

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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KEEP TRUCKIN, INC.,  
Petitioner,

v.

INNOVATIVE GLOBAL SYSTEMS, LLC,  
Patent Owner.

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IPR2020-00692  
Patent 8,032,277 B2

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Before JUSTIN T. ARBES, JOHN F. HORVATH, and  
FREDERICK C. LANEY, *Administrative Patent Judges*.

ARBES, *Administrative Patent Judge*.

JUDGMENT  
Final Written Decision  
Determining All Challenged Claims Unpatentable  
*35 U.S.C. § 318(a)*

I. INTRODUCTION

*A. Background and Summary*

Petitioner Keep Truckin, Inc. filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–13 of U.S. Patent No. 8,032,277 B2 (Ex. 1001, “the ’277 patent”) pursuant to 35 U.S.C.

§ 311(a). On August 19, 2020, we instituted an *inter partes* review as to all challenged claims on all grounds of unpatentability asserted in the Petition. Paper 7 (“Decision on Institution” or “Dec. on Inst.”). Patent Owner Innovative Global Systems, LLC subsequently filed a Patent Owner Response (Paper 17, “PO Resp.”), Petitioner filed a Reply (Paper 22, “Reply”), and Patent Owner filed a Sur-Reply (Paper 26, “Sur-Reply”). An oral hearing was held on April 22, 2021, and a transcript of the hearing is included in the record (Paper 28, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–13 are unpatentable.

### *B. Related Matters*

The parties indicate that the ’277 patent is the subject of the following pending district court case: *Innovative Global Systems, LLC v. Keep Truckin, Inc.*, Case No. 19-cv-00641-MN (D. Del.). See Paper 14, 2; Paper 23, 1. Petitioner also filed a petition challenging claims of related U.S. Patent No. 10,157,384 B2 in Case IPR2020-00694. A final written decision was entered in Case IPR2020-00694 on July 21, 2021.

### *C. The ’277 Patent*

The ’277 patent discloses devices and methods for “logging and reporting driver activity and vehicle operation.” Ex. 1001, code (57). Operators of commercial motor vehicles (CMVs) are required to comply with “rules governing the safe operation of . . . vehicles,” including hours of service (HOS) regulations designed to reduce “driver fatigue and sleep

disorder related incidents on the nation's highways.” *Id.* at col. 1, ll. 11–26. The '277 patent states that it incorporates by reference federal regulations defined in 49 C.F.R. Parts 395 and 390.5, which “prohibit drivers from operating or being forced to operate their vehicles more than a specified amount of time between mandatory off-duty periods” and require logging of activities to ensure compliance. *Id.* at col. 1, ll. 27–38, 52–54. According to the '277 patent, “[t]he cost of compliance with these reporting requirements is extraordinarily burdensome” and expensive when using a paper log. *Id.* at col. 1, ll. 55–62. The '277 patent seeks to solve this issue using a mechanical device in the vehicle. *Id.* at col. 1, l. 66–col. 6, l. 17.

Figure 1 of the '277 patent is reproduced below.

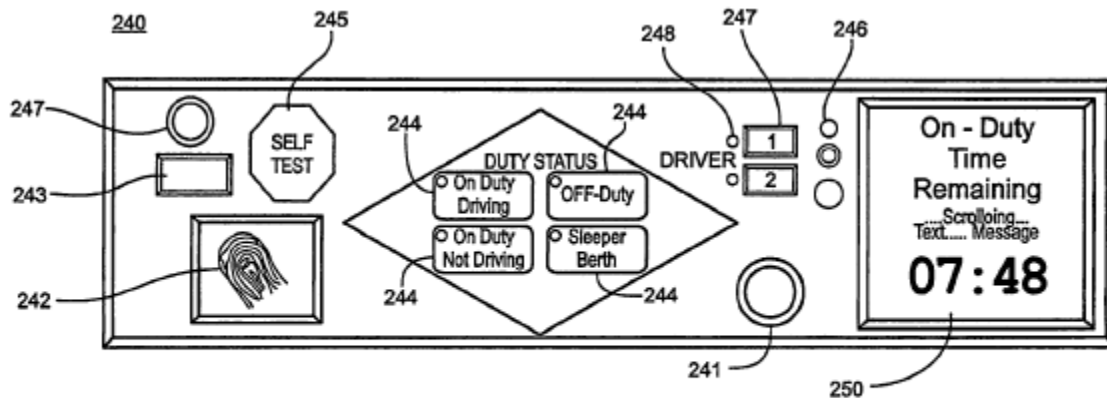


FIG. 1

Figure 1 depicts front panel 240 of on-board recorder 200, which has “various inputs and outputs for interfacing with” the vehicle driver, a host server, or a device operated by legal authorities; sensors within the vehicle (e.g., a vehicle odometer); a data bus of the vehicle; and a global navigation satellite system (e.g., the Global Positioning System (GPS)). *Id.* at col. 6, ll. 49–56. On-board recorder 200 obtains, via various interfaces, “mileage from the vehicle mileage sensing system,” “mileage, engine use, miles

driven, time and date” from the vehicle engine control module (ECM), and vehicle location, date, and time from a global navigation satellite system.

*Id.* at col. 7, ll. 28–35.

On-board recorder 200 also includes duty status buttons 244 for inputting the driver’s current duty status. *Id.* at col. 6, l. 56–col. 7, l. 3. The ’277 patent lists four possible duty statuses: “driving-on duty, not driving-on duty, off duty, and sleeper berth.” *Id.* at col. 8, ll. 44–45. A duty status change can be recorded manually when the driver presses one of duty status buttons 244 or automatically when certain information is received by on-board recorder 200. *Id.* at col. 8, ll. 45–50. For example, on-board recorder 200 can log a change to driving-on duty status “when the vehicle starts to move, as determined by the ECM indicating engine use, i.e., that the vehicle has been started, and by the vehicle mileage sensing system or ECM indicating motion,” or a change to off duty status when the driver logs out from on-board recorder 200. *Id.* at col. 9, ll. 9–30. On-board recorder 200 uses raw data collected over time to create an HOS log. *Id.* at col. 8, ll. 51–54.

Figure 5 of the '277 patent is reproduced below.

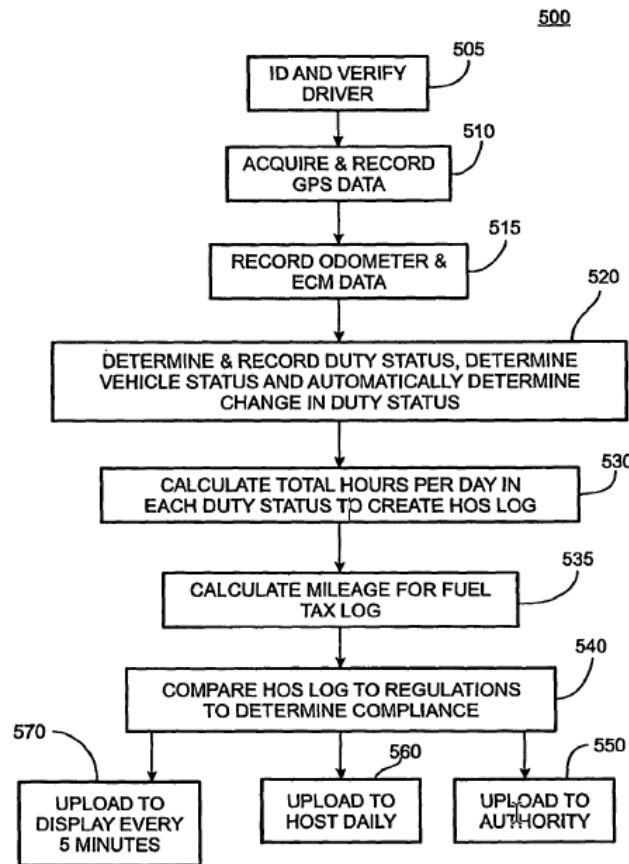


FIG. 5

Figure 5 depicts an exemplary method for “logging and reporting driver and vehicle operating data.” *Id.* at col. 6, ll. 32–33. The on-board recorder identifies the driver at step 505 (e.g., via input to biometric reading device 242 shown in Figure 1 above), receives and records GPS, mileage, and ECM data at steps 510 and 515, determines and records duty status changes (via manual input or automatically) at step 520, “calculat[es] total hours per day in each duty status to create an HOS log” at step 530, and compares the HOS log to HOS regulations to determine compliance with such regulations at step 540. *Id.* at col. 10, ll. 39–55. The '277 patent discloses that

[i]n creating the HOS log, recorder 200 continuously calculates the time the driver has been in each duty status over the course

of a day. The HOS log includes the time per duty status for eight consecutive days, including a calculation of the total hours driven today, total hours on duty for the past seven days, and total hours on duty for the past eight days. The hours of service log is typically created from date, time, mileage and duty status.

*Id.* at col. 8, ll. 57–64, col. 11, ll. 1–20 (describing an exemplary HOS log shown in Figure 6, with duty status on the vertical axis and hours of the day on the horizontal axis).

Finally, the on-board recorder periodically displays the HOS log or compliance information to the driver (e.g., via display 250 shown in Figure 1 above) at step 570, uploads the information to a “receiver external to the vehicle” (e.g., via a wireless telecommunications network) at step 560, or uploads the information to a device of “federal, national, state, provincial or local authorities” at step 550. *Id.* at col. 9, ll. 42–col. 10, l. 14, col. 10, ll. 39–55. For example, “[b]y continuously emitting a signal indicating the compliance status of the driver, recorder 200 provides a way whereby authorized federal, state or local officials can immediately check the status of a driver’s hours of service.” *Id.* at col. 10, ll. 11–14. A device operated by authorities can receive a compliance signal “whenever the vehicle is within a predetermined range of the second receiver located, for example in a hand-held device, law enforcement vehicle, weigh station, or along a highway,” or the device may wirelessly interrogate the on-board recorder for certain data. *Id.* at col. 10, ll. 14–28.

*D. Illustrative Claim*

Challenged claims 1 and 2 of the '277 patent are independent.

