Kelty-078, FIG. 3. Kelty-078 additionally teaches “**starting and stopping of charging of the battery pack** via the means 25 of keyfob,” where the option of starting/stopping charging “**may also be added to a cell phone connection or other mobile device** to follow the network connections of the first and second network 16, 18 as described above **to allow for choosing of one the charging options and setting any default via any user interface device 24.**” EX1005-Kelty-078, 7:35-43.

b) MTC

A POSITA would have been motivated to modify the instructions available using **Sutardja's UIM-WNIM** to include the start/stop charging commands taught by Kelty-078 to allow the user to remotely start and stop charging while remote from their vehicle. EX1003-Dec, ¶167. A POSITA would have recognized automated charging schedules may not always match the user's immediate needs, and providing start and stop controls would have allowed the user to override or adjust scheduled charging when circumstances changed. *Id.*

Such a modification would have been applying a known technique (sending start/stop charging signals) to a known device (Sutardja-Hobbs-Kelty-078's battery charging system), ready for improvement, to yield predictable results (remote control of charging). EX1003-Dec, ¶168.

A POSITA would have had REOS in implementing a start/stop option in **Kelty-078's phone**. EX1003-Dec, ¶169. A POSITA would have understood Sutardja's **controller (modules 112/106)** would already be capable of processing start/stop charging signals from other sources (e.g., local commands generated from automatic charging) and, as such, modifying Sutardja-Hobbs-Kelty-078's battery charging system to include sending remote start/stop charging signals would be a simple matter of programming. *Id.*

VI. GROUND 2: CLAIMS 6-9 ARE OBVIOUS IN VIEW OF SUTARDJA, HOBBS, AND KELTY-078.

A. Claim 6.

1. Claim 6[Pre]

Sutardja teaches a *method for charging a battery of a vehicle*. EX1004-Sutardja, [0275] (“method 200 for supplying power to charge the battery 14 in the vehicle 102”), [0277]-[0288], Figs. 8-9. See Claim 1[Pre].

2. Claim 6[a]

Sutardja-Kelty-078 teaches *establishing wireless communication between a controller of the vehicular battery charger (modules 112/106) and a portable controller of a user remote (Kelty-078’s phone) remote from the vehicle and the vehicular battery charger (CMM 104)*.

a) Sutardja’s Teachings

As discussed in Ground 1, Claim 1[f], Sutardja in view of Kelty-078 teach a *portable controller of a user remote from the vehicle and battery charger communicates with the battery charger controller (modules 112/106) wirelessly*. A MTC was provided in Ground 1, Claim 1[f] and is incorporated by reference.

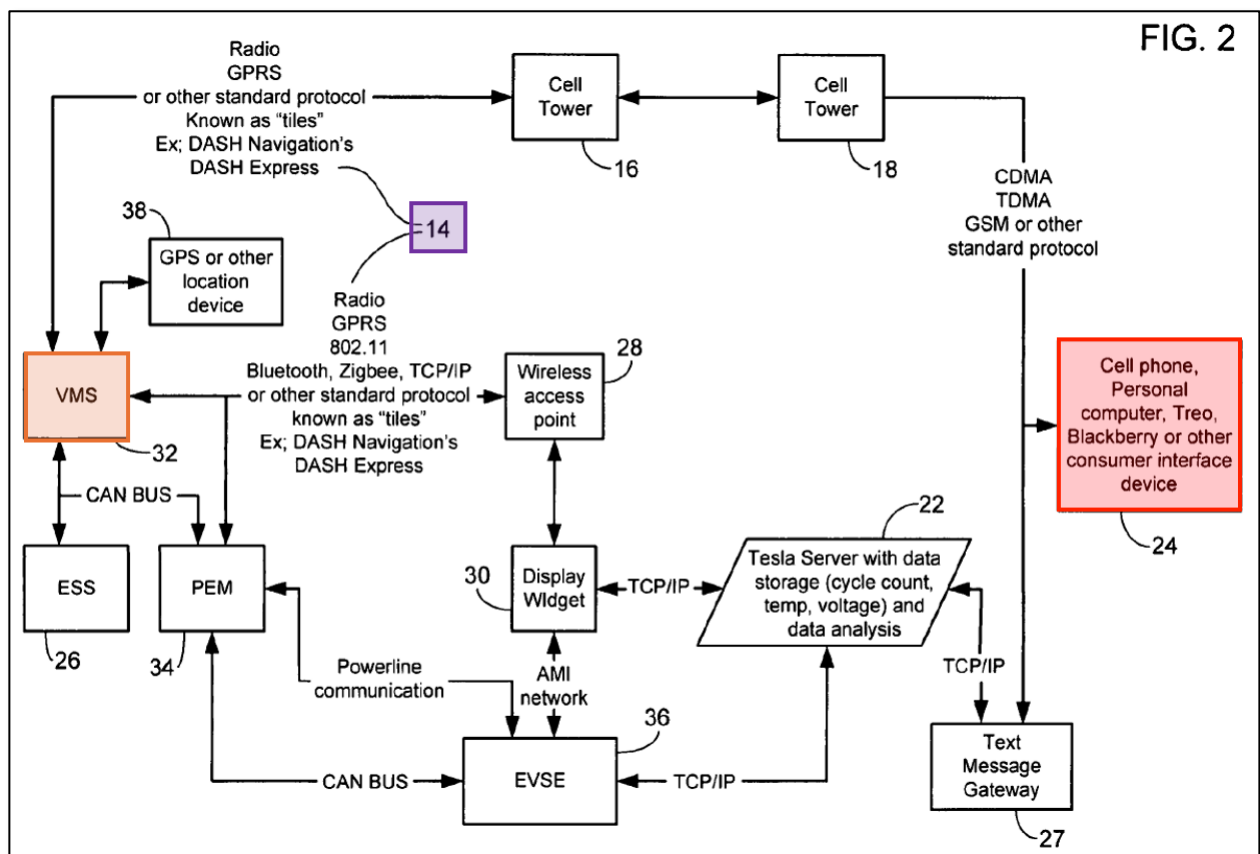
Sutardja teaches a *controller (modules 112/106) of the vehicular battery charger wirelessly communicating with a...controller (UIM-WNIM)*. EX1003-Dec, ¶173. See Ground 1, Claim 1[f]; EX1004-Sutardja, [0241], [0243]-[0244], (“the control module 112...control[s] the operation of the CMM 104-1” and “may receive

data input by the user for charging the battery 14...from the user interface module 108” (UIM-WNIM).)

b) Kelty-078’s Teachings

(i) establish wireless communication

Kelty-078 teaches *controller* (VMS 32) uses *communication chip* 14 to *establish wireless communication* (e.g., via Bluetooth or GSM/GPRS cellular) with *a portable controller* (interface device 24).



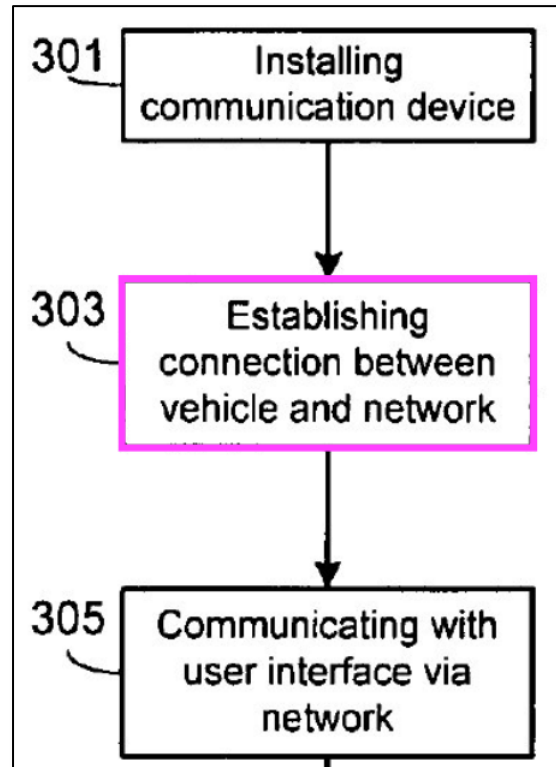
EX1005-Kelty-078, FIG. 2.

Kelty-078 teaches “the electric vehicle communication interface generally includes a communication device 14 arranged and installed within the electric

vehicle (step 301).” EX1005-Kelty-078, 3:53-56, FIG. 2, FIG. 3 (Step 303).

Communication chip 14 “allow[s] for communication to the first network 16 to allow for the vehicle 12 to contact the user 20 via the user interface device[.]” EX1005-Kelty-078, 4:53-58, 8:44-48 (discussing messages to the user are broadcast through onboard communication chip). The communication between the vehicle and **mobile communication device 24** may be “**completely wireless.**” EX1005-Kelty-078, 3:43-45, 4:4-7, 4:24-39 (listing known wireless communication protocols, such as Bluetooth and GSM/GPRS).

Kelty-078 expressly teaches the **VMS 32** (*controller*) *establish[es] wireless communication*. Kelty-078 teaches “[e]stablishing connection between vehicle and network” and “[c]ommunicating with user interface [24] via network”:



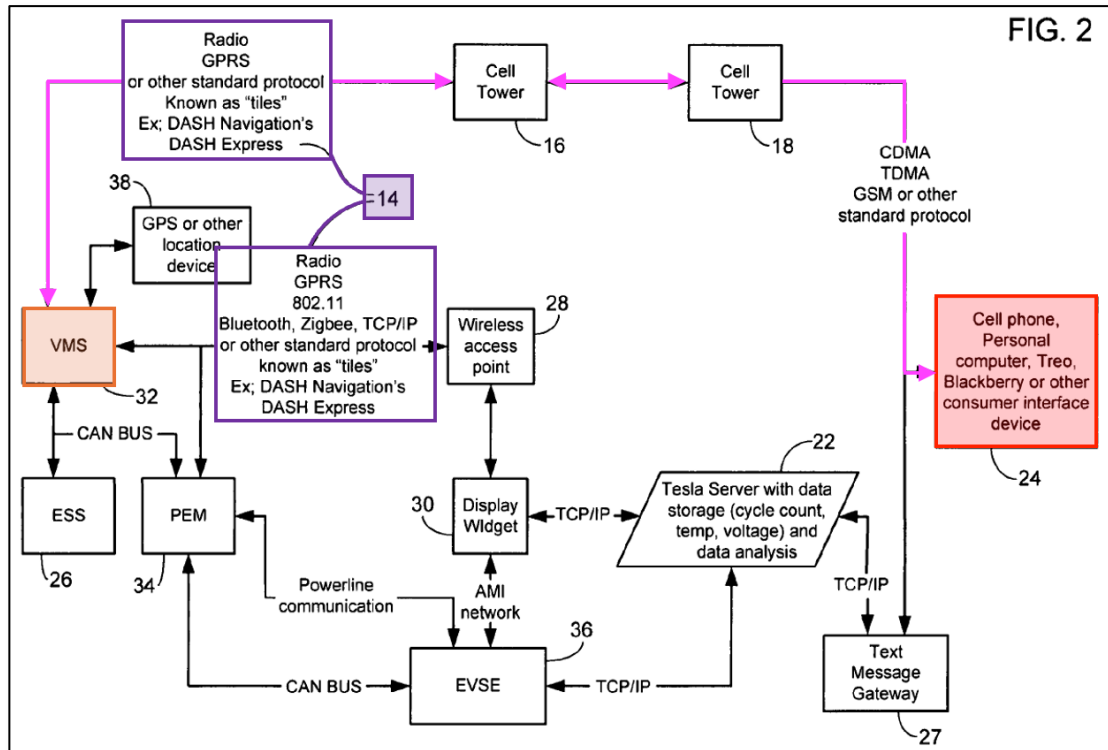
EX1005-Kelty-078, FIG. 3 (excerpt), Abstract (“establishing a connection **from** the vehicle to a network”), 2:25-30 (disclosing “establishing a connection,” including “contacting a user interface device via the network”), 9:64 (Claim 1).

Kelty-078 teaches “the user...of the vehicle is...capable of communicating with the electric vehicle 12 from their portable device such as a cell phone...to program and **send specific instructions** to the electric vehicle 12 for controlling and monitoring the battery system 26 arranged within the electric vehicle 12 (step 307).” EX1005-Kelty-078, 4:58–5:1, FIG. 3; EX1003-Dec, ¶177.

