

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner

v.

iQAR INC.,
Patent Owner

Case IPR2024-00543
U.S. Patent No. 10,882,399

**PETITIONER'S NOTICE OF APPEAL TO THE UNITED STATES COURT
OF APPEALS FOR THE FEDERAL CIRCUIT**

Pursuant to 35 U.S.C. §§ 141(c) and 319, and 37 C.F.R. § 90.2(a), notice is hereby given that Petitioner Tesla, Inc. hereby appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision in Case No. IPR2024-00543 entered July 21, 2025 (Paper 23) (“Final Written Decision”) by the Patent Trial and Appeal Board (“the Board”), and from all underlying orders, decisions, rulings, and opinions related thereto and included therein, and/or in the Decision entered on November 6, 2025 (Paper 26), denying Petitioner’s Request for Rehearing (“Rehearing Decision”). This appeal is timely under 35 U.S.C. § 142, 37 C.F.R. § 90.3, Federal Rule of Appellate Procedure 15(a)(1), and Federal Circuit Rule 15(a)(1) because Petitioner’s timely request for rehearing reset the time for appeal to no later than sixty-three (63) days after the Board’s action on rehearing, as reflected in the Decision on Rehearing entered November 6, 2025 (Paper 26).

For the limited purpose of providing the Director with the information required by 37 C.F.R. § 90.2(a)(3)(ii) and Federal Rule of Appellate Procedure 15(a)(2)(C), the issues on appeal may include, but are not limited to:

1. The Board’s decision that claims 8 and 18 of U.S. Patent No. 10,882,399 (the “’399 Patent”) were not shown to be unpatentable as obvious under 35 U.S.C. § 103 in view of the combination of Hongo, Obradovich, Niki, and Newstrom;

2. All of the Board's subsidiary findings supporting its determination that claims 8 and 18 of the '399 Patent were not shown to be unpatentable as obvious under 35 U.S.C. § 103 in view of the combination of Hongo, Obradovich, Niki, and Newstrom; the Board's failure to consider arguments and evidence of record properly; the Board's legal errors in undertaking the obviousness analysis; the Board's findings that conflict with the evidence of record and are not supported by substantial evidence;
3. All other issues decided adversely to Petitioner in any orders, decisions, rulings, or opinions underlying or supporting the Final Written Decision and/or the Rehearing Decision.

Petitioner further reserves the right to challenge any finding or determination supporting or relating to the issues above.

Pursuant to 35 U.S.C. § 142 and 37 C.F.R. § 90.2(a)(1), this notice is being filed with the Director of the U.S. Patent and Trademark Office, and a copy is also being filed with the Board. In addition, pursuant to Federal Circuit Rule 15(a)(1) and 37 C.F.R. § 90.2(a)(2), Petitioner also is electronically filing this notice with the Clerk of the U.S. Court of Appeals for the Federal Circuit, and paying the fee set forth in Federal Circuit Rule 52.

Dated: January 8, 2026

/Ryan Chowdhury/

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR § 42.6(e)(4), the undersigned certifies that on January 8, 2026, a complete and entire copy of this Petitioner's Notice of Appeal was provided via email to the Patent Owner by serving the correspondence address of record as follows:

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Pursuant to 37 C.F.R. § 90.2(a)(1), I hereby certify that in addition to being filed electronically through the Board's P-TACTS System, this Petitioner's Notice of Appeal is being provided to the Director of the USPTO on January 8, 2026, by electronically filing to the email address as follows:

Director of the United States Patent and Trademark Office c/o Office of the
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I hereby certify that on January 8, 2026 a true and correct a copy of the foregoing Petitioner's Notice of Appeal, along with a copy of the Final Written Decision and the Rehearing Decision, was filed electronically with the Clerk's Office of the United States Court of Appeals for the Federal Circuit, at the following address:

United States Court of Appeals for the Federal Circuit
717 Madison Place, N.W., Suite 401
Washington, DC 20005

Dated: January 8, 2026

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

IQAR INC.,
Patent Owner.

IPR2024-00543
Patent 10,882,399 B2

Before JASON W. MELVIN, SEAN P. O'HANLON, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

Opinion for the Board filed by O'HANLON, *Administrative Patent Judge*.

Opinion Dissenting in Part filed by MELVIN, *Administrative Patent Judge*.

O'HANLON, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Tesla, Inc. (“Petitioner”) filed a Petition for *inter partes* review of claims 1–20 (“the challenged claims”) of U.S. Patent No. 10,882,399 B2 (Ex. 1001, “the ’399 patent”). Paper 2 (“Pet.”), 1. iQar Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6. With our authorization (*see* Ex. 3001), Petitioner filed a Preliminary Reply (Paper 7) and Patent Owner filed a Preliminary Sur-reply (Paper 8). On July 30, 2024, we instituted an *inter partes* review of the challenged claims on all grounds raised in the Petition. Paper 9.

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 13, “PO Resp.”), Petitioner filed a Reply to the Patent Owner Response (Paper 15, “Pet. Reply”), and Patent Owner filed a Sur-reply to Petitioner’s Reply (Paper 18, “PO Sur-reply”). An oral hearing was held on April 29, 2025. A transcript of the hearing has been entered into the record. Paper 22 (“Tr.”).

For the reasons that follow, we conclude that Petitioner has proven by a preponderance of the evidence that claims 1–7, 9–17, 19, and 20 of the ’399 patent are unpatentable. It, however, has failed to meet its burden of proof regarding the unpatentability of claims 8 and 18.

B. Real Parties in Interest

Petitioner identifies itself as the sole real party in interest. Pet. 89.

Patent Owner identifies itself (stating that it is “formerly known as Invently Automotive, Inc.”) as the sole real party in interest. Paper 4, 1.

C. Related Matters

The parties indicate that the '399 patent is the subject of the following district court proceeding:

iQar Inc. v. Tesla, Inc., No. 1-23-cv-00694 (W.D. Tex. filed June 20, 2023).

Pet. 89; Paper 4, 1. It appears that this proceeding has been transferred to the Northern District of California under the caption:

iQar Inc. v. Tesla, Inc., No. 3-24-cv-01337 (N.D. Cal. filed March 6, 2024).

D. The Challenged Patent

The '399 patent discloses methods and systems for controlling power applied to a vehicle engine. Ex. 1001, 1:17–18. The '399 patent purports that, currently, fuel consumption cannot be precisely controlled by a driver, and operational assisting devices typically do not optimize power consumption of the vehicle. *Id.* at 1:22–27, 1:52–55. The '399 patent purports to improve upon optimization of power consumption of a vehicle via “power management logic that can calculate an applied power for the vehicle engine based on information provided from the external environment of the vehicle, the operational status of the vehicle, one or more command inputs from a driver, and one or more operational parameters of the vehicle.” *Id.* at 2:30–39.

The '399 patent describes “steps that may be followed to optimize the energy supplied to an engine so that the vehicle travels at a fuel-efficient speed.” Ex. 1001, 11:44–46; *see also id.* at Fig. 2 (illustrating a flowchart of steps to optimize power).

To determine an optimally efficient speed (or the optimal power to be supplied to the engine), a route is determined 201 from the starting position and an actual or estimated ending position, the route is segmented 203 into one or more segments, a model optimal speed (or power) is calculated 205, statistical data from previous trips along the same segment of the route are retrieved 207, and an overall efficiency applied power is calculated from at least the model power and the statistical data 209. Finally, the overall efficient applied power is provided to the engine.

Id. at 11:46–56. “The route is determined based on the current position of the vehicle and a final destination position.” *Id.* at 11:64–65. The destination may be input by the driver before or during the trip (*id.* at 12:4–6), or the destination may be derived from information about the driver, current location, time of day, and past trips (*id.* at 12:17–47). “In some variations, the route may be broken up into segments that may be used by a power management device to optimize the power needed to travel this segment.” *Id.* at 14:10–13. Accuracy of the model increases as the number of segments increases. *Id.* at 14:40–42. “The route may be continuously re-segmented” as the vehicle moves. *Id.* at 14:31–33. “The power required by the vehicle to travel along a route, or a segment of the route, may be estimated or calculated, and this calculation may be used to determine a calculated speed for the vehicle so that the power usage is optimized or minimized.” *Id.* at 14:47–51. The optimal speed for each segment may be calculated by any appropriate method, and may include the use of energy calculating logic. *Id.* at 15:13–18.

E. The Challenged Claims

Petitioner challenges claims 1–20 of the '399 patent. Pet. 1. Claims 1 and 11 are independent. Claim 1 is illustrative of the challenged claims and is reproduced below.

1. A method of electric vehicle operation, comprising:
determining a segment of a vehicle route;
determining information about an external environment of a vehicle, information about operational status of the vehicle, information from external command input telemetry in combination with user command inputs to the vehicle including voice command inputs; and
applying calculated electric power to the vehicle to travel along the segment of the vehicle route at a calculated speed.

Ex. 1001, 27:43–52.

F. Instituted Grounds of Asserted Unpatentability

The Petition relies on the following prior art references:

Name	Reference	Exhibit
Hongo	English-language translation of JP 2003-276472 (Ex. 1007), which was published September 30, 2003	1005
Obradovich	US 6,282,464 B1, issued August 28, 2001	1008
Niki	US 7,059,435 B2, issued June 13, 2006	1009
Kudo	US 2005/0251325 A1, published November 10, 2005	1010
Kuroda	US 6,314,347 B1, issued November 6, 2001	1011
Newstrom	US 7,552,008 B2, issued June 23, 2009	1012

We instituted trial based on all asserted claims and grounds of unpatentability as follows:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 5, 6, 9–12, 15, 16, 19, 20	103(a) ¹	Hongo, Obradovich, Niki
3, 4, 13, 14	103(a)	Hongo, Obradovich, Niki, Kudo
7, 17	103(a)	Hongo, Obradovich, Niki, Kuroda
8, 18	103(a)	Hongo, Obradovich, Niki, Newstrom

Pet. 1–2. Petitioner submits declarations of Vassilios Morellas, Ph.D. (Ex. 1003, “Morellas Declaration”; Ex. 1053) in support of its contentions. Patent Owner submits a declaration of Craig J. Hoff, Ph.D., P.E. (Ex. 2007) in support of its contentions.