Claims 3–13 depend, directly or indirectly, from claim 2. Claim 2 recites:

2. A method for logging and reporting driver activity and vehicle operation, comprising: identifying a driver of a vehicle;

recording operating data with an electronic device operatively connected to a data bus of the vehicle, coupled to a vehicle mileage sensing system, and linked to a global navigation satellite system, the operating data being selected from a group consisting of mileage obtained from at least one of the vehicle mileage sensing system and the data bus; engine use, time, and date obtained from the vehicle data bus; and location, time, and date obtained from the global navigation satellite system;

recording a duty status of the driver;

creating an hours of service log comprising data selected from a group consisting of a change in duty status of the driver, time and date the change occurred, hours within each duty status, total hours driven today, total hours on duty for seven days, and total hours on duty for eight days; and

automatically uploading the hours of service log to a receiver external to the vehicle using a wireless telecommunications network.

*E. Evidence*

The pending grounds of unpatentability in the instant *inter partes* review are based on the following prior art:

U.S. Patent No. 6,225,890 B1, issued May 1, 2001 (Ex. 1007, “Murphy”);

International Patent Application Publication No. WO 97/13208, published Apr. 10, 1997 (Ex. 1006, “Houser”);<sup>1</sup> and

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<sup>1</sup> When citing Houser, we refer to the page numbers listed at the top of each page and the line numbers in the left margin of each page.

Title 49 of the Code of Federal Regulations, Sections 390–396 (Oct. 1, 2003) (Ex. 1008, “Transportation Regulations”). Petitioner filed a declaration from Scott Andrews (Exhibit 1002) with its Petition. Patent Owner filed a declaration from William T. Brown (Exhibit 2006) with its Response.

#### *F. Asserted Grounds*

The instant *inter partes* review involves the following grounds of unpatentability:

| Claim(s) Challenged | 35 U.S.C. §         | Reference(s)/Basis                         |
|---------------------|---------------------|--------------------------------------------|
| 1                   | 103(a) <sup>2</sup> | Houser                                     |
| 1, 2, 4–7, 12, 13   | 103(a)              | Houser, Transportation Regulations         |
| 3, 8–11             | 103(a)              | Houser, Transportation Regulations, Murphy |

## II. ANALYSIS

### *A. Legal Standards*

To prevail in its challenges to the patentability of claims 1–13 of the ’277 patent, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e). “In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v.*

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<sup>2</sup> The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103. Because the challenged claims of the ’277 patent have an effective filing date before the effective date of the applicable AIA amendment, we refer to the pre-AIA version of 35 U.S.C. § 103.

*Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). This burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015); *see also In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1376 (Fed. Cir. 2016) (“Where, as here, the only question presented is whether due consideration of the four *Graham* factors renders a claim or claims obvious, no burden shifts from the patent challenger to the patentee. This is especially true where the only issues to be considered are what the prior art discloses, whether there would have been a motivation to combine the prior art, and whether that combination would render the patented claims obvious.”).

A claim is unpatentable for obviousness if, to one of ordinary skill in the pertinent art, “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting 35 U.S.C. § 103(a) (2006)). The question of obviousness is resolved on the basis of underlying factual determinations, including “the scope and content of the prior art”; “differences between the prior art and the claims at issue”; and “the level of ordinary skill in the pertinent art.” *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Additionally, secondary considerations, such as “commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or nonobviousness, these inquiries may have relevancy.”<sup>3</sup> *Id.* When conducting an obviousness

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<sup>3</sup> Patent Owner has not presented any evidence of secondary considerations of nonobviousness in this proceeding.

analysis, we consider a prior art reference “not only for what it expressly teaches, but also for what it fairly suggests.” *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019) (citation omitted).

A patent claim “is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. An obviousness determination requires finding “both ‘that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.’” *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367–68 (Fed. Cir. 2016) (citation omitted); *see KSR*, 550 U.S. at 418 (for an obviousness analysis, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does”). “Although the *KSR* test is flexible, the Board ‘must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to *how* or *why* the references would be combined to produce the claimed invention.’” *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (citation omitted). Further, an assertion of obviousness “cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *accord In re NuVasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016) (stating that “conclusory statements” amount to an “insufficient articulation[] of motivation to combine”; “instead, the finding must be supported by a ‘reasoned explanation’” (citation omitted)); *Magnum Oil*, 829 F.3d at 1380 (“To satisfy its burden of proving

obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.”).

*B. Level of Ordinary Skill in the Art*

We consider Petitioner’s asserted grounds of unpatentability in view of the understanding of a person of ordinary skill in the art. The level of ordinary skill in the art is “a prism or lens through which . . . the Board views the prior art and the claimed invention” to prevent hindsight bias. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). In determining the level of ordinary skill in the art for a challenged patent, we look to “1) the types of problems encountered in the art; 2) the prior art solutions to those problems; 3) the rapidity with which innovations are made; 4) the sophistication of the technology; and 5) the educational level of active workers in the field.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 666–667 (Fed. Cir. 2000). “Not all such factors may be present in every case, and one or more of them may predominate.” *Id.*

In the Decision on Institution, based on the parties’ arguments and record at the time, we adopted Petitioner’s proposed definition and preliminarily found that a person of ordinary skill in the art at the time of the ’277 patent (August 2005) would have had “a bachelor’s degree in electrical engineering, or equivalent, at least two years of experience related to designing and/or developing on-board recording devices for commercial vehicles, and familiarity with the rules and regulations governing logging and reporting of data for drivers of motor carriers.” Dec. on Inst. 9; *see* Pet. 8–10; Ex. 1002 ¶ 16; Paper 6, 3. The parties agree with that assessment. *See* PO Resp. 4; Reply 3. Based on the full record developed during trial,

including our review of the '277 patent and the types of problems and prior art solutions described in the '277 patent, we adopt the preliminary definition of the level of ordinary skill in the art and apply it for purposes of this Decision.

### *C. Claim Interpretation*

We interpret the challenged claims

using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

37 C.F.R. § 42.100(b) (2019). Neither party proposes any interpretations for terms in the challenged claims. *See* Pet. 9; PO Resp. 4. We have reviewed the parties' papers and conclude that no terms require express interpretation. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) ("Because we need only construe terms 'that are in controversy, and only to the extent necessary to resolve the controversy,' we need not construe [a particular claim limitation] where the construction is not 'material to the . . . dispute.'" (citations omitted)).

### *D. Obviousness Ground Based on Houser and Transportation Regulations (Claims 1, 2, 4–7, 12, and 13)*

#### *1. Houser*

Houser discloses devices and methods for "maintaining an electronic vehicle log." Ex. 1006, code (57). Houser states that "[m]any vehicles, particularly those used commercially, must maintain legally auditable records of their usage," including, for example, data regarding the "driver

and duration of driving.” *Id.* at p. 1, ll. 12–19. Such records may be required by “governmental authorities or agencies.” *Id.* at p. 1, ll. 19–21.

Figure 1 of Houser is reproduced below.

**FIG. 1**

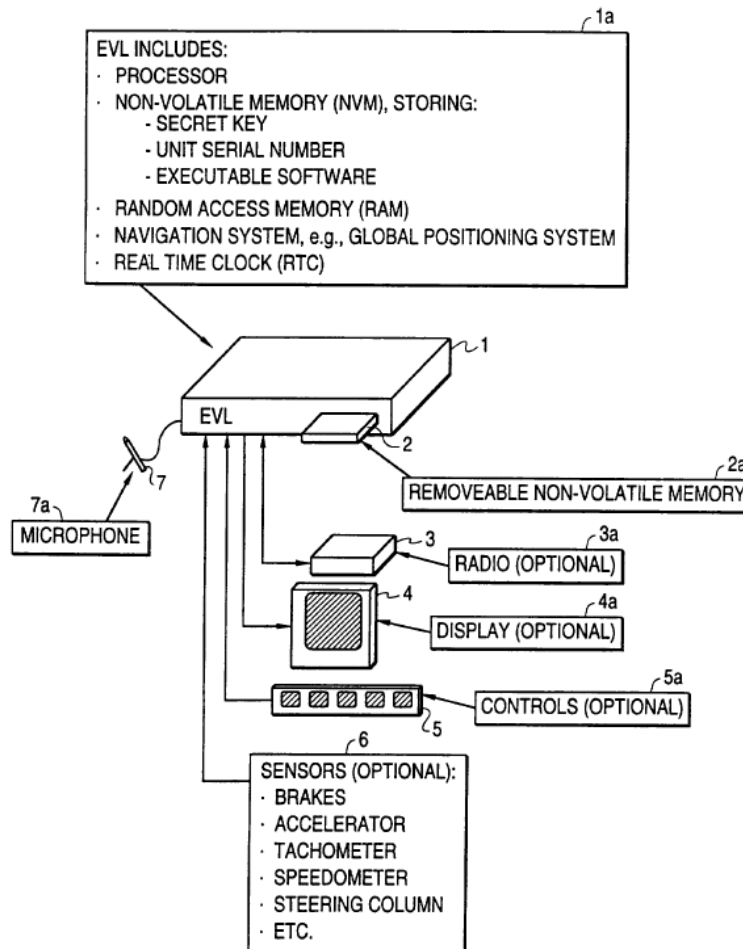


Figure 1 depicts electronic vehicle log (EVL) 1, a “package of elements suitably housed to be mounted in a vehicle” also referred to as a “data processing interface unit (DPIU).” *Id.* at p. 7, ll. 17–23. EVL 1 includes a processor; removable non-volatile memory module 2 for storing collected data; radio 3 for “communicat[ing] with governmental authorities” via wireless communication; display 4 for displaying data to the driver; and controls 5, which may comprise a “keyboard, keypad or related switch control” or microphone for speech input. *Id.* at p. 8, l. 16–p. 9, l. 14.