Because Kelty-078 teaches (1) **VMS 32**, i.e., the claimed *controller* in the vehicle, establishes a connection with a network (FIG. 3, Step 303) via

communication chip 14; (2) the connection can be established **from** the vehicle; (3) VMS 32 “controls” the “various systems in the electric vehicle”; and (4) the communication chip/device 14 is arranged in the vehicle and “may also be incorporated into the computer controlling the vehicle internal network,” the VMS (controller) is configured to establish wireless communication. EX1005-Kelty-078, Abstract, 7:44-51, 3:53-59; EX1003-Dec, ¶178.

Regarding communication with a *portable controller*, Kelty-078 teaches “[t]he user 20 will be capable of communicating with either the first network 16, the second network 18 or directly with the vehicle 12 **via any user interface device 24** (step 305).” EX1005-Kelty-078, 4:16-19. Disclosed exemplary communication protocols include, amongst others, Bluetooth and GSM/GPRS cellular data connections established through communication device 14. EX1005-Kelty-078, 3:53-67, 4:24-39, 7:43-47, FIG. 2; EX1003-Dec, ¶179.



EX1005-Kelty-078, FIG. 2; EX1003-Dec, ¶179. It is well known Bluetooth and the GSM/GPRS cellular data protocols are communication protocols that establishes wireless communication between devices. EX1003-Dec, ¶¶179-182.

Because Kelty-078 teaches vehicle wirelessly communicates with **user interface device 24** via the network and the established communication (FIG. 3, Step 305), Kelty-078 teaches the *controller* (**VMS 32**) is *configured to establish wireless communication* through **communication chip 14** over Bluetooth or GSM/GPRS with *a portable controller*, namely **user interface device 24** including a processor.

c) MTC

Kelty-078 provides express implementation details for the wireless communication performed in Sutardja, including the step of *establishing wireless*

communication. A POSITA would have been motivated and found it obvious to apply the teachings of establishing wireless communication between Sutardja's controller (**modules 112/106**) and Kelty-078's phone. EX1003-Dec, ¶184. A POSITA implementing Sutardja's teachings would have looked to Kelty-078's teachings for implementation details on establishing wireless communication allows a vehicle controller to communicate with a phone, especially for electric vehicle charging systems. EX1005-Kelty-078, 4:53-58, 7:44-47; EX1003-Dec, ¶184. Kelty-078 expressly teaches, suggests, and/or motivates the modification, explaining there "is a need in the art for a communication interface for an electric vehicle... that will be able to control remotely the charging of the battery." EX1005-Kelty-078, 1:35-39.

This modification would have been applying a known technique (Kelty-078's step of establishing wireless communication) to a known method (Sutardja's method of remotely controlling charging for an electric vehicle) ready for improvement to yield predictable results (successful wireless communication). EX1003-Dec, ¶185.

A POSITA would have had a REOS looking towards Kelty-078 to fill the missing details not expressly disclosed by Sutardja. EX1003-Dec, ¶186. Sutardja teaches wireless communication between *a controller* (**modules 112/106**) *of the vehicular battery charger* and *a controller* (**UIM-WNIM**). EX1004-Sutardja, [0241], [0243]-[0244]; Ground 1, Claim 1[f]. A POSITA would have understood for

Sutardja's battery charger controller (modules 112/106) to be able to wirelessly communicate with Kelty-078's phone (implementing Sutardja's UIM-WNIM), Sutardja's battery charger controller (modules 112/106) would establish wireless communication via executing programming instructions to implement this functionality. EX1003-Dec, ¶186. To the extent required, any programming modifications would have been straightforward, routine, and well-within the skillset of a POSITA. *Id.*

3. Claim 6[b]

See Claim 1[e].

4. Claim 6[c]

Sutardja teaches CMM 104 “charges the battery 14 using the power supplied by the utility company 23 to the supply outlet 20.” EX1004-Sutardja, [0239]. *See* Claim 1[Pre].

5. Claim 6[d]

See Claim 1[e].

6. Claim 6[e]

See Claim 1[e]-[g].

B. Claim 7

See Claim 1[e]-[g].

C. Claim 8

See Claim 1[e]-[f].

D. Claim 9

See Claim 4.

VII. GROUND 3: CLAIM 1 IS OBVIOUS OVER SUTARDJA, HOBBS, HUNT, AND KELTY-433.

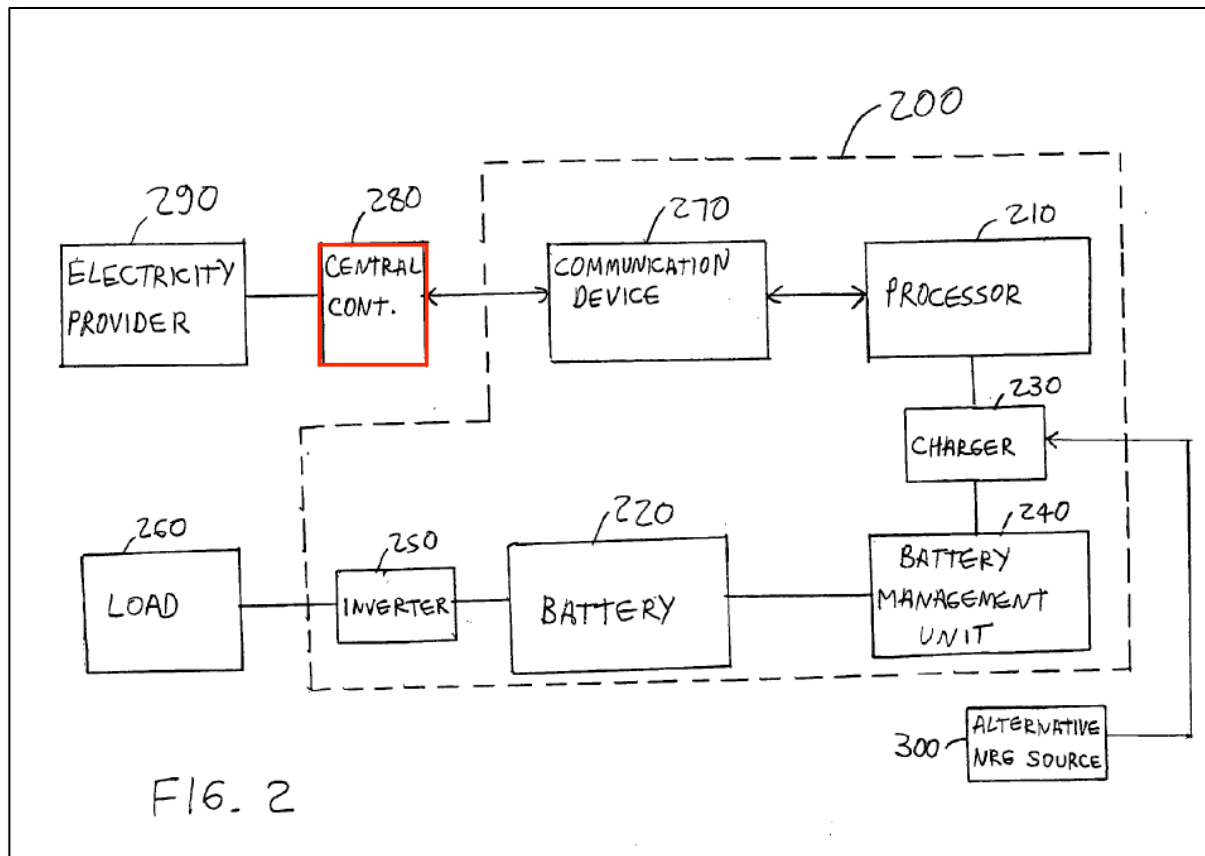
A. Alternate Mappings for Claims 1 and 4

Claim 1 recites a *portable controller remote from the vehicle and battery charger that generates a notification to a user indicating the predetermined threshold level of charge of the battery as a result of receiving a signal indicative of the predetermined threshold level of charge of the battery*. EX1001, Claims, 1[f]-[g]. Dependent Claim 4 recites *the notification is at least one of a group consisting of a text and an e-mail automatically generated to the user*. *Id.*, Claim 4.

To the extent it is argued the *notification is* itself a text generated by the *portable controller*, Petitioner advances this alternative mapping for Claims 1 and 4.

Under the alternative mappings, Sutardja's load management module (LMM) in computer 134 of the utility company 23, in view of Kelty-433's teachings of a handheld utility company device, teaches *a portable controller* as recited in Claim

1[f].



Kelty-433, FIG. 2; *see also* [0022] (“Central controller 280 is operated outside the customer’s premises by the electrical provider 290, such as a utility company, and can be a ... hand-held or laptop device...”).

Sutardja-Hobbs-Kelty-433-Hunt teaches *the portable controller generates a notification*, as recited in Claim 1[g]. Sutardja-Hobbs-Kelty-433-Hunt-Kelty-078 teaches the notification is a text as required in claim 4.

Petitioner relies on Sutardja-Hobbs’s teachings as set forth in Ground 1 for Claim limitations 1[Pre]-1[e][iii].

1. Claim 1[e][iv]

The '107 Patent gives an example of a “wireless signal” transmitted using “wireless communication.” EX1001, 22:37-50, 10:18-25; EX1003-Dec, ¶199. Hunt similarly sends signals (e.g., power usage signals) using wireless communication. EX1008-Hunt, [0028], [0031], [0039], [0066], [0068], [0065], [0027].

Sutardja-Hobbs teaches Sutardja’s **controller (modules 112/106)** *responsive to the level of charge of the battery reaching the predetermined threshold level of charge of the battery, send, before the charging of the battery is complete* (Hobbs’s continuing to charge after Hobbs’s indication), *at least one signal as the alert. See* Ground 1, Claims 1[e][i]-[iii]; EX1006-Hobbs, [0111]. As discussed in Claim 1[c], Sutardja teaches a battery charger with a transmitter. *See* Ground 1, Claim 1[c].

Sutardja-Hobbs in view of Hunt teach Sutardja’s **controller (modules 112/106)** *send...via the transmitter, the at least one signal indicative of the predetermined threshold level of charge of the battery.* Sutardja-Hobbs-Kelty-433 in view of Hunt teach the portable controller generating a notification based on this signal as discussed in Claim 1[f]-[g]. *See* Ground 3, 1[f]-[g].

a) Hunt’s Teachings of *at least one signal as the alert via the transmitter*

Hunt teaches monitoring users’ power usage via sensor 115, which receives data via power meter 112 on an “event driven basis.” EX1008-Hunt, [0031]. Sensor 115 communicates power usage data to display/data collector unit 125 which

transmits **power usage signals** to datacenter 195. EX1008-Hunt, [0028], [0031], [0039], [0066], [0068], [0065], [0027]. Hunt’s datacenter “processes the consumer’s power usage data and provides up-to-date feedback to the display/data collector unit 125.” EX1008-Hunt, [0031].

b) MTC

A POSITA would have been motivated to modify Sutardja-Hobbs so responsive to the battery charger level reaching Hobbs’s predetermined threshold level of charge, user interface 108 transmits a power usage signal (*at least one signal*), per Hunt, via Sutardja’s transmitter. *See* Ground 1, Claim 1[c], 1[e] (Hobbs’s teachings of the battery charger level reaching a predetermined threshold level of charge); EX1003-Dec, ¶203.

A POSITA would have appreciated the combination would have been combining prior art elements (power usage signals) according to known methods (monitoring and transmitting power usage) to yield the predictable results of the utility company knowing what charge level the vehicle has reached in order to accurately bill the user or throttle/redirect power since the user’s primary charge threshold has been reached. EX1003-Dec, ¶204. It was well known a user may charge a vehicle to a first level at a certain rate and a second level at a different rate. *Id.* (discussing EX1023-Kelty-218).

A POSITA would have had a REOS in modifying Sutardja per Hunt to specifically transmit a power usage signal. EX1003-Dec, ¶205. Sutardja teaches UIM 108 inside the vehicle communicates with LMM of utility computer 134. *Id.*; EX1004-Sutardja, [0253], [0276]- [0277].

2. *Claim 1[f]*

The '107 Patent states the “other controller can be one or more processors of a personal computer, phone, PDA, or other processor- based device associated with a user of the vehicle charging cord 22, **one or more processors of a server or other computer associated with a power utility** providing power to the vehicle charging cord 22, and the like.” EX1001, 8:65-9:12.