II. ANALYSIS

A. Principles of Law

1. *Inter Partes Review*

“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

¹ The application resulting in the ’399 patent claims priority to a date prior to the date when the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011), took effect. Thus, we refer to the pre-AIA version of section 103.

grounds for the challenge to each claim”)). Petitioner bears the burden of persuasion to prove unpatentability of each challenged claim by a preponderance of the evidence. 35 U.S.C. § 316(e). This burden never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

2. Obviousness

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the 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) when in evidence, any objective evidence of nonobviousness.² *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The person of ordinary skill in the art is a hypothetical person presumed to have known the relevant art at the time of the invention. *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In

² The parties have not directed us to any such objective evidence.

determining the level of ordinary skill in the art, we may consider certain factors, including: “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Best Med. Int’l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353 (Fed. Cir. 2022) (quoting *Daiichi Sankyo Co. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007)). “The patent’s purpose can also be informative.” *Id.*

Petitioner’s witness, Dr. Morellas, contends that a person having ordinary skill in the art at the time of the invention would have had “a bachelor’s degree in electrical engineering, computer engineering, mechanical engineering, civil engineering (transportation systems), physics, or a related field, and at least four years of experience (or the academic equivalent) in the field of transportation systems.” Ex. 1003 ¶ 27; *see also* Pet. 15 n.3 (citing same).

Patent Owner does not contest Dr. Morellas’s proposed definition or proffer a definition of its own. *See generally* PO Resp.; *see also* Ex. 2007 ¶ 43 (setting forth a substantially similar definition as Dr. Morellas).

We find Dr. Morellas’s unopposed definition to be consistent with the problems and solutions disclosed in the patent and prior art of record, and adopt it as our own for purposes of this Decision. *See, e.g., In re GPAC*, 57 F.3d at 1579 (approving the determination of the level of ordinary skill in the art by appeal to the references of record).

C. Claim Construction

In an *inter partes* review, claims are construed using the same claim construction standard that would be used to construe the claims in a civil action under 35 U.S.C. § 282(b), including construing the claims in accordance with the ordinary and customary meaning of such claims 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). “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention” and “after reading the entire patent.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313, 1321 (Fed. Cir. 2005) (en banc). In addition to the specification and prosecution history, we also consider use of the terms in other claims and extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Id.* at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (alteration in original) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Both parties assert that no interpretation of any claim terms is required. *See* Pet. 2 (“no formal claim constructions are required in this proceeding”); PO Resp. 5 (“[N]one of the terms of the ’399 patent’s claims require express construction.”). However, both parties interpret various

claim terms in their arguments. *See, e.g.*, Pet. 28 (interpreting “information about an external environment of a vehicle” to “encompass[] ‘any information about the environment surrounding or acting on the vehicle’”) (citing Ex. 1001, 7:52–65)); PO Resp. 7–9 (interpreting “a segment of a vehicle route”). We address certain ones of these claim interpretations below. No further claim interpretation is needed for this Decision.

D. Asserted Obviousness Based on Hongo, Obradovich, and Niki

Petitioner argues that claims 1, 2, 5, 6, 9–12, 15, 16, 19, and 20 would have been obvious in view of Hongo, Obradovich, and Niki. Pet. 4–62. In support of its showing, Petitioner relies upon the Morellas Declaration. *Id.* (citing Ex. 1003). We have reviewed the parties’ briefs and the evidence of record and determine that, for the reasons explained below, Petitioner has shown, by a preponderance of the evidence, that claims 1, 2, 5, 6, 9–12, 15, 16, 19, and 20 would have been obvious in view of Hongo, Obradovich, and Niki and that Petitioner has set forth reasoning with rational underpinning why it would have been obvious to combine the teachings of these references.

1. Overview of the Asserted Prior Art

a. Hongo

Hongo discloses a “target vehicle speed determining device” that “automatically output[s] a suitable target vehicle speed according to weather, sunlight conditions, and the like.” Ex. 1005, codes (54), (57), ¶ 1. Hongo’s target vehicle speed determining device 100 includes a computer that is connected to DVD 105 that stores computer programs and data such

as map information and speed limits, GPS device 170, and environmental information acquisition means 120. *Id.* ¶¶ 22–23, Fig. 1. The target vehicle speed determining device uses information from these sources, as well as information from driving history, to determine a target vehicle speed V_0 that it outputs to automatic cruise control (ACC) system 200. *Id.* ¶¶ 24–26, 32.

The target vehicle speed determining device is operable in a trace mode and a playback mode. Ex. 1005 ¶ 25. “The trace mode is a dedicated mode for constructing the driving history DB 10 consisting of driving history data” *Id.* ¶ 26. Driving history recording means 140 acquires position information from GPS 170 and position of a driving block BKN that is defined by dividing the road being traveled into 20 m sections. *Id.* ¶ 27. The driving history recording means stores this information in driving history database 10 along with other information, such as the legal speed limit V_s , minimum radius of curvature R , road environment real-time information X , and current vehicle speed V . *Id.* ¶¶ 27–30, Fig. 3.

“In the playback mode, the block number BKN and the road environment parameter Y are specified from the current position coordinate r and the road environment real-time information X by a method equivalent to the above-mentioned driving history recording means 140” Ex. 1005 ¶ 32. The driving history search means 130 is used to search the driving history DB 10 for driving history data 11 with matching keys (BKN, Y). *Id.* “If there are driving history data 11 in which both keys (BKN, Y) match, the average value u [of the previously recorded vehicle speed data points] can be used as . . . the target vehicle speed.” *Id.* ¶ 33. Otherwise, formulas are used to calculate the target vehicle speed. *Id.* ¶¶ 35–36.

b. Obradovich

Obradovich discloses “a multimedia information and control system for use in an automobile” that “facilitates a user’s retrieval and/or dissemination of information, and control of vehicle functions.” Ex. 1008, code (57), 1:9–12. Information and control system 100 includes processor 105 connected to “display interfaces 102, input interfaces 104, communications interfaces 106, output control interfaces 108, vehicle computer interfaces 110, vehicle control interfaces 112, self-test interface 114, preferences interface 116, and audio interface 118.” *Id.* at 5:16–22, Fig. 1. The input interfaces include touch screen interface 104a and voice command interface 104b. *Id.* at 6:56–62, Fig. 1. “[W]herever the touch screen capability may be used to select or control various options or functions provided by system 100, the voice command is equally applicable.” *Id.* at 7:17–21. The output interfaces include cruise control interface 108h. *Id.* at 8:15–18, Fig. 1.

c. Niki

Niki discloses “a parallel hybrid vehicle” that includes “an internal-combustion engine E, a motor M, and a transmission T [that] are connected directly in series.” Ex. 1007, 5:17–20, Fig. 1. “[T]he driving force from at least one of the internal-combustion engine and the motor is transmitted to the driving wheels.” *Id.* at 1:12–17. Niki describes that control of the vehicle can be via

a C/C (cruise control) unit 53 [that] calculates the torque value (C/C required torque) targeted during the travel control satisfying predetermined traveling conditions previously set according to the input operation of the driver, that is cruise control, for example, such as the constant speed travelling

control which controls the internal-combustion engine E and the motor M so that the vehicle travelling speed VP detected in a vehicle speed sensor S1 becomes the target vehicle speed which is the target value of the travelling speed of the vehicle, and follow travel control for following a preceding vehicle while maintaining a predetermined vehicular gap, and outputs the torque value to the first torque selecting section 52.

Id. at 8:47–59; *see also id.* at Figs. 1–2 (illustrating the control apparatus).

2. Independent Claim 1

Petitioner relies on Hongo to disclose a method of operating a vehicle substantially as recited in claim 1, and relies on Obradovich to teach the use of voice commands and Niki to teach application of the method to a hybrid vehicle. Pet. 14–43.

a. The Preamble

Claim 1 recites “[a] method of electric vehicle operation.” Ex. 1001, 27:43. Petitioner argues that “the preamble is not limiting,” but nonetheless maps Niki’s hybrid vehicle to the recited electric vehicle. Pet. 25–26 (citing Ex. 1009, 5:17–54, 8:47–59;³ Ex. 2003 ¶¶ 90–91). Petitioner argues that it would have been obvious to an ordinarily skilled artisan to implement Hongo’s cruise control device 100 on Niki’s hybrid vehicle. *Id.* at 21–25 (citing Ex. 1005 ¶¶ 2, 6–9, 22, 68; Ex. 1009, 1:20–35, 5:17–32, 8:6–24, 8:47–59; Ex. 1003 ¶¶ 84–89).

³ Although Petitioner cites to Ex. 1009 “8:47–5” at page 25 of the Petition, we understand Petitioner’s intention was to cite to lines 47–59, the full paragraph, as Petitioner cites to those lines elsewhere in the Petition. *See* Pet. 20, 24, 25, 40.

Patent Owner does not contest this aspect of the Petition. *See generally* PO Resp.

Hongo discloses a target vehicle speed determining device that calculates and outputs to an automatic cruise control system a suitable target vehicle speed. Ex. 1005 ¶¶ 22–26, Fig. 1. Niki discloses a hybrid electric vehicle including cruise control unit 53 that controls both internal combustion engine E and motor M to achieve a target vehicle speed. Ex. 1009, 1:17–20, 8:47–59.

Accordingly, for the foregoing reasons, to the extent the preamble is limiting, Hongo and Niki support Petitioner’s contentions. We determine that Petitioner sets forth reasoning with rational underpinning as to why a person having ordinary skill in the art would have combined the teachings of Hongo and Niki. *See, e.g.*, Pet. 21–23 (arguing that the modification “would have involved choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success” and “Niki’s teachings and/or suggestions improve vehicle control in the Hongo vehicle”).

b. The Segment Recitation

Claim 1 recites “determining a segment of a vehicle route.” Ex. 1001, 27:44. Petitioner maps Hongo’s 20 m section of a route being driven, defined by a driving block BKN, to the recited segment of a vehicle route and argues that Hongo’s driving history recording means 140 determines the driving block in which the vehicle is currently traveling based on the vehicle’s current position. Pet. 26–29 (citing Ex. 1005 ¶¶ 27, 32, Fig. 2; Ex. 1003 ¶¶ 96–98).

