

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.,
Petitioner,
v.
iQAR INC.,
Patent Owner.

Case No. IPR2024-00543
U.S. Patent No. 10,882,399 B2

PATENT OWNER'S SUR-REPLY

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	ARGUMENT.....	2
A.	Hongo Does Not “ <i>Determin[e] a Segment of a Vehicle Route</i> ”	2
B.	Hongo Does Not “ <i>Apply[] Calculated Electric Power to the Vehicle to Travel Along the Segment of the Vehicle Route at a Calculated Speed</i> ”	7
C.	Hongo Never Determines “ <i>Multiple Route Segments</i> ”	9
D.	The Prior Art Does Not “ <i>Determin[e] Information About Operational Status of a Vehicle</i> ” By “ <i>Communicating With a Remote Database</i> ”	11
III.	Conclusion	12

I. INTRODUCTION

Patent Owner submits this sur-reply to Petitioner's reply (Paper 15). The '399 patent discloses and claims a system that (1) determines a vehicle's route, (2) divides that determined route into segments, and then (3) prospectively calculates the power needed to travel over the determined segments at a calculated speed. Per the patent, this optimizes the vehicle's power consumption. Hongo—the primary prior art reference at issue in the petition—does not teach this type of system. Rather than determining and segmenting the vehicle's route for purposes of making prospective power/speed determinations, Hongo only considers the vehicle's current location. The determined current location is used to match stored map data, which Hongo refers to as “blocks.” Hongo then controls the vehicle's current speed using stored historical speeds associated with the vehicle's current map location.

While Petitioner began this proceeding by noting that “no formal claim constructions are required” (*see* Petition, Paper 2 at 2), it now changes course and proposes a series of overly broad constructions. These depart from the language of the '399 patent's claims and would effectively render much of what the specification discusses meaningless. It does this to fit its square peg prior art (Hongo, which is indifferent to the vehicle's destination and controls speed based only on current location) into the round hole of the claims (which require knowing the vehicle's

destination so speed and power can be controlled for segments along the vehicle's route).

Petitioner's overbroad claim constructions invite error. ***“Determining a segment of a vehicle route”*** requires more than simply determining that the vehicle is positioned on a road. Instead, vehicle's destination—and the path it is following—must be known. Likewise, ***“applying calculated electric power to the vehicle to travel along the segment of the vehicle route at a calculated speed”*** requires more than simply changing speed as the vehicle's position changes. The route—and a segment of that route—must be known and calculations must be performed for that segment. And determining ***“multiple route segments”*** plainly means exactly what it says: the vehicle's route must be divided into multiple, determined segments. Merely tracking the vehicle's current position as it moves along is not what the claims require. Petitioner has not carried its burden.

II. ARGUMENT

Again, Petitioner has failed to explain why the prior art teaches what the claims require.

A. Hongo Does Not “Determin[e] a Segment of a Vehicle Route”

There is no dispute that Hongo's cruise control system is unaware of where the vehicle is travelling. Hongo's system does not know the vehicle's final or intended destination or any intermediate destinations that the vehicle may pass on

the way to that destination. Instead, Hongo's vehicle speed determinations are based solely and exclusively on where the vehicle is currently located.

Petitioner spends the bulk of its reply arguing that despite not knowing where the vehicle is going, Hongo's system nonetheless “**determin[es] a segment of the vehicle route**” as all the '399 patent's claims require. According to Petitioner, the claims somehow embrace “well-known techniques relating to using a current vehicle position” to control speed. Reply at 2. To arrive at this conclusion, it argues that the claim phrase “vehicle route” should be interpreted such that it embraces meandering, directionless travel that does not “end[] at a particular destination.” *Id.* at 5. Put another way, Petitioner would have the Board hold that it is enough for purposes of the claims to simply determine that the vehicle's current location corresponds to a road. Knowing where the vehicle is going is somehow not required.

