

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LOS ANGELES COUNTY METROPOLITAN
TRANSPORTATION AUTHORITY

Petitioner,

v.

TRANSPORT TECHNOLOGIES, LLC

Patent Owner.

Case IPR2016-01077

Patent 6,980,101

Before TRENTON A. WARD, GEORGIANNA W. BRADEN, and
MONICA S. ULLAGADDI, *Administrative Patent Judges*.

ULLAGADDI, *Administrative Patent Judge*.

DECISION
Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

A. Background

Los Angeles County Metropolitan Transportation Authority, Clark Construction Group LLC, and Atkinson Contractors LP (collectively, “Petitioner”) filed a Petition (Paper 4, “Pet.”)¹ for *inter partes* review of claims 1, 3, 5, 6, 8, and 10 (the “challenged claims”) of U.S. Patent No. 6,980,101 (Ex. 1001, “the ’101 patent”). Transport Technologies, LLC (“Patent Owner”) timely filed a Preliminary Response (Paper 8, “Prelim. Resp.”).

Pursuant to 35 U.S.C. § 314(a), *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

Upon consideration of the Petition, the Petitioner’s supporting evidence, as well as Patent Owner’s Preliminary Response and supporting evidence, and for the purposes of this Decision, we are persuaded Petitioner has established a reasonable likelihood it would prevail with respect to at least one of the challenged claims. Accordingly, for the reasons that follow, we institute an *inter partes* review of the ’101 patent as to challenged claims 1, 3, 5, 6, 8, and 10.

B. Related Proceedings

The parties inform us that the ’101 patent is at issue in the following proceeding: *Transport Techs., LLC v. L.A. County Metro. Transp. Auth.*, Case No. 2:15-cv-6423-RSWL (C.D. Cal.), filed August 21, 2015. Pet. 1; Paper 7. 1. Petitioner filed a separate petition on August 19, 2016 for *inter partes* review, Case

¹ This decision references the Corrected Petition filed on May 31, 2016. Paper 4.

No. IPR2016-01633, that challenges the same claims of the '101 patent challenged in this proceeding.

C. The '101 Patent

The '101 patent is entitled “Motor Vehicle Occupancy Signaling System” and discloses transmitting “a claim by a registrant as to the number of occupants traveling in a vehicle over a section of highway” that is associated with a high occupancy vehicle (HOV) incentive program. Ex. 1001, [54], [57]. The registrant’s claim is made when “traversing . . . one or more sections of highway at particular times of day and days of the year,” which are “deemed . . . qualifying ride-sharing event[s]” (QREs) by an agency that administers a ridesharing program. *Id.* at 1:51–56 (internal quotation marks omitted). In addition to a claim of occupancy, the '101 patent also discloses that the agency collects identifying information for the registrant to the ridesharing program. *Id.* at 1:66–2:1.

The '101 patent further discloses that the claim of occupancy is transmitted by a sending device, alternatively referred to as a transponder, “that is carried or attached to a motor vehicle” and that includes “circuitry [that] will uniquely identify the transponder and the position of the switch claiming an occupancy level.” *Id.* at 2:59–66. Figure 2, reproduced below, is a diagram of the transponder or sending device. *Id.* at 2:32–33.

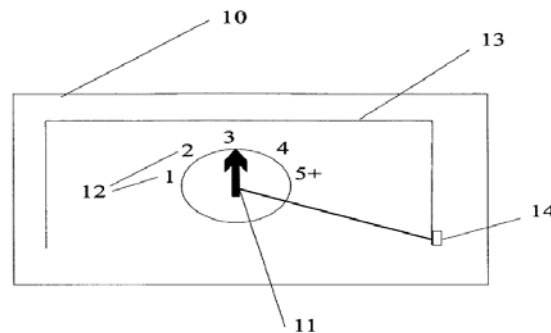


Figure 2 of the '101 patent depicts the transponder or sending device.

Figure 2 depicts sending device 10 “with a multiple position switch 11 that can point to a claimed occupancy level 12.” *Id.* at 2:60–62. Multiple position switch 11 permits claiming an occupancy level from 1 to 5 or more. *See id.* at Fig. 2. Sending device 10 “transmit[s] an identification code when passing by reading device 3.” *Id.* at 2:42–44. Figure 4, reproduced below, depicts processing performed by reading device 3.

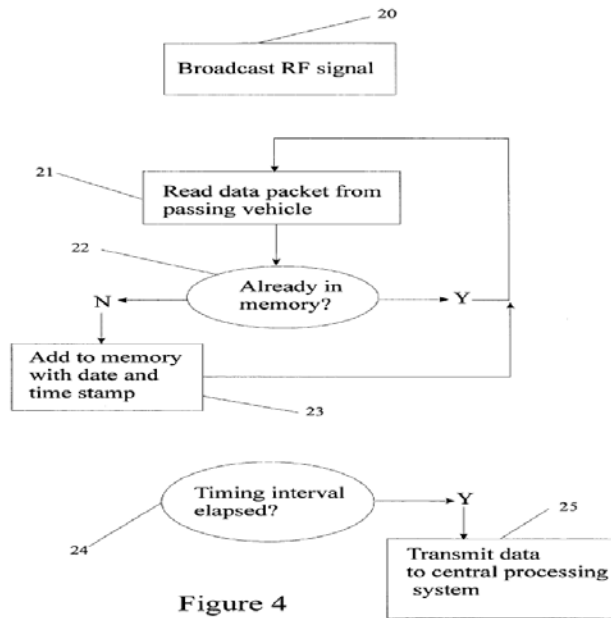


Figure 4

Figure 4 of the '101 patent depicts a process flow diagram for the reading device.

Reading device 3, using its receiver, listens for transmissions from sending device 10 of a passing vehicle that is within its radio frequency signal range. *Id.* at 3:15–18. The '101 patent further discloses that reading device 3 reads data transmitted from sending device 10, stores the data in memory, and transmits the data to a central processing system for the agency. *See id.* at 3:18–24, Fig. 4.

D. Illustrative Claims

As noted above, Petitioner challenges claims 1, 3, 5, 6, 8, and 10 of the '101 patent, of which claims 1 and 6 are independent. Both independent claims are reproduced below.

1. A vehicle occupancy monitoring system wherein a claim is made by a registrant about the number of occupants in a vehicle as it traverses a designated section of highway:

 a transmitter that transmits a claim as to the number of occupants in the vehicle;

 a sending transponder in the vehicle that transmits a code that uniquely identifies the registrant with the program administrator;

 a reading data collector that can interrogate a vehicle within its range, and receive, store and transfer to a central processing facility said transmitted code identifying the registrant along with a time/date stamp.

Ex. 1001, 3:26–37.

6. A method of receiving claimed vehicle occupancy data about a vehicle by a registrant, and also identifying the registrant as the vehicle traverses a designated section of highway, said method comprising the steps of:

 transmitting the number of occupants in a vehicle claimed by a registrant;

 transmitting a signal from the vehicle that identifies the registrant;

 and then receiving the claim by a registrant as to number of occupants in a vehicle and reading the signal from the vehicle that identifies the registrant as the vehicle transits the designated section of highway.

Id. at 4:13–25.

E. The Evidence of Record

Petitioner relies upon the following references, as well as the Declarations of Anthony Wing (Ex. 1007) and Scott Andrews (Ex. 1008):

Reference	Date	Exhibit
U.S. Patent No. 5,289,183 (“Hassett ’183”)	Feb. 22, 1994	1004
“AUTOMATED VEHICLE OCCUPANCY MONITORING SYSTEMS FOR HOV/HOT FACILITIES” (“The Ontario Report”)	Dec. 16, 2004	1005
U.S. Patent No. 5,086,389 (“Hassett ’389”)	Feb. 4, 1992	1006

F. The Asserted Grounds of Unpatentability

Petitioner asserts unpatentability of the challenged claims of the ’101 patent based on the following grounds:

Reference(s)	Basis	Claims Challenged
Hassett ’183	§ 102 ²	1, 3, 6, and 8
Hassett ’183	§ 103	1, 3, 6, and 8
The Ontario Report	§ 102	1, 3, 5, 6, 8, and 10
The Ontario Report	§ 103	1, 3, 5, 6, 8, and 10
Hassett ’183 and The Ontario Report	§ 103	1, 3, 5, 6, 8, and 10
Hassett ’183 and Hassett ’389	§ 103	1, 3, 5, 6, 8, and 10

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29 (2011), revised 35 U.S.C. § 102, effective March 16, 2013. Because the ’101 patent has an effective filing date before this date, we refer to the pre-AIA version of § 102 throughout this Decision.