Patent Owner argues that Hongo does not disclose or teach the Segment Recitation. PO Resp. 6–20. First, Patent Owner argues that “determining a segment of a vehicle route” “plainly require[s] that the ‘route’ being traveled by the vehicle be known.” *Id.* at 7. Patent Owner argues that “[t]he vehicle’s ‘route’ is the path it will travel ‘determined based on the current position of the vehicle and a final destination position.’” *Id.* Patent Owner argues that this interpretation is supported by the ’399 patent. *Id.* at 7–8 (citing Ex. 1001, 5:31–51, 7:14–16, 11:5–50, 11:64–65, 12:4–5, 14:5–15, 14:17–18, 14:38–39, 18:33–36, 20:19–25, Fig. 2; Ex. 2007 ¶¶ 91–94, 96–98, 102–106).

Petitioner replies that “[t]he plain meaning of ‘segment’ is ‘a separate piece of something.’” Pet. Reply 5 (citing Ex. 1053). Petitioner argues that “[i]f temporal characteristics relating to vehicle position while traveling were desired, the patent drafter would have used modifiers used in the specification, such as ‘current route segment’ and ‘upcoming route segments’ . . . or ‘next segments.’” *Id.* at 5–6 (emphasis omitted) (citing Ex. 1001, 3:55–4:15; 5:31–55). Petitioner argues that, because such modifiers are not recited in claims, “the claim language reveals an intent for broader scope.” *Id.* at 6.

Continuing, Petitioner argues that “the *vehicle route* references a route (‘a traveled way’) for a vehicle,” and “[n]othing in the plain meaning of *vehicle route* limits the ‘traveled way’ to one that ends at a particular destination.” Pet. Reply 10 (citing Ex. 1053 ¶¶ 40–42). Petitioner argues that this interpretation of “vehicle route” is supported by the specification of the ’399 patent. *Id.* at 10–11 (citing Ex. 1001, 2:64–3:19, 11:44–12:15, 12:48–59, 14:25–37; Ex. 1053 ¶¶ 43–45).

Patent Owner replies that, “[b]y using the phrase ‘vehicle route,’ the claims are plainly referring to the path the vehicle is traveling towards its intended destination.” PO Sur-reply 3. Patent Owner argues that, in every example, the ’399 patent discloses that the system is aware of the vehicle’s destination. *Id.* at 4–6 (citing Ex. 1001, 5:43–50, 6:59–7:31, 11:48–49, 11:64–65, 12:4–5, 14:25–36, Fig. 2).

We disagree with Patent Owner’s assertion that claim 1 requires that a route from the vehicle’s current position to a final destination must be known. *See* PO Resp. 7. Initially, claim 1 does not recite “destination.” Instead, claim 1 recites only “determining a *segment* of a vehicle route.” Ex. 1001, 27:44 (emphasis added). Nor does the ’399 patent specification require the interpretation proffered by Patent Owner. Notably, the ’399 patent discloses that the power management device may rely on historical route information to optimize the energy used to travel each segment of a route. Ex. 1001, 17:39–43, 17:64–67. Such reliance on historical data beneficially reduces the amount of required computing power. *Id.* at 18:5–9. Under this approach, “the location of the vehicle is periodically determined” and “used to determine[] a historical segment *corresponding to the current location.*” *Id.* at 18:30–33 (emphasis added). If the vehicle has moved into a new route segment, the historical data is queried to determine the most efficient speed to travel for the current segment. *Id.* at 18:39–56. Thus, the ’399 patent explicitly discloses calculating and applying power to a vehicle based on the route segment in which the vehicle is currently traveling. *See id.* at 18:64–67 (“The flowchart shown in FIG. 5 illustrates a continuous process, in which the power

management device can determine a probable optimal speed as the current segment changes (e.g., as the vehicle moves).”), Fig. 5.

Furthermore, the ’399 patent explains that “[t]he route used by the power management device *typically* includes a starting position . . . , an ending position, . . . , and any intermediate positions between the initial and the final positions.” *Id.* at 14:6–10 (emphasis added). Notably, the ’399 patent sometimes refers to the “entire route,” indicating that use of “route” in the claims does not necessarily mean the entire route. Indeed, the ’399 patent explains that, “[i]n *some variations*, the entire route (or the entire predicted route) may be divided up into N segments” and “[i]n *some variations*, probable optimal speeds may be identified for the entire route.” Ex. 1001, 14:38–39, 19:1–2 (emphases added). This strongly suggests that, in some other variations, the entire route is *not* divided into segments and optimal speeds are *not* identified for the entire route, further indicating that the recited “route” is not the entire path the vehicle will take. Therefore, we find that the ’399 patent contemplates routes that, although not typical, do not include an ending position.

Moreover, to the extent a destination is required, the ’399 patent discloses that the destination can be derived based on the vehicle’s location or driving history, and there can be multiple “likely destinations” and the system can “continuously infer the vehicle’s destination” and the probable destination “may constantly change to revise the destination” while the vehicle is traveling along the route. Ex. 1001, 12:16–59. Contrary to Patent Owner’s arguments, neither the claim language nor the specification of the ’399 patent requires the route be predetermined or extend from the vehicle’s current position to a final destination.

Next, Patent Owner argues that Hongo does not determine the vehicle's destination and, therefore, does not determine the route along which the vehicle will travel. PO Resp. 9 (citing Ex. 2007 ¶¶ 97–99). Patent Owner interprets the Petition as mapping Hongo's driving block numbers BKN to the recited segments (*id.* at 9–10) and argues that Petitioner incorrectly assumes “that the ranges of position coordinates stored in Hongo's blocks are all positions over which the vehicle actually traveled in the past and is again traveling in the future” (*id.* at 11). To the contrary, argues Patent Owner, Hongo's driving history database 10 only stores “static, unchanging map data . . . that has no direct correlation to any ‘route’ being traveled by the vehicle.” *Id.* at 11–12; *see also id.* at 13–14 (presenting substantially similar arguments).

Petitioner replies that Hongo's driving blocks are route segments and history recording means 140 acquires position information that is divided into 20 m sections. Pet. Reply 15 (citing Pet. 26–27). Petitioner argues that Hongo's driving history search means 130 uses the current position to determine the number of the driving block the vehicle is in. *Id.* (citing Pet. 27). Petitioner argues that Hongo's use of a current vehicle position to query a database is like the process depicted in Figure 5 of the '399 patent. *Id.* at 16 (citing Ex. 1001, 18:25–56).

We disagree with Patent Owner's characterization of the Petition. Rather than mapping Hongo's driving block numbers themselves to the recited segments, as stated above the Petition maps Hongo's 20 m section of a route being driven, which section is identified by a driving block number BKN, to the recited segment of a vehicle route. *See* Pet. 26.

Hongo discloses that, when operating in playback mode, the driving history search means searches the driving history database using the current position of the vehicle as a search key. Ex. 1005 ¶ 32. Patent Owner acknowledges as much. See PO Resp. 16 (“Hongo repeatedly explains that its system considers the ‘current *position* of the vehicle while driving’ when making a speed determination.” (citing Ex. 1007 ¶¶ 8, 15–17)), 17 (describing Hongo as identifying a position match when the vehicle’s current position is within a 20 m section of the mapped road). The current position is used to determine the 20 m section of road in which the vehicle is located. Ex. 1005 ¶ 32. This 20 m section is identified by a block number BKN. *Id.* ¶ 27. The driving history search means queries the driving history database using the identified block number and road environment parameter Y to retrieve driving history and other data for the 20 m section of the road. *Id.* ¶¶ 27, 32. Patent Owner acknowledges that this is how Hongo’s system operates. See PO Resp. 18–20 (describing Hongo as using the block numbers to query the driving history database (citing Ex. 1007 ¶¶ 15, 25–27, 31–32, 50, 69–70, Fig. 3, code (57))).

Accordingly, for the foregoing reasons, Hongo supports Petitioner’s contentions.

c. The External Environment Information Recitation

Claim 1 recites “determining information about an external environment of a vehicle.” Ex. 1001, 27:45–46. Petitioner maps Hongo’s road environment real-time information, specifically road surface temperature, to the recited information about an external environment of a vehicle and argues that, by processing the acquired road environment

information, Hongo's system determines the road environment information. Pet. 28–30 (citing Ex. 1005 ¶ 11, Fig. 2; Ex. 1003 ¶¶ 99–100).

Patent Owner does not contest this aspect of the Petition. *See generally* PO Resp.

Hongo discloses acquiring road environment real-time information, including road surface temperature. Ex. 1005 ¶¶ 27, 32. This information can be used to determine whether any precipitation is due to rain or snow. *Id.* ¶ 11. The target vehicle speed is determined based in part on this information. *Id.* ¶¶ 30, 32, Fig. 3.

Accordingly, for the foregoing reasons, Hongo supports Petitioner's contentions.

d. The Operational Status Information Recitation

Claim 1 recites “determining . . . information about operational status of the vehicle.” Ex. 1001, 27:46–47. Petitioner maps Hongo's current vehicle speed to the recited information about operational status of the vehicle and argues that, by processing the acquired vehicle speed in calculating target speed, Hongo's system determines the operational status information. Pet. 30–32 (citing Ex. 1005 ¶¶ 23, 28, Fig. 2; Ex. 1003 ¶ 102).

Patent Owner does not contest this aspect of the Petition. *See generally* PO Resp.

Hongo discloses that, in the trace mode, Hongo's system obtains and records the current vehicle speed. Ex. 1005 ¶ 28. These recorded vehicle speed data points are used to determine the target vehicle speed when operating in the playback mode. *Id.* ¶¶ 32–33.