EVL 1 is coupled to sensors 6 of the vehicle, such as, for example, “brake sensors, accelerator sensors, [and] tachometer or mileage sensors.” *Id.* at p. 9, ll. 15–20. EVL 1 collects data by “periodically monitoring sensors on the vehicle to determine how the vehicle is being used,” including, for example, “date and time of data collection, vehicle speed, brake usage, . . . and vehicle location from a navigation source such as the so-called Global Positioning System (GPS) or equivalent data gathering system.” *Id.* at p. 1, l. 29–p. 2, l. 19, p. 15, l. 31–p. 16, l. 3, p. 20, ll. 18–26. Such records in the past were “manually maintained in a handwritten log.” *Id.* at p. 2, ll. 20–22, p. 7, ll. 14–16.

Figure 3B of Houser is reproduced below.

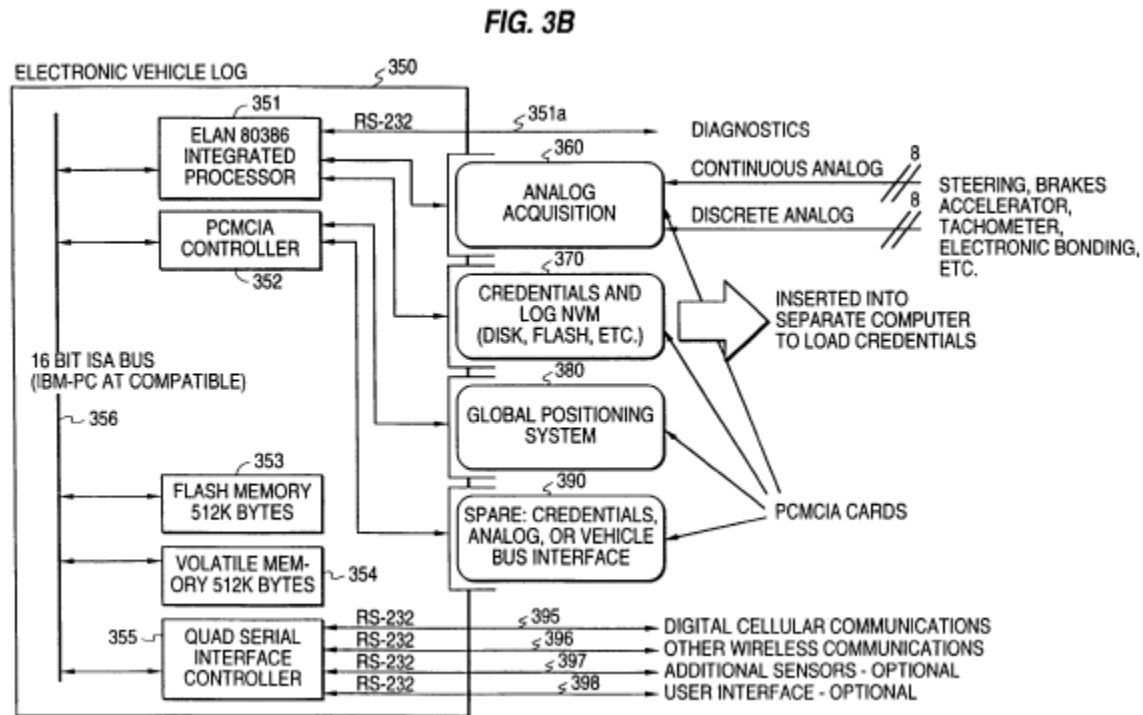


Figure 3B depicts various components of an exemplary EVL, including Personal Computer Memory Card International Association (PCMCIA) controller 352 and PCMCIA cards 360, 370, 380, and 390 for interfacing

with vehicle components (e.g., sensors) and other systems. *Id.* at p. 14, ll. 17–19, p. 16, l. 14–p. 17, l. 29. Figure 5B of Houser is reproduced below.

**FIG. 5B**

| ELEMENT                 | CHARACTERISTICS                        |
|-------------------------|----------------------------------------|
| BRAKE PERFORMANCE       | MECHANICAL STATUS                      |
| DRIVER STATUS / HISTORY | ROAD MILES/ TIME / HEALTH RECORD       |
| MAINTENANCE RECORDS     | HISTORY / VIOLATIONS                   |
| ENVIRONMENTAL SYSTEM    | INSPECTION RECORDS / ON-BOARD MONITORS |

Figure 5B lists various elements of data collected by EVL 1 “[o]ver time.”

*Id.* at p. 26, ll. 16–17. Houser discloses that

[o]ver time, data may be tabulated and summarized and output in the form of Figure 5B. For example, brake performance can demonstrate over time the mechanical status and history of the cab and trailer(s) brakes. Moreover, over time, the driver status and history may be recorded. For example, the driver can collect road mileage, time or duration of travel for the mileage logged and health record. More particularly, the driver’s vision, alcohol or drug record and the like can be maintained with the driver’s identification. Figure 5B also refers to environmental systems for detecting temperature, pressure and the like which are factors of the environment of the vehicle, driver and cargo. Inspection records and on-board monitors and sensor data is recorded in an environmental system table over time.

*Id.* at p. 26, ll. 18–25. Houser describes wirelessly uploading collected data to, for example, an inspection facility at a border crossing when the vehicle enters a particular geographic zone. *Id.* at p. 10, l. 31–p. 13, l. 1.

## 2. *Transportation Regulations*

Transportation Regulations sets forth standards for those involved with the operation of commercial motor vehicles in interstate commerce. Ex. 1008. The regulations require that “every motor carrier shall require every driver used by the motor carrier to record his/her duty status for each

24 hour period” using either a paper grid format or “using an automatic on-board recording device.” *Id.* at 154 (49 C.F.R. § 395.8(a)). “The duty status shall be recorded as follows: (1) ‘Off duty’ or ‘OFF’; (2) ‘Sleeper berth’ or ‘SB’ (only if a sleeper berth is used); (3) ‘Driving’ or ‘D’; (4) ‘On-duty no driving’ or ‘ON.’” *Id.* (49 C.F.R. § 395.8(b)). The regulations require that drivers “keep their records of duty status current to the time shown for the last change of duty status” and require recording of, for example, “[t]he total hours in each duty status.” *Id.* at 154–155 (49 C.F.R. § 395.8(f)(1), (f)(11)). A driver must, if required by his or her motor carrier to use an automatic on-board recording device, “use such device to record the driver’s hours of service.” *Id.* at 159 (49 C.F.R. § 395.15(a)(2)). The regulations require that automatic on-board recording devices be capable of producing, “upon demand, a driver’s hours of service chart, electronic display, or printout showing the time and sequence of duty status changes including the drivers’ starting time at the beginning of each day.” *Id.* (49 C.F.R. § 395.15(b)(1)).

### 3. *Claim 2*

Petitioner argues that claim 2 is unpatentable over Houser and Transportation Regulations under 35 U.S.C. § 103(a). Pet. 39–53. Petitioner relies on Houser as teaching the majority of the limitations of claim 2 and relies on Transportation Regulations for certain limitations. *Id.*

Petitioner argues that Houser teaches a method for “logging and reporting driver activity and vehicle operation.” *Id.* at 42–43 (citing Ex. 1006, p. 1, ll. 3–6). With respect to the first step of claim 2, “identifying a driver of a vehicle,” Petitioner cites Houser’s statement that controls 5 are

used for “input[t]ing the operator’s identity.” *Id.* at 43 (emphasis omitted) (quoting Ex. 1006, p. 9, ll. 9–11).

The second step of claim 2 is

recording operating data with an electronic device operatively connected to a data bus of the vehicle, coupled to a vehicle mileage sensing system, and linked to a global navigation satellite system, the operating data being selected from a group consisting of mileage obtained from at least one of the vehicle mileage sensing system and the data bus; engine use, time, and date obtained from the vehicle data bus; and location, time, and date obtained from the global navigation satellite system.

Petitioner argues that EVL 1 in Houser is “operatively connected to a data bus of the vehicle” (via PCMCIA card 390 shown in Figure 3B above and labeled “Vehicle Bus Interface”), “coupled to a vehicle mileage sensing system” (via PCMCIA card 360 connected to a vehicle mileage sensor), and “linked to a global navigation satellite system” (via PCMCIA card 380 labeled “Global Positioning System”). *Id.* at 43–44. Petitioner further contends that EVL 1 records “operating data,” namely “mileage” obtained from a mileage sensor, as well as “engine use” and “location,” both of which are logged by date and time provided by the navigation system.<sup>4</sup> *Id.* at 44–46.

With respect to the third step of claim 2, “recording a duty status of the driver,” Petitioner relies on a combination of Houser and Transportation Regulations. Petitioner first points to Houser’s disclosure of controls 5 on EVL 1 for inputting data and Houser’s statement that “over time, the *driver status and history* may be recorded. For example, the driver can collect road

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<sup>4</sup> Claims 1 and 2 recite, in a number of limitations, data “selected from a group consisting of” certain types. For the second step of claim 2, Petitioner argues that Houser teaches recording all three recited types of data.

mileage, *time or duration of travel* for the mileage logged and health record.” *Id.* at 31–34, 46–47 (emphasis added) (quoting Ex. 1006, p. 26, ll. 18–22). Petitioner further argues that Transportation Regulations expressly teaches recording the “duty status” of the driver using an automatic on-board recording device. *Id.* at 39–40, 47 (citing Ex. 1008, 154 (49 C.F.R. § 395.8)). According to Petitioner, a person of ordinary skill in the art implementing the device described in Houser, which has input controls and records vehicle and driver data, “would have consulted the Transportation Regulations to identify the types of data that were required to be logged to ensure that they are in compliance with the Transportation Regulations, and that the data is, in fact, properly recorded and reported.” *Id.* at 40–41. In combination, “Houser’s system would be capturing and recording various vehicle and driver parameters, and the Transportation Regulations, as noted by Houser, would specify which vehicle and driver parameters were required to be recorded.” *Id.* at 41. Thus, Petitioner contends that Houser teaches recording various data, such as “driver status and history” over time, and Transportation Regulations specifies particular data that must be recorded, such that a person of ordinary skill in the art would have been motivated to record the duty status of the driver using the device of Houser. *Id.* 31–34, 40–41, 46–47.