II. DISCUSSION

A. *Claim Construction*

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable construction standard). Under that standard, and absent any special definitions, we give claim terms their ordinary and customary meaning, as would have been understood by one of ordinary skill in the art at the time of the invention. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Claim terms need only be interpreted to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

1. *Preambles of Claim 1 and Claim 6*

Claim 1 recites, *inter alia*, “[a] vehicle occupancy monitoring system wherein a claim is made by a registrant about the number of occupants in a vehicle as it traverses a designated section of highway.” Ex. 1001, 3:26–28. Claim 6 recites, *inter alia*, “[a] method of receiving claimed vehicle occupancy data about a vehicle by a registrant, and also identifying the registrant as the vehicle traverses a designated section of the highway.” *Id.* at 4:13–16.

According to Petitioner, “the preambles of both independent claims are non-limiting” and “as a district court may construe preambles as non-limiting, the Board should examine the Challenged Claims on *inter partes* review as if the preambles are non-limiting.” Pet. 5. Patent Owner does not address the preambles in its discussion of claim construction. *See Prelim. Resp.* 8–12.

Our reviewing court has held that “a preamble generally is not limiting when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the claimed invention.” *Catalina Marketing Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 809 (Fed. Cir. 2002).

In this case, the body of claim 1 not only defines a structurally complete vehicle occupancy monitoring system with a transmitter, a sending transponder, and a reading data collector, but the body of the claim substantially overlaps with the recitation of the preamble. *Compare* Ex. 1001, 3:26–28, *with id.* at 3:29–37. The body of claim 6 similarly describes a complete process and also substantially reiterates the preamble; “receiving the claim by a registrant as to number of occupants in a vehicle and reading the signal from the vehicle that identifies the registrant as the vehicle transits the designated section of highway.” *Compare id.* at 4:13–16, *with id.* at 4:22–25.

In view of the above, on this record and for the purposes of this Decision, we determine that neither the preamble of claim 1 nor the preamble of claim 6 is limiting.

2. “registrant”

Patent Owner contends the broadest reasonable construction of the claim term “registrant” is “a person or entity that has registered to participate in a program of ridesharing incentives.” Prelim. Resp. 12. Patent Owner bases this construction on the ’101 patent’s overview of the ridesharing program. *See id.* at 11–12 (citing Ex. 1001, 1:59–64, 3:6–7).

According to Petitioner, “[u]nder a broadest reasonable interpretation the driver (or anyone else in the car with access to the device interface) could be the claimed ‘registrant’ ‘claiming’ the number of occupants,” and this term is “not

only limited to the particular person who had actually registered with the program administrator.” Pet. 8 (citing Ex. 1008 ¶ 103).

We are charged with interpreting claim terms according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b). Additionally, when construing claim terms, we “should also consult the patent’s prosecution history in proceedings in which the patent has been brought back to the [U.S. Patent and Trademark Office] for a second review.” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015). Yet, we must be careful not to improperly import limitations into the claims or to read a particular embodiment appearing in the written description into the claim, if the claim language is broader than the embodiment. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993). In *SuperGuide Corp. v. DirecTV Enters., Inc.*, 358 F.3d 870, 875 (Fed. Cir. 2004), our reviewing court held:

[t]hough understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.

We note that the claim term “registrant” is not defined in the specification of the ’101 patent with the requisite deliberateness, clarity, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (“Although an inventor is indeed free to define the specific terms used to describe his or her invention, this must be done with reasonable clarity, deliberateness, and precision,” and when a term is given an uncommon meaning, the uncommon definition must be set out within the patent disclosure.). Moreover, although the embodiments disclosed in the ’101 patent are instructive, the claims recite language broader than that of the disclosure cited by Patent Owner. *See Van Geuns*, 988 F.2d at 1184. The ’101 patent

describes a “system [that] determines if a qualified ride-sharing event has occurred, and if so it will then provide for distribution of the program incentives to the registered individual(s)” and further, that “[a] driver who anticipates being able to participate in QREs would register with the agency (the program administrator).” Ex. 1001, [57], 1:59–61; *see also id.* at 2:48–50, 3:6–7 (describing a data packet consisting of an identifier that uniquely identifies the registrant and further describing how a “driver would, upon registration, acquire a number of these devices uniquely identifying the registrant”).

Accordingly, on this record and for the purposes of this Decision, we are not persuaded that the claim term “registrant” requires a person or entity to register with *a ridesharing program*, or administrator of the same, contrary to Patent Owner’s position. *See* Prelim. Resp. 11–12. At this stage of the proceeding, we determine that Patent Owner’s construction is overly narrow because the construction impermissibly imports limitations from the specification. *See Van Geuns*, 988 F.2d at 1184. We further determine, at this stage of the proceeding, that Petitioner’s construction of “registrant” is overly broad because it eliminates the requirement that a person had registered at all. *See* Pet. 8.

Because the specification of the ’101 patent does not define explicitly the term “register,” we refer to its ordinary and customary meaning, as would have been understood by one of ordinary skill in the art in the context of the entire disclosure. *See Translogic Tech., Inc.*, 504 F.3d at 1257. To determine the ordinary and customary meaning of this term, we refer to its dictionary definition. The dictionary definition for the term “register” is “to enter in or as in a record or list; enroll or record official” and definition for the term “registrant” is a person who registers.” *Webster’s New World College Dictionary 4th Edition, 1999* (Ex. 3001, 4). Therefore, on this record and for the purposes of this Decision, we

determine that the claim term “registrant” encompasses a person who has registered their vehicle or enrolled in a program.

3. “*program administrator*”

According to Patent Owner, the broadest reasonable construction of the claim term “program administrator” is ““an entity or agency that administers a program to provide ridesharing incentives based on vehicle occupancy.”” Prelim. Resp. 11. Again, Patent Owner bases its proffered construction on “the overview of the ridesharing program in the ’101 patent.” *Id.* at 9–11 (citing Ex. 1001, [57], 1:26–29, 1:51–56, 1:59–61, 2:9–12). Petitioner does not proffer a construction for the “program administrator.” *See generally* Pet.

Here again, we note that the claim term “program administrator” is not defined in the specification of the ’101 patent with the requisite deliberateness, clarity, and precision. *See Paulsen*, 30 F.3d at 1480. The ’101 patent apparently equates a program administrator with an agency: “[a] driver who anticipates being able to participate in QREs would register with the agency (the program administrator).” Ex. 1001, 1:59–61; *see also id.* at 1:54–57 (determining, by an agency, what is deemed to be a QRE and publishing, by the agency, a schedule defining the QRE). Accordingly, on this record and for the purposes of this Decision, we are not persuaded that the claim term “program administrator” requires an entity or agency to administer a *ridesharing* program. At this stage of the proceeding, we determine that Patent Owner’s construction is overly narrow because the construction impermissibly imports limitations from the specification. *See Van Geuns*, 988 F.2d at 1184.

Because the specification of the ’101 patent does not define explicitly the term “program administrator,” we refer to its ordinary and customary meaning, as

would have been understood by one of ordinary skill in the art in the context of the entire disclosure. *See Translogic Tech., Inc.*, 504 F.3d at 1257.