Accordingly, for the foregoing reasons, Hongo supports Petitioner's contentions.

e. The External Command Input Recitation

Claim 1 recites “determining . . . information from external command input telemetry in combination with user command inputs to the vehicle including voice command inputs.” Ex. 1001, 27:47–49. Petitioner presents two mappings for this recitation. Pet. 33–35. First, Petitioner maps traffic information received by Hongo's radio to the recited information from external command input telemetry and argues that, by processing the received radio signals, Hongo's system determines the received information. *Id.* at 33–34 (citing Ex. 1005 ¶ 64; Ex. 1003 ¶¶ 105–107). Second, Petitioner maps Obradovich's navigation functionality including vehicle location information received via GPS to the recited information from external command input telemetry and argues that, by processing the received GPS signals, Obradovich's system determines the received information. *Id.* at 34–35 (citing Ex. 1008, 1:39–54, 1:55–67; Ex. 1003 ¶¶ 108–113). For both of its mappings, Petitioner relies on Obradovich to teach “using voice commands for controlling cruise control functionality via a cruise control interface,” arguing that it would have been obvious to an ordinarily skilled artisan to include Obradovich's touch and voice control interfaces with Hongo's cruise control system. *Id.* at 15–18 (citing Ex. 1005 ¶¶ 3–4, 6–7, 24; Ex. 1008, 1:16–28, 3:21–49, 5:33–53; Ex. 1003 ¶¶ 76–83), 35–36 (citing Ex. 1008, 1:39–54, 2:36–47, 2:49–56, 6:57–62, 7:13–24, 8:16–18; Ex. 1003 ¶¶ 115–118).

Patent Owner does not contest this aspect of the Petition. *See generally* PO Resp.

Hongo discloses that its system receives traffic information during driving and that this information is useful in determining weather- and sunlight-based deceleration coefficients that are used to calculate the target vehicle speed when a real-time environmental information search key is not found in a search of the driving history database. Ex. 1005 ¶¶ 35, 64.

Obradovich discloses a navigation system that uses GPS signals to determine the vehicle location, speed, direction, and route to a destination. Ex. 1008, 1:39–67, 7:25–34, 12:60–13:10. Notably, Hongo also employs GPS signals to determine the vehicle location. *See, e.g.*, Ex. 1005 ¶ 23. Obradovich discloses the use of voice commands to operate the control system, including its cruise control system. Ex. 1008, 7:17–21, 8:16–19.

Accordingly, for the foregoing reasons, Hongo and Obradovich support Petitioner’s contentions. We determine that Petitioner sets forth reasoning with rational underpinning as to why a person having ordinary skill in the art would have combined the teachings of Hongo and Obradovich. *See, e.g.*, Pet. 14–18 (arguing that implementing Obradovich’s cruise control selection capabilities into Hongo’s cruise control functionality would have “improved vehicle operation in Hongo by allowing a user to use voice to adjust adaptive cruise control,” “improved vehicle user interfaces by increasing convenience and flexibility in input choices,” and “involved incorporating prior art elements according to known methods in a vehicle to yield predictable results”).

f. The Applying Recitation

Claim 1 recites “applying calculated electric power to the vehicle to travel along the segment of the vehicle route at a calculated speed.”

Ex. 1001, 27:50–52. Petitioner maps Hongo’s target vehicle speed to the recited calculated speed. Pet. 37–38 (citing Ex. 1005 ¶¶ 35–36, 55, Fig. 2; Ex. 1003 ¶ 120). Petitioner argues that “controlling vehicle movement using the target vehicle speed itself involves calculating and applying a power corresponding to the target vehicle speed to the vehicle engine.” *Id.* at 39 (citing Ex. 1003 ¶ 121). Petitioner argues that, when implementing Hongo’s modified cruise control device on Niki’s hybrid vehicle, the cruise control system controls and applies the calculated electric power to the electric motor to cause the vehicle to travel along the route. *Id.* at 39–42 (citing Ex. 1005 ¶¶ 17, 29, Fig. 3; Ex. 1009, 5:17–54, 8:47–59; Ex. 1003 ¶¶ 123–128).

Patent Owner contests Petitioner’s arguments. PO Resp. 21–30. First, Patent Owner relies on its arguments advanced for the Segment Recitation to argue that, because Hongo’s system does not determine any segments, it cannot apply calculated electric power to the vehicle to travel along a segment. *Id.* at 21 (citing Ex. 2007 ¶¶ 163–169); *see also id.* at 27–29 (presenting substantially similar arguments).

Patent Owner’s arguments are unavailing for the reasons set forth above. Hongo’s system uses the current vehicle position to determine in which 20 m section of the road the vehicle is currently located, retrieves the block number for that 20 m section, and uses the block number and a measured environment parameter as keys to retrieve driving history and other data. Ex. 1005 ¶¶ 27, 32. If both keys match, Hongo’s system

calculates the average value of the previously recorded vehicle speed data points and uses that value as the target vehicle speed. *Id.* ¶ 33. If not, Hongo’s system uses equations to calculate the target vehicle speed. *Id.* ¶¶ 35–36.

Next, Patent Owner argues that claim 1 “require[s] an ordered, two-step process.” PO Resp. 22. Patent Owner argues that claim 1 requires first determining a segment of a vehicle route, then applying calculated electric power to the vehicle to travel along the segment. *Id.* According to Patent Owner, “[t]hese interrelated claim limitations require that the ‘segment of a vehicle route’ be one that the vehicle has not yet travelled.” *Id.* Patent Owner characterizes claim 1 as “requir[ing] *prospective* speed/power calculations.” *Id.* at 22–23 (citing Ex. 1001, 3:55–4:10, 5:49–55, Fig. 2); *see also id.* at 25–26 (presenting substantially similar arguments); PO Sur-reply 7–9 (presenting substantially similar arguments).

Petitioner replies that “the operation recited in [claim 1] is applying, not calculating” and, because it does not include “language limiting the type of power applied, this encompasses exemplary power optimization techniques described in the specification.” Pet. Reply 11–12 (emphasis omitted) (citing Ex. 1001, 18:25–67; Ex. 1053 ¶¶ 48–54). Petitioner argues that the specification of the ’399 patent “describes examples of calculating and applying a power while a vehicle is traveling along a current segment.” *Id.* at 12 (citing Ex. 1001, 11:44–63, 14:47–17:37, 18:4–67, 21:1–10, Fig. 5). Petitioner argues that “Hongo’s adaptive cruise control involves applying power to maintain a vehicle speed in a similar manner as the power optimization technique involved in Figures 5 and 6 of the [’399 patent] specification.” *Id.* at 22.

We fail to see, and Patent Owner does not adequately identify, any requirement in claim 1 that electric power and speed for a route segment be calculated prior to the vehicle traveling along the segment. Indeed, claim 1 does not specify how or when electric power and speed are calculated. Rather, claim 1 merely recites “applying calculated electric power to the vehicle to travel along the segment of the vehicle route at a calculated speed.” Ex. 1001, 27:50–52. The recited *applying* calculated electric power to a vehicle to travel along the segment at a calculated speed at least implies that the vehicle is currently traveling along the segment.

Patent Owner’s contentions are also unavailing because they contradict the ’399 patent. For example, as noted above, the ’399 patent discloses that the power management device may rely on historical route information, in which case “the location of the vehicle is periodically determined” and “used to determine[] a historical segment *corresponding to the current location*.” Ex. 1001, 18:30–33 (emphasis added). If the vehicle has moved into a new route segment, the historical data is queried to determine the most efficient speed to travel for the current segment. *Id.* at 18:39–56. Thus, the ’399 patent explicitly discloses calculating and applying power to a vehicle based on the route segment in which the vehicle is currently traveling. *See id.* at 18:64–67 (“The flowchart shown in FIG. 5 illustrates a continuous process, in which the power management device can determine a probable optimal speed as the current segment changes (e.g., as the vehicle moves).”), Fig. 5. Notably, Patent Owner acknowledges that the ’399 patent “specification explains that ‘applied power may’ also be determined for ‘current . . . route segments.’” PO Sur-reply 9 (alteration in original).

Furthermore, Patent Owner's assertion that "the ['399] patent's system uses information about 'the next segments (or upcoming segments)' to calculate power and speed" (PO Resp. 23 (citing Ex. 1001, 3:55–4:10)) is unavailing because Patent Owner selects only one of several factors that the '399 patent discloses can be used to determine power. The sentence cited by Patent Owner for support actually states that "[t]he power management logic may determine an applied power for the vehicle engine based on information about the external environment of the vehicle that is selected from the group consisting of" several factors, the first-listed factor being "the current location of the vehicle." Ex. 1001, 3:55–4:10. Patent Owner also cites column 5, lines 49–55 to support its assertion "that 'speeds for current and upcoming route segments can . . . be calculated." PO Resp. 23 (alteration in original). Here, again, Patent Owner references only a portion of the disclosure, as this portion of the '399 patent discloses that energy-efficient speeds can also be calculated based on other factors. For example, the '399 patent discloses that "[i]n some variations, the optimized speed for the vehicle is determined based on historical speeds for similar destinations." Ex. 1001, 5:51–54. Patent Owner's characterization of the full disclosure of the '399 patent, specifically that upon which Petitioner relies, as being "optional" or an "alternative" (PO Resp. 25–26) is not supported by the '399 patent and is, therefore, unavailing.

Additionally, Patent Owner appears to argue that the Petition fails to relate the recited calculated electric power and calculated speed. *See, e.g.*, PO Resp. 23–24. We disagree. As noted above, Petitioner argues that in order for Hugo's system to achieve its target vehicle speed, the system must calculate the power required to achieve that speed and apply that calculated

power to achieve the target vehicle speed. *See* Pet. 39. And as also explained above, Petitioner argues when applied to Niki’s hybrid vehicle, the calculated power would include calculated electric power. *See id.* at 39–42. Contrary to Patent Owner’s assertions (*see, e.g.*, PO Resp. 24–26), Petitioner has not read “the requirement that the vehicle be caused ‘to travel along the segment’ ‘at a calculated speed’ . . . out of the claims.”