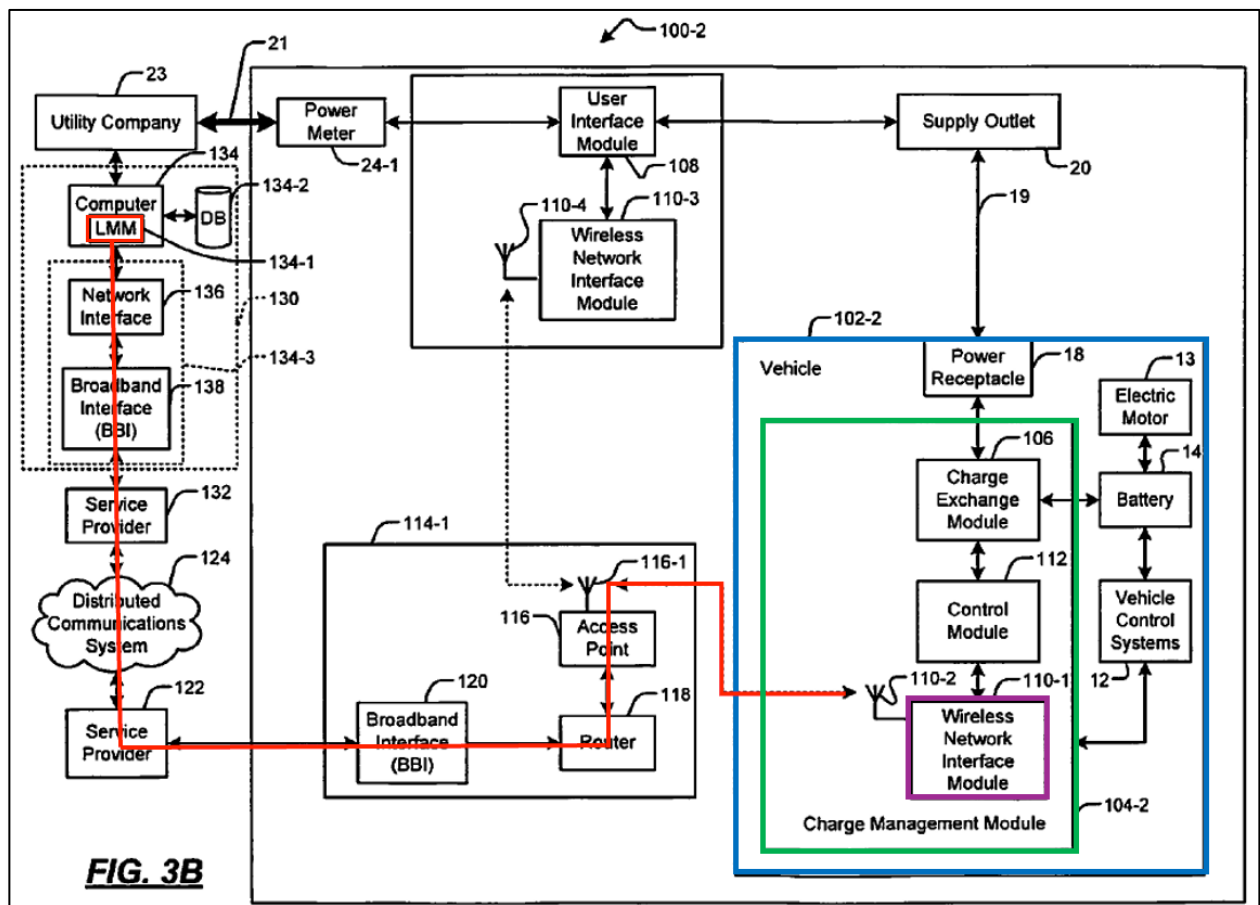
Sutardja-Hobbs-Kelty-433 teaches a *portable controller* (Kelty-433’s handheld device implementing Sutardja’s LMM functionality⁶) *remote from the vehicle and battery charger, the portable controller configured to wirelessly communicate with the controller of the battery charger via the transmitter* (Sutardja’s transmitter in WNIM). See Ground 1, Claim 1[f].

⁶ Petitioner refers to “Kelty-433’s handheld device implementing Sutardja’s LMM functionality” as “Kelty-433’s handheld device” throughout the rest of the petition.

a) Sutardja's Teachings of *a controller*

Sutardja in view of Hunt teaches *a controller (LMM) remote from the vehicle and battery charger, the controller configured to wirelessly communicate with the controller (modules 112/106) of the battery charger via the transmitter (transmitter in WNIM).*

Sutardja discloses a “computer 134 with a load management module (LMM) 134-1” in the utility company 23. EX1004-Sutardja, [0251]-[0252], Fig. 3A-3B. The LMM in computer 134 of utility company 23 (controller) is remote from the vehicle and battery charger, as shown in Figure 3B:



EX1004-Sutardja, Fig. 3B.

b) Kelty-433's Teachings of *a portable controller*

Sutardja does not explicitly specify whether LMM in computer 134 of utility company 23 is portable; however, Kelty-433 teaches such. Kelty-433 teaches portable and remotely located controllers configured to wirelessly communicate with charging and battery-management systems. EX1003-Dec, ¶210. Specifically, Kelty-433 discloses a “central controller 280” in two-way communication with a remotely located power-management device through communication device 270. EX1009-Kelty-433, [0009], [0022], Fig. 2. Kelty-433 teaches central controller 280 “is operated outside the customer’s premises by the electrical provider 290” and “can be a ... **hand-held or laptop device**” *Id.* Kelty-433’s central controller 280 is thus *remote from the vehicle and battery charger* (because it is located outside the customer’s premises) and a *portable controller* (because it can be hand-held). EX1003-Dec, ¶210.

c) MTC

A POSITA would have been motivated and found it obvious to implement Sutardja’s **controller (LMM in computer 134)** using Kelty-433’s portable controller so battery charge monitoring operations would be performed using portable devices capable of wirelessly communicating with vehicle-charging systems. EX1003-Dec, ¶211. Utility company technicians might carry portable controllers to install,

monitor, and diagnose battery charger installations as they visit customers' premises.

Id.

Modifying Sutardja according to Kelty-433's teachings would have been a simple substitution of one known element (handheld device) for another (computer) to obtain predicable results (being able to remotely monitor power usage). EX1003-Dec, ¶212.

A POSITA would have had a REOS in making such a modification. EX1003-Dec, ¶213. Sutardja describes the utility management functionality as being implemented on a utility company computer, which (per Kelty-433) may be a desktop, laptop, server, or handheld. EX1009-Kelty-433, [0022]. LMM 134-1 remotely communicates with the controller (module 112/106) through wireless communication systems, allowing LMM to manage power distribution among all electric vehicles being charged. EX1004-Sutardja, [0244]-[0253], [0262]-[0267]; EX1003-Dec, ¶213. A POSITA would have recognized several practical and technical benefits from implementing Sutardja's LMM 134-1 using Kelty-433's handheld (portable) functionality. EX1003-Dec, ¶213. As such, implementing Sutardja's LMM functionality on Kelty-433's central controller would be a simple matter of programming, well within the abilities of a POSITA. EX1003-Dec, ¶213.

3. Claim 1[g]

For “wireless signal” *see* Ground 1, Claim 1[e][iv]. In the combination, Kelty-433’s handheld device (Claim 1[f]) would generate a notification based on Hunt’s teachings to a user indicating the predetermined threshold level of charge of the battery following and as the result of receiving the at least one signal indicative of the predetermined threshold level of charge of the battery based on Hobbs’s teachings in Ground 1, Claim 1[e] and Hunt’s teachings in Ground 3, Claim 1[e]. In claim 4, this *notification* is limited to an *email* or *text message*. Although not claimed, this notification (once generated by Kelty-433’s handheld device) would be sent to the user’s mobile device using a conventional communication technique.

a) Hunt’s Teachings of *generating a notification*

Hunt teaches generating and displaying notification alerts to a user responsive to received power-usage and status information communicated from a remotely located system.

Hunt teaches “display/data collector unit 125 may include a display to display various information to the consumer, such as intermittent energy costs and notification indicators to alert the consumer of a high cost period...” EX1008-Hunt, Abstract, [0019], [0026] (“Notification indicator(s) or alerts may additionally be communicated to the display/data collection unit”); Fig. 10; EX1003-Dec, ¶217. Hunt teaches “display/data collector unit 125 may receive updated information from

the data center 195, such as cost-to-date estimated cost, billing rate changes, notification of alerts and messages,” and thereafter “display[]” such information “for the consumer to view.” EX1008-Hunt, [0084], [0073]-[0075].

b) MTC

A POSITA would have been motivated to modify the combined Sutardja-Hobbs-Kelty-433 system to incorporate Hunt’s notification-display functionality such that, upon receipt of a signal indicating the battery has reached the predetermined threshold level of charge, Kelty-433’s handheld device would generate and display a notification to the user indicating the predetermined threshold level of charge had been reached. EX1003-Dec, ¶218.

A POSITA would have been motivated to incorporate Hunt’s “notification indicators or alerts” and “up-to-date feedback” into the Sutardja-Hobbs-Kelty-433 system to improve consumer awareness and inform users when a desired charge threshold was reached, enabling timely charging and vehicle-use decisions without continuously monitoring the charger. EX1008-Hunt, [0006]-[0008], [0025]-[0026], [0073]-[0078], EX1003-Dec, ¶219.

Modifying the combined Sutardja-Hobbs-Kelty-433 system according to Hunt’s teachings would have involved use of a known technique (Hunt’s remote notification and alert-display technique) to improve similar devices (remote energy-management and monitoring system) in the same way. EX1003-Dec, ¶220. In the

modified system, modules 112/106 and CMM 104-1 would transmit Hobbs's threshold-level signal through Sutardja's disclosed wireless communication architecture to the remote LMM 134-1, which would execute Hunt's known notification-display functionality to generate and display a user notification indicating the predetermined threshold level had been reached. *Id.*; *See* Ground 1, Claim 1[d]-[e].

A POSITA would have had a REOS in making such a modification, as doing so would have been a simple matter of programming Sutardja's LMM to generate such notifications, and well within the skill of a POSITA. EX1003-Dec, ¶221. Implementing this modification would have required only routine programming and configuration of known wireless communication, processing, and display components performing their established functions. *Id.*

VIII. GROUND 4: CLAIM 4 IS OBVIOUS OVER SUTARDJA, HOBBS, HUNT, KELTY-433, AND KELTY-078.

A. Claim 4

As explained above, Sutardja-Hobbs-Kelty-433-Hunt teaches Sutardja-Hobbs-Kelty-433-Hunt's handheld LMM 134-1 (*the portable controller*) generates a notification to a user indicating the predetermined threshold level of charge of the battery has been met. *See* Ground 3, Claim 1[g].

a) Kelty-078's Teachings

Kelty-078 teaches generating and communicating signals in the form of text messages. *See* Ground 1, Claim 1[e][iv]. EX1003-Dec, ¶223.

b) MTC

In the combined system Sutardja-Kelty-433, handheld LMM 134-1 (*portable controller*) would generate charging notifications to the user in the form of a text. EX1003-Dec, ¶224. Specifically, upon receipt of Hobbs's threshold-level charging alert signal through Sutardja's disclosed wireless communication architecture, the modified Hunt notification functionality implemented in LMM 134-1 would generate and display a notification to the user indicating that the predetermined threshold level of charge had been reached, and Kelty-078 teaches that such portable communication devices were capable of producing "instant messaging" (text) communications. *Id.*; EX1005-Kelty-078, 4:19-39, 4:54-5:1.

A POSITA would have been motivated to incorporate Kelty-078's known portable-device messaging functionality into the combined Sutardja-Hobbs-Kelty-433-Hunt system because Kelty-078 expressly teaches portable communication devices capable of generating and communicating charging-related information through text messaging communications. EX1003-Dec, ¶225.

Modifying the combined system according to Kelty-078's teachings would have involved applying a known technique (portable-device messaging) to improve

a similar device (remote charging-management and notification system) in the same way (to provide mobile notifications). EX1003-Dec, ¶226.

A POSITA would have had a REOS in making such a combination. EX1003-Dec, ¶227. Hunt teaches generating user notifications responsive to received energy-management information and Sutardja teaches remotely communicating charging-related information through wireless communication systems. *Id.* Incorporating Kelty-078's known IM/text messaging functionality into the combined system would have involved only routine implementation of known communication and messaging functionality using known portable communication devices and processors performing their established functions. *Id.*

IX. GROUND 5: CLAIMS 10-12, 14 ARE OBVIOUS OVER HOBBS, SUTARDJA AND KELTY-078.

A. Claim 10

1. Claim 10[Pre]

To the extent the preamble is limiting, Hobbs teaches *a system for charging a battery of a vehicle and for wireless communication with a phone*. Hobbs discloses an electric-vehicle charger 100 “configured to charge batteries (e.g., batteries 152) that are located on electric or hybrid electric vehicles (e.g., vehicle 150)” (*system for charging a battery of a vehicle*). EX1006-Hobbs, Abstract, [0026], [0029], [0037], [0051], [0054].