There is no support whatsoever for this strained construction in either the claims or the '399 patent's specification. To begin, the claims all require “determining a segment of the vehicle route.” By using the phrase “vehicle route,” the claims are plainly referring to the path the vehicle is traveling towards its intended destination. Simply knowing that the vehicle is currently positioned on a road (which is all Hongo does) is not enough. A road is not “the vehicle route.” It is simply a road. The “vehicle[’s]” route corresponds to the path the vehicle is traveling. And the “vehicle[’s]” path cannot be determined, known, and segmented

unless the vehicle's destination—either its final destination or some intermediate destination—is known. The dictionary definition cited by Petitioner does not say anything to the contrary. Petitioner points to a definition that defines “route” to mean “a travelled way.” Reply at 5 (citing Ex. 1055). So, a “route” is not just a “way” (or road), it is the “way” that is being **“travelled.”** This is clarified in other definitions of the same term, which explain that “route” means “a line of travel” or a “course[.]” Ex. 1055, p. 4.

This is exactly how the '399 patent uses the term. In the patent, a “segment of the vehicle route” is a portion of the path the vehicle is following as it makes its way to its **destination**. See, e.g., 11:48-49 (a “route” is the path traveled from “the current position of the vehicle and a final destination position”); 11:64-65 (similar); see also *id.*, 7:14-16 (a “route” extends “from point A to point B”); 12:4-5 (a “route” extends to a “destination”). The patent never uses the term “route” to refer to just the current position of the vehicle. It also does not use the term “route” to refer to only a road on a map.

Despite the '399 patent's consistent use of the term “route,” Petitioner argues that in the '399 patent, there is “a lack of unambiguous disclosure that a vehicle route is defined by a final destination point.” Reply, 11. There is no ambiguity. The claims—and the patent—plainly use the word “route” to refer to the **path** the vehicle is following to either a final or intermediate destination. Petitioner points to passages

in the '399 patent explaining that a route “may be continuously re-segmented” or re-routed in view of “changing road conditions” may necessitate re-routing. *See id.* This does not affect a re-definition of the term “route.” Petitioner just fails to understand the patent’s disclosure. According to the '399 patent, the patent’s system may use—and perform calculations based on—either a known destination (*i.e.*, one explicitly entered by the driver) or a predicted destination (*i.e.*, the system can make inferences about and predict where it believes the vehicle is going). *See, e.g.*, Ex. 1001, 5:43-50. In the latter case, the predicted destination—and thus the vehicle’s route—may be updated as the vehicle travels along. *See, e.g., id.*, 14:25-36 (explaining that the route may be “re-segmented” when an “anticipated destination” is employed and the driver then “change[s] the route”). This does not mean, however, that the '399 patent ignores the vehicle’s destination and considers only where the vehicle currently is. To the contrary, the '399 patent simply reassesses whether it has properly inferred and predicted the vehicle’s destination and route. The system still knows (or at least thinks it knows) where the vehicle is going. This is the case throughout the '399 patent: in **every** example, the system is aware of where the vehicle is going. *See generally id.*, Fig. 2 (noting that the first step performed by the '399 patent’s system is to “determine route”). In contrast, Hongo is indifferent to the vehicle’s final or any intermediate destination. It only cares

about where the vehicle is now. It never determines the vehicle's route and thus also does not determine any segments of that not determined route.

Petitioner is also wrong when it argues that its overbroad interpretation of the term “route”—which replaces the word's ordinary meaning with something else—is not inconsistent with the “central purpose” of the '399 patent. See Reply at 9. Petitioner's proposed construction undeniably causes the claims to embrace systems—like Hongo—that are unaware of where the vehicle is travelling and only control the vehicle's speed based on its present location. The '399 patent unambiguously states that it is not this type of system. Unlike a “traditional ‘cruise control’ system” that continuously adjusts speed as the vehicle moves “across different terrain,” the patent's system accounts for conditions the vehicle will encounter as it “travel[s] over” a “route.” Ex. 1001, 6:59-7:31. Thus, in all cases, the system determines the vehicle's route (either to its final destination or an intermediate destination). It does not simply determine the road the vehicle is on now. Claim terms “ordinarily cannot be construed broader than the disclosure in the specification.” *Indacon, Inc. v. Facebook, Inc.*, 824 F.3d 1352, 1357 (Fed. Cir. 2016). Petitioner's construction—which negates virtually everything the specification explains is important—does this very thing.