Finally, we note that Hongo discloses a target vehicle speed determining device that calculates and outputs to an automatic cruise control system a suitable target vehicle speed. Ex. 1005 ¶¶ 22–26, 32, Fig. 1. The target vehicle speed determining device uses stored information, GPS information, environmental information, and historic driving information to determine the target vehicle speed. *Id.* ¶¶ 22–26, 32, Fig. 1. Niki discloses a hybrid electric vehicle including a cruise control unit that controls both the internal combustion engine and the motor to achieve a target vehicle speed. Ex. 1009, 1:17–20, 8:47–59.

Accordingly, for the foregoing reasons, Hongo and Niki support Petitioner’s contentions. We determine that Petitioner sets forth reasoning with rational underpinning as to why a person having ordinary skill in the art would have combined the teachings of Hongo and Niki. *See, e.g.*, Pet. 21–23.

g. Conclusion

For the foregoing reasons, on this record, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that claim 1 would have been obvious in view of the combination of Hongo, Obradovich, and Niki.

3. Independent Claim 11

Petitioner relies on Hongo to disclose a vehicle substantially as recited in claim 11, and relies on Obradovich to teach a user interface system and Niki to teach a hybrid vehicle. Pet. 14–25, 52–59.

Patent Owner does not advance arguments for the patentability of claim 11 apart from its arguments advanced for claim 1. *See generally* PO Resp.

Independent claim 11 recites an electric vehicle and contains several recitations that are substantially the same as those recited in independent claim 1. *Compare* Ex. 1001, 27:43–52, *with id.* at 28:17–33. Petitioner relies on its showing made for claim 1 regarding the similar recitations. Pet. 52. Our above analysis regarding these similar elements applies to claim 11, and we focus our analysis below on the distinct recitations of claim 11.

a. The Vehicle Recitation

Claim 11 recites “a vehicle having an electric power source, a communication system, and a user interface system capable of accepting voice command inputs.” Ex. 1001, 28:19–21. Petitioner maps Niki’s hybrid vehicle to the recited vehicle, Niki’s battery 3 to the recited power source, Obradovich’s communications interfaces 106 of control system 100 to the recited communication system, and Obradovich’s voice command interface 104b of control system 100 to the recited user interface system. Pet. 53–55 (citing Ex. 1008, 1:39–54, 6:57–7:7; Ex. 1009, 5:17–54, Fig. 1; Ex. 1003 ¶¶ 152–155).

Niki discloses a hybrid electric vehicle including cruise control unit 53 that controls both internal combustion engine E and motor M, powered by nickel-hydrogen battery 3, to achieve a target vehicle speed. Ex. 1009, 1:17–20, 5:17–54, 8:47–59. Obradovich discloses a navigation system that uses GPS signals to determine the vehicle location, speed, direction, and route to a destination. Ex. 1008, 1:39–67, 7:25–34, 12:60–13:10. Obradovich discloses the use of voice commands input via voice command interface 104b to operate the control system, including its cruise control system. *Id.* at 6:56–62, 7:17–21, 8:16–19.

Accordingly, for the foregoing reasons, Niki and Obradovich support Petitioner’s contentions. We determine that Petitioner sets forth reasoning with rational underpinning as to why a person having ordinary skill in the art would have combined the teachings of Hongo, Niki, and Obradovich. *See, e.g.*, Pet. 14–18, 21–23.

b. The Power Management System Recitation

Claim 11 recites “a power management system for the electric power source.” Ex. 1001, 28:22. Petitioner maps Hongo’s target speed determining device 100 to the recited power management system and argues that “Hongo teaches calculating and applying a target speed (and a corresponding power) to a vehicle in providing adaptive cruise control.” Pet. 55 (citing Ex. 1005 ¶¶ 29, 35–36, 45, 55, Fig. 1; Ex. 1003 ¶ 156). Petitioner argues that “it would have been obvious that applying a target speed to a vehicle involves applying a corresponding power to the vehicle because vehicle power output and vehicle speed are directly correlated.” *Id.* at 56 (citing Ex. 1003 ¶ 157). Petitioner argues that, when implemented on

Niki's hybrid vehicle, the modified system would control power output by Niki's battery. *Id.* at 56–57 (citing Ex. 1009, 5:17–54, Fig. 1; Ex. 1003 ¶¶ 157–158).

Hongo discloses a target vehicle speed determining device that calculates and outputs to an automatic cruise control system a suitable target vehicle speed. Ex. 1005 ¶¶ 22–26, 32, Fig. 1. Niki discloses a hybrid electric vehicle including motor M powered by nickel-hydrogen battery 3. Ex. 1009, 5:17–54.

Accordingly, for the foregoing reasons, Hongo and Niki support Petitioner's contentions. We determine that Petitioner sets forth reasoning with rational underpinning as to why a person having ordinary skill in the art would have combined the teachings of Hongo and Niki. *See, e.g.*, Pet. 22–23.

c. The Operational Parameters Recitation

Claim 11 recites the “power management system . . . able to determine . . . one or more operational parameters of the vehicle.” Ex. 1001, 28:28–29. Petitioner maps Hongo's tire information to the recited operational parameters and argues that the tire information has “a strong influence on braking force, cornering power, etc.” and “affects how vehicle speed is calculated.” Pet. 57–58 (quoting Ex. 1005 ¶ 64) (citing Ex. 1005 ¶¶ 35–39, 64; Ex. 1003 ¶ 160).

Hongo discloses that information “related to the tires of the vehicle in motion,” such as “the type of tires installed (summer/winter, etc.) and the presence or absence of chains,” has “a strong influence on braking force,

cornering power, etc., [and] this tire information is very useful in calculating the coefficients” used to calculate the target vehicle speed. Ex. 1005 ¶ 64.

Accordingly, for the foregoing reasons, Hongo supports Petitioner’s contentions.

d. The Calculate Recitation

Claim 11 recites “the power management system set to calculate electric power and speed over a segment of a vehicle route.” Ex. 1001, 28:29–31. Petitioner maps Hongo’s target speed to the recited speed and argues that “[i]t would have been obvious that applying the target speed to adjust cruise control involves calculat[ing] . . . power.” Pet. 58 (second and third alterations in original) (emphasis omitted) (citing Ex. 1003 ¶ 161).

Hongo discloses a target vehicle speed determining device that calculates and outputs to an automatic cruise control system a suitable target vehicle speed. Ex. 1005 ¶¶ 22–26, 32, Fig. 1. The ’399 patent discloses calculating power as a function of the calculated speed. *See, e.g.*, Ex. 1001, 2:53–55, 2:60–63.

Accordingly, for the foregoing reasons, Hongo supports Petitioner’s contentions.

e. Conclusion

For the foregoing reasons, on this record, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that claim 11 would have been obvious in view of the combination of Hongo, Obradovich, and Niki.

4. Dependent Claims 6 and 16

Claim 6 depends directly from claim 1 and further recites “wherein vehicle route segment determination further comprises determining multiple route segments, each route segment having a separate calculated speed and selected drive train parameters.” Ex. 1001, 27:63–28:2. Claim 16 depends directly from claim 11 and contains substantially similar recitations, but does not include the drive train parameter recitation. *Id.* at 28:47–50. Petitioner relies on its arguments made for claim 6 in arguing that claim 16 would have been obvious. Pet. 59. Patent Owner does not advance arguments for the patentability of claim 16 apart from its arguments advanced for claim 6. *See generally* PO Resp. We, therefore, focus our analysis on claim 6.

Petitioner argues that a route longer than 20 m will include multiple 20 m sections, each identified by a driving block BKN. Pet. 45–46 (citing Ex. 1005 ¶¶ 27, 32, Fig. 2; Ex. 1003 ¶ 136). Petitioner argues that, as the vehicle travels along the route and moves from one 20 m section to another, Hongo’s system determines multiple route segments. *Id.* at 46–47 (citing Ex. 1003 ¶¶ 137–138).

Continuing, Petitioner argues that if the driving block of the vehicle’s current position does not have corresponding data in driving history database 10 (that is, “block number BKN misses”), Hongo’s system will calculate the target vehicle speed using equation (2). Pet. 47 (citing Ex. 1005 ¶ 36). Petitioner notes that the value of one variable in this equation, γ , is a function of the minimum value of the radius of curvature, and Hongo discloses that, because the radius of curvature can change suddenly, “it is desirable to look ahead at the required number of cases” to determine the smallest value for the radius of curvature. *Id.* at 47–48 (citing

Ex. 1005 ¶¶ 27, 36–37, 39; Ex. 1003 ¶¶ 140–141). Therefore, Petitioner argues, it would have been “advantageous to compute a target vehicle speed for each road segment (driving block) to account for any sudden changes to the curvature *R* along the travel path.” *Id.* at 48 (citing Ex. 1003 ¶ 141).

Finally, Petitioner argues that it would have been obvious to “adjust[] vehicle speed using parameters associated with the target speed,” such as a vehicle speed parameter, an engine power parameter, and a throttle position parameter. Pet. 48–49 (citing; Ex. 1003 ¶ 142).

Patent Owner argues that claim 6 requires that “*multiple* route segments must be determined at the *same time* as part of the *same segment determination step*.” PO Resp. 32 (citing Ex. 1001, 14:38–35). Patent Owner argues that although Hongo’s system will determine multiple driving block numbers based on the vehicle position as the vehicle travels, “Hongo’s system never . . . identifies more than a single block number at a time.” *Id.* at 32–33 (citing Ex. 1005 ¶¶ 44, 46–48, Fig. 6). Continuing, Patent Owner argues that “Hongo’s system also never identifies ‘separate calculated speed[s] and selected drive train parameter[s]’ for multiple determined route segments.” *Id.* at 33 (alterations in original). Patent Owner argues that “the Petition points only to calculations performed by Hongo when ‘block number BKN misses,’” in which case “Hongo’s system has been *unable to ascertain* the block number corresponding to the vehicle’s current position” and “no ‘segment of the vehicle route’ has been determined.” *Id.* However, Patent Owner argues, “[t]he Petition never explains why it would be obvious to replace the speed determination Hongo employs when a block number is identified with the different determination method used in the opposite circumstances.” *Id.*

Petitioner replies that, because claim 1 and claim 6 “each lack language regarding timing, the determining operation recited in [claim 6] may be satisfied without regard to when each of the multiple route segments [is] determined.” Pet. Reply 24 (emphasis omitted). Petitioner argues that Hongo’s discussion of when driving block number BKN “misses” means that “an ascertained BKN is not identified within driving history DB 10.” *Id.* at 25.