Hobbs's battery charger 100 "communicate[s] with diagnostic device 130" via *wireless* local area network using "cellular telephony." EX1006-Hobbs, [0037], [0051], [0054]. Diagnostic device 130 is a **handheld personal digital assistant (PDA)** with a keypad and screen that can communicate with the vehicle charger using "cellular telephony, infrared serial link, or wireless local area network." EX1006-Hobbs, [0037]. Therefore, Hobbs teaches *a system for wireless communication with a phone*.

(i) Hobbs's Teachings: a phone having a controller

The '107 Patent states the "other controller can be one or more **processors** of a personal computer, **phone**, **PDA**, or other processor-based device associated with a user...". Therefore, the claimed *phone having a controller* includes at least a processor of a phone. EX1001, 8:67-9:13.

Because Hobbs's PDA communicates using cellular telephony and has user interface functionality (keypad), Hobbs's PDA performs the fundamental function of a cellular telephone and would have been understood by a POSITA as a type of phone. EX1003-Dec, ¶231; EX1006-Hobbs, [0037]. It was well known that a PDA with cellular telephony and user interface capabilities is a phone. EX1003-Dec, ¶231 (discussing Treo). Hobbs thus teaches a phone in the form of a PDA that communicates with the vehicle charger via cellular telephony (Hobbs's phone). *Id.*

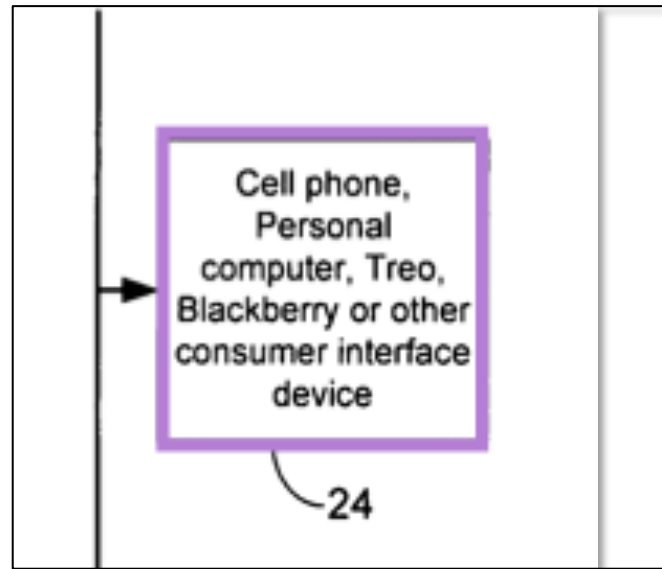
Hobbs's phone⁷ performs manual control of charger 100, processes keypad inputs, and communicates with charger 100. EX1006-Hobbs, [0037]. Cellphones were well known to include processors, and a POSITA would have understood that Hobbs's phone included a processor for performing these functions. EX1006-Hobbs, [0037]; EX1003-Dec, ¶232.

(ii) Kelty-078's Teachings: a phone having a controller

To the extent that it is argued Hobbs does not teach a processor, a POSITA would be motivated to look to Kelty-078 for implementation details of a PDA phone.

Kelty-078 teaches a Treo, a specific PDA *phone*, including a processor (*controller*):

⁷ As used herein, mappings referencing Hobbs's phone (diagnostic device 130) should be understood to also be referencing the processor of Hobbs's phone (diagnostic device 130) or Hobbs's phone processor as modified by Kelty-078. Petitioner's mappings reference to Hobbs's phone given how Hobbs's or Hobbs's in view of Kelty-078 discusses functionality relative to Hobbs's phone.



EX1005-Kelty-078, Figs. 2, 1 (excerpt). The Treo PDA phone includes a processor. EX1003-Dec, ¶234 (*citing* EX1033-Redi, [0024] “the mobile device is a combination PDA/telephone device such as...Treo 700”); EX1030-PalmTreo700p, 247 (“Intel Xscale processor,”)).

Because (1) Kelty-078 teaches a specific example of device 24 that is a commercially available device known to have a processor; (2) Kelty-078’s device 24 performs functionality requiring a processor; and (3) cellphones were well known to include processors, Kelty-078 teaches a *phone having a controller* (namely the Treo, a specific PDA phone).

b) MTC

A POSITA would have been motivated to look towards Kelty-078 for teachings regarding implementation details of Hobbs’s phone. EX1003-Dec, ¶235. Kelty-078 provides details about the internal circuitry of a phone. *Id.* A POSITA

would have been motivated and found it obvious to apply the teachings of Kelty-078's internal circuitry to Hobbs's phone. *Id.* Kelty-078 provides details of the functionality that Hobbs's phone already performs. *Id.*; EX1006-Hobbs, [0037]. A POSITA would have been motivated to modify Hobbs using Kelty-078's known technique to improve similar devices (Hobbs's phone, Kelty-078's phone) in the same way by utilizing a processor in Hobbs-Kelty-078 to execute programming instructions and perform Hobbs's device functions. *Id.*

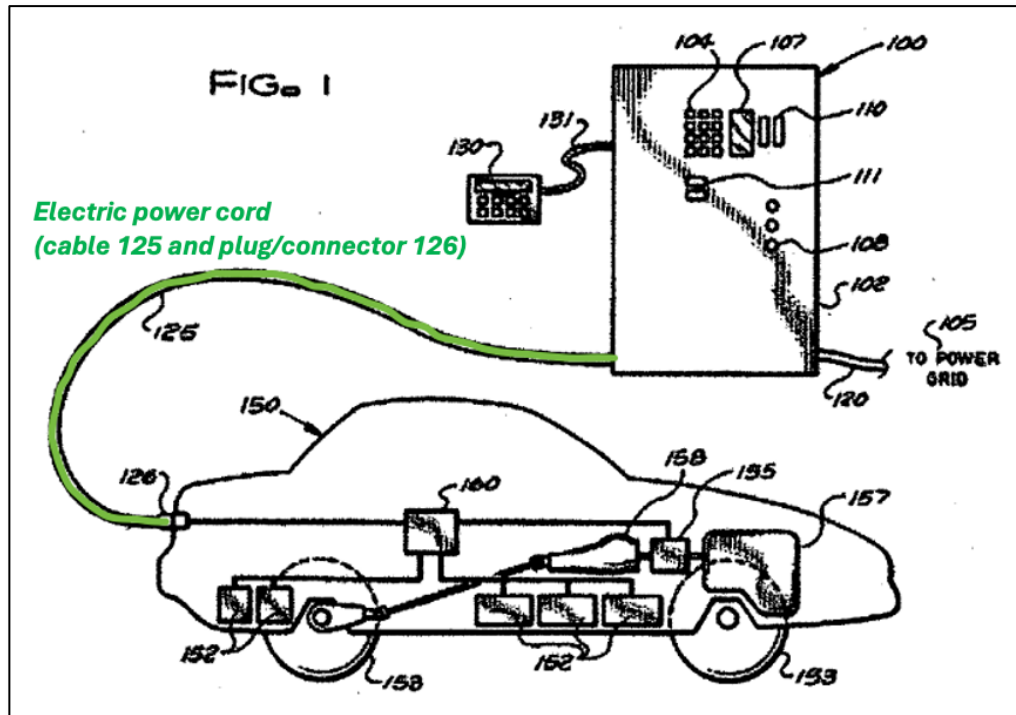
A POSITA would have found such hardware implementation details to be obvious since it was well known to have hybrid phone/PDA devices, such as the Palm Treo. EX1003-Dec, ¶236 (noting that the Palm Treo with cellular telephony is phone/PDA). As discussed above, Hobbs has a phone that is operable to manually control charger 100, process keypad inputs, and communicate with charger 100, and a processor allows Hobbs's phone to process those functions. EX1006-Hobbs, [0037].

A POSITA would have had a REOS looking towards Kelty-078 to fill Hobbs's missing express implementation detail disclosures since a POSITA would have understood that for Hobbs's phone to be able to manually control charger 100, process keypad inputs, and/or communicate with charger 100, Hobbs's phone would have a processor executing programming instructions to implement this functionality. EX1003-Dec, ¶237.

2. Claim 10[a]

Hobbs teaches a *battery charger* (i.e., charger 100 *together with connector/cable 125/126*)⁸ for an electric vehicle, namely charger 100 comprising *an electrical power cord releasably attachable to... the vehicle* (e.g., via cable 125 and plug or connector 126). EX1006-Hobbs, [0031]-[0032], [0065]-[0066], [0075]. Connector 126 is “configured to connect to an electric vehicle 150 and deliver the direct-current output (e.g., direct current 293 described below) to the vehicle 150.” EX1006-Hobbs, [0032]. Hobbs’s charger 100 will not start charging until connector 126 is connected to vehicle 150. EX1006-Hobbs, [0076]. When the connector is disconnected, the power supply to the charger is turned “off.” EX1006-Hobbs, [0076]. Therefore, Hobbs’s cable 125 and plug or connector 126 is *releasably attachable to the vehicle*. EX1003-Dec, ¶238.

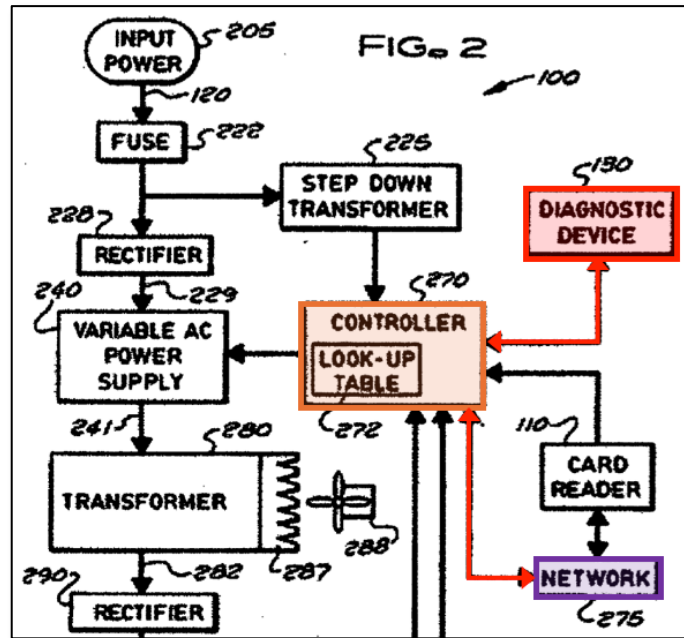
⁸ Hereinafter, “battery charger 100” may be used for simplicity where the connector/cable 125/126 is not relevant to the mapping.



EX1006-Hobbs, Fig. 1.

3. *Claim 10[b]*

Hobbs's battery charger 100 communicates with Hobbs's phone "cellular telephony, infrared serial link, or wireless local area network" (WLAN). EX1006-Hobbs, [0037]. Hobbs "network 275" has two-way communication between the phone and controller 270 that is used to "remotely monitor the use of charger 100, program controller 270, provide data for look-up table 272, perform the functions of diagnostic device 130, etc." EX1006-Hobbs, [0056], [0075].



EX1006-Hobbs, Fig. 2 (excerpt).