The dictionary definition for the term “program” is “a plan or procedure for dealing with some matter.” *Webster’s New World College Dictionary 4th Edition, 1999* (Ex. 3001, 5). Therefore, on this record and for the purposes of this Decision, the claim term “program administrator” encompasses an entity or person that administers a plan or procedure for dealing with some matter.

B. Principles of Law

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

A claim is unpatentable under 35 U.S.C. § 103(a) if 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 to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

“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. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring *inter partes* review petitions to identify “with particularity

. . . the evidence that supports the grounds for the challenge to each claim’’)). This burden never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)) (discussing the burden of proof in *inter partes* review). Furthermore, Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016).

Thus, to prevail in an *inter partes* review, Petitioner must explain how the proposed combinations of prior art would have rendered the challenged claims unpatentable. At this preliminary stage, we determine whether the information presented in the Petition shows there is a reasonable likelihood that Petitioner would prevail in establishing that one of the challenged claims is anticipated by the asserted prior art or would have been obvious over the proposed combinations of prior art.

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

C. Level of Ordinary Skill in the Art

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17. “The importance of resolving the level of ordinary skill in the art lies in the necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

Petitioner’s Declarant, Mr. Andrews, testifies that a person of ordinary skill in the art relevant to the ’101 patent “would have a Bachelor of Science in Electrical or Computer Engineering or the equivalent, plus two years of experience

with automated toll roads, intelligent transportation systems, RFID tracking systems, or similar experience.” Ex. 1008 ¶ 49. Patent Owner does not offer any contrary explanation at this time regarding who would qualify as a person of ordinary skill in the art relevant to the ’101 patent. *See generally* Prelim. Resp.

Based on our review of the ’101 patent, the types of problems and solutions described in the ’101 patent and cited prior art, and the testimony of Petitioner’s Declarant, we adopt and apply Petitioner’s definition of a person of ordinary skill in the art at the time of the claimed invention. We note that the applied prior art reflects the appropriate level of skill at the time of the claimed invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

D. Asserted Challenges Based on Hassett ’183 Alone

Petitioner contends claims 1, 3, 6, and 8 of the ’101 patent are unpatentable under 35 U.S.C. § 103 as obvious over Hassett ’183. Pet. 6–21. Petitioner further contends claims 1, 3, 6, and 8 of the ’101 patent are anticipated under 35 U.S.C. § 102 by Hassett ’183. *Id.* at 21–23. Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 23–40.

For the reasons that follow, we determine Petitioner has demonstrated a reasonable likelihood of prevailing in showing claims 1, 3, 6, and 8 would have been obvious in view of Hassett ’183. We further determine, however, Petitioner has not demonstrated a reasonable likelihood of prevailing in showing claims 1, 3, 6, and 8 are anticipated by Hassett ’183.

1. Overview of Hassett ’183

Hassett ’183 is directed to a “Traffic Monitoring and Management Method and Apparatus” and discloses “utilizing a microprocessor-based, read-write vehicle borne transponder device.” Ex. 1004, [54], [57]. Hassett ’183 discloses that the

vehicle-borne transponder includes “a radio frequency receiver and transmitter, a memory and a data processor.” *Id.* at 2:38–41. Hassett ’183 further discloses that vehicle data, such as the number of axles, number of passengers, and vehicle class, is entered into the vehicle-borne transponder by a vehicle operator via a keypad interface. *Id.* at 5:28–32.

As a vehicle traverses a roadway, transceivers spaced along the roadway collect information regarding a number of passengers in the vehicle from the vehicle-borne transponder. *Id.* at [57]. Hassett ’183 discloses that the vehicle-borne transponder transmits “processed and unprocessed information, together with an identifying signal for the transponder” that stores this information, back to an interrogating roadway transceiver. *Id.* at 2:48–51. In addition to the number of passengers, this information may include a vehicle identification number (VIN) for the vehicle. *See id.* at 10:31–36.

Hasset ’183 further discloses that the vehicle-borne transponder transmits and receives information packets. *Id.* at 7:38–39. The information packets include, for example, a current date and time stamp that “can be included in either a transmission from a roadway transceiver to a vehicle transponder or from a vehicle transponder to a road[way] transceiver.” *Id.* at 8:1–4. The roadway transceivers are coupled to a central data processor station. *Id.* at 2:51–53. The central data processor station can utilize the information packets to perform traffic analysis. *Id.* at 2:53–61. Hassett ’183 also describes toll determination as an application of the vehicle-borne transponder. *See id.* at 2:65–3:3.

2. *Analysis of Obviousness Challenge Based On Hassett '183 Alone*

a. *Claim 1*

Claim 1 recites, *inter alia*, “a transmitter that transmits a claim as to the number of occupants in the vehicle.” Ex. 1001, 3:29–30. According to Petitioner, Hassett '183 teaches this limitation because it “discloses [that] the driver enters information into the transponder via a keypad, such as the ‘number of passengers’” and that, “[a]s the vehicle traverses the roadway 128, the roadway transceivers interrogate the vehicle transponder to retrieve *this information* [(the number of passengers)] for traffic analysis.” Pet. 10 (citing Ex. 1004, 5:28–34) (internal quotation marks omitted). We further note Hassett '183 discloses that the vehicle-borne transponder “includes a radio frequency receiver and transmitter” and “receive[s], store[s], process[es] and transmit[s] various information pertaining to a host vehicle’s use of the roadway.” Ex. 1004, 2:38–41, 3:54–56. On this record and at this stage of the proceeding, we are satisfied that Petitioner establishes sufficiently that the transmitter of the vehicle-borne transponder disclosed in Hassett '183 transmits a claim as to the number of passengers, and thus, we are satisfied Hassett '183 teaches the “transmitter” recited in claim 1.

Claim 1 further recites, *inter alia*, “a sending transponder in the vehicle that transmits a code that uniquely identifies the registrant with the program administrator.” Ex. 1001, 3:31–33. Petitioner contends that this limitation is met by Hassett '183’s teaching of a “vehicle transponder [that] transmits a signal to roadside receivers that includes a ‘vehicle identification number.’” Pet. 11 (citing Ex. 1004, 10:31–36). Petitioner also contends that this limitation is met by Hassett '183’s teaching of an identifying signal for the transponder that is transmitted by the vehicle transponder to the roadway transceivers. *Id.* (citing Ex. 1004, 2:48–51).

Patent Owner disputes Petitioner's contentions. First, Patent Owner argues the "identifying signal" disclosed in Hassett '183 could be "an arbitrary code assigned by one of Hassett's roadside transceiver[s] for each new vehicle that it encounters" and that "[s]uch a code could not identify a program registrant as the claim requires." Prelim. Resp. 31.

On this record and at this stage of the proceeding, we do not agree with Patent Owner's first argument and we are, instead, persuaded by Petitioner's position that Hassett '183's identifying signal teaches the claimed "code." *See* Pet. 11. Although Petitioner fails to identify where Hassett '183 discloses expressly that either the identifying signal or the VIN uniquely identifies a registrant with a program administrator, Petitioner's Declarant, Mr. Andrews, testifies that Hassett '183's identifying signal would have been understood by the ordinarily skilled artisan to have been a unique identifier that distinguishes vehicles and that "a program administrator would have been able to identify the corresponding registrant from the 'identifying signal'" since it is unique to a particular vehicle and person. Ex. 1008 ¶ 77; *see id.* ¶ 79. Mr. Andrews also describes the knowledge of one of ordinary skill in the art based on the background and state of the art of transponder-based tolling. *Id.* ¶¶ 32–39. In this section of the Declaration, Mr. Andrews cites U.S. Patent No. 6,966,489, filed on January 7, 2002, which discloses

[t]he user of each vehicle is identified by the detection of a user identification device, such as [by] a[n] . . . electronic transponder mounted in the vehicle The toll collection system maintains a user identification register of users having an account with the operator of the toll road network Upon detection of the . . . electronic transponder mounted in the vehicle passing under a gantry, and the communication of identification information from the communication device to the toll collection system, a check is made in the user identification register to identify whether a corresponding user record

exists. If a corresponding user record is found, a toll charge is calculated and the user debited for that toll charge.