Patent Owner replies that, because claim 6 depends from claim 1, “the ‘multiple route segments’ of claim 6 must be determined as part of the same ‘determining a segment of a vehicle route’ step referenced in claim 1.” PO Sur-reply 10.

We fail to see, and Patent Owner does not adequately identify, any requirement in claim 6 that multiple route segments must be determined at the same time. Rather, we agree with Petitioner that “determining multiple route segments” as recited in claim 6 is satisfied when multiple route segments are determined sequentially as the vehicle moves from segment to segment. As noted by Petitioner, claim 6 does not contain any language specifying when the recited “multiple route segments” are determined. *See* Pet. Reply 24. Instead, claim 6 broadly recites “determining multiple route segments” without further limitation, such as determining the multiple route segments at the same time, as suggested by Patent Owner. Nor does its dependence from claim 1 narrow the broad language of claim 6.

We also disagree with Patent Owner’s argument that Hongo’s discussion of driving block number BKN “misses” means that “Hongo’s system has been *unable to ascertain* the block number corresponding to the vehicle’s current position.” PO Resp. 33. To the contrary, Hongo discloses

that, “[i]n the playback mode, the block number BKN and the road environment parameter Y are specified from the current position coordinate r and the road environment real-time information X by a method equivalent to the above-mentioned driving history recording means 140.” Ex. 1005

¶ 32. Hongo further discloses that, “using the driving history search means 130, the driving history DB 10 is searched for driving history data 11 with matching keys (BKN, Y).” *Id.* Thus, when Hongo discusses the instance in which “block number BKN misses” (*id.* ¶ 36), this means no data corresponding to the driving block number was found in driving history database 10.

As discussed in § II.D.2.b above regarding the Segment Recitation of claim 1, Hongo discloses using the vehicle’s current position to obtain data from the driving history database. Ex. 1005 ¶ 32. As the vehicle travels into subsequent 20 m sections of road, the system determines multiple road segments. Accordingly, Hongo supports Petitioner’s contentions.

For the foregoing reasons, on this record, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that claims 6 and 16 would have been obvious in view of the combination of Hongo, Obradovich, and Niki.

5. Dependent Claims 2, 5, 9, 10, 12, 15, 19, and 20

Claims 2, 5, 9, and 10 depend directly from claim 1, and claims 12, 15, 19, and 20 depend directly from claim 11. Petitioner contends that the combination of Hongo, Obradovich, and Niki teaches or suggests the recitations of these claims and supports these contentions with declaration testimony. Pet. 43–44, 49–52, 59–62 (citing Ex. 1003).

Patent Owner does not contest this aspect of the Petition. *See generally* PO Resp.

We determine that Petitioner’s contentions regarding these dependent claims are fully supported by the record. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that claims 2, 5, 9, 10, 12, 15, 19, and 20 would have been obvious in view of the combination of Hongo, Obradovich, and Niki. *See In re NuVasive*, 841 F.3d 966, 974 (Fed. Cir. 2016) (“The Board, having found the only disputed limitations together in one reference, was not required to address undisputed matters.”); Paper 10, 9 (emphasizing that “arguments not raised in the response may be deemed waived”).

E. Asserted Obviousness Based on Hongo, Obradovich, Niki, and Kuroda

Claim 7 depends directly from claim 1, and claim 17 depends directly from claim 11. Petitioner contends that the combination of Hongo, Obradovich, Niki, and Kuroda teaches or suggests the recitations of these claims and supports these contentions with declaration testimony. Pet. 71–77 (citing Ex. 1003).

Patent Owner does not contest this aspect of the Petition. *See generally* PO Resp.

We determine that Petitioner’s contentions regarding these dependent claims are fully supported by the record. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that claims 7 and 17 would have been obvious in view of the combination of Hongo, Obradovich, Niki, and Kuroda. *See In re NuVasive*, 841 F.3d at 974; Paper 10, 9.

F. Asserted Obviousness Based on Hongo, Obradovich, Niki, and Newstrom

Petitioner argues that claims 8 and 18 would have been obvious in view of Hongo, Obradovich, Niki, and Newstrom. Pet. 77–83. In support of its showing, Petitioner relies upon the Morellas Declaration. *Id.* (citing Ex. 1003). We have reviewed the parties’ briefs and the evidence of record and determine that, for the reasons explained below, Petitioner has not shown, by a preponderance of the evidence, that claims 8 and 18 would have been obvious in view of Hongo, Obradovich, Niki, and Newstrom.

1. Overview of Newstrom

Newstrom discloses “an apparatus and a method for populating a geospatial road database” in which “a geospatial database management system is mounted on a host vehicle and manages geospatial data relating to a travel path for the host vehicle.” Ex. 1012, code (57). More particularly, Newstrom’s geospatial database management system 10 is “used on a host vehicle 12 with one or more onboard intelligent subsystems 14” that “may provide an operator interface which conveys information to the operator indicative of the position of vehicle 12 within a lane of traffic, and also indicate to the driver information about objects around the vehicle.” *Id.* at 3:47–58; *see also id.* at Fig. 1 (illustrating a block diagram of the geospatial database management system). The road information used by the subsystems is “maintained in a geospatial database 20 by a database manager 22,” and the information “is retrieved from geospatial database 20, through database manager 22, by query processor 24.” *Id.* at 4:12–16, Fig. 1.

2. Claims 8 and 18

Claim 8 depends directly from claim 1 and further recites “wherein the step of determining information about operational status of a vehicle further comprises the step of communicating with a remote database.” Ex. 1001, 28:7–10. Claim 18 depends directly from claim 11 and contains substantially similar recitations. *Id.* at 28:55–57. Petitioner relies on its arguments made for claim 8 in arguing that claim 18 would have been obvious. Pet. 83. Patent Owner does not advance arguments for the patentability of claim 18 apart from its arguments advanced for claim 8. *See generally* PO Resp. We, therefore, focus our analysis on claim 8.

Petitioner relies on Newstrom to teach the recitation of claim 8. Pet. 82–83. Petitioner argues that Newstrom’s lane departure information is another example of the recited information about operational status of the vehicle. *Id.* at 82 (citing Ex. 1012, 7:56–64; Ex. 1003 ¶ 196). Petitioner notes that Newstrom’s system can issue warnings of lane departure that are initiated based on vehicle speed, position, and orientation “relative to attributes specified in Newstrom’s geospatial database 20.” *Id.* at 83 (citing Ex. 1012, 7:56–64, Fig. 3; Ex. 1003 ¶ 197). Petitioner argues that this database is remote from the vehicle because the data within the geospatial database can be downloaded to solid state memory through a wireless connection. *Id.* (citing Ex. 1012, 8:26–38; Ex. 1003 ¶ 197). Petitioner argues that Newstrom’s system communicates with the geospatial database while the vehicle is being driven because Newstrom’s database manager can load new portions of the geospatial database as the vehicle location changes. *Id.* (citing Ex. 1012, 8:26–38; Ex. 1003 ¶ 197).

Petitioner notes that Hongo takes weather conditions into consideration when determining its target vehicle speed and argues that it was known by the Critical Date that poor weather conditions present safety risks to vehicle operation beyond vehicle speed. Pet. 79 (citing Ex. 1005 ¶¶ 5–6, 13, 40; Ex. 1015, 10; Ex. 1003 ¶¶ 189–190). Therefore, Petitioner argues, it would have been obvious “to seek other techniques to improve safety of vehicle operation when road surface conditions and driver visibility [are] poor.” *Id.* at 79–80. Petitioner argues that Newstrom’s use of lane departure warnings is one such technique and that including this technique in Hongo’s system (as modified by Obradovich and Niki) would have further improved user safety during poor weather conditions by leveraging data collected by Hongo’s onboard sensors to identify lane departures and provide haptic feedback of such departures. *Id.* at 80–81 (citing Ex. 1003 ¶ 192).

Patent Owner argues that Newstrom’s geospatial database is stored on the vehicle itself, and is therefore not remote as required by claim 8. PO Resp. 34 (citing Ex. 1012, 4:12–16, Fig. 1); *see also id.* at 35 (“Petitioner has pointed to nothing showing where the ‘server’ in Newstrom is located.”). Patent Owner argues that the wireless connection relied upon by Petitioner occurs only when Newstrom’s database manager is first initialized and Newstrom’s system does not make contact with the server “during use or detection of a lane departure.” *Id.* (citing Ex. 1012, 8:27–28; Ex. 2007 ¶¶ 246–256). Patent Owner also contests Petitioner’s assertion that Newstrom’s system communicates with the geospatial database while the vehicle is being driven, arguing that “[a]ll that Newstrom teaches i[s] that its database manager 22—located on the vehicle—can load different portions of

database 20—again, already stored on the vehicle—as the vehicle moves to different locations.” *Id.* at 35 (citing Ex. 1012, 8:29–38).

Petitioner replies that neither claim 1 nor claim 8 contains a temporal requirement, meaning the recitations of claim 8 can be satisfied when information used to determine an operational status of the vehicle is obtained via communication with a remote database. Pet. Reply 26–28. Petitioner argues that Newstrom’s disclosure of its database manager unloading unused portions of data and loading new portions of data as the vehicle location changes means the vehicle uses a wireless connection to a server during vehicle operation. *Id.* at 28–29 (citing Ex. 1012, 8:26–38).