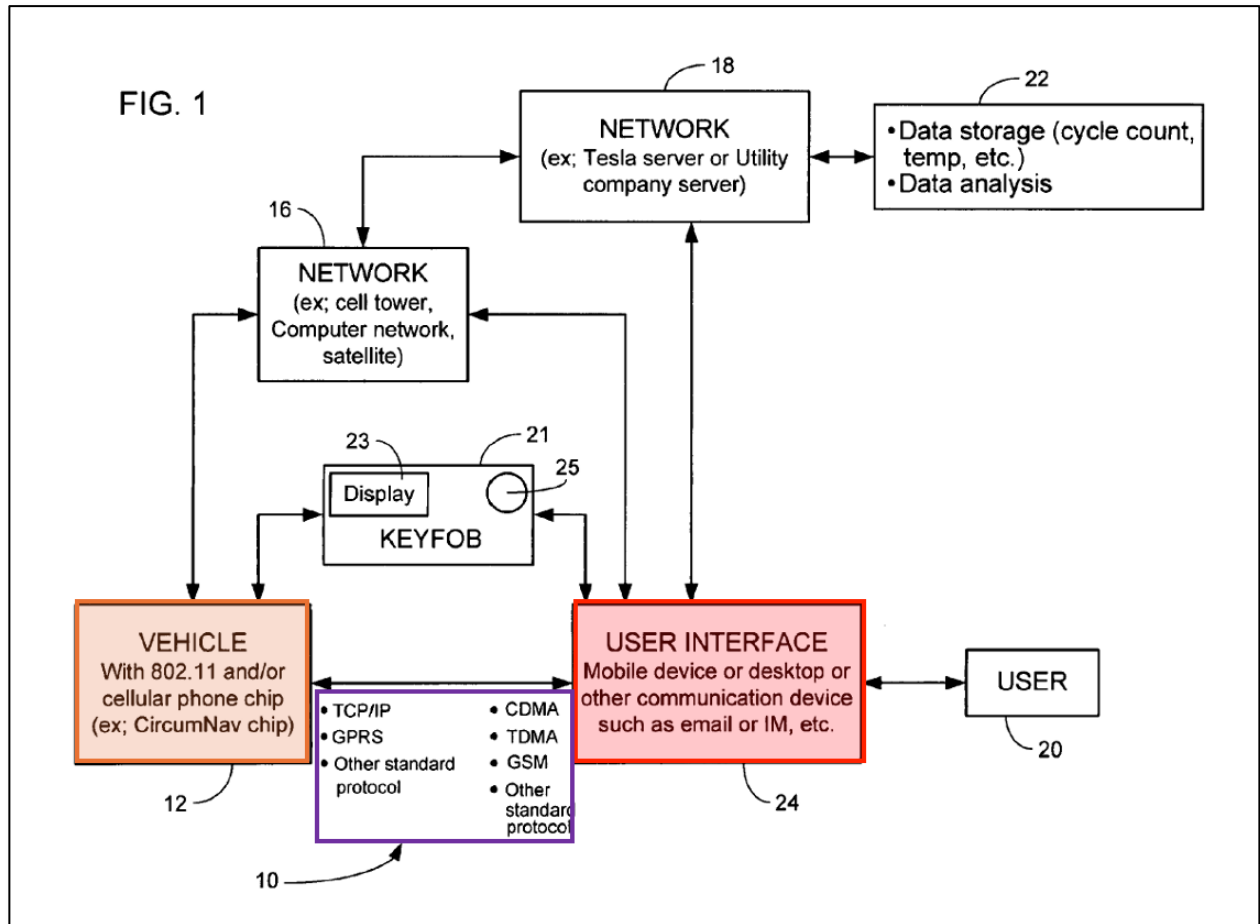
To communicate via wireless or cellular communications with Hobbs's phone via network 275, Hobbs's battery charger 100 would have included a transmitter and receiver for communicating via network 275, whether as one hardware unit as a transceiver or separate hardware units.⁹ EX1003-Dec, ¶240; EX1006-Hobbs, [0037].

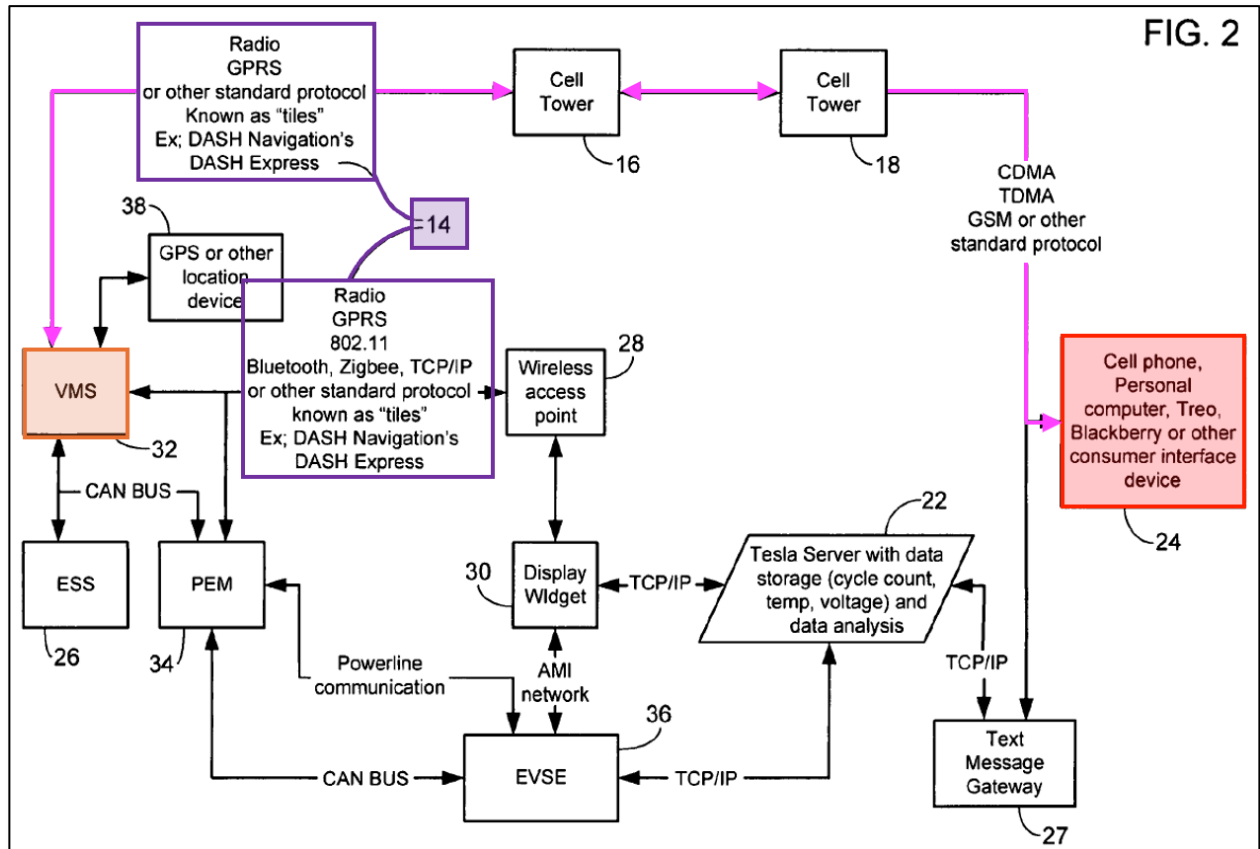
⁹ “Reference herein and in the appended claims to a ‘receiver’ and a ‘transmitter’ is intended to encompass transceivers as well as separate receivers and transceivers.”
EX1001, 9:35-38.

a) Kelty-078's Teachings

To the extent it is argued that Hobbs lacks express hardware implementation details regarding a transmitter, Kelty-078 teaches these details.

Kelty-078 teaches a *transmitter*, communication chip 14, using “standard” wireless protocols to communicate with Kelty-078’s device 24 (i.e., a phone). Kelty-078 teaches “electric vehicle communication interface 10,” which “includes a communication device 14” or “communication chip 14.” EX1007-Kelty-078, 3:47–4:7, FIG. 2. Kelty-078 teaches communication interface 10 of the electric vehicle includes vehicle management system (VMS) 32 communicates with device 24 via communication chip 14 utilizing various known, wireless protocols. EX1007-Kelty-078, 4:1-39, 7:44-51, 4:53–5:9, 3:62–4:1; EX1003-Dec, ¶242. Communication chip 14 allows for the vehicle 12 to contact the user 20 of device 24. EX1007-Kelty-078, 4:43-58. Communication chip 14 uses “standard protocol[s]” such as GPRS (general packet radio service), TCP/IP, Bluetooth, and others. EX1007-Kelty-078, 3:62-65, 4:1-4, 7:44-51, FIGS. 1-2; EX1003-Dec, ¶242. As depicted below, communication interface 10 allows bidirectional communication between vehicle 12 and device 24.





EX1007-Kelty-078, FIGS. 1-2.

Because Kelty-078's communication chip 14 ("radio" and includes a transmitter and receiver) implements protocols such as GPRS or Bluetooth, and because VMS 32 is in communication with communication chip 14 and device 24 over such common wireless communication protocols, Kelty-078's communication chip 14 includes a *transmitter*, as claimed. EX1007-Kelty-078, 4:53-58, 7:43-47; EX1003-Dec, ¶243.

b) MTC

To the extent argued that Hobbs does not teach implementation details readily apparent to a POSITA, a POSITA would have been motivated to and found obvious

to look to Kelty-078 to obtain additional specificity on a transmitter for wirelessly communicating via a network. EX1003-Dec, ¶¶244-248. Hobbs teaches a battery charger 100, having the ability to transmit and receive information wirelessly to Hobbs's phone. EX1003-Dec, ¶244. Kelty-078 simply provides the additional specificity of communication chip 14 for performing such wireless transmission and receipt of communications between a controller of the vehicle and a phone, especially for electric vehicle charging systems. *Id.*; EX1007-Kelty-078, 4:53-58, 7:44-47; EX1006-Hobbs, [0037].

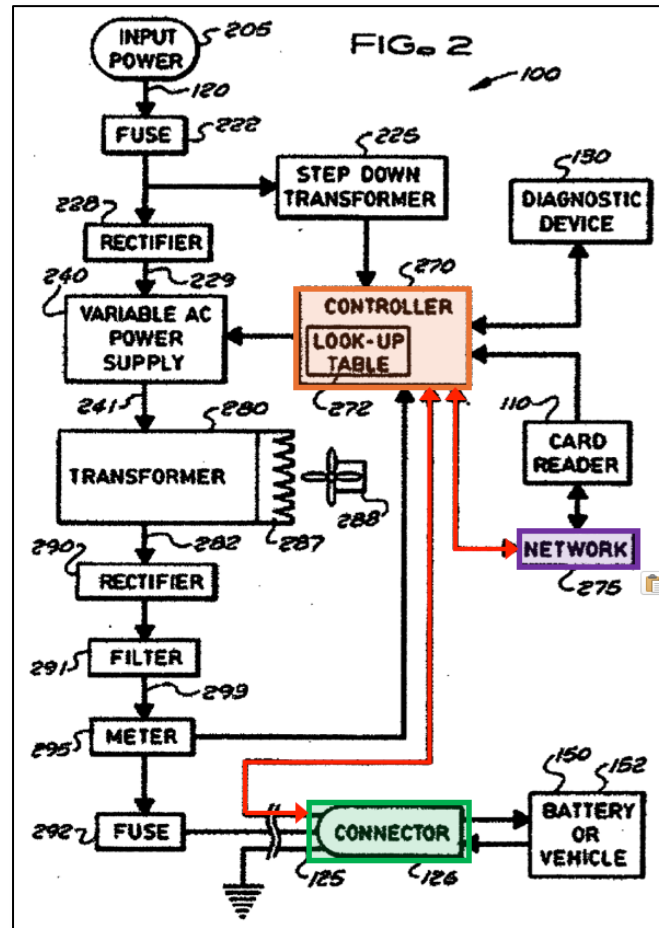
This modification would have been the use of a known technique (Kelty-078's communication chip 14) to improve a similar device (Hobbs's battery charger 100) in the same way. EX1003-Dec, ¶246.

A POSITA would have had a REOS modifying Hobbs's battery charger 100 per Kelty-078. EX1003-Dec, ¶249. Implementing Kelty-078's communication chip 14 to communicate with Hobbs's phone would require nothing more than the addition of a well-known hardware component into Hobbs's battery charger 100, especially given that Kelty-078 teaches an exemplary, commercially-available communication chip and commercially-available cellphones. *Id.*; EX1007-Kelty-078, 3:66–4:1. Kelty-078 even expressly suggests the motivation, explaining there “is a need in the art for a communication interface for an electric vehicle...that will be able to control remotely the charging of the battery.” EX1007-Kelty-078, 1:35-

39. In addition to implementing Kelty-078's communication chip 14 into Hobbs's system, straightforward modifications to the programming instructions would be implemented, where such programming is well within the POSITA's expertise. EX1003-Dec, ¶249.

4. Claim 10[c]

Hobbs teaches a *battery charger* 100 with a variable power supply controlled by *battery charger controller 270*. EX1006-Hobbs, [0026]. Hobbs's battery charger 100 includes *controller 270*, "a digital controller" which includes "a circuit board with a processor and memory for data storage" with associated "software configured to perform the functions described herein, including digital control, display and diagnostics." EX1006-Hobbs, [0051]. Battery controller 270 manages the vehicle battery power supply 240. EX1006-Hobbs, [0049]-[0050]. Hobbs's battery charger *controller* is *electrically coupled to the electrical power cord and to Hobbs's or Hobbs's in view of Kelty-078's transmitter (network 275)* as depicted in Figure 2.