Petitioner similarly relies on a combination of Houser and Transportation Regulations for the fourth step of claim 2, which is

creating an hours of service log comprising data selected from a group consisting of a change in duty status of the driver, time and date the change occurred, hours within each duty status, total hours driven today, total hours on duty for seven days, and total hours on duty for eight days.

Petitioner points to Houser’s disclosure that “[t]he present invention is characterized as a *log* because the memory of the present invention substitutes for prior art hand-written log books typically used by drivers of vehicles, especially commercial vehicles,” and Houser’s statement that commercial vehicle operators are required to “maintain *legally* auditable records of their usage,” including “driver and duration of driving.” *Id.* at 47–48 (emphasis added) (quoting Ex. 1006, p. 1, ll. 12–17, p. 7, ll. 14–16). Petitioner argues that “[a]lthough Houser does not explicitly mention preparation of an ‘hours of service log,’ a [person of ordinary skill in the art] would have understood that these legal requirements” are set forth in Transportation Regulations, which describes in detail what must be logged, such as a “driver’s hours of service chart . . . showing the time and sequence of duty status changes.” *Id.* at 48–49 (emphasis omitted) (citing Ex. 1008, 159 (49 C.F.R. § 395.15)). Again, according to Petitioner, a person of ordinary skill in the art “implementing Houser would have configured the data elements that were logged to be consistent with the requirements set forth in the Transportation Regulations.” *Id.* at 49. Petitioner thus asserts that the combination of Houser and Transportation Regulations teaches creating an hours of service log comprising at least “a change in duty status of the driver,” the “time and date the change occurred,” and “hours within each duty status,” as recited in claim 2. *Id.* at 47–49.

With respect to the fifth step of claim 2, “automatically uploading the hours of service log to a receiver external to the vehicle using a wireless telecommunications network,” Petitioner cites Houser’s description of the vehicle wirelessly transmitting logged data to an inspection facility at a reporting zone in response to a polling signal from the facility. *Id.* at 50–53. Petitioner argues that “[a]lthough Houser does not explicitly show a

‘receiver external to the vehicle,’” the reference discloses that the logged data is received by the inspection facility, and a person of ordinary skill in the art “would have understood that, to receive the wirelessly communicated data from the vehicle, the inspection facility would have included a wireless receiver.” *Id.* at 51–52.

Patent Owner in its Response does not dispute that Houser and Transportation Regulations teach all of the limitations of claim 2.<sup>5</sup> Nor does Patent Owner dispute Petitioner’s reasoning as to why a person of ordinary skill in the art would have been motivated to combine the references’ teachings in the manner asserted with a reasonable expectation of success in doing so. Patent Owner’s only argument with respect to the asserted ground is that “Petitioner’s arguments . . . fail because they depend upon the opinion of Petitioner’s unqualified expert, Scott Andrews,” whose “testimony is neither competent nor credible” because he is not a person of ordinary skill in the art. PO Resp. 8–15; Sur-Reply 5–8.

Patent Owner argues that Mr. Andrews is “unqualified” because “[n]othing in his background, education, or training renders him qualified to opine on the subject matter of [the ’277 patent]—systems that log and

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<sup>5</sup> In summarizing the disclosure of Houser, Patent Owner mentions that Houser only allows a driver to input “a limited set of data,” not “duty status information,” and does not disclose how such information “would be used with other stored information to generate an hours of service log that complies with the Transportation Regulations.” PO Resp. 5. As explained above, however, Petitioner relies on the combination of Houser and Transportation Regulations, not Houser alone, to teach the claim steps of “recording a duty status of the driver” and “creating an hours of service log.” *See* Pet. 39–41, 46–49.

present data to ensure compliance with the HOS Regulations.”<sup>6</sup> PO Resp. 8. Patent Owner argues that Mr. Andrews “has no experience designing or developing systems that log and present data to ensure compliance with the HOS Regulations,” nor does Mr. Andrews have any other related experience associated with ensuring compliance with “HOS Regulations.” *Id.* at 10–11; Sur-Reply 6–7. In particular, Patent Owner highlights Mr. Andrews’s lack of familiarity with “key aspects of the HOS Regulations, including 49 C.F.R. § 395.8 and § 395.15,” which allegedly are “critical in the development of [the challenged claims because] they define, in part, the problem to be solved.” PO Resp. 11. Patent Owner argues that because Mr. Andrews lacks familiarity with “HOS Regulations” and because he failed to take “steps to become skilled in the art of HOS logging or compliance,” “Mr. Andrews cannot provide any competent or credible testimony about what a [person of ordinary skill in the art] would have reviewed or would have been motivated to do.” *Id.* at 11–15; Sur-Reply 7–8.

In response, Petitioner notes that Patent Owner “does not allege that Mr. Andrews lacks the level of education or technical experience both parties attribute to a [person of ordinary skill in the art].” Reply 3. Petitioner contends that this is because “Mr. Andrews has a Master’s Degree in electrical engineering and extensive experience designing on-board recording devices for commercial vehicles.” *Id.* (citing Ex. 1002 ¶¶ 6–12; Ex. 1004 (Mr. Andrews’s curriculum vitae); Ex. 2005, 58:17–20, 88:4–11). Petitioner points to Mr. Andrews’s specific experience developing “a lot of systems that are able to calculate and log the kind of data associated with

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<sup>6</sup> Patent Owner does not explicitly define “HOS Regulations,” but refers to regulations set forth in “49 C.F.R. pt. 395 subpt. A.” PO Resp. 1.

hours of service” to demonstrate his familiarity with different kinds of duty statuses and regulations associated with logging and reporting data for drivers of motor carriers. *Id.* at 3–4 (citing Ex. 2008, 30:1–5, 32:21–33:9, 48:18–19, 49:6–8, 58:17–20, 90:6–92:2, 207:1–209:18).

Petitioner characterizes Patent Owner’s argument as follows: “Mr. Andrews[’s] testimony cannot support Petitioner’s challenges because Mr. Andrews allegedly lacks random experience that is not part of the definition of a [person of ordinary skill in the art] agreed to by *both parties*.” *Id.* at 4. Petitioner contends that “[t]he definition of a [person of ordinary skill in the art] adopted by both parties . . . says nothing of designing or developing systems for logging and presenting data to ensure compliance with HOS regulations.” *Id.* Rather, Petitioner points out that “[t]he parties agreed that the only technical expertise required of a [person of ordinary skill in the art] is a degree in electrical engineering, or equivalent, and experience related to designing or developing on-board recording devices for commercial vehicles, both of which Mr. Andrews clearly has.” *Id.*

Patent Owner argues in reply that “Petitioner does not claim that Mr. Andrews has any experience relating to systems designed to log and record data to ensure compliance with an ‘hours of service regulation’ and generate an ‘hours of service log.’” Sur-Reply 6 (emphasis omitted). “This lack of experience matters,” according to Patent Owner, because systems designed for this purpose “need to have specific functionality” and “[n]o electrical engineer could appreciate these issues without *some* experience developing or designing a system having the same general purpose as the one claimed in the [c]hallenged [c]laims.” *Id.*

As an initial matter, we note that Patent Owner did not move to exclude Mr. Andrews’s declaration (Exhibit 1002) and thereby waived any

argument that Mr. Andrews is not “qualified as an expert by knowledge, skill, experience, training, or education [to] testify in the form of an opinion or otherwise” under Federal Rule of Evidence 702. *See* 37 C.F.R. § 42.64 (setting forth the procedure for objecting to evidence and filing a motion to exclude to “preserve” such objections); Paper 8, 9–10 (listing the time periods for motions to exclude); Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019), 79, *available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated> (“Trial Practice Guide”) (“A motion to exclude must explain why the evidence is not admissible (e.g., relevance or hearsay) . . . . A motion to exclude is not a vehicle for addressing the weight to be given evidence—arguments regarding weight should appear only in the merits documents.”). Thus, although Patent Owner’s arguments are framed in terms of whether Mr. Andrews is “qualified,” PO Resp. 8, we understand Patent Owner’s position to be that Mr. Andrews’s testimony should be accorded no *weight* in our analysis of whether Petitioner has proven that the challenged claims would have been obvious.

Indeed, we note that with respect to the issue of whether an expert has sufficient qualifications to offer admissible testimony, there is no requirement that the expert’s experience be a perfect match to the field of art at issue. *SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010). To testify as an expert, an individual does not need to be a person of ordinary skill in the art, but rather must be “qualified in the pertinent art.” *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1363–64 (Fed. Cir. 2008); *see* Trial Practice Guide 34.

We find that Patent Owner’s criticisms of Mr. Andrews’s qualifications in this proceeding are unwarranted. As Petitioner has argued, and Patent Owner has not disputed, Mr. Andrews’s advanced degree in

electrical engineering and extensive experience designing on-board recording devices for commercial vehicles demonstrate that he has technical expertise that is particularly relevant to the subject matter of the '277 patent. *See* Ex. 1002 ¶¶ 5–11; Ex. 1004, 1–6. For the last 25 years, he has “focused exclusively on the development and management of technologies in support of Intelligent Transportation Systems.” Ex. 1002 ¶ 6. Mr. Andrews has “worked in the field of vehicle status logging since the early 1990’s,” including “systems for logging the location and operational status of vehicles, and providing automated roadside assistance and emergency response based on relaying GPS position and vehicle status to a service center using wireless communications.” *Id.* ¶ 7; *see* Ex. 2005, 30:7–19 (Mr. Andrews testifying that he has “done a lot of projects where the objective was to log data from the vehicle”), 58:7–20 (Mr. Andrews testifying that he “developed a lot of systems that are able to calculate and to collect and log the kind of data associated with hours of service”). He has experience “work[ing] on various systems associated with trucking applications,” including systems for “driver hour logging and associated parking reservation systems, and various types of navigation, communications, and dispatching systems,” and has “a strong working knowledge of the various technologies that comprise location-based vehicle status logging and tracking.” Ex. 1002 ¶ 8. With respect to compliance with regulations in particular, Mr. Andrews testified that he worked on a project “to make sure . . . truckers had a known place where they would have room to park so that they could comply with hours-of-service regulations,” and is generally familiar with duty statuses and the concept of hours of service. Ex. 2005, 29:16–30:5, 48:10–21. As such, Mr. Andrews has the level of education and experience of a person of ordinary skill in the art, as defined

above and agreed to by the parties, and possesses relevant technical work experience, such that his testimony is relevant to and entitled to consideration in our analysis. *See supra* Section II.B.