The parties agree that “remote” as used in claim 8 requires the database to be located somewhere other than on the vehicle. *See* Pet. 83 (arguing that Newstrom’s geospatial database “is remote from a vehicle”); PO Resp. 34 (“A database located on the vehicle is, of course, not the ‘remote database’ required by claim 8.”). We agree that Petitioner has not shown adequately that Newstrom’s geospatial database 20 is not located on the vehicle. Notably, Petitioner asserts that “the geospatial database 20 *may* be hosted on a server that is remote from a vehicle” (Pet. 83 (emphasis added)), but Petitioner does not identify disclosure in Newstrom stating or suggesting that the server is not located on the vehicle. Contrary to Petitioner’s assertions, Newstrom expressly discloses that its geospatial database is located on the vehicle:

FIG. 1 is a block diagram of a geospatial database management system 10 to be used *on a host vehicle 12* with one or more onboard intelligent subsystems 14 (such as driver assist subsystems e.g: Collision avoidance and warning subsystem, lane keeping assist subsystem, platooning assist subsystems, vision enhancement or augmentation[.]

Ex. 1012, 3:47–52 (emphasis added). Figure 1, reproduced below, illustrates geospatial database 20 as part of management system 10 and being onboard vehicle 12:

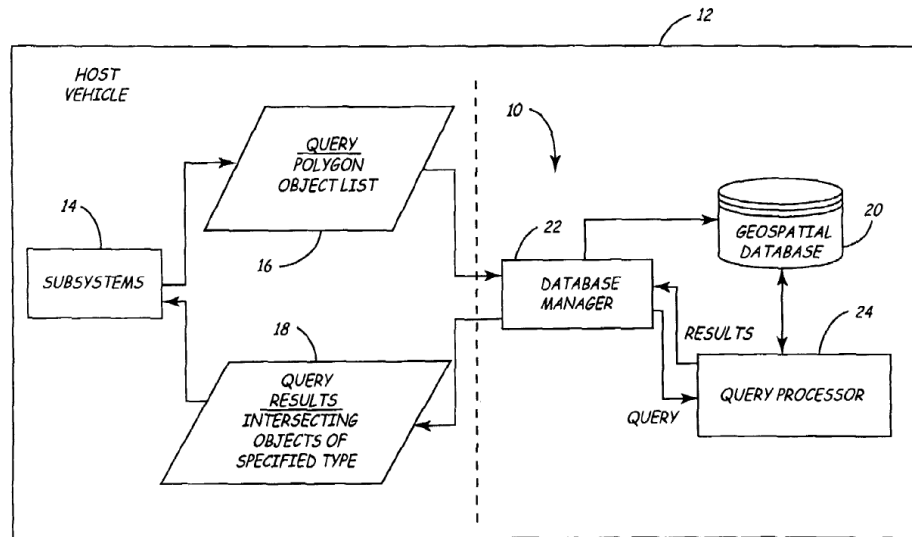


FIG. 1

Figure 1 is a block diagram of geospatial database management system 10, including geospatial database 20, database manager 22, query processor 24, and intelligent subsystems 14, located on host vehicle 12. *Id.* Petitioner does not explain adequately why Newstrom’s disclosure that, when first initializing the database manager, the geospatial database is loaded into solid state memory by, for example, wirelessly transferring data from a server means that the geospatial database is remote from the vehicle. Similarly, Petitioner does not explain adequately why Newstrom’s disclosure that the database manager can load new portions of the data into solid state memory as the vehicle location changes means that the geospatial database is remote from the vehicle. Nor does Petitioner’s conclusory contention that “the geospatial database 20 *may* be hosted on a server that is remote from a vehicle” (Pet. 83 (emphasis added)) apprise us of disclosure that Newstrom’s geospatial database *is* remote from the vehicle. Dr. Morellas’s testimony is

substantially identical to the Petition (*see* Ex. 1003 ¶197) and, thus, also fails to provide adequate support for Petitioner’s assertions.

During the hearing, counsel for Petitioner confirmed that it relied solely on Newstrom’s disclose of the database using a “wireless connection” by which the database manager communicates with the database in arguing that Newstrom’s geospatial database 20 is remote from vehicle 12.

Tr. 19:14–24; *see also* Ex. 1012, 8:27–29. Petitioner, however, fails to explain adequately how such wireless communication indicates that the database is not located on vehicle, especially given Newstrom’s express disclosure (discussed above) that the database is onboard the vehicle.

3. Conclusion

For the foregoing reasons, on this record, Petitioner has not shown, by a preponderance of the evidence, that claims 8 and 18 would have been obvious in view of the combination of Hongo, Obradovich, Niki, and Newstrom.

III. CONCLUSION⁴

Based on the evidence presented with the Petition, the evidence introduced during the trial, and the parties’ respective arguments, Petitioner

⁴ 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

has shown, by a preponderance of the evidence, that claims 1–7, 9–17, 19, and 20 of the '399 patent are unpatentable, but has failed to show that claims 8 and 18 are unpatentable. In summary,

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2, 5, 6, 9–12, 15, 16, 19, 20	103(a)	Hongo, Obradovich, Niki	1, 2, 5, 6, 9–12, 15, 16, 19, 20	
3, 4, 13, 14	103(a)	Hongo, Obradovich, Niki, Kudo	3, 4, 13, 14	
7, 17	103(a)	Hongo, Obradovich, Niki, Kuroda	7, 17	
8, 18	103(a)	Hongo, Obradovich, Niki, Newstrom		8, 18
Overall Outcome			1–7, 9–17, 19, 20	8, 18

IV. ORDER

Accordingly, it is

ORDERED that claims 1–7, 9–17, 19, and 20 of the '399 patent have been shown to be unpatentable;

FURTHER ORDERED that claims 8 and 18 of the '399 patent have not been shown to be unpatentable; and

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), (b)(2).

FURTHER ORDERED that, because this is a final written 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.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

IQAR INC.,
Patent Owner.

IPR2024-00543
Patent 10,882,399 B2

Before JASON W. MELVIN, SEAN P. O'HANLON, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

MELVIN, *Administrative Patent Judge*, dissenting-in-part.

I respectfully dissent from the majority's determination that Petitioner has not shown claim 8 and 18's requirement for "communicating with a remote database." Newstrom discloses that its database manager may load the geospatial database "from a . . . wireless connection to [a] server." Ex. 1012, 8:27–29. Although Newstrom does not specify where the server is located, it describes using a wireless connection and contrasts that with loading from a "hard drive." *Id.* I agree with Petitioner's expert that those disclosures teach a database remote from the vehicle. Ex. 1003 ¶ 197.

Although the majority criticizes Petitioner's assertion that Newstrom's database "may" be remote, as opposed to "is" remote, that language relates to Newstrom's disclosure of multiple possible configurations and does not undermine Petitioner's reliance on the remote-server configuration. It is sufficient that Newstrom discloses a remote database as one option.

Accordingly, I would find that Newstrom satisfies claim 8 and 18's requirement for "communicating with a remote database."

IPR2024-00543
Patent 10,882,399 B2

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,

v.

IQAR INC.,
Patent Owner.

IPR2024-00543
Patent 10,882,399 B2

Before ROBERT L. KINDER, SEAN P. O'HANLON, and
BRENT M. DOUGAL, *Administrative Patent Judges*.

O'HANLON, *Administrative Patent Judge*.

DECISION

Denying Petitioner's Request on Rehearing of Final Written Decision
35 U.S.C. § 42.71(d)(2)

I. INTRODUCTION

On July 21, 2025, we issued a Final Written Decision in this proceeding, determining that Petitioner had shown, by a preponderance of the evidence, that claims 1–7, 9–17, 19, and 20 of U.S. Patent No. 10,882,399 B2 (Ex. 1001, “the ’399 patent”) were unpatentable, but Petitioner failed to show, by a preponderance of the evidence, that claims 8 and 18 of the ’399 patent were unpatentable. Paper 23 (“Dec.” or “Decision”). On August 20, 2025, Tesla, Inc. (“Petitioner”) filed a Request for Rehearing (Paper 24, “Reh’g Req.”) under 37 C.F.R. § 42.71(d) to seek reconsideration of the Decision. For reasons discussed below, the Request for Rehearing is *denied*.

II. STANDARD OF REVIEW

A party requesting rehearing bears the burden of showing that the decision should be modified. 37 C.F.R. § 42.71(d). The party must identify specifically all matters we misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply. *Id.*

III. ANALYSIS

Petitioner presents two arguments asserting that, in the Decision, we misapprehended matters in determining that Petitioner did not prove, by a preponderance of the evidence, that claims 8 and 18 would have been

obvious in view of the combination of Hongo,¹ Obradovich,² Niki,³ and Newstrom.⁴ *See generally* Reh’g Req. We address each of Petitioner’s arguments in turn below.

A. Statement of Petitioner’s Counsel During the Hearing

Petitioner asserts that we misapprehended its counsel’s answer to a question posed by the Board during the hearing. Reh’g Req. 6–8. Petitioner asserts that the question we asked indicates that we misapprehended its “invalidity positions for claims 8 and 18 [to be] ‘solely’ limited to Newstrom’s disclosure in column 8, lines 28 to 29.” *Id.* at 6 (citing Paper 22 (the hearing transcript, “Tr.”), 19:14–18). Similarly, Petitioner asserts that we misapprehended “the statement provided by counsel of Tesla’s unpatentability positions regarding claims 8 and 18 being ‘solely’ limited to column 8, lines 28 to 29 of Newstrom.” *Id.* Petitioner asserts that, in addition to this portion of Newstrom’s disclosure, Petitioner also relied on other portions of Newstrom and the testimony of its witness, Dr. Morellas’. *Id.* at 6–8 (citing Paper 2 (Petition, “Pet.”), 83; Paper 15 (Reply to the Patent Owner Response, “Pet. Reply”), 29; Ex. 1012, 8:15–38, 19:19–22; Ex. 1003 (Dr. Morellas’ first declaration) ¶ 197; Ex. 1053 (Dr. Morellas’ second declaration) ¶ 99).