Ex. 1008 ¶ 39; *see also id.* ¶ 34 (describing electronic toll collection including a tag that sends its ID to a roadside reader that either verifies a user account or deducts a fare from an onboard account, and further describing “several types of toll transaction management including systems where: ‘[t]he data stored is normally an ID which can be used to identify a user’s account status and other details which reside at a central database’”). On this record and at this stage of the proceeding, Mr. Andrews’ testimony and the factual evidence underlying his testimony are collectively persuasive to support Petitioner’s contention that Hassett ’183’s identifying signal for the vehicle-borne transponder would have been understood by the ordinarily skilled artisan to uniquely identify a registrant with a program administrator. *See* Pet. 11.

In addition to the identifying signal disclosed in Hassett ’183, as discussed above, Petitioner cites Hassett ’183’s VIN as teaching the “code” recited in claim 1. Petitioner contends the VIN “is a term of art for a number that uniquely identifies a vehicle, and is used when titling and registering a vehicle” and that, “[a]s registered property, the vehicle’s VIN also identifies the registrant of the vehicle.” Pet. 11 (citing Ex. 1008 ¶ 78). Petitioner’s Declarant, Mr. Andrews, testifies that “creation of a vehicle ‘title’ links the VIN of the vehicle to the license plate and registration tags of the vehicle, and to the identified vehicle owner(s).” Ex. 1008 ¶ 78.

Petitioner’s Declarant also describes, as discussed above, the knowledge of one of ordinary skill in the art based on the background and state of the art of transponder-based tolling. *Id.* ¶¶ 32–39. In his Declaration, Mr. Andrews cites U.S. Patent No. 7,237,715, which was filed on August 10, 2000, and discloses:

a method of collecting fees associated with vehicles for road usage wherein every vehicle contains its own unique identification code-similar or in concert with the known vehicle identification number (VIN)-comprised of a number, letter or symbol or combinations thereof. Vehicle code readers (fixed or mobile) that transfer data to a central agency, or other appropriate means, are placed in selected area: entrances and exits to specified bridges, tunnels and highways.

Ex. 1008 ¶ 38 (citing Ex. 1014, 2:1–15).

On this record and at this stage of the proceeding, Mr. Andrews' testimony and its underlying factual evidence are persuasive, when taken together, to support Petitioner's contention that Hassett '183's disclosure of a VIN would have been understood by the ordinarily skilled artisan to uniquely identify a registrant with a program administrator. *See* Pet. 11.

Second, Patent Owner argues "Mr. Andrews does not explain *why* it would have been obvious to a person having ordinary skill in the art to modify Hassett '183" to establish "a program that requires users to register with the system," that includes "transponders that can transmit a 'code that uniquely identifies the registrant with the program administrator,'" and that "collects information from the registered users of the system about vehicle occupancy during use of the system." Prelim. Resp. 40.

On this record and at this stage of the proceeding, we do not agree with Patent Owner's second argument because it mischaracterizes Petitioner's challenge as one that modifies Hassett '183 to include, among other things, a program that requires registration and collecting information from registered users. *See* Prelim. Resp. 40. Based in part on Mr. Andrews' testimony, we understand Petitioner's position to be based on the disclosure of transponder-based tolling and the VIN in Hassett '183, as well as the knowledge of the ordinarily skilled artisan, specifically, the knowledge that transponder-based tolling uses the VIN to uniquely

identify registrants with a program administrator in order to collect toll fees. *See* Ex. 1008 ¶ 38. For this reason, at this stage of the proceeding, we are satisfied by Petitioner’s position and are unpersuaded by Patent Owner’s second argument. *See* Pet. 11 (citing Ex. 1008 ¶¶ 77–79); *see* Ex. 1008 ¶¶ 32–39.

Third, Patent Owner argues Hassett ’183 does not disclose a program or registrant and “there is no reason for systems that gather information in the aggregate or for statistical purposes and traffic management, such as described in Hassett ’183 to require registration by individuals.” Prelim. Resp. 34.

Petitioner cites Hassett ’183’s disclosure of a vehicle operator as teaching the registrant. Pet. 7. Mr. Andrews testifies that Hassett ’183’s vehicle operator would have been understood by an ordinarily skilled artisan to be, in some cases, a vehicle owner that registers his or her car. *See* Ex. 1008 ¶ 78. According to our claim construction discussed above in Section II.A.2, the claim term “registrant” is not limited to a person who registers for a ridesharing program; rather, on this record and at this stage of the proceeding, we determine that the claim term “registrant” encompasses a vehicle owner that registers his or her vehicle, such as with a state department of motor vehicles. On this record and at this stage of the proceeding, we similarly are unpersuaded by Patent Owner’s third argument because we did not adopt Patent Owner’s proffered constructions for “program administrator” and “registrant” as discussed above in Section II.A.2, and because Hassett ’183 discloses more than traffic analysis and discloses a toll-collecting application.

Fourth, Patent Owner further argues “Hassett ’183 contains no teaching of a permanent transponder identifier stored unalterably within the transponder device.” Prelim. Resp. 31. Fifth, Patent Owner argues a vehicle’s VIN does not identify a

registrant because “there is no space in the VIN for information about the owner or user of the vehicle.” *Id.* at 32.

We are not persuaded by Patent Owner’s fourth and fifth arguments because they are not commensurate in scope with claim 1. Claim 1 does not require the “code” to be permanent or unalterably stored, contrary to Patent Owner’s argument. *See* Prelim. Resp. 31. Furthermore, the “code” recited in claim 1 is not limited to directly identifying the owner or user of the vehicle, and instead encompasses indirectly identifying this person using, for example, a database or lookup table.

On this record and at this stage of the proceeding, we are satisfied that Petitioner establishes sufficiently that the “code” recited in claim 1 encompasses the disclosure of a VIN and identifying signal for the vehicle-borne transponder in Hassett ’183 because Petitioner’s position is supported by Mr. Andrews’ testimony that the VIN identifies indirectly the registered vehicle owner via the vehicle title and the factual evidence cited in paragraphs 32 through 39 of Mr. Andrews’ Declaration. *See* Ex. 1008 ¶ 78. Thus, based on our review of the portions of Hassett ’183 cited by Petitioner and Mr. Andrews’ testimony, we are satisfied, on this record and at this stage of the proceeding, that Petitioner establishes sufficiently that Hassett ’183 teaches the “sending transponder” as recited in claim 1.

Claim 1 further recites “a reading data collector that can interrogate a vehicle within its range, and receive, store and transfer to a central processing facility said transmitted code identifying the registrant along with a time/date stamp.” Ex. 1001, 3:34–37. Petitioner contends that Hassett ’183’s disclosure of a roadside transceiver teaches the “reading data collector” and that the disclosure of a network management computer, alternatively termed a central data processor

station, teaches the “central processing facility.” Pet. 13. Petitioner further contends Hassett ’183’s roadside transceiver has a limited radio range, includes “data storage in the form of a memory element,” and interrogates vehicle transponders. *Id.* (internal quotation marks omitted). According to Petitioner, information received by the roadside transceiver includes the identifying signal for the vehicle-borne transponder or the VIN. *Id.* Petitioner asserts that “Hassett ’183 discloses that the roadside transceivers are coupled to a central data processor station so they can relay[] the information to the network management computer 128 for analysis.” *Id.* at 13–14 (citing Ex. 1004, 2:51–61, 5:16–21) (internal quotation marks omitted). Petitioner further asserts that “Hassett ’183 discloses providing this date and time information to the network management computer.” *Id.* at 14 (citing Ex. 1004, 5:12–21).