EX1006-Hobbs, Fig. 2. EX1003-Dec, ¶250.

5. Claim 10[d]

For “wireless signal” see Ground 1, Claim 1[e][iv]. As discussed in Claim 10[Pre], Hobbs’s controller 270 communicates with Hobbs’s phone’s controller (per Hobbs/Hobbs-Kelty-078) via “cellular telephony, infrared serial link, or wireless local area network” using the transmitter (per Hobbs or Hobbs-Kelty-078) by sending signals. EX1006-Hobbs, [0037], [0054], [0113] (“[w]hile charging is taking place (e.g., steps 313 through 339), **controller...may provide a signal to...network**

275 indicating the amount of energy used...Network 275 may be used...perform the functions of diagnostic device 130 , etc.”), [0037].

6. Claim 10[e]

Hobbs’s battery charger 100’s **controller 270** *control[s] supply of power to the battery in the course of a charging session as the level of charge of the battery is increased.* EX1003-Dec, ¶¶253-254.

As discussed in Claim 1[e][iii], Hobbs’s controller 270 controls the power level to the battery. Hobbs’s battery charger 100 starts “charging at a starting level” and “incrementally or gradually increase[s] the charging level.” (*in the course of a charging session*). EX1006-Hobbs, [0073].

7. Claim 10[f]

Hobbs’s **controller 270** *receive[s], via a user-manipulatable control* (Hobbs’s key pad), *data indicative of a predetermined threshold level of charge* (Hobbs’s certain level of charge of battery 152) *by which* Hobbs’s **controller 270** *sends an alert* (Hobbs’s indication), *the predetermined threshold level of charge being less than a full charge of the battery* (Hobbs’s continuing to charge after Hobbs’s indication). EX1003-Dec, ¶¶255-256.

a) Hobbs’s Teachings

Hobbs’s controller 270 “communicate[s] with the user...via key pad 104, screen 107, or lights or gauges 108...” EX1006-Hobbs, [0055]. Controller 270 “provide[s] instructions or prompt the user for information via writing on screen 107,

and the user may input information via key pad 104.” EX1006-Hobbs, [0036].
EX1003-Dec, ¶¶257-259.

Hobbs teaches to *send an alert* (Hobbs’s indication), *the predetermined threshold level of charge being less than a full charge of the battery and data indicative of a predetermined threshold level of charge* (Hobb’s certain level of charge of battery 152). Ground 1, Claim 1[e][ii]-1[e][iii],

b) Sutardja’s Teachings

Complimenting Hobbs’s teachings of multiple thresholds and user-supplied amounts of charge, Sutardja teaches the user can input desired charge amount (predetermined levels of charge) in terms of charge percentages as discussed in Claim 1[e][ii] (*data indicative of a predetermined threshold level of charge*). EX1003-Dec, ¶260.

c) MTC

A POSITA would have been motivated to modify Hobbs so the user inputs a predetermined charge level in terms of charge percentages for the vehicle battery. EX1003-Dec, ¶261. A POSITA would have appreciated that specifying a charge threshold percentage rather than a particular amount of energy would have been more convenient to a user since it is generally easier for a typical user to understand a percentage of charge compared to energy units. *Id.* Hobbs-Sutardja thus advantageously allows a user to input a charge threshold percentage and receive an

alert when the threshold is reached, improving system ease-of-use and notification capabilities for the user. *Id.*

Such a combination would have been the use of a known technique (user inputting charge level threshold) to improve similar devices (Hobbs's charger 100, which accepts user inputs of charge amounts via a keypad and/or display and Sutardja's charger) in the same way. *Id.*

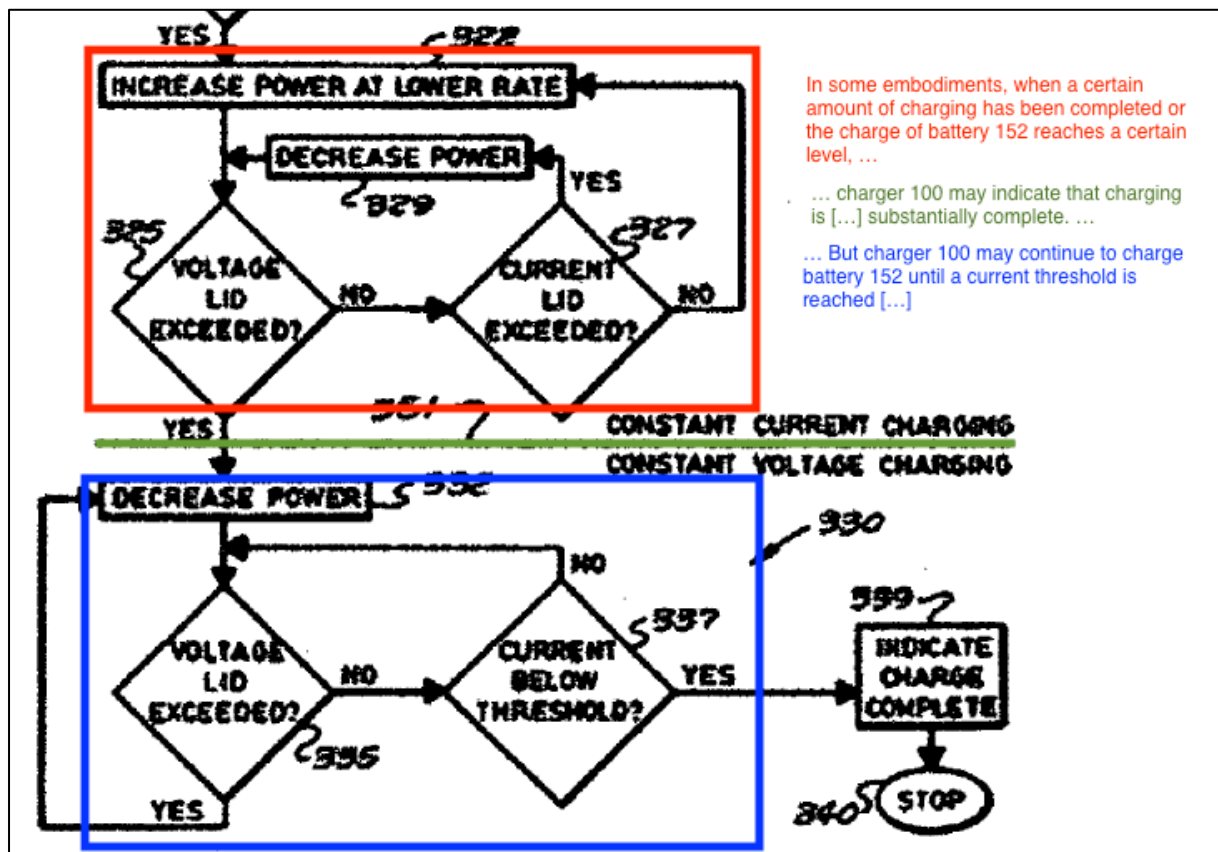
A POSITA would have had a REOS modifying Hobbs. EX1003-Dec, ¶262. Hobbs's current threshold is "stored in look-up table 272 for...battery 152." EX1006-Hobbs, [0107]. A POSITA would have appreciated once the user inputs Sutardja's desired charge amount (predetermined levels of charge), Hobbs would look up the associated current threshold to that charge amount. EX1003-Dec, ¶262. This would have required only straightforward modifications to programming instructions well-within the skillset of a POSITA. *Id.* It was well known that to determine whether the charge level has reached the predetermined threshold level of charge, the current charge level would need to be compared against the charge level threshold, and that monitoring a charge level during charging can be done by measuring current flow which Hobbs teaches. *Id.*

Hobbs's allows a user to specify charge energy indicative of a level of charge and includes the necessary hardware for implementing Sutardja's known technique of a charge level in a percentage form. EX1003-Dec, ¶263. Thus, such a combination

would have utilized Hobbs's existing hardware and merely required straightforward and routine modifications to Hobbs's software using ordinary skill of a POSITA. EX1003-Dec, ¶263; EX1006-Hobbs, [0111], [0109].

8. Claim 10[g]

As discussed in Claim 1[e][ii], Hobbs's **controller 270** compare[s], during charging of the battery with the vehicular battery charger, a level of charge of the battery (as measured using Hobb's current flow measurements) to the predetermined threshold level of charge (Hobbs-Sutardja's user-set level of charge for notification, as measured by Hobbs's current threshold). See Claim 10[f]. EX1003-Dec, ¶¶264-266.



EX1006-Hobbs, Fig. 3 (excerpt), [0111].

9. Claim 10[h]

For “wireless signal” *see* Ground 1, Claim 1[e][iv]. Hobbs-Sutardja in view of Kelty-078 teaches **controller 270** is *responsive to detection of the level of charge of the battery reaching the predetermined threshold level of charge* (Sutardja user set charge level measured by Hobbs’s current threshold) *during the charging session and before charging of the battery is complete* (Hobbs’s continuing to charge after Hobbs’s indication), *send a signal* (Hobbs’s alert via Kelty-078’s transmitting text functionality) *indicative of the level of charge being reached via the transmitter* (See Claim 10[b]) *to the controller of the phone* (Hobbs’s phone) *as the alert*. See Claim 10[f]. EX1003-Dec, ¶¶267-268.

(i) send a signal (Hobbs’s alert via Kelty-078’s transmitting text functionality) *indicative of the level of charge being reached via the transmitter to the controller of the phone* (Hobbs’s phone) *as the alert*.

Sutardja-Hobbs teaches data indicative of a predetermined threshold level of charge by which the battery charger controller sends an alert is displayed to the user as discussed in Claim 10[f].

b) Kelty-078’s Teachings

Kelty-078 teaches the electric vehicle transmits a text to the user’s phone. See Ground 1, Claim 1[e][iv]. EX1003-Dec, ¶¶270-271.

c) MTC

A POSITA would have been motivated and found it obvious to implement Kelty-078's known text messaging cell phone alert functionality to transmit Hobbs's alert as a signal to Hobbs's phone so that the driver of the vehicle would be notified when the charge was nearing completion. EX1003-Dec, ¶¶272-273. This would avoid the user being required to stay with their car during charging, and/or to check back repeatedly until the charging was complete. *Id.* A POSITA would have been motivated to make all the necessary modifications needed to be able to transmit messages. *Id.* It was well known that PDA phone devices (e.g., Treo) received texts. *Id.*

Modifying Hobbs according to Kelty-078's teachings would have involved the use of a known technique (text messaging) to improve similar wireless communication and charging-notification devices (Hobbs's phone and battery charger) in the same way (user can be alerted when away from their vehicle on the charging status). *Id.*

A POSITA would have had a REOS modifying Hobbs. EX1003-Dec, ¶274. Hobbs's battery charger 100 indicates "when battery charging is substantially complete. EX1006-Hobbs, [0109], [0111]-[0112], and [0113]. Because Hobbs's battery charger 100 included cellular communication capability, a POSITA would have reasonably looked to conventional cellular messaging techniques, including

SMS (text), as predictable options for remotely notifying the user of charging completion. EX1003-Dec, ¶274. Rather than requiring the user to stay in the vehicle, Hobbs's battery charger controller 270 transmits a text such as a charging substantially complete alert using the vehicle's existing cellular communication capability. *Id.*

B. Claim 11

See Claim 10[h]; Ground 1, Claim 4.

C. Claim 12

For “wireless signal” *see* Ground 1, Claim 5.

a) Hobbs's Teachings

Hobbs in view of Kelty-078 teach Hobbs's *battery charger controller 270 is further responsive to signals from the phone to start and stop charging of the battery.*

Hobbs's phone has an associated keypad and screen and allows “manual control of battery charging, or programming of charger 100.” EX1006-Hobbs, [0037]. The “user may start charger 100 (step 302)...by pressing a button on charger 100[.]” EX1006-Hobbs, [0074]. Hobbs is not specific as to if “the manual controls of battery charging” includes a signal from the user to **start and stop** battery charging.

b) Kelty-078's Teachings

Kelty-078 teaches that the system acts *responsive to signals from the phone to start and stop charging of the battery.* *See* Ground 1, Claim 5.

c) MTC

A POSITA would have been motivated to modify Hobbs's phone so the user can input start/stop charging as part of Hobbs's "manual control of battery charging, or programming of charger 100" via Hobbs's phone keyboard or screen per Kelty-078's teachings. EX1003-Dec, ¶¶279-280; EX1006-Hobbs, [0037]. A POSITA would have recognized that automated charging schedules may not always match the user's immediate needs and providing start/stop controls would have allowed the user to adjust charging. EX1003-Dec, ¶279.