Petitioner’s arguments fail to persuade us that we misapprehended or overlooked any matter. As we explained in the Decision, claims 8 and 18

¹ English-language translation of JP 2003-276472 (Ex. 1005).

² US 6,282,464 B1 (Ex. 1008).

³ US 7,059,435 B2 (Ex. 1009).

⁴ US 7,552,008 B2 (Ex. 1012).

recite “communicating with a remote database.” Dec. 38 (citing Ex. 1001, 28:7–10, 28:55–57). We explained that Petitioner relied on Newstrom to teach the recitation, mapping Newstrom’s geospatial database to the recited database and arguing that Newstrom’s geospatial database is remote from the vehicle based on Newstrom’s disclosure of using a “wireless connection.” *Id.* (citing Pet. 82–83; Ex. 1012, 7:56–64, Fig. 3; Ex. 1003 ¶¶ 196–197). We further noted that Petitioner argued that Newstrom’s system communicates with the geospatial database while the vehicle is being driven. *Id.* (citing Pet. 83; Ex. 1012, 8:26–38; Ex. 1003 ¶ 197). Finally, we noted that Patent Owner argued Newstrom’s geospatial database is stored on the vehicle itself, and is therefore not remote as required by claims 8 and 18. *Id.* at 39–40.

In the Petition, Petitioner argued that Newstrom’s “geospatial database 20 may be hosted on a server that is remote from a vehicle, and implemented as a remote database.” Pet. 83 (emphasis omitted) (citing Ex. 1012, 8:26–38). Dr. Morellas’ testimony is substantially the same as the Petition. *See* Ex. 1003 ¶ 197 (“Further, Newstrom describes that database 20 can be loaded by database manager 22 into ‘solid state memory’ located in a vehicle through a ‘wireless connection to server,’ and thus, geospatial database 20 may be hosted on a server that is remote from a vehicle, and implemented as a remote database.” (emphasis omitted) (citing Ex. 1012, 8:26–38)). The cited portion of Newstrom states, in relevant part, “When database manager 22 is first initialized, it loads database 20 (from a CD, DVD, hard disk, *wireless connection to server*, etc.) into solid state memory.” Ex. 1012, 8:27–29 (emphasis added).

During the hearing, Petitioner addressed claims 8 and 18 very briefly, stating that “[w]e respectfully leave the full discussion to our briefing.” Tr. 6:1–13. We questioned Petitioner’s counsel later in the hearing to confirm our understanding that Petitioner relied only on Newstrom’s disclosure of a “wireless connection” in arguing that the geospatial database is remote from the vehicle: “It’s my understanding from reading the briefs that for the remote database limitation of Claim 8, you rely, I think, solely on the disclosure of a wireless connection to the server at column 8, lines 28 to 29, I believe, of the Newstrom reference. Is that correct?” Tr. 19:15–18. Petitioner’s counsel responded by indicating that our understand of Petitioner’s arguments was correct (“That’s correct, Your Honors.”) and arguing that communication with the asserted remote database occurs both during initialization and in subsequent communications when the vehicle is being driven. *Id.* at 19:19–24.

We did not misapprehend or overlook the answer provided by Petitioner’s counsel during the hearing or any of Petitioner’s arguments and evidence. As confirmed by Petitioner’s counsel, Petitioner relies solely on Newstrom’s disclosure of loading its spatial database 20 into solid state memory via a “wireless connection to [a] server” in asserting that the database “may be hosted on a server that is remote from a vehicle.” Pet. 83 (citing Ex. 1012, 8:26–38; Ex. 1003 ¶ 197). Column 8, lines 27–29 is the only disclosure in Newstrom of a “wireless connection.” Although Petitioner argues that Newstrom’s system communicates wirelessly with the geospatial database while the vehicle is being driven (*see* Dec. 38 (citing Pet. 83); Tr. 19:20–22), Petitioner relies solely on the single instance of “wireless” in Newstrom’s disclosure to satisfy the recitation that the

database (which Petitioner maps to Newstrom's geospatial database 20) is "remote." In the Decision, we explained that Petitioner's reliance on Newstrom's "wireless connection" and its assertion that the geospatial database *may* be hosted on a remote server were not persuasive to satisfy Petitioner's burden to prove the unpatentability of claims 8 and 18 by a preponderance of the evidence, especially given Newstrom's express disclosure that the geospatial database is located on the vehicle. Dec. 40–42. For example, we stated:

Petitioner does not explain adequately why Newstrom's disclosure that, when first initializing the database manager, the geospatial database is loaded into solid state memory by, for example, wirelessly transferring data from a server means that the geospatial database is remote from the vehicle. Similarly, Petitioner does not explain adequately why Newstrom's disclosure that the database manager can load new portions of the data into solid state memory as the vehicle location changes means that the geospatial database is remote from the vehicle. Nor does Petitioner's conclusory contention that "the geospatial database 20 *may* be hosted on a server that is remote from a vehicle" (Pet. 83 (emphasis added)) apprise us of disclosure that Newstrom's geospatial database *is* remote from the vehicle. Dr. Morellas' testimony is substantially identical to the Petition (*see* Ex. 1003 ¶197) and, thus, also fails to provide adequate support for Petitioner's assertions.

During the hearing, counsel for Petitioner confirmed that it relied solely on Newstrom's disclosure of the database using a "wireless connection" by which the database manager communicates with the database in arguing that Newstrom's geospatial database 20 is remote from vehicle 12. Tr. 19:14–24; *see also* Ex. 1012, 8:27–29. Petitioner, however, fails to explain adequately how such wireless communication indicates that the database is not located on vehicle, especially given Newstrom's express disclosure (discussed above) that the database is onboard the vehicle.

Dec. 41–42.

B. Petitioner’s Reply and Dr. Morellas’ Second Declaration

Petitioner asserts that we overlooked the arguments presented on page 29 of its Reply and paragraph 99 of Dr. Morellas’ second declaration. Reh’g Req. 8–11. Petitioner asserts that we ignored its argument “on page 29 of the Reply, [where it] identified expert testimony explaining that (1) column 8, lines 15-25 of Newstrom identifies a challenge associated with retrieval of valid information, and (2) a remote-server configuration ‘improve[s] accuracy of the information specified in the geospatial database 20.’” *Id.* at 9 (second alteration in original). Petitioner argues that this disclosure “confirms the rationale in the dissenting opinion for diverging from the majority opinion” and “provides evidentiary support for findings in the dissenting opinion with respect to Newstrom’s disclosure.”⁵ *Id.* at 9–10.

Initially, Petitioner’s reliance on assertions made in its Reply, relying on Dr. Morellas’ second declaration, fail to persuade us that we overlooked or misapprehended any arguments made in the *Petition*. Such post-institution arguments attempting to bolster the *Petition* are untimely and, thus, improper. *See* Patent Trial and Appeal Board Consolidated Trial Practice Guide 73 (Nov. 2019).⁶

Even considering Petitioner’s Reply arguments, however, we are not persuaded that we overlooked or misapprehended any matter. As stated

⁵ For clarity of the record, we note that our dissenting colleague is no longer an administrative patent judge and, therefore, has been replaced on the panel presiding over this proceeding. *See* Paper 25.

⁶ *Available at* www.uspto.gov/TrialPracticeGuideConsolidated.

above and in the Decision, Petitioner maps Newstrom’s geospatial database 20 to the recited database. Pet. 83; Dec. 38. It is this database that must be remote from the vehicle per claims 8 and 18. Ex. 1001, 28:7–10, 28:55–57; *see also* Dec. 40 (“The parties agree that ‘remote’ as used in claim 8 requires the database to be located somewhere other than on the vehicle.” (citing Pet. 83; PO Resp. 34)). Newstrom does not disclose that its geospatial database is remote from the vehicle—Newstrom does not disclose that any database or server is remote from the vehicle. Rather, Newstrom discloses multiple ways in which data can be loaded from the geospatial database into solid state memory, one such way being via a “wireless connection to [a] server.” Ex. 1012, 8:27–29. Petitioner and Dr. Morellas’ assertions that this disclosure “implies that [Newstrom’s system] could interact with an external server” and Newstrom’s “system architecture does not preclude communication with an external server” (Pet. Reply 29; Ex. 1053 ¶ 99) fails to persuade us that the server necessarily is remote, especially given Newstrom’s express disclosure that the geospatial database is located on the vehicle. Dec. 40–42 (citing Ex. 1012, 3:47–52, Fig. 1).

Furthermore, as we explained in the Decision, we found persuasive Patent Owner’s arguments traversing Petitioner’s assertions. *See* Dec. 39–40 (summarizing Patent Owner’s arguments and stating that “[w]e agree that Petitioner has not shown adequately that Newstrom’s geospatial database 20 is not located on the vehicle.”). At best for Petitioner, its arguments that the “wireless connection” indicates that Newstrom’s geospatial database could be located remotely from the vehicle are at least counterbalanced by Patent Owner’s arguments to the contrary, and, thus,

Petitioner has failed to prove the unpatentability of claims 8 and 18 by a preponderance of the evidence.

IV. CONCLUSION

In conclusion, the Request for Rehearing does not demonstrate that the Final Written Decision misapprehended or overlooked any matters in the case.

Outcome of Decision on Rehearing:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Denied	Granted
8, 18	103(a)	Hongo, Obradovich, Niki, Newstrom	8, 18	

Final Outcome after Rehearing:

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
1, 2, 5, 6, 9–12, 15, 16, 19, 20	103(a)	Hongo, Obradovich, Niki	1, 2, 5, 6, 9–12, 15, 16, 19, 20	
3, 4, 13, 14	103(a)	Hongo, Obradovich, Niki, Kudo	3, 4, 13, 14	
7, 17	103(a)	Hongo, Obradovich, Niki, Kuroda	7, 17	

Claim(s)	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
8, 18	103(a)	Hongo, Obradovich, Niki, Newstrom		8, 18
Overall Outcome			1–7, 9–17, 19, 20	8, 18

V. ORDER

Accordingly, it is

ORDERED that the Request for Rehearing is *denied*.

IPR2024-00543
Patent 10,882,399 B2

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