Patent Owner disputes Petitioner’s contentions. Patent Owner argues “[n]othing in the specification or claims of the Hassett ’183 patent suggests that time or date information is collected or forwarded at all.” Prelim. Resp. 38. We disagree with Patent Owner. To the contrary, on this record and at this stage of the proceeding, we are satisfied that Petitioner establishes sufficiently that a “time/date stamp” is transmitted or transferred because Hassett ’183 discloses “a subsequent transceiver 120 signals the vehicle transponders 102’-106’ to transmit the original time and date information that they received from the upstream transceiver 124. . . [and] [t]he transceiver 120 then . . . relays the information to the network management computer 128 for analysis.” Ex. 1004, 5:13–18.

Based on our review of the portions of Hassett ’183 cited by Petitioner and Mr. Andrews’ testimony, we are satisfied, on this record and at this stage of the proceeding, that Petitioner establishes sufficiently that Hassett ’183 teaches the “reading data collector” as recited in claim 1.

b. Claim 3

Claim 3 recites “wherein the said sending transponder also transmits the claimed number of vehicle occupants.” Ex. 1001, 3:44–46. Petitioner asserts that “Hassett ’183 discloses that the information transmitted by the vehicle transponder includes the ‘number of passengers.’” Pet. 17 (citing Ex. 1004, 6:67–7:8). The cited portion of Hassett ’183 discloses a number of passengers as information collected by the vehicle transponder. Ex. 1004, 7:2–6. Moreover, Hassett ’183 discloses that the roadside transceiver “includes means for signaling said transponders to *transmit* an information signal indicative of *at least one of* said number of passengers . . . [and] vehicle identification number.” *Id.* at 10:31–36 (emphasis added).

c. Claim 6

We determine that Petitioner’s arguments presented with respect to claim 1 are also persuasive, on this record and for purposes of this Decision, with respect to the “transmitting” limitations of independent claim 6 for substantially similar reasons. Ex. 1001, 4:17–20. Claim 6 further recites, *inter alia*, “and then receiving the claim by a registrant as to number of occupants in a vehicle and reading the signal from the vehicle that identifies the registrant as the vehicle transits the designated section of highway.” *Id.* at 4:22–25. According to Petitioner, “the Hassett ’183 roadside transceivers receive the number of passengers (the claimed number of occupants) claimed by the driver (the claimed registrant).” Pet. 19 (citing Ex. 1008 ¶ 97) (internal quotation marks omitted). Petitioner also cites Hassett ’183’s disclosure of the following: “[a]s the vehicle traverses the roadway 128, the roadway transceivers interrogate the vehicle transponder to retrieve *this information* [(the number of passengers)] for traffic analysis.” *Id.* at 10 (citing Ex. 1004, 5:32–34) (internal quotation marks omitted).

Petitioner contends that “the Hassett ’183 roadside transceivers read . . . [the] vehicle identification number . . . hence identifying the registrant” and that “this is all done as the vehicle of Hassett ’183 traverses a designated section of a roadway (e.g., a toll road or highway).” *Id.* at 19–20 (citing Ex. 1008 ¶¶ 77–79, 96, 98).

We further note that Hassett ’183’s roadside transceivers signal the transponders to transmit a signal indicative of the vehicle’s VIN. *See* Ex. 1004, 10:31–36.

Although Petitioner fails to sufficiently establish that Hassett ’183 discloses expressly that the signal indicative of the VIN is transmitted as the vehicle traverses the roadway, we determine, on this record and for purposes of this Decision, that Petitioner establishes sufficiently this feature to be taught implicitly in the cited teachings of Hassett ’183 discussed above. *See id.*; *see* Pet. 19–20.

d. Claim 8

Claim 8 recites “further comprising the transmission of number of occupants claimed by a registrant by a transponder that transmits a signal both identifying the registrant and the number of occupants claimed by that registrant.” Ex. 1001, 4:31–35. Petitioner contends Hassett ’183 teaches or suggests this limitation. *See* Pet. 20–21. As discussed above with respect to claim 3, Hassett ’183 discloses “transceiver includes means for signaling said transponders to transmit an *information signal indicative of at least one of* said number of passengers . . . [and] [a] vehicle identification number.” Ex. 1004, 10:31–36 (emphasis added).

3. Summary

For the foregoing reasons, on this record and at this stage of the proceeding, we are satisfied Petitioner establishes sufficiently a reasonable likelihood it would prevail in showing that claims 1, 3, 6, and 8 are unpatentable under 35 U.S.C. § 103 over Hassett ’183.

4. Analysis of Anticipation Challenge Based On Hassett '183

a. Claim 1

At least with respect to the claim 1 recitation of “a code that uniquely identifies the registrant with the program administrator,” Petitioner’s analysis of anticipation by Hassett ’183 relies on the same elements cited in its analysis that claims 1, 3, 6, and 8 would have been obvious over this reference. Pet. 21 (citing Ex. 1008 ¶¶ 57–100). In its obviousness analysis, Petitioner cites the identifying signal for the transponder and the VIN disclosed by Hassett ’183 and contends that these disclosures would have been understood by the ordinarily skilled artisan to correspond to the “code” recited in claim 1. *See* Pet. 11–13. For its anticipation challenge, Petitioner further contends that the claimed “code” is disclosed inherently, if not explicitly, in Hassett ’183. Pet. 22 (citing Ex. 1008 ¶¶ 77–79; Ex. 1004, 1:33–36, 3:1–3, 1:57–2:13).

Contrary to Petitioner’s argument, we determine that neither the identifying signal for the vehicle-borne transponder nor the VIN is disclosed expressly in connection with a registrant or a program administrator. *See generally* Ex. 1004. Accordingly, on this record, we are not persuaded by Petitioner that Hassett ’183 discloses expressly the “code” recited in claim 1.

If a prior art reference does not expressly set forth a particular element of the claim, the reference still may anticipate only if that element is “inherent” in its disclosure. *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002). Our reviewing court has held that

[t]o establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by

probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

In re Robertson, 169 F.3d 743, 745 (Fed. Cir. 1999) (citations and internal quotations omitted) (emphasis added).

With regard to inherent disclosure, Petitioner's Declarant, Mr. Andrews, testifies that:

A person of ordinary skill in the art would have understood the "identifying signal" and "vehicle identification number" to be unique identifiers, in order to distinguish one vehicle from another. A person of ordinary skill in the art would have understood that a program administrator would have been able to identify the corresponding registrant from either the "identifying signal" or "vehicle identification number," since both identifying elements are unique to a particular vehicle and person.

Ex. 1008 ¶ 77; *see id.* ¶ 78. Although Petitioner and its Declarant sufficiently establish for purposes of this Decision that Hassett '183's identifying signal or VIN would have been understood by the ordinarily skilled artisan to have uniquely identified a registrant with a program administrator is sufficient to establish the claimed "code" is taught by Hassett '183, Petitioner fails to establish sufficiently that the "code" is inherent in Hassett '183. Mr. Andrews, however, does not testify that either the identifying signal for the transponder or the VIN *necessarily* uniquely identifies a registrant with a program administrator so as to disclose inherently the "code" recited in claim 1. *See id.* ¶ 77, 78. Even assuming, without deciding, that Hassett '183 discloses a program administrator, there exists a possibility that Hassett '183 could use, individually or collectively, the identifying signal for the vehicle-borne transponder and the VIN to determine a number of distinct vehicles traversing a designated stretch of the roadway instead of to uniquely identify a registrant with a program administrator, as Patent Owner

contends. *See* Prelim. Resp. 31. Stated differently, Mr. Andrews’ testimony does not eliminate the possibility that the identifying signal for the vehicle-borne transponder and/or the VIN could have been used for a purpose other than for uniquely identifying a registrant with a program administrator. *See* Ex. 1008 ¶ 78. Accordingly, on this record, we also are not persuaded Hassett ’183 discloses inherently the “code” recited in claim 1.