Such a combination would have been the use of a known technique (start and stop charging options) to improve similar devices (Hobbs's phone user control of charger 100) in the same way. EX1003-Dec, ¶280. This would have been combining prior art elements (start/stop charging via a signal) according to known methods (user input) to yield predictable results of Hobbs being able to start and stop when a user wishes to charge their vehicle. *Id.*

A POSITA would have had REOS in implementing a start/stop option in Hobbs's phone. EX1003-Dec, ¶281. A POSITA would have understood Hobbs's phone controlled charging as a part of "manual control of battery charging" and, as such, implementing a start/stop option in Hobbs's phone would be a simple matter of programming. *Id.*; EX1006-Hobbs, [0037], [0074].

D. Claim 14

The '107 Patent describes that, if the supply of power has been interrupted, the controller 44 can send a power interrupt fault message. EX1001, 42:67-43:6 The '107 describes “power interruption” as “stopping battery charging.” EX1001, 4:10-20, 43:7-17. For “wireless signal” *see* Ground 1, Claim 5.

Hobbs-Kelty-078 *battery charger controller 270 is further responsive to detection of interruption of power to the battery (utility supply fault) by sending another signal indicative of the interruption via the transmitter to the controller of the phone.*

In the Hobbs-Kelty-078 combination, *another signal* is the battery charger 100-transmitted fault command—a signal transmitted to Hobbs’s phone from battery charger 100, second signal received from Hobbs’s phone, instructing Hobbs’s controller 270 to stop charging battery 152 during the charging session. EX1003-Dec, ¶¶282-285.

a) Hobbs’s Teachings

Charger 100 includes “screen 107 and key pad 104” to “provide diagnostics and manual control.” EX1006-Hobbs, [0037], FIG. 1. Hobbs’s charger 100 communicates with a phone. EX1006-Hobbs, [0037]; Claim 14[Pre].

Hobbs explicitly states a function of its system is to provide an indication of “charging equipment or **utility supply fault.**” EX1006-Hobbs, [0036].

Hobbs teaches if the voltage of the vehicle battery is not within a defined range after a certain number of charge additions, its charger 100 may **stop charging and provide a fault indication** via screen 107. EX1006-Hobbs, [0084]; EX1003-Dec, ¶288. Hobbs teaches “when a certain amount of charging has been completed or the charge of battery 152 reaches a certain level, **charger 100 may indicate that charging is complete...or substantially complete.**” EX1006-Hobbs, [0111]. Charger 100 “**indicate[s] that charging is complete at one current threshold...and stop charging at a lower current threshold.**” *Id.* In each of these descriptions, Hobbs teaches *sending a signal including a power interruption notification*. EX1006-Hobbs, [0084], [0111]; EX1003-Dec, ¶288.

Hobbs teaches notifying the user via a display or screen. EX1006-Hobbs, [0109] (“the voltage, current, or power level at which charging is taking place... indicated...in real time, via an LED or screen 107.”); (“...indicate that charging is complete (...via indicator lights 108, screen 107, or both)”).

b) Kelty-078’s Teachings

Kelty-078 teaches “an electric vehicle communication interface that allows for the vehicle **to notify the user** when the battery is fully charged or if a problem has occurred during charging thus affecting the operability of the electric vehicle.” EX1005-Kelty-078, 2:46-50; 5:5-9 (“**communication between** the electric vehicle 12 and user 20”), 5:19-26, FIG. 3. EX1003-Dec, ¶290.

c) MTC

A POSITA would have been motivated to modify Hobbs's **controller 270** so that **controller 270** transmits a fault indication signal to a user on Hobbs's phone. EX1003-Dec, ¶291; EX1006-Hobbs, [0037]. A POSITA would have understood Hobbs's battery charger **controller 270** to be capable of communicating with Hobbs's phone. EX1006-Hobbs, [0037].

Such a combination would have been the use of a known technique (transmitting a fault indication signal to a Hobbs's phone) to improve similar devices (Hobbs's phone user control of charger 100) in the same way. EX1003-Dec, ¶292. A POSITA would have recognized the combination constitutes applying a known technique (transmitting a power interruption notification to a user's device, per Hobbs-Kelty-078) to a known system ready for improvement (Hobbs's phone) to the yield predictable result of notifying the user quickly and conveniently when charging has stopped, leading to a REOS. *Id.*

This combination would have been combining prior art elements (fault indication signal) according to known methods (transmitting signals to phones) to yield predictable results of the user of Hobbs's phone being alerted of problems during charging of battery via Hobbs's **controller 270**. EX1003-Dec, ¶293. Thus, in the combination, Hobbs's **controller 270** *is configured to send another wireless signal including a power interruption notification* (the instruction comprising the

Hobb's charging complete indication) to Hobbs's phone via Hobbs's battery charger 100 transmitter. *See* Claim 10[b], EX1006-Hobbs, [0111]; EX1003-Dec, ¶293.

A POSITA would have had REOS for Hobbs's **controller 270** transmitting a fault indication signal to a user on Hobbs's phone via Kelty-078's teachings of notifying the user of a problem occurring while charging. EX1003-Dec, ¶294. A POSITA would have appreciated that Hobbs teaches providing an indication of faults in a vehicle battery charging session. *Id.*; EX1006-Hobbs, [0036]. Hobbs teaches "charger 100" communicates "with digital diagnostic device 130 configured to facilitate maintenance of the battery charger or diagnosis of faults." EX1006-Hobbs, [0037]. Hobbs's power interruption notification would be wirelessly provided to Hobbs's phone allowing the user to **monitor** the battery remotely, motivating the combination via Kelty-078's teachings of notifying the user of a problem occurring while charging. EX1003-Dec, ¶294.

X. GROUND 6: CLAIM 13 IS OBVIOUS OVER HOBBS, SUTARDJA, KELTY-078, AND KUROMAME.

A. Claim 13

As discussed in Claim 10[a], Hobbs teaches *the battery charger is releasably attachable to the vehicle*. Hobbs in view of Kuromame teaches *the battery charger is releasably attachable to the...source of power, and is portable as a single unit*.

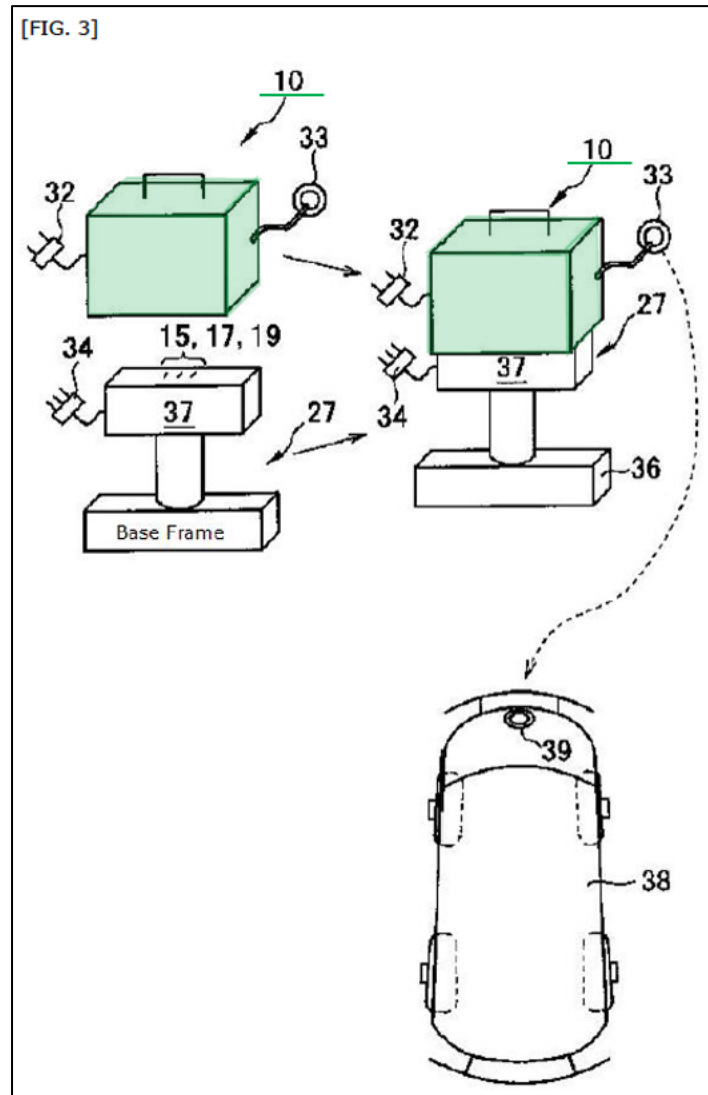
a) Hobbs's Teachings

Hobbs teaches “the present invention include ...**mobile**...battery chargers.” EX1006-Hobbs, [0026], [0053]. Hobbs does not provide implementation details for Hobbs's mobile battery charger, and a POSITA would be motivated to look towards Kuromame to find more implementation details for a mobile (portable) battery charger. EX1003-Dec, ¶295.

b) Kuromame's Teachings

Kuromame teaches a “**portable charging device 10**...the charging system for electric vehicles[.]” EX1010-Kuromame, [0011]-[0012]. Kuromame teaches the portable charging device 10 “can be used alone[.]” EX1010-Kuromame, [0038], [0032], [0035]. Therefore, Kuromame teaches *a battery charger is portable as a single unit*. EX1003-Dec, ¶¶296-298.

Kuromame's *battery charger is releasably attachable to the source of power, and is portable as a single unit* because the driver retrieves the portable charging device 10 from the trunk and connects it to the power device for charging. EX1010-Kuromame, [0027], [0023], [0025]; EX1003-Dec, ¶¶297-298.



EX1010-Kuromame, Fig. 3.

c) MTC

A POSITA would have been motivated and found it obvious to modify Hobbs's vehicle charger to be portable. EX1003-Dec, ¶¶299-302. Hobbs provides a teaching in the prior art (mobile battery charger) that would have led one of ordinary skill to modify the prior art (Hobbs's battery charger) per Kuromame's portable battery charger teachings to arrive at the claimed invention (portable battery

charger). EX1003-Dec, ¶299. A POSITA would have realized that Hobbs's vehicle charger is detachable from the car as discussed in Claim 10[a]. EX1003-Dec, ¶301. A POSITA would have been motivated to make Hobbs's vehicle charger portable to allow charging anywhere with a power outlet. *Id.*

As such, a POSITA would have been motivated to seek out a reference, such as Kuromame, that provides implementation details for a mobile battery charger. EX1003-Dec, ¶300. Such a modification would have been the simple substitution of one known element (Kuromame's portable battery charger) for another (Hobbs's mobile battery charger) to obtain predictable results of being able to charge a vehicle on the go. *Id.*

A POSITA would have had a REOS in modifying Hobbs per Kuromame. EX1003-Dec, ¶302. Hobbs teaches mobile battery chargers. EX1006-Hobbs, [0026]. Kuromame provides implementation details for a portable charging device for electric vehicles. *Id.* Thus, said modification would have been a matter of implementing Hobbs's mobile battery charger to be portable and connectable to a source of power, as taught by Kuromame. *Id.*

XI. CONCLUSION

Petitioner respectfully requests *inter partes* review of the Challenged Claims.

Respectfully submitted,

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COUNSEL FOR PETITIONER

XII. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(A)(1)

A. Real Party-In-Interest

Petitioner is the real party-in-interest. 37 C.F.R. § 42.8(b)(1).

B. Related Matters

The Parties are currently involved in the following Litigation: *ChargeLogic, LLC v. Tesla, Inc.*, W.D. Tex., Case No. 7:26-cv-00100. U.S. Patent Nos. 10,090,567; 11,258,107; 11,721,844; 11,508,996; 11,909,010; and 11,909,011 are asserted in the Litigation and are related (i.e., in the same patent family) to the '107 Patent, which is the subject of the present IPR.

Pursuant to 37 C.F.R. § 42.8(b)(2), Tesla Inc. identifies the following matters related to the '107 Patent:

Tesla, Inc. v. ChargeLogic, LLC, IPR2026-00377, regarding U.S. Patent No. 10,090,567; and

Tesla, Inc. v. ChargeLogic, LLC, IPR2026-00380, regarding U.S. Patent No. 11,721,844; and

Tesla, Inc. v. ChargeLogic, LLC, IPR2026-000379, regarding U.S. Patent No. 11,508,996; and

Tesla, Inc. v. ChargeLogic, LLC, IPR2026-00381, regarding U.S. Patent No. 11,909,010; and

Tesla, Inc. v. ChargeLogic, LLC, IPR2026-00382, regarding U.S. Patent No. 11,909,011.