Petitioner's efforts to align Hongo to the claims relies entirely on its erroneous claim construction. It does not—and cannot—argue that Hongo makes any sort of

destination determination. Thus, if “**determining a segment of a vehicle route**” requires knowing the vehicle destination (it does), then the Petition’s grounds fall apart. But this is not the only place Petitioner goes awry. It also makes a series of other, bizarre assertions in an effort to rescue its Hongo arguments. For instance, it argues that the vehicle’s “current segment” can simply be the “current vehicle position.” Reply, 16. A single point or position is not a “segment.” The claims themselves make clear that a “segment” is more than a single point: it is a portion of a route. Petitioner also argues that the claimed “segment is not limited to any type of information.” *Id.*, 17. The claimed “segments,” however, are specific: they must be “**segments of the vehicle route.**” This is why Hongo fails to teach what the claims require: its blocks are just chunks of stored map data. They have nothing to do with the route the vehicle is traveling.

B. Hongo Does Not “Apply[] Calculated Electric Power to the Vehicle to Travel Along the Segment of the Vehicle Route at a Calculated Speed”

Petitioner next misconstrues the claim limitation requiring “**applying calculated electric power to the vehicle to travel along the segment of the vehicle route at a calculated speed.**” Here, Petitioner does little more than point out that the ’399 patent’s specification references “current” route segments. *See generally* Reply at 18-23. This simplistic and incomplete analysis invites error. The focus of any claim construction analysis must start with the claim language. And any

construction—like that proposed by Petitioner—that negates that claim language must be rejected.

The claims by their very words require **prospective** electric power and speed calculations for **vehicle route segments**. It is not enough to simply calculate power and speed for the vehicle’s current position. More specifically, the claim requires first “determining a segment of a vehicle route.” Then, “calculated electric power” must be “appl[ied]” “to the vehicle” allowing it “***to travel along the segment of the vehicle route at a calculated speed.***” Put another way, the performed calculations must be specific to the determined “segment.” This segment must be part of the “vehicle route” (*i.e.*, the path that the vehicle will travel on the way to its destination). And it is the power needed to “travel along the segment of the vehicle route at a calculated speed” that must be calculated and then applied. This is not what Hongo does. Rather than performing power and speed calculations for route segments, Hongo’s speed calculations are continuously performed only for **discrete vehicle positions** (*i.e.*, where the vehicle is located now). *See, e.g.*, Ex. 1005, [0008] (explaining that “speed determinations” are made by looking up the “current position of the vehicle” in a database); [0015] (explaining that the “current position of the vehicle currently driving and the real-time road environment information” is used to search historical data).

Nothing about the '399 specification justifies discarding these claim requirements. Yes, the specification explains that “applied power may” also be determined for “current ... route segments.” Ex. 1001, 5:38-55. But it also unambiguously explains—just as the claims require—that the patent’s system determines the vehicle’s “next segment (or upcoming segments)” and calculates power and speed for that upcoming segment. *Id.*, 3:55-4:10; *see also id.*, 5:49-55 (similarly noting that “speeds for ... upcoming route segments can ... be calculated”).

Once again, Petitioner’s prior art arguments are premised entirely on its construction of the claims as requiring only speed/power calculations for the vehicle’s current position and controlling speed for that position. As this is not what the claims require, Petitioner has also failed to show that its limitation is taught by the combination of art it references.