b. Claim 6

Claim 6 recites, *inter alia*, “transmitting the number of occupants in a vehicle claimed by a registrant.” Ex. 1001, 4:17–18. Petitioner asserts “Hassett ’183 discloses the registrant (e.g., driver) claiming the number of passengers through a keypad input on the transponder.” Pet. 19 (citing Ex. 1008 ¶ 95). Petitioner’s Declarant testifies that “the vehicle operator that enters the ‘claim’ is either explicitly or inherently the claimed ‘registrant,’ since the vehicle identifier (VIN) would uniquely identify the vehicle owner in the same way that a transponder identifier would.” Ex. 1008 ¶ 95. As discussed above with respect to claim 1, we did not adopt Petitioner’s construction of registrant, and we determined, for the purposes of this Decision, that Hassett ’183 does not disclose expressly a registrant. *See generally* Ex. 1004. Petitioner also fails to persuade us, on this record, that the disclosure in Hassett ’183 of a claim made by a driver as to the number of passengers discloses inherently a claim by a registrant. This is because neither Petitioner nor its Declarant establish sufficiently that the vehicle operator is *necessarily* the same person who registered the vehicle (e.g., a vehicle owner) or the same person who enrolls in a program. *See Robertson*, 169 F.3d at 745. Accordingly, on this record, we are not persuaded Hassett ’183 discloses inherently “transmitting the number of occupants in a vehicle claimed by a registrant,” as recited in claim 6.

5. Summary

On this record, we determine that Petitioner does not establish sufficiently that the “code” recited in claim 1 is disclosed, either expressly or inherently, in Hassett ’183. Accordingly, Petitioner also does not establish sufficiently that the limitation recited in dependent claim 3 is disclosed, either expressly or inherently, in Hassett ’183.

We further determine that Petitioner does not establish sufficiently that “transmitting the number of occupants in a vehicle claimed by a registrant,” as recited in claim 6 is disclosed, either expressly or inherently, in Hassett ’183. Accordingly, Petitioner also does not establish sufficiently that the limitation recited in dependent claim 8 is disclosed, either expressly or inherently, in Hassett ’183.

For the foregoing reasons, we determine Petitioner fails to establish a reasonable likelihood it would prevail in showing that claims 1, 3, 6, and 8 are anticipated under 35 U.S.C. § 102 by Hassett ’183.

E. Asserted Challenge Based on the Combination of Hassett ’183 and Hassett ’389

Petitioner contends claims 1, 3, 5, 6, 8, and 10 of the ’101 patent are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Hassett ’183 and Hassett ’389. Pet. 43–54. Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 41–47.

Petitioner cites substantially the same portions of Hassett ’183 as discussed above in Section II.D.2 to teach the limitations recited in claims 1, 3, 6, and 8. *Compare* Pet. 7–21, *with id.* at 43–50, 52–54. Petitioner also cites portions of Hassett ’389 as teaching the limitations recited in these claims and proffers a rationale for combining Hassett ’183 and Hassett ’389. *See* Pet. 43–50, 52–54.

For the reasons that follow, we determine Petitioner has not demonstrated a reasonable likelihood of prevailing in showing obviousness of claims 1, 3, 6, and 8 over the combination of Hassett '183 and Hassett '389. Because Petitioner cites different portions of Hassett '389 and proffers a distinct and independent rationale for combining Hassett '183 and Hassett '389 with respect to dependent claims 5 and 10, however, we determine Petitioner has demonstrated a reasonable likelihood of prevailing in showing obviousness of claims 5 and 10.

1. Overview of Hassett '389

Hassett '389 is incorporated by reference in Hassett '183 and is directed to an “Automatic Toll Processing Apparatus.” Ex. 1006, 1:7–15, [54]. Hassett '389 discloses a “system for automatic collection of tolls includ[ing] a toll facility, an in-vehicle toll processor having memory for storing a toll-money-available quantity purchased by the user, and a toll-facility-identification site.” *Id.* at [57].

Hassett '389 further discloses “a vertical array of ten indicator lights 112.” *Id.* at 13:30. “Each indicator light in the light array represents a different class of vehicle—bus, car, truck, or other.” *Id.* at 13:34–35. Hassett '389 discloses illuminating an indicator light corresponding to a vehicle-class identifier received from an in-vehicle component (“IVC”). *Id.* at 13:41–46. The illuminated indicator light indicates the vehicle class of the vehicle currently passing through the corresponding lane of the toll facility. *Id.* at 13:46–49. According to Hassett '389, “[e]nforcement personnel can then monitor the light column for each automated lane to confirm proper correspondence between [the] visually observed vehicle class and [the] vehicle class indicated by each IVC.” *Id.* at 13:49–53.

2. *Analysis of the Challenge Based on Obviousness in View of Hassett '183 and Hassett '389*

a. *Claim 1*

Claim 1 recites, *inter alia*, “a sending transponder in the vehicle that transmits a code that uniquely identifies the registrant with the program administrator.” Ex. 1001, 3:31–33. According to Petitioner, “Hassett '389 discloses a transponder in the IVC (the RF transmitter and receiver) as the claimed ‘sending transponder.’” Pet. 47. First, Petitioner cites the background of Hassett '389 and contends it discloses “RF ‘tags’ or ‘cards’ that transmit a serial number to identify the vehicle.” *Id.* (citing Ex. 1006, 1:32–37). Second, Petitioner contends “the IVC also includes a serial number,” and that “the serial number (the claimed ‘code’) . . . uniquely identif[ies] the IVC (and hence the vehicle and registrant) to the program administrator.” *Id.* (citing Ex. 1006, 18:27–35). More particularly, Petitioner asserts Hassett '389’s RF transmitter, at the toll collection facility, “initiates communication with the IVC . . . and the RF receiver receives acknowledgement that the IVC has properly paid the toll.” *Id.* at 48. Petitioner contends a “POSITA would have understood Hassett '389 to disclose including the IVC serial number in the acknowledgement, as was done in other systems with a vehicle tag.” *Id.* at 49 (citing Ex. 1008 ¶ 199). Third, Petitioner contends, in the alternative, that it would have been obvious to modify Hassett '389 to include such feature. *Id.* at 47–48 (citing Ex. 1008 ¶¶ 190–92). Petitioner contends that such modification would “enable more complete analysis of the recorded traffic activity, as well as confirm the accuracy of toll transactions, and that they are being charged to the proper registrant.” *Id.* at 49 (citing Ex. 1008 ¶¶ 199, 200; Ex. 1006, 16:17–21; Ex. 1004, [57], 3:1–3).

According to Patent Owner, Hassett '389's IVC serial number does not uniquely identify the registrant with the program administrator. Prelim. Resp. 43. Patent Owner contends "Hassett '389 discloses a system designed to preserve anonymity of drivers, citing privacy concerns" and "explicitly states the concern for maintaining privacy and anonymity of users, and thus that an object of the invention is to 'preserve the privacy of users.'" *Id.* (citing Ex. 1006, 1:59–61, 2:7).

On this record, we agree with Patent Owner. In view of Hassett '389's disclosed privacy preservation objective, Petitioner does not demonstrate sufficiently that: (1) the ordinarily skilled artisan would have combined the cited background disclosure with Hassett '389's IVC; (2) Hassett '389's disclosure of an IVC serial number, independently of the cited background disclosure, uniquely identifies a registrant with a program administrator; or (3) it would have been obvious to the ordinarily skilled artisan to modify Hassett '389's IVC serial number to uniquely identify a registrant with a program administrator.

With respect to Petitioner's first and second contentions, Hassett '389 describes as its objective, providing "toll collection systems that reduce administrative burdens . . . and preserve the privacy of users." Ex. 1006, 2:4–7, 1:60–62. To achieve this objective, Hassett '389's *in-vehicle toll processor*, as opposed to a centralized toll authority, calculates a toll amount, debits the calculated toll amount, and transmits an acknowledgement signal indicating the calculated toll amount was debited. *Id.* at 2:35–40, 2:54–61. In light of this *localized* toll processing, Petitioner does not explain sufficiently why the ordinarily skilled artisan would have modified Hassett '389's IVC with the background disclosure of "a 'tag' or card that acts as a reflective transmitter or discrete transmitter to identify the vehicle by serial number as it passes through a toll booth." *See* Ex. 1006, 1:35–38. Stated differently, Petitioner does not explain

sufficiently what the vehicle identification information would have been transmitted and/or used for, given that toll processing is performed locally within the vehicle.