Petitioner is not aware of any other related matters where the '107 Patent has been at issue

C. Lead and Back-Up Counsel

Petitioner provides the following designation and service information for lead and back-up counsel. 37 C.F.R. §§ 42.8(b)(3) and (b)(4).

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D. 37 C.F.R. § 42.8(b)(4) – Service Information

Please address all correspondence to the lead and back-up counsel as shown above. Petitioner consents to electronic service by e-mail at the e-mail addresses provided above.

CLAIM LISTING APPENDIX
U.S. Patent No. 11,258,107 for Claims 1- 14

Claim Designation	Claim Language
Claim 1[Pre]	1. A system for charging a battery of a vehicle, the system comprising:
Claim 1[a]	a battery charger having:
Claim 1[b]	an electrical power cord releasably attachable to at least one at least one of the vehicle and a source of power;
Claim 1[c]	a transmitter;
Claim 1[d]	a controller electrically coupled to the electrical power cord and to the transmitter, the controller configured to:
Claim 1[e][i]	receive, via a user-manipulatable control, data indicative of a predetermined threshold level of charge
Claim 1[e][ii]	by which the controller sends an alert, the predetermined threshold level of charge being less than a full charge of the battery,
Claim 1[e][iii]	compare, during charging of the battery with the battery charger, a level of charge of the battery to the predetermined threshold level of charge, and
Claim 1[e][iv]	responsive to the level of charge of the battery reaching the predetermined threshold level of charge of the battery, send, before the charging of the battery is complete, at least one signal as the alert via the transmitter, the at least one signal indicative of the predetermined threshold level of charge of the battery; and
Claim 1[f]	a portable controller remote from the vehicle and battery charger, the portable controller configured to wirelessly communicate with the controller of the battery charger via the transmitter;
Claim 1[g]	wherein the portable controller generates a notification to a user indicating the predetermined threshold level of charge of the battery following and as the result of receiving the at least one signal indicative of the predetermined threshold level of charge of the battery.
Claim 2	2. The system of claim 1, wherein the notification is an indicator on a display viewable by the user.
Claim 3	3. The system of claim 2, wherein the display is electrically coupled to the portable controller.

Claim Designation	Claim Language
Claim 4	4. The system of claim 1, wherein the notification is at least one of a group consisting of a text and an e-mail automatically generated to the user.
Claim 5	5. The system of claim 1, wherein the portable controller is configured to send signals to the controller of the battery charger to start and stop charging of the battery.
Claim 6[Pre]	6. A method of charging a battery of a vehicle, the method comprising:
Claim 6[a]	establishing wireless communication between a controller of the vehicular battery charger and a portable controller of a user remote from the vehicle and the vehicular battery charger;
Claim 6[b]	receiving, via a user-manipulatable control, data indicative of a predetermined threshold level of charge by which the controller sends an alert, the predetermined threshold level of charge being less than a full charge of the battery;
Claim 6[c]	supplying power to the battery of the vehicle via the vehicular battery charger;
Claim 6[d]	comparing, during charging of the battery with the vehicular battery charger, a level of charge of the battery to the predetermined threshold level of charge; and
Claim 6[e]	generating and wirelessly transmitting, during the charging of the battery and before the charging of the battery is complete, a signal to the portable controller responsive to detecting the level of charge of the battery reaching the predetermined level of charge of the battery.
Claim 7	7. The method of claim 6, wherein the signal includes data indicative of the level of charge of the battery.
Claim 8	8. The method of claim 6, wherein wirelessly transmitting the signal comprises wirelessly transmitting the signal from the controller of the vehicular battery charger.
Claim 9	9. The method of claim 6, wherein alerting the user comprises alerting the user via at least one of a group consisting of an e-mail and a text.
Claim 10[Pre]	10. A system for charging a battery of a vehicle and for wireless communication with a phone having a controller, the system comprising:

Claim Designation	Claim Language
Claim 10[a]	a battery charger having: an electrical power cord releasably attachable to at least one of the vehicle and a source of power;
Claim 10[b]	a transmitter;
Claim 10[c]	a battery charger controller electrically coupled to the electrical power cord and to the transmitter, the battery charger controller configured to:
Claim 10[d]	wirelessly communicate with the controller of the phone by sending signals via the transmitter,
Claim 10[e]	control supply of power to the battery in the course of a charging session as the level of charge of the battery is increased,
Claim 10[f]	receive, via a user-manipulatable control, data indicative of a predetermined threshold level of charge by which the battery charger controller sends an alert, the predetermined threshold level of charge being less than a full charge of the battery;
Claim 10[g]	compare, during charging of the battery with the vehicular battery charger, a level of charge of the battery to the predetermined threshold level of charge; and
Claim 10[h]	responsive to detection of the level of charge of the battery reaching the predetermined threshold level of charge during the charging session and before charging of the battery is complete, send a signal indicative of the level of charge being reached via the transmitter to the controller of the phone as the alert.
Claim 11	11. The system of claim 10, wherein the signal indicative of the level of charge being reached is at least one of a group consisting of a text and an e-mail automatically generated to the user.
Claim 12	12. The system of claim 10, wherein the battery charger controller is further responsive to signals from the phone to start and stop charging of the battery.
Claim 13	13. The system of claim 10, wherein the battery charger is releasably attachable to the vehicle and the source of power, and is portable as a single unit.
Claim 14	14. The system of claim 10, wherein the battery charger controller is further responsive to detection of interruption of power to the battery by sending another signal indicative of the interruption via the at least one of the group consisting of the transmitter and the receiver to the controller of the phone.

APPENDIX OF EXHIBITS

Exhibit 1001	U.S. Patent No. 11,258,107 to Austin (“the ’107 Patent”)
Exhibit 1002	U.S. Patent No. 11,258,107 File History (“the ’107 File History”)
Exhibit 1003	Declaration of Scott Andrews
Exhibit 1004	U.S. Patent Publication No. 2008/0136371 to Sutardja (“Sutardja”)
Exhibit 1005	U.S. Patent No. 7,698,078 to Kelty-078 et al. (“Kelty-078”)
Exhibit 1006	U.S. Patent Application Publication No. 2006/0028178 to Hobbs et al. (“Hobbs”)
Exhibit 1007	U.S. Patent Application Publication No. 2007/0300183 to Anttila et al. (“Anttila”)
Exhibit 1008	U.S. Patent Application Publication No. 2003/0193405 to Hunt et al. (“Hunt”)
Exhibit 1009	U.S. Patent Application Publication No. 2007/0200433 to Kelty et al. (“Kelty-433”)
Exhibit 1010	Japanese Patent Application No. 2000-4542 to Kuromame et al. (“Kuromame”)
Exhibit 1011	K. Shuaib et al., <i>Co-existence of Zigbee and WLAN, A Performance Study</i> , IEEE Xplore (2006) (“Shuaib”)
Exhibit 1012	U.S. Patent Application Publication No. 2006/0009697 to Banet et al. (“Banet”)
Exhibit 1013	U.S. Patent Application Publication No. 2008/0312782 to Berdichevsky et al. (“Berdichevsky”)
Exhibit 1014	<i>Specification of the Bluetooth System Master Table of Contents & Compliance Requirements: Covered Core Package version: 2.0 + EDR. 4</i> , November 2004. (“Bluetooth”)
Exhibit 1015	C. C. Chan, <i>The State of the Art of Electric and Hybrid Vehicles</i> , Proceedings of the IEEE, Vol. 90, No. 2, February 2002. (“Chan”)
Exhibit 1016	U.S. Patent Application No. 2003/0230443 to Cramer et al. (“Cramer”)
Exhibit 1017	U.S. Patent No. 5,487,002 to Diller et al. (“Diller”)
Exhibit 1018	U.S. Patent No. 2,309,941 to Drummond (“Drummond”)
Exhibit 1019	U.S. Patent No. 5,367,558 to Gillig et al. (“Gillig”)
Exhibit 1020	U.S. Patent Application Publication No. 2010/0106351 to Hanssen et al. (“Hanssen”)

Exhibit 1021	Elena Malykhina, <i>Palm Treo 700p: A PDA For Work And Play</i> , Information Week, May 19, 2006, https://www.informationweek.com/it-leadership/palm-treo-700p-a-pda-for-work-and-play . (“InformationWeek”)
Exhibit 1022	Information Week, Hardware Articles Listings, May 26, 2006, https://web.archive.org/web/20060526214055/http://www.informationweek.com/hardware/reviews/?subSection=Reviews . (“InformationWeekArchived”)
Exhibit 1023	U.S. Patent Application Publication No. 2009/0021218 to Kelty et al. (“Kelty-218”)
Exhibit 1024	Willett Kempton and Jasna Tomić. <i>Vehicle-to-grid power fundamentals: Calculating capacity and net revenue</i> . Journal of Power Sources. 2005. 144. pp. 268-279 (“Kempton”)
Exhibit 1025	U.S. Patent No. 7,693,609 to Kressner et al. (“Kressner”)
Exhibit 1026	William C.Y. Lee, <i>Wireless & Cellular Telecommunications</i> , McGraw-Hill (3rd Ed.) (“Lee”)
Exhibit 1027	U.S. Patent Application No. 2010/0211340 to Lowenthal et al. (“Lowenthal-340”)
Exhibit 1028	U.S. Patent No. 7,956,570 to Lowenthal et al. (“Lowenthal-570”)
Exhibit 1029	Lisa Gade, <i>Palm Treo 700wx for Sprint</i> , MobileTechReview, Spetember 3, 2006, archived October 23, 2006, https://web.archive.org/web/20061023145632/https://www.mobiletechreview.com/treo-700wx.htm (“MobileTechReviewArchived”)
Exhibit 1030	<i>Your Palm© Treo™ 700p Smartphone User Guide</i> , © 2006 Palm, Inc. (“PalmTreo700p”)
Exhibit 1031	U.S. Patent Publication No. 2008/0039980 to Pollack et al. (“Pollack”)
Exhibit 1032	U.S. Patent No. 7,084,859 to Pryor (“Pryor”)
Exhibit 1033	U.S. Patent Appl. Publication No. 2007/0248089 to Redi et al. (“Redi”)
Exhibit 1034	U.S. Patent No. 7,764,932 to Rofougaran et al. (“Rofougaran”)
Exhibit 1035	U.S. Patent No. 5,573,090 to Ross (“Ross”)
Exhibit 1036	<i>Electric Vehicle Battery Systems</i> , Sandeep Dhameja, Newnes, 2002 (“Sandeep”)
Exhibit 1037	Jin-Shyan Lee, Yu-Wei Su, and Chung-Chou Shen, <i>A Comparative Study of Wireless Protocols: Bluetooth, UWB, ZigBee, and Wi-Fi</i> , The 33rd Annual Conference of the IEEE

	Industrial Electronics Society (IECON) (Nov. 5-8, 2007, Taipei, Taiwan) (“Su”)
Exhibit 1038	U.S. Patent Appl. Publication No. 2010/0102776 to Uchida (“Uchida”)
Exhibit 1039	U.S. Patent Appl. Publication No. 2004/0119445 to Wakeman (“Wakeman”)
Exhibit 1040	U.S. Patent Appl. Publication No. 2007/0173805 to Weinberg et al. (“Weinberg”)
Exhibit 1041	U.S. Patent Publication No. 2008/0039989 A1 to Pollack et al. (“Pollack’89”)

CERTIFICATION OF WORD COUNT

The undersigned certifies pursuant to 37 C.F.R. § 42.24 that the foregoing Petition for *Inter Partes* Review, excluding any table of contents, mandatory notices under 37 C.F.R. § 42.8, certificates of service or word count, or appendix of exhibits, contains 13,995 words according to the word-processing program used to prepare this document (Microsoft Word).

Dated: June 18, 2026

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**CERTIFICATE OF SERVICE ON PATENT OWNER
UNDER 37 C.F.R. § 42.105**

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(b), the undersigned certifies that on June 18, 2026, a complete and entire copy of this Petition for *Inter Partes* Review and Exhibits were provided via Federal Express to the Patent Owner by serving the correspondence address of record for the '107 Patent:

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Further, a courtesy copy of this Petition for *Inter Partes* Review was sent via email to Patent Owner's litigation counsel:

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