Although Patent Owner appears to be correct that Mr. Andrews’s experience does not include working on any specific projects in which logging and recording data was specifically for the *purpose* of ensuring compliance with an hours of service regulation, we do not find that this absence of first-hand knowledge impacts the weight we should give his testimony. *See* Ex. 2005, 48:10–49:9 (Mr. Andrews testifying that although he could not recall reading 49 C.F.R. §§ 395.8 or 395.15 in particular prior to being engaged for this proceeding, he is “familiar with the requirements for automatic on-board recording devices”). Mr. Andrews has considerable *technical* experience related to the “[t]echnical [f]ield” of the ’277 patent, namely logging and reporting driver activity and operation data of a vehicle, which is a focus of the ’277 patent. *See* Ex. 1001, codes (54), (57), col. 1, ll. 4–7; Ex. 1002 ¶¶ 5–11; Ex. 1004, 1–6; Reply 3–6 (describing Mr. Andrews’s experience as recounted during his deposition). To the extent Patent Owner contends that Mr. Andrews needed to do more to “acquaint himself with the prior art,” Mr. Andrews testified in detail regarding the state of the art, the evolution of logging devices in the art, “federal regulations requiring logging of driver activity and vehicle operational data,” and the Transportation Regulations in particular. *See* PO Resp. 11–13; Sur-Reply 7–8; Ex. 1002 ¶¶ 28–58, 118–128, 142–151. And regardless, his testimony pertains to what a person of ordinary skill in the art would have been motivated to do, and “[t]he person of ordinary skill is a hypothetical person who is presumed to be aware of all the pertinent prior art.” *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d

955, 962 (Fed. Cir. 1986). Therefore, we reject Patent Owner’s argument that Mr. Andrews’s testimony should be given no weight because he is an “unqualified” expert.

We find that Mr. Andrews’s opinions as to why Houser and Transportation Regulations teach the limitations of claim 2 and why a person of ordinary skill in the art would have been motivated to combine their teachings with a reasonable expectation of success are explained sufficiently and are consistent with the references’ disclosures. Specifically, Houser teaches that controls 5 of EVL 1 are used by the driver to input information. Ex. 1006, p. 9, ll. 4–14, p. 9, l. 32–p. 10, l. 1. Houser further teaches recording “driver status and history” over time and characterizes its device as a “log” that replaces prior art “hand-written log books.” *Id.* at p. 7, ll. 14–16, p. 26, ll. 16–20. In describing the applicable art, Houser states that operators of vehicles are required to “maintain legally auditable records of their usage” and various records are required by “governmental authorities or agencies.” *Id.* at p. 1, ll. 12–21. Although Houser does not cite 49 C.F.R. § 395.15 specifically, some of the “legal[]” requirements for vehicle and driver data logging are in Transportation Regulations, one of which is the necessity to maintain—using an automatic on-board recording device (like the one described in Houser)—an “hours of service chart” showing “time and sequence of duty status changes.” *See* Ex. 1008, 159 (49 C.F.R. § 395.15(b)). A person of ordinary skill in the art would have been well aware of such regulations. *See supra* Section II.B; Ex. 1001, col. 1, ll. 27–30 (stating that “[f]ederal regulations relating to the safe operation of Commercial Motor Vehicles (CMV) are defined in 49 CFR Part 395 and 49 CFR Part 390.5”).

Mr. Andrews explains why a person of ordinary skill in the art implementing the device described in Houser, which has driver controls and records vehicle and driver data, would have looked to Transportation Regulations to identify the specific types of data that are required to be logged to be in compliance, and designed the Houser device to record such data. Ex. 1002 ¶¶ 123–128. Those opinions are supported by express statements in Houser (e.g., that its invention is a “log” and is designed to ensure compliance with various “legal[]” requirements of governmental authorities) that link its teachings to Transportation Regulations. Petitioner’s analysis regarding claim 2, supported by the testimony of Mr. Andrews, which we credit,<sup>7</sup> is persuasive. *See* Pet. 40–53; Ex. 1002 ¶¶ 123–128, 131–157.

For the reasons stated by Petitioner and explained above, we find that Houser and Transportation Regulations teach all of the limitations of claim 2 and conclude that a person of ordinary skill in the art would have been motivated to combine the references’ teachings with a reasonable expectation of success. Petitioner has proven, by a preponderance of the evidence, that claim 2 would have been obvious based on Houser and Transportation Regulations under 35 U.S.C. § 103(a).

#### *4. Claims 4–7, 12, and 13*

Claims 4–7, 12, and 13 depend, directly or indirectly, from claim 2. Petitioner explains how each limitation of the claims is taught or rendered obvious by the disclosure of Houser. Pet. 53–60.

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<sup>7</sup> Patent Owner’s expert, Mr. Brown, does not testify as to any issues regarding the asserted ground based on Houser and Transportation Regulations. *See* Ex. 2006 ¶ 24.

Claim 4 recites “wirelessly transmitting information relating to the vehicle to at least one of an onboard recorder and a computing device external to the vehicle.” Petitioner argues that Houser teaches wirelessly uploading information to a receiver external of the vehicle at inspection facility 203, as explained with respect to parent claim 2, and it would have been obvious to a person of ordinary skill in the art that “the information would be wirelessly transmitted to a computing device capable of receiving the transmitted information.” *Id.* at 50–54. Petitioner also cites Houser’s disclosure of inspector workstations 204 at inspection facility 203 “communicat[ing] with vehicle 200 . . . by wireless means.” *Id.* at 54 (quoting Ex. 1006, p. 11, l. 31–p. 12, l. 4).

Claims 5–7 recite that the computing device of parent claim 4 is a “handheld device,” “host server,” or “electronic tablet,” respectively. Petitioner argues that these types of computing devices were well-known in the art, and “[t]ransmitting information relating to the vehicle to a handheld device, a host server, or an electronic tablet amounts to no more than combining familiar prior art elements according to known methods to yield predictable results.” *Id.* at 55–56; *see* Ex. 1006, p. 10, ll. 23–25 (“[A]n agent uses a personal computer or workstation to generate, for example, border crossing or inspection credential data.”), p. 11, ll. 30–31 (“At the inspection facility, work stations, shown as computer workstations, 204 are provided [to] governmental employees, such as inspectors.”), p. 12, ll. 9–12 (“The workstation 204 may interface with centralized databases to obtain data that is not stored in the workstation as necessary. . . . [I]t is desirable if the workstations 204 are networked together for intercommunication and interchangeability.”).

Claim 12 recites “emitting safety related information from the vehicle.” Petitioner points to Houser’s disclosure of transmitting various safety related data, such as the driver’s “safety record and health,” “safety biometrics,” “[c]argo data,” and “HAZMAT warnings.” Pet. 56–59 (citing Ex. 1006, p. 1, ll. 22–28, p. 11, ll. 16–17, 20–28, p. 13, l. 15–p. 14, l. 5, p. 15, l. 28 (“The safety/health of the vehicle/operator may be output.”)).

Claim 13 recites that the safety related information of parent claim 12 comprises “tire pressure.” Petitioner cites Houser’s disclosure of EVL 1 monitoring “tire pressure monitoring sensors” and collecting “tire safety” information. *Id.* at 59–60 (citing Ex. 1006, p. 9, ll. 15–20, p. 26, ll. 11–13). Petitioner argues that a person of ordinary skill in the art would have found it obvious to “include tire pressure information as part of the safety related information that is emitted to allow a government authority to confirm that the tire pressure of the vehicle is at a safe level” and “would have understood that a key element of a roadside safety inspection for a heavy vehicle would include inspecting tire pressure.” *Id.* (citing Ex. 1006, p. 28, l. 30–p. 29, l. 3; Ex. 1008, 117 (49 C.F.R. § 393.75(h))).

Patent Owner does not dispute Petitioner’s arguments as to claims 4–7, 12, and 13, other than to assert that Mr. Andrews’s testimony is not credible. PO Resp. 8–15. We disagree for the reasons explained above. *See supra* Section II.D.3.

Petitioner’s analysis for each of the claims, supported by the testimony of Mr. Andrews, which we credit, is persuasive. *See* Pet. 53–60; Ex. 1002 ¶¶ 158–175. We find that Houser and Transportation Regulations teach or render obvious all of the limitations of claims 4–7, 12, and 13 and conclude that a person of ordinary skill in the art would have been motivated to combine the references’ teachings with a reasonable expectation of

success, for the reasons stated by Petitioner. Petitioner has proven, by a preponderance of the evidence, that claims 4–7, 12, and 13 would have been obvious based on Houser and Transportation Regulations under 35 U.S.C. § 103(a).

### 5. *Claim 1*

Claim 1 is an apparatus claim with limitations similar to those of claim 2. Petitioner argues that Houser teaches or suggests an “electronic device for logging and reporting driver activity and vehicle operation” (i.e., EVL 1) comprising a “memory device” (i.e., non-volatile memory module 2), “power supply,” “first interface configured to connect to a vehicle mileage sensing system” (i.e., PCMCIA card 360 shown in Figure 3B above), “second interface configured to connect to a data bus of the vehicle” (i.e., PCMCIA card 390), “receiver configured to link with a global navigation satellite system” (i.e., PCMCIA card 380), “data portal configured to upload data from the memory device to a receiver external to the vehicle using a wireless telecommunications network” (i.e., wireless interface to communicate with an inspector workstation), “driver interface configured to record driver identification information input by a driver of the vehicle” (i.e., controls 5), “processor” (i.e., processor 351) for recording “operating data”<sup>8</sup> (e.g., “ignition switch position, speed, steering, brake accelerator data, tachometer data, electronic cargo bonding data and the like”), and a “display” (i.e., display 4). Pet. 13–39, 41–42. Petitioner argues

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<sup>8</sup> Claim 1 recites a processor for recording data “selected from a group consisting of operating data, an hours of service log, and a fuel tax log.” Petitioner argues that Houser teaches recording “operating data.” Pet. 34–38.

that the limitation of a “driver interface configured to record . . . duty status input by the driver” would have been obvious based on Houser’s disclosure of recording “driver status and history” over time and the express requirement in Transportation Regulations for drivers to record duty status. *Id.* at 31–34, 39–42 (citing Ex. 1006, p. 26, ll. 18–22; Ex. 1008, 154).