Petitioner also does not explain sufficiently, given Hassett '389's localized toll processing, why Hassett '389's IVC serial number would have been understood by the ordinarily skilled artisan to "uniquely identif[y] the registrant with the program administrator." Pet. 49. In support of Petitioner's second contention, Mr. Andrews testifies that "Hassett '389 describes the use of the serial number only during manual re-charging of the tag system with credits for toll payments through a prepayment process" and that the "transponder can provide this identification during regular toll charging operations." Ex. 1008 ¶ 191 (citing Ex. 1006, 2:48–51, 16:55–63). Based on our review of these cited portions of Hassett '389, instead of the IVC serial number, the cited portions disclose a toll-collect signal and a toll-money-available signal. *See* Ex. 1006, 2:48–51, 16:55–63.

With respect to Petitioner's third contention, Petitioner's Declarant, Mr. Andrews, testifies that

[a] person of skill in the art would be motivated to effect this combination to broaden the appeal of the tolling system, to reduce traffic congestion at the cash terminals, and to enable more complete analysis of the recorded traffic activity as well as confirming the accuracy of toll transactions and that they are being charged to the proper registrant.

In operation each of these systems would be performing its core functions in the same way as in the original systems, and the combination would produce predictable results with obvious operational benefits.

Ex. 1008 ¶¶ 192–93.

Mr. Andrews further testifies that "Hassett '389 does not indicate if the IVC identification information is collected as part of this tolling operation, and cites

potential privacy and scale drawbacks to doing so, as noted above” but testifies that “it would have been obvious to add the identification transmission capability of Hassett ’183 to the toll system of Hassett ’389 to eliminate or offset the load on the cash based prepayment system of Hassett ’389.” *Id.* ¶ 199. We understand Mr. Andrews’ testimony to implicate *centralized* toll payment processing in favor of the disclosed cash-based prepayment system and localized payment processing. *See id.* Mr. Andrews does not disclose the underlying facts or data forming the basis of his opinion that the ordinarily skilled artisan would have been motivated to eliminate or offset the load on the cash-based prepayment system with centralized toll payment processing (i.e., by modifying the IVC serial number to uniquely identify a registrant with a program administrator or by transmitting other information that uniquely identifies the registrant with the program administrator) in light of the expressly stated privacy preservation objective of Hassett ’389.

Unlike in our analysis of the identifying signal for the vehicle-borne transponder in Hassett ’183 in Section II.D.2 above, we do not consider the background and state of the art section of Mr. Andrews’ Declaration to be underlying factual evidence here because this section relates to centralized toll payment processing, which is distinguished from the localized, in-vehicle toll payment processing disclosed in Hassett ’389. *See* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”)

Accordingly, on this record, we are not persuaded that the combination of Hassett ’183 and Hassett ’389 teaches or suggests the “code” recited in claim 1.

b. Claim 6

Our analysis with respect to claim 1 is substantially applicable to claim 6. In particular, claim 6 recites, *inter alia*, “transmitting a signal from the

vehicle that identifies the registrant” and “reading the signal from the vehicle that identifies the registrant as the vehicle transits the designated section of highway.” Ex. 1001, 4:20–21, 4:23–25. On this record and for the reasons discussed above in Section II.E.2.a, we are not persuaded Hassett ’389’s IVC serial number identifies a registrant, nor are we persuaded it would have been obvious to modify Hassett ’389 to transmit information identifying the registrant and to read the information as the vehicle transits the designated section of highway.

c. Claims 5 and 10

Claim 5 recites “a visual display of the number of claimed occupants that can be seen by an enforcement officer outside the vehicle as it traverses the highway.” Ex. 1001, 4:6–10. Claim 10 recites a substantially similar limitation. *Id.* at 4:41–44. According to Petitioner, Hassett ’389 discloses “using a light array to visually display the claimed ‘vehicle class’” and contends “[e]nforcement personal personnel (the claimed ‘enforcement officer’) can then visually observe the claimed ‘vehicle class’ and actual vehicle as it passes.” Pet. 51 (citing Ex. 1006, 13:28–56). Petitioner contends it would have been obvious to the ordinarily skilled artisan to combine the teachings of Hassett ’183 and Hassett ’389 because:

A POSITA would also have been motivated to modify the vehicle class display of Hassett ’389 for use in the system of Hassett ’183 so as to provide an enforcement mechanism for vehicle occupancy regulations in HOV lanes or occupancy-based toll roads. (Ex. 1008 ¶212). Such a combination would be no more than combining known elements to achieve predictable results. (Ex. 1008 ¶ 215).

Pet. 47. Mr. Andrews testifies that “[a] person of ordinary skill in the art would have found it obvious to use the light array of Hassett ’389 to visually display the claimed number of occupants of Hassett ’183, in place of or in addition to the

different vehicle classes of Hassett '389.” Ex. 1008 ¶ 214. Mr. Andrews further testifies that “[s]uch a combination would also have required only minor adaptations between the two systems, for example re-numbering the lights, and adapting the light control system to accept inputs as to the number of occupants instead of, or in addition to the vehicle class.” *Id.* ¶ 215; *see id.* ¶ 216.

Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 44–47. First, Patent Owner argues Petitioner’s “unsupported arguments do not identify an actual motivation or rationale to combine Hassett '389 with Hassett '183 for constructing the proposed combination” and that “[t]here is no teaching or suggestion in Hassett '183 (or in Hassett '389) of a need for enforcing vehicle occupancy.” Prelim. Resp. 45–46. Second, Patent Owner argues Petitioner’s challenge is based on impermissible hindsight reasoning. *Id.* at 46. Third, Patent Owner argues Petitioner’s Declarant’s testimony “is not supported by any objective evidence or analysis.” *Id.* at 45.

We do not agree with Patent Owner’s first argument because under *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 401 (2007), there is no need to find an explicit, implicit, or inherent teaching or suggestion in Hassett '183 or Hassett '389 in support of Petitioner’s rationale for combining. The Court in *KSR* specifically held that “a combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 550 U.S. at 401. Here, Petitioner’s proffered rationale for combining Hassett '183 and Hassett '389 is consistent with this holding: “[s]uch a combination would be no more than combining known elements to achieve predictable results.” Pet. 45. Petitioner’s proffered rationale is supported by the testimony of its Declarant. *See* Ex. 1008 ¶¶ 212, 214–16. For this same reason, we also disagree with Patent Owner’s second argument that Petitioner’s challenge is based on impermissible

hindsight. As Mr. Andrews testifies, “[a] person of skill in the art would have been motivated to combine Hassett ’389 and Hassett ’183 in this way to achieve the same type of enforcement capability for vehicle class violations as for occupancy violations.” *Id.* ¶ 215.

With regard to Patent Owner’s third argument, although Petitioner’s Declarant does not testify as to specific supporting evidence, Mr. Andrews nonetheless sets forth the level of skill in the art based on the description of the background and state of the art and his own experience with respect to toll collection and enforcement. Ex. 1008 ¶¶ 32–39. Therefore, on this record and at this stage of the proceeding, we find Mr. Andrew’s testimony persuasive.

3. Summary

Based on our review of the Petition, the cited portions of Hassett ’183 and Hassett ’389, and Petitioner’s Declarant’s testimony, on this record and for the purposes of this Decision, we are satisfied Petitioner establishes sufficiently a reasonable likelihood of prevailing in demonstrating that claims 5 and 10 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Hassett ’183 and Hassett ’389.