Patent Owner does not dispute Petitioner’s arguments as to claim 1 other than to assert that Mr. Andrews’s testimony is not credible. PO Resp. 8–15. We disagree for the reasons explained above. *See supra* Section II.D.3.

Petitioner’s analysis for each of the limitations, supported by the testimony of Mr. Andrews, which we credit, is persuasive. *See* Ex. 1002 ¶¶ 66–100, 106–117, 123–130. We find that Houser and Transportation Regulations teach all of the limitations of claim 1 and conclude that a person of ordinary skill in the art would have been motivated to combine the references’ teachings with a reasonable expectation of success, for the reasons stated by Petitioner. Petitioner has proven, by a preponderance of the evidence, that claim 1 would have been obvious based on Houser and Transportation Regulations under 35 U.S.C. § 103(a).

*E. Obviousness Ground Based on Houser, Transportation Regulations, and Murphy (Claims 3 and 8–11)*

*1. Murphy*

Murphy discloses “[a] system for restricting use of a vehicle by a selected vehicle operator to permitted time intervals and permitted vehicle travel corridors.” Ex. 1007, code (57). An individual may have his or her use of a vehicle “restricted to one or more permitted corridors or paths” or “restricted to one or more selected time intervals.” *Id.* at col. 3, ll. 21–26.

For example, a restricted operator (RO) may have been “convicted of operation of a vehicle under the influence of alcohol and/or of a controlled substance or drug (a DUI offense)” and may only be permitted to operate the vehicle “to commute to and from work during restricted workday hours.” *Id.* at col. 3, ll. 26–47.

Murphy discloses vehicle apparatus 170 comprising biometric indicium receiving and analysis mechanism (BIRAM) 177 that receives or measures a “biometric indicium” of the vehicle driver; location determination (LD) module 173 that receives signals and determines the “present location and/or present speed” of the vehicle; and controller module 179 connected to vehicle interface module 182 that in turn is “connected to at least one vehicle component, such as [the] vehicle engine, vehicle transmission system, [or] vehicle fuel supply . . . for use in controlling or restricting operation of the vehicle.” *Id.* at col. 13, l. 28–col. 14, l. 4, Fig. 6. “[V]ehicle interface 182 and [the] associated information bus may, if desired, be provided according to the serial data communications standards between microcomputers in a vehicle, as set forth in S.A.E. Documents J1708 and J1587.” *Id.* at col. 14, ll. 13–17.

The driver first “activates the vehicle by turning on the ignition system and thereby activates the driver control system,” then, in response to a prompt from the control system, “provides a sample of his/her (first) ident indicium,” such as a “biometric indicium” like a “thumbprint,” “partial or full facial image,” or “retina” scan. *Id.* at col. 4, ll. 39–44, col. 7, ll. 49–55, col. 16, l. 52–col. 17, l. 2, Fig. 2 (steps 31 and 33). Based on the ident indicium presented, the control system “identifies the driver” and determines the status of the driver as “(1) [an] RO; (2) identified and authorized, but not an RO; (3) unidentified or unauthorized; (4) non-identifiable because of poor

quality of ident indicium presented by driver; [or] (5) ident indicium not presented.” *Id.* at col. 7, l. 57–col. 8, l. 2, Fig. 2 (steps 35 and 37). The control system then “determines the present vehicle location, vehicle speed (optional) and time.” *Id.* at col. 8, ll. 2–4, Fig. 2 (step 39).

If the driver provides an ident indicium and is determined to be an RO (status 1), the control system determines “(i) whether the vehicle location and/or speed are within permitted ranges for the RO and (ii) whether the present time and/or accumulated time or mileage are within permitted ranges for the RO.” *Id.* at col. 5, ll. 17–24, col. 8, ll. 5–10, col. 17, ll. 14–29, Fig. 2 (steps 41 and 43). If both conditions are met, “the system allows the RO to continue to operate the vehicle . . . by enabling the ignition circuit so that the engine can be started.” *Id.* at col. 8, ll. 10–14, Fig. 2 (step 46).

Subsequently, the control system “optionally determines whether a new ident indicium or sample is now required” at “unpredictable times” and follows a similar identification and restriction process. *Id.* at col. 4, ll. 44–52, col. 8, ll. 15–20, Fig. 2 (step 45). If either condition is not met, however, the control system takes one or more of various “Control Actions” to restrict the driver’s use of the vehicle, such as, for example, “(temporarily) disabl[ing] the vehicle at a selected time so that the vehicle no longer operates, through fuel cutoff, air brake disablement or some other similar measure,” “disabl[ing] use of selected vehicle accessories,” or “reduc[ing] the vehicle speed to a selected speed range.” *Id.* at col. 5, ll. 29–60, col. 8, ll. 21–27, col. 17, ll. 30–62, Fig. 2 (step 47).

If the driver fails to provide the required ident indicium (status 5), the control system takes any of the “Control Actions” that are “consistent with restricting the driver’s operation of the vehicle,” such as disabling the vehicle. *Id.* at col. 9, ll. 22–29, Fig. 2 (steps 81 and 83).

## 2. Claims 8–11

Claims 8–11 each depend from the immediately preceding claim and independent claim 2, in sequence:

8. The method for vehicle data communication according to claim 2, wherein identifying the driver of the vehicle comprises downloading driver related data from a wireless communication network to a vehicle onboard recorder.

9. A method for vehicle data communication according to claim 8, wherein the driver related data comprises biometric data selected from a group consisting of facial, retinal, and thumb print identifiers.

10. The method for vehicle data communication according to claim 9, and comprising reading biometric data of the driver and matching the data read to the biometric data stored in the vehicle onboard recorder to verify the identity of the driver, thereby logging the driver into the vehicle onboard recorder.

11. The method for vehicle data communication according to claim 10, further comprising disabling the vehicle if the driver is not logged into the vehicle onboard recorder.

### *a) Whether the Prior Art Teaches the Claim Limitations*

With respect to claim 8, Petitioner argues that Murphy teaches a vehicle onboard recorder (i.e., apparatus 170) that compares information to restrictions imposed on an “identified” vehicle operator, communicates wirelessly, and is capable of “downloading from a remote facility” information for “vehicle driver identification.” Pet. 66–68 (citing Ex. 1007, col. 13, ll. 44–48, 53–59, col. 14, ll. 23–27, 40–45, col. 15, ll. 55–60, Fig. 6). Petitioner contends that “[s]etting the onboard recorder disclosed in Murphy to download data from a wireless communication network would have been obvious to a [person of ordinary skill in the art] in light of” the cited disclosures. *Id.* at 67.

With respect to claim 9, Petitioner argues that Houser discloses a driver inputting a “biometric” to log into the EVL, Murphy specifically discloses the use of a “facial scan,” “retinal scan,” or “fingerprint” for biometric identification, and “[i]t would have been obvious to a [person of ordinary skill in the art] to choose one of the examples of biometric data described by Murphy to use as the biometric disclosed in Houser.” *Id.* at 68–69 (citing Ex. 1006, p. 4, ll. 13–15, p. 21, ll. 15–17; Ex. 1007, col. 2, ll. 23–32, col. 4, ll. 39–44, col. 16, l. 52–col. 17, l. 2). Similarly, with respect to claim 10, Petitioner argues that Houser discloses a driver using a “biometric” to obtain access and log into the EVL, after which the biometric is verified to identify the driver. *Id.* at 70; *see* Ex. 1006, p. 4, ll. 13–18, p. 21, ll. 15–21.

With respect to claim 11, Petitioner argues that Murphy discloses determining the status of a driver based on the driver’s “biometric indicium” and, if such an indicium is not presented, restricting the driver’s operation of the vehicle in various ways, such as temporarily disabling the vehicle. Pet. 70–71 (citing Ex. 1007, col. 2, ll. 35–45, col. 5, ll. 29–33, col. 7, ll. 24–29, col. 7, l. 64–col. 8, l. 2, col. 9, ll. 24–29, col. 9, l. 66–col. 10, l. 2, col. 11, ll. 19–27, Figs. 2A, 2B (steps 81 and 83)).

Patent Owner does not dispute that Houser and Murphy teach the limitations of claims 8–11.<sup>9</sup> *See* Tr. 23:1–10. Petitioner’s analysis explaining why the references teach the limitations of each of the claims,

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<sup>9</sup> Patent Owner argues with respect to all of the challenged claims that Petitioner’s asserted grounds fail because Mr. Andrews’s testimony is not credible. PO Resp. 8–15. We disagree for the reasons explained above. *See supra* Section II.D.3.

supported by the testimony of Mr. Andrews, which we credit, is persuasive. *See* Pet. 66–71; Ex. 1002 ¶¶ 191–213.

*b) Whether a Person of Ordinary Skill in the Art Would Have Been Motivated to Combine the References' Teachings*

With respect to the combination of references, Petitioner argues that Houser and Murphy both disclose systems for “collecting, logging and reporting various vehicle driver and operational information,” and both are specifically concerned with “ensur[ing] . . . vehicles are driven safely and according to certain restrictions.” Pet. 63. Petitioner contends that Houser generally teaches the use of “biometric sensors” to acquire driver data, and Murphy teaches “particular instances” of using such sensors (e.g., facial scan, retinal scan, fingerprint) to identify the driver. *Id.* at 63–64. And, according to Petitioner, a person of ordinary skill in the art

seeking to implement the system of Houser would have sought out a reference such as Murphy in order to be informed about the range of technologies that might be employed to implement the functions described generally by Houser. A motor carrier that installs in its vehicles EVLs as disclosed in Houser would further benefit from practicing the inventions disclosed in Murphy. For example, Murphy discloses a number of restrictions that may be imposed on a vehicle “if the vehicle driver is found to be operating outside the permissible vehicle operating range(s).”

*Id.* at 64 (citations omitted) (quoting Ex. 1007, col. 17, ll. 30–33).

Petitioner’s contentions are supported by the testimony of Mr. Andrews. *See* Ex. 1002 ¶¶ 179–184.

Patent Owner disputes whether a person of ordinary skill in the art would have been motivated to combine Houser with Murphy,<sup>10</sup> relying on the testimony of Mr. Brown. PO Resp. 15–22 (citing Ex. 2006 ¶¶ 32–44); Sur-Reply 8–15. Patent Owner addresses all of the challenged claims for the asserted ground together in its Response (focusing primarily on the language of claim 11 pertaining to “disabling the vehicle”), focuses solely on claim 11 in its Sur-Reply, and addressed only claim 11 at the hearing. *See id.*; Tr. 16:15–19.

*(1) Periodic Biometric Verification*

Patent Owner argues that “combining Murphy with Houser would have rendered Houser inoperable” for its intended purpose of vehicle safety. PO Resp. 16–17. Patent Owner cites Murphy’s description of commanding the driver to provide biometric information at “unpredictable times while the vehicle is operating” or fixed intervals while driving, and disabling the vehicle if the driver does not do so. *Id.* at 17–18. According to Patent Owner, “the combination of Murphy’s features—the demand for periodic biometric verification and, without such verification, the ability to shut the vehicle down—would have rendered Murphy of no interest” to an ordinarily skilled artisan. *Id.* Patent Owner further contends that requiring “repeated, mandatory validation efforts” in a CMV would make the vehicle more dangerous because if a CMV is disabled, it is impossible for the driver to

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<sup>10</sup> Patent Owner does not dispute the combination of Houser and Murphy with Transportation Regulations. Petitioner has provided sufficient reasoning for the combination with Transportation Regulations with respect to parent claim 2. *See* Pet. 40–41, 63–65; *supra* Section II.D.3.

“safely guide th[e] CMV to a stop off the road” (unlike a small passenger car, for example). *Id.* at 18.

We disagree. As an initial matter, Petitioner’s asserted ground is not premised on periodic input of biometric information while the vehicle is being driven, but rather simply modifying Houser’s system to disable the vehicle if the driver is not logged into the EVL. *See* Pet. 70–71 (arguing that Murphy teaches biometric verification “to provide access to a vehicle” and disabling the vehicle so that the vehicle cannot be operated); *Allied Erecting & Dismantling Co. v. Genesis Attachments, LLC*, 825 F.3d 1373, 1381 (Fed. Cir. 2016) (obviousness does not require incorporating all teachings of one reference into another); *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1076 (Fed. Cir. 2015) (“A reference must be considered for everything it *teaches* by way of technology and is not limited to the particular *invention* it is describing and attempting to protect.” (quotation marks and citation omitted)).

Further, Murphy does not require periodic biometric verification once a vehicle is in motion in all embodiments. To the contrary, the reference indicates that doing so is merely an option for some embodiments. Murphy states that “[i]n one embodiment, each person who is seated behind the driver’s wheel must present a sample of a biometric indicium” when beginning to operate the vehicle, and “[i]n *some embodiments*, the vehicle operator is required to present another sample of the biometric indicium at unpredictable times while the vehicle is operated.” Ex. 1007, col. 2, ll. 24–32 (emphasis added); *see also id.* at col. 8, ll. 15–17 (“In step 45, the system *optionally* determines whether a new ident indicium or sample is now required. This requirement will recur at unpredictable times.” (emphasis added)), col. 9, ll. 30–32 (same for step 85). Murphy further

discloses, “for *at least one* selected time during which an operator operates a selected vehicle, requesting the operator to provide a selected ident indicium, within a selected indicium time interval, for interrogation.” *Id.* at col. 21, ll. 52–55 (emphasis added). The “at least one” time plainly can be when the driver enters the vehicle and attempts to start it (i.e., before the vehicle starts moving). This is consistent with the language of claim 11, which imposes no requirement on when the disabling take place. The disabling can take place when the driver first attempts to log into the device and start driving; it need not occur while the vehicle is in motion. *See* Tr. 31:18–32:26 (Patent Owner acknowledging that the disabling in claim 11 can take place at any time).

Moreover, the fact that Murphy in some embodiments prompts the driver periodically while driving the vehicle for biometric input does not negate Murphy’s express teaching of verifying the driver when the driver starts the vehicle. *See* Ex. 1007, col. 2, ll. 24–29, col. 6, ll. 55–59 (“In addition to, or instead of, presentation of a biometric indicium, the vehicle may require insertion or presentation of a token or smart card . . . that corresponds to that vehicle, in order for the vehicle to be activated or ‘started.’”), col. 7, ll. 50–55 (driver is prompted to provide an ident indicium when the driver “activates the vehicle by turning on the ignition system”), col. 8, ll. 10–14 (“enabling the ignition circuit so that the engine can be started” if it is determined that the driver is status 1 and driving at the permitted time and mileage), 36–40 (same for status 2), col. 11, ll. 31–34 (“Preferably, the driver is required to respond to the first command to present a ident indicium sample, which command will be issued at or around the time the vehicle is activated.”). Indeed, Murphy describes important reasons for doing so. A driver’s use of a vehicle may be restricted because

he or she was convicted of a DUI offense, is “of an advanced age,” is “a very young driver,” “suffers some other infirmity” that might make the driver “unable to fully control and operate the vehicle,” or is transporting hazardous substances. *Id.* at col. 3, ll. 26–40, col. 9, ll. 45–53, col. 17, ll. 3–13. Use may be restricted by time or location, such as, for example, limiting the driver to “commute to and from work during restricted workday hours” or to travel to “a medical practitioner’s office, a pharmacy, [or] a food store . . . during restricted hours each day.” *Id.* at col. 3, ll. 40–47. Thus, it is plainly important to prevent the driver from starting the vehicle and beginning to drive if the driver is attempting to drive outside a restricted time or location. In that case, periodic biometric verification would never take place because the vehicle would be disabled prior to being started.

For similar reasons, we disagree with Patent Owner’s position that Murphy was not concerned with vehicle safety. *See* PO Resp. 16. Murphy restricts the use of a vehicle in circumstances where driving might be unsafe (e.g., when a driver has a DUI conviction or is elderly, young, or infirm). Ex. 1007, col. 1, ll. 10–28, col. 3, ll. 21–47, col. 17, ll. 3–13. Murphy also describes restricting use in safe ways. For example, if the vehicle is in motion, it can have its speed reduced to an acceptable speed or “be brought to a graceful stop,” or, in “extreme situation[s],” it can deploy an airbag. *Id.* at col. 2, ll. 60–64, col. 5, ll. 29–65, col. 17, ll. 30–62. We agree with Petitioner that both Houser and Murphy are “concerned with ensuring vehicles are driven safely.” *See* Pet. 64–65.

Given that Murphy does not require periodic biometric verification while the vehicle is in motion in all embodiments and teaches, for example, disabling the vehicle when the driver first attempts to start the vehicle, we see no reason why a person of ordinary skill in the art, in considering the

teachings of Houser and Murphy together, would have been limited to implementing periodic biometric verification in Houser's system as Patent Owner contends. Modifying Houser's system to disable the vehicle if the driver is not logged into the EVL would not render Houser inoperable for its intended purpose of ensuring the safe operation of the vehicle.

*(2) Communication Over a Vehicle Data Bus*

Patent Owner makes a number of arguments pertaining to the use of a vehicle data bus. Patent Owner argues that "Murphy's system needs to be equipped to not only receive information from the data bus, but also to send a signal to impose a control action to the engine control unit via the vehicle's data bus," and "[t]he need to send a signal to the engine control unit via a data bus would have concerned a [person of ordinary skill in the art]."

PO Resp. 19. According to Patent Owner and Mr. Brown, "sending data to an engine control unit was an untested theory" in 2005, with the industry just beginning to experiment with the data bus and not sending signals to the data bus—only the reverse, i.e., receiving information from the data bus. *Id.* at 19–20 (citing Ex. 2006 ¶¶ 40–42, 44). Patent Owner argues that a person of ordinary skill in the art would have been concerned that "transmitting data across the data bus would unintentionally disable the CMV." *Id.* at 20.

Patent Owner further contends that "directing information toward a vehicle's engine control unit was unnecessary in the field of logging HOS compliance" because "[t]he information necessary to generate an HOS log could be obtained by other, more conventional technologies, such as the use of global positioning systems to gauge speed and distance traveled." *Id.* at 21. Patent Owner argues that Houser is evidence of that because the EVL

collects data via a data bus but does not require transmitting a signal to an engine control unit. *Id.* at 21–22.

We disagree. Patent Owner does not point to—and we do not find—any disclosure in Murphy that its control system “needs” or “requires” transmission of a signal to an engine control unit via the vehicle data bus to initiate a control action. *See* PO Resp. 19. The only support that Mr. Brown cites for that position is Murphy’s reference to the SAE J1708 and J1587 communication protocols, but that portion of Murphy merely gives examples of “serial data communications standards between microcomputers in a vehicle” rather than describing how the control system triggers control actions. *See* Ex. 2006 ¶¶ 40–41; Ex. 1007, col. 13, l. 66–col. 14, l. 17.

Further, Murphy discloses at least one method of disabling a vehicle—fuel cutoff—that does *not* require communication with an engine control unit via a vehicle data bus. *See* Ex. 1007, col. 5, ll. 29–54, col. 17, ll. 30–62. Mr. Brown acknowledged that fuel cutoff would constitute disabling a vehicle as recited in claim 11 and would not require communication with the engine:

Q. How could a vehicle be disabled as was cited in claim 11 if the driver is not logged into the vehicle onboard recorder?