For the foregoing reasons, on this record, we determine Petitioner fails to establish a reasonable likelihood it would prevail in showing that independent claims 1 and 6 are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Hassett ’183 and Hassett ’389. Accordingly, Petitioner also does not establish a reasonable likelihood it would prevail in showing that the limitations recited in dependent claims 3 and 8 are taught or suggested by the combination of Hassett ’183 and Hassett ’389.

F. Asserted Challenges Based on the Ontario Report

Petitioner contends claims 1, 3, 5, 6, 8, and 10 of the '101 patent are unpatentable under 35 U.S.C. § 103 as obvious over the Ontario Report. Pet. 23–37. Petitioner further contends claims 1, 3, 5, 6, 8, and 10 of the '101 patent are anticipated under 35 U.S.C. § 102 by the Ontario Report. *Id.* at 37–38. Lastly, Petitioner contends claims 1, 3, 5, 6, 8, and 10 of the '101 patent are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Hassett '183 and the Ontario Report. *Id.* at 38–43. Patent Owner disputes Petitioner's contentions. Prelim. Resp. 13–22. For the reasons that follow, we determine Petitioner has not demonstrated a reasonable likelihood of prevailing as to the grounds based on the Ontario Report because Petitioner does not establish sufficiently that the Ontario Report is a "printed publication." *See* 35 U.S.C. § 311(b).

1. Analysis of The Ontario Report as Prior Art

We address the issue of whether the Ontario Report is available as prior art under 35 U.S.C. § 102(b). The determination of whether a given reference qualifies as a prior art "printed publication" involves a case-by-case inquiry into the facts and circumstances surrounding the reference's disclosure to members of the public. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004). "Because there are many ways in which a reference may be disseminated to the interested public, 'public accessibility' has been called the touchstone in determining whether a reference constitutes a 'printed publication' bar under 35 U.S.C. § 102(b)." *In re Hall*, 781 F.2d 897, 898–99 (Fed. Cir. 1986). To qualify as a prior art printed publication, the reference must have been disseminated or otherwise made accessible to persons interested and ordinarily skilled in the subject matter to which the document relates prior to the critical date. *Kyocera Wireless Corp. v.*

Int'l Trade Comm'n, 545 F.3d 1340, 1350 (Fed. Cir. 2008). Public accessibility is a legal conclusion based on underlying factual determinations. *Cooper Cameron Corp. v. Kvaerner Oilfield Prods., Inc.*, 291 F.3d 1317, 1321 (Fed. Cir. 2002).

The Ontario Report (Ex. 1005) is entitled “Automated Vehicle Occupancy Monitoring Systems HOV/HOT Facilities” and was prepared by McCormick Rankin Corporation on behalf of the ENTERPRISE Intelligent Transportation Systems (ITS) research program. Ex. 1005, 2. The front cover of the Ontario Report is designated “FINAL REPORT” and dated December 2004. *Id.* at 1. The Ontario Report includes a letter dated December 16, 2004 that generally describes the contents of the report. *Id.* at 2.

Petitioner’s Declarant, Mr. Wing, testifies as to the public availability of the Ontario Report. Ex. 1007 ¶¶ 1–7. In particular, Mr. Wing testifies that, as a former employee of McCormick Rankin Corporation, he is “familiar with McCormick Rankin Corporation’s document preparation and maintenance policies and practices.” *Id.* ¶ 2. Mr. Wing further testifies that the Ontario Report “was created at or before December 16, 2004” and that “McCormick Rankin Corporation customarily dated its reports of this nature as the time of submission to our clients for public use, as shown in the cover letter and letter of transmittal at the second page of the document.” Ex. 1007 ¶¶ 3, 4.

Patent Owner argues Petitioner fails to establish that the Ontario Report is a printed publication because Petitioner does not present any evidence establishing that the Ontario Report was publicly accessible. Prelim. Resp. 16. Patent Owner contends “even if the Board credits the December 16 date as an accurate indication of the date on which it took its current form, this indicates nothing about whether the document was published outside McCormick Rankin Corporation, and if so, how broadly and to whom.” *Id.* at 17.

Our reviewing court has held that “[e]vidence of routine business practice can be sufficient to prove that a reference was made accessible before a critical date.” *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1569 (Fed. Cir. 1988) (citing *Hall*, 781 F.2d at 899). In this case, the only testimony relevant to dissemination of the Ontario Report relates to the customary practice of the McCormick Rankin Corporation to date “its reports of this nature as the time of submission to our clients for public use.” Ex. 1007 ¶ 4. Mr. Wing does not testify that McCormick Rankin Corporation *only* dated its reports when the report was in its “final report” form, ready for submission to a client. *See id.* Furthermore, Mr. Wing does not testify that the designation “final report” is *only* used for reports ready for submission to a client. *Id.* Stated differently, Petitioner does not present sufficient evidence, on this record, to persuade us that the Ontario Report is not a *draft* report that is dated as of its latest revision, instead of a final report that is dated as of its dissemination.

We note that the Ontario Report is designated “Draft Final Report” on a majority of its pages. *See generally* Ex. 1005. We further note that, in its table of contents, the Ontario Report includes a path to a filename: “I:\Work Order File\5438 Vehicle Occupancy Monitoring Research\Project Reports\5438 FORMATTED FINAL REPORT AUGUST 19-04.DOC.” *Id.* at 7. Although the present record does not establish that this filename corresponds to the Ontario Report, when taken together with the “Draft Final Report” designation, these two facts create uncertainty as to McCormick Rankin Corporation’s routine business practices. Specifically, Petitioner fails to demonstrate clearly and persuasively that it was counter to routine business practice to use the term “Final Report” to designate a document that may not be in its final form, and to date documents prior to dissemination to clients.

The Ontario Report includes a letter dated December 16, 2004 addressed to a “Sir/Madam.” Ex. 1005, 2. The Ontario Report further includes a *pro forma* letter to stakeholders or clients describing ENTERPRISE as a consortium of public agencies dedicated to the advancement of ITS that includes as its members, U.S. Federal Highways Administration, several U.S. states, etc. *Id.* at 72. Appendix B of the Ontario Report includes the contact information for over thirty member entities of the ENTERPRISE ITS research program. It is telling that neither Petitioner, nor Petitioner’s Declarant, Mr. Wing, indicates that any one of these member entities could testify as to dissemination of the Ontario Report should *inter partes* review be instituted.

2. Summary

For the foregoing reasons, Petitioner does not present sufficient evidence of routine business practice to persuade us that the Ontario Report was disseminated or otherwise made available to an entity outside of the McCormick Rankin Corporation prior to March 14, 2005, the filing date of the ’101 patent. Accordingly, Petitioner fails to establish sufficiently that the Ontario Report is a printed publication to qualify as prior art to the ’101 patent. *See* 35 U.S.C. § 311(b).

In view of Petitioner’s failure to establish sufficiently the Ontario Report as prior art, we determine Petitioner fails to establish a reasonable likelihood it would prevail in showing that: the challenged claims (claims 1, 3, 5, 6, 8, and 10) are anticipated under 35 U.S.C. § 102 by the Ontario Report; the challenged claims are unpatentable under 35 U.S.C. § 103 as obvious over the Ontario Report; and the challenged claims are unpatentable under 35 U.S.C. § 103 as obvious over the combination of Hassett ’183 and the Ontario Report.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has demonstrated there is a reasonable likelihood it would prevail in establishing the unpatentability of claims 1, 3, 5, 6, 8, and 10 of the '101 patent. At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claim.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted as to claims 1, 3, 5, 6, 8, and 10 of the '101 patent on the following asserted grounds:

Claims 1, 3, 6, and 8 of the '101 patent under 35 U.S.C. § 103 as unpatentable over Hassett '183;

Claims 5 and 10 of the '101 patent under 35 U.S.C. § 103 as unpatentable over the combination of Hassett '183 and Hassett '389;

FURTHER ORDERED that the trial is limited to the grounds identified above, and no other grounds set forth in the Petition are authorized; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, *inter partes* review of the '101 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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