[COUNSEL]: Objection; form, foundation, scope.

A. I’m sure there are things like ignition interlocks.

Q. Is there anything else you can think of?

A. Off the top of my head, I can’t think of anything else.

Q. What about fuel cutoff?

A. That would certainly function, but an ignition interlock would be easier.

Q. Okay. Well, if you consider fuel cutoff, would fuel cutoff require communication with the engine?

- A. Not necessarily, because I could—I could have a circuit that keeps fuel cutoff through an elec—through a switch. So, no, I *would not have to communicate with the engine*.

Ex. 1034, 33:3–24 (emphasis added). Patent Owner faults Petitioner for not asking further questions to establish that a person of ordinary skill in the art “would have” specifically implemented a switch to cut off fuel. Sur-Reply 11–13. The relevance of the testimony above, however, is in refuting Patent Owner’s assertion that Murphy *requires* communicating a signal to an engine control unit over the vehicle data bus to disable the vehicle. Murphy does not say one way or the other whether such communication is performed or needed, and the evidence shows that for at least one type of disabling, it is not. Patent Owner’s contentions regarding the need to transmit signals to an engine control unit to disable a vehicle are not persuasive, as they are inconsistent with the disclosure of Murphy.

Ultimately, we agree with Petitioner that “[t]he disclosures in Murphy that Petitioner alleges would be obvious to combine with the other cited references are not the features that Patent Owner now alleges are required by Murphy” (i.e., periodic biometric verification while the vehicle is in motion and transmitting a signal to an engine control unit over the vehicle data bus to disable the vehicle) and “there is no indication in Murphy or elsewhere that the disclosures in Murphy cited by Petitioner are inexorably tied to those features, or that the teachings of Murphy could not be combined with the disclosures in Houser without them.” *See* Reply 18–19. Modifying Houser’s system to disable the vehicle if the driver is not logged into the EVL would not require communication to an engine control unit over a vehicle data bus and thereby render Houser inoperable for its intended purpose as Patent Owner contends.

(3) *Expert Testimony*

Finally, we note that Petitioner argues that we should give no weight to the testimony of Patent Owner's expert, Mr. Brown, because he does not "qualify" as a person of ordinary skill in the art. Reply 7–8. We reject that argument for reasons similar to those explained above regarding Mr. Andrews. *See supra* Section II.D.3. Petitioner never moved to exclude Mr. Brown's declaration (Exhibit 2006) and thereby waived any argument that he is not "qualified as an expert by knowledge, skill, experience, training, or education [to] testify in the form of an opinion or otherwise" under Federal Rule of Evidence 702. Further, Mr. Brown has education equivalent to a bachelor's degree in electrical engineering and the requisite level of technical experience required by the determined level of ordinary skill in the art, and possesses relevant technical work experience, such that his testimony is relevant to and entitled to consideration in our analysis. *See* Sur-Reply 2–5 (citing Ex. 2006 ¶¶ 7, 10, 12, 14; Ex. 1035, 62–66).

We have considered and weighed all of the testimony of Mr. Andrews and Mr. Brown according to the strength of their opinions posited in the context of the record before us. Based solely on their education and experience, we conclude that the testimony of both experts is entitled to consideration, with Mr. Andrews having slightly more relevant education and Mr. Brown having slightly more relevant work experience. As explained above, though, we conclude that Mr. Andrews's opinions as to why a person of ordinary skill in the art would have been motivated to combine the teachings of Houser and Murphy are more credible, as they are consistent with and supported by the disclosures of the cited prior art references and evidence that he relies upon. *See* Ex. 1002 ¶¶ 179–184; *Elbit Sys. of Am., LLC v. Thales Visionix, Inc.*, 881 F.3d 1354, 1358 (Fed. Cir.

2018) (“The [Patent Trial and Appeal Board (‘PTAB’)] [i]s entitled to weigh the credibility of the witnesses.” (citation omitted)); *Icon Health & Fitness, Inc. v. Strava, Inc.*, 849 F.3d 1034, 1041 (Fed. Cir. 2017) (“To the extent [a party] challenges the PTAB’s factual findings, . . . the PTAB is permitted to weigh expert testimony and other record evidence and, in so doing, rely on certain portions of an expert’s declaration while disregarding others.”); Trial Practice Guide 35 (“The Board has broad discretion to assign weight to be accorded expert testimony.”).

#### *(4) Conclusion*

For the reasons stated by Petitioner and explained above, we find that Houser, Transportation Regulations, and Murphy teach or render obvious all of the limitations of claims 8–11 and conclude that a person of ordinary skill in the art would have been motivated to combine the references’ teachings with a reasonable expectation of success. Petitioner has proven, by a preponderance of the evidence, that claims 8–11 would have been obvious based on Houser, Transportation Regulations, and Murphy under 35 U.S.C. § 103(a).

#### *3. Claim 3*

Claim 3 depends from claim 2 and recites that “the vehicle data bus comprises at least one of a group consisting of RS232, SAE J1708, SAE J1850, SAE J1939, and SAE J2497.” Petitioner argues that Houser teaches a vehicle data bus for acquiring vehicle data but “does not describe specific types of vehicle buses,” and Murphy describes a vehicle data bus operating according to the SAE J1708 standard. Pet. 65–66 (citing Ex. 1007, col. 14, ll. 13–17). Patent Owner does not dispute that Murphy

teaches the additional limitation of claim 3. *See* Tr. 23:1–10. Petitioner’s analysis is persuasive. *See* Pet. 65–66.

With respect to the combination of references, Petitioner explains that the references both concern vehicle operation safety and have overlapping disclosures, and a person of ordinary skill in the art “seeking to implement the system of Houser would have sought out a reference such as Murphy in order to be informed about the range of technologies that might be employed to implement the functions described generally by Houser.” *Id.* at 63–66 (citing Ex. 1002 ¶¶ 182–190). In the proposed combination, Houser’s vehicle data bus would operate according to the SAE J1708 standard, as taught by Murphy, such that each would be “performing the same exact functions” that the references describe. *Id.* at 65–66.

Patent Owner generally disputes whether a person of ordinary skill in the art would have been motivated to combine Houser with Murphy, but does not address specifically the language of claim 3. *See* PO Resp. 15–22 (addressing all of the challenged claims for the asserted ground together); Sur-Reply 8–15 (addressing only claim 11); Ex. 2006 ¶¶ 39–44. We do not agree with Patent Owner’s arguments regarding the combination of Houser and Murphy for the reasons explained above. *See supra* Section II.E.2.b. Patent Owner’s arguments also are largely inapposite to claim 3. The only modification to Houser for purposes of claim 3 is to use the SAE J1708 communication protocol for the vehicle data bus. Pet. 65–66. There is no requirement in claim 3 of using the vehicle data bus to communicate information *to* the vehicle engine control unit (e.g., to disable the vehicle)—the only requirement is that of parent claim 2 that the electronic device be “operatively connected to” and obtain information “from” the vehicle data bus. Thus, Patent Owner’s assertions regarding the alleged danger of

disabling a vehicle in the manner taught by Murphy and the necessity of communicating information to a vehicle engine control unit are immaterial. *See* PO Resp. 15–22; Sur-Reply 8–15.

Petitioner’s contentions regarding claim 3 are supported by the testimony of Mr. Andrews and are persuasive based on the full trial record. *See* Pet. 63–66; Reply 10–11; Ex. 1002 ¶¶ 176–190. Houser discloses the use of a vehicle data bus to acquire vehicle operation data, and a person of ordinary skill in the art would have been motivated based on Murphy to use the well-known SAE J1708 standard for the vehicle data bus. *See KSR*, 550 U.S. at 417 (“[W]hen a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.” (quotation marks and citation omitted)).

For the reasons stated by Petitioner and explained above, we find that Houser, Transportation Regulations, and Murphy teach all of the limitations of claim 3 and conclude that a person of ordinary skill in the art would have been motivated to combine the references’ teachings with a reasonable expectation of success. Petitioner has proven, by a preponderance of the evidence, that claim 3 would have been obvious based on Houser, Transportation Regulations, and Murphy under 35 U.S.C. § 103(a).

*F. Obviousness Ground Based on Houser (Claim 1)*

Petitioner contends that claim 1 is unpatentable over Houser under 35 U.S.C. § 103(a). Pet. 11–39. As explained above, we conclude that claim 1 is unpatentable over the combination of Houser and Transportation Regulations. *See supra* Section II.D.5. As such, we need not address

Petitioner's alternative ground of unpatentability of claim 1 based on Houser alone.

### III. CONCLUSION<sup>11</sup>

Petitioner has demonstrated, by a preponderance of the evidence, that claims 1–13 of the '277 patent are unpatentable. In summary:

| <b>Claims</b>              | <b>35 U.S.C. §</b> | <b>References/<br/>Basis</b>                        | <b>Claims<br/>Shown<br/>Unpatentable</b> | <b>Claims<br/>Not shown<br/>Unpatentable</b> |
|----------------------------|--------------------|-----------------------------------------------------|------------------------------------------|----------------------------------------------|
| 1                          | 103(a)             | Houser <sup>12</sup>                                |                                          |                                              |
| 1, 2, 4–7,<br>12, 13       | 103(a)             | Houser,<br>Transportation<br>Regulations            | 1, 2, 4–7, 12,<br>13                     |                                              |
| 3, 8–11                    | 103(a)             | Houser,<br>Transportation<br>Regulations,<br>Murphy | 3, 8–11                                  |                                              |
| <b>Overall<br/>Outcome</b> |                    |                                                     | 1–13                                     |                                              |

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<sup>11</sup> Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this Decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. §§ 42.8(a)(3), 42.8(b)(2).

<sup>12</sup> As explained above, we do not reach Petitioner's alternative ground based on Houser alone. See *supra* Section II.F.

#### IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–13 of the '277 patent have been shown to be unpatentable.

This is a final decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2020-00692  
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