C. Hongo Never Determines “Multiple Route Segments”

Claim 6 requires that “*vehicle route segment determination further comprises determining multiple route segments.*” There is no dispute that Hongo simply tracks the vehicle’s position as it moves along and then uses that position to search its database of stored historical BKN data. Its system never stores (or uses) more than a single vehicle position at a time. It also never stores, or refers to, more than a single stored BKN at a time.

Petitioner argues that this—in its view—does not matter because the claim purportedly “lacks language regarding timing.” Reply, 23-24. This completely ignores that claim 6 depends on claim 1. Claim 1 requires performance of the step of “determining a segment of a vehicle route.” Then claim 6 narrows claim 1 by further providing that claim 1’s segment determination step entails “determining multiple route segments.” It is this dependency that requires the determination of multiple route segments at the same time: 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 for the claims to be satisfied. Again, Hongo concerns itself only with the vehicle’s current position. It never performs a determination step that entails ascertaining multiple positions or blocks at the same time. Petitioner essentially seeks to write the phrase “determining multiple route segments” entirely out of the claim.

Petitioner also argues that “vehicle systems were known to ‘determine segments sequentially in time as the vehicle travels along a route....’” Response, 24. This is completely irrelevant. Whether this was “known” or not says nothing about the claims. The claims here require determination of “multiple route segments.” And this is something Hongo admittedly never does: it is unable to determine more than a single vehicle position at a time.

D. The Prior Art Does Not “Determin[e] Information About Operational Status of a Vehicle” By “Communicating With a Remote Database”

Claim 8 requires “*determin[ing] information about operational status of the vehicle*” by “*communicating with a remote database.*” The information the Petition points to as corresponding to this claim limitation is not gathered during vehicle operation. Instead, it is loaded into the vehicle during manufacture. Petitioner argues that there is “nothing in the claim language” that requires “that information used for assessment in determining an ‘operational status’ be obtained during vehicle operation.” Reply at 26-27. This makes no sense. “[I]nformation about operational status of a vehicle” is plainly information collected during vehicle operation. Information collected when the vehicle is not operating—and perhaps is not yet even a “vehicle” because it is still in the process of being manufactured—has nothing to do with the vehicle’s “operational status.”

Petitioner also theorizes that claim 8 can embrace data loaded onto the vehicle during manufacture and before it is operating on the road because claim 8 does not include the word “using.” *Id.* at 28. This is also misguided. The claim requires that “the step of determining information about operational status of a vehicle further comprises the step of communicating with a remote database.” This is a method claim and the meaning of this language is apparent: the current operational status of the vehicle is determined by communicating (at the time of the operational status

determination) with a database. Petitioner effectively reads the “communicating with a remote database” out of the claims leaving only “determining operational status of a vehicle.” The claim does not allow for operational status determination in any which way. Instead, operational status must be determined by **“communicating with a remote database.”** This admittedly does not occur in the prior art of record: there is no communication with remote databases during vehicle operation. *See generally* Response (Paper 13) at 34-35.

III. CONCLUSION

For the above reasons, and for those explained in Patent Owner’s prior briefing, Patent Owner once again respectfully requests that the Board reject Petitioner’s arguments and confirm the patentability of the ’399 patent’s claims.

Respectfully submitted,

ORRICK, HERRINGTON & SUTCLIFFE LLP

Dated: March 25, 2025

/K. Patrick Herman/

K. Patrick Herman, Reg. No. 75,018
Orrick, Herrington & Sutcliffe LLP
51 West 52nd Street
New York, NY 10019
Telephone: (212) 506-3596
Email: P52PTABDocket@orrick.com

Counsel for Patent Owner iQar, Inc.

CERTIFICATE OF WORD COUNT

The undersigned certifies that the foregoing paper complies with the type-volume limitation in 37 C.F.R. § 42.24. According to the utilized word-processing system's word count, the paper contains 2,746 words.

Dated: March 25, 2025

By: /K. Patrick Herman/

K. Patrick Herman, Reg. No. 75,018
Orrick, Herrington & Sutcliffe LLP
51 West 52nd Street
New York, NY 10019
Telephone: (212) 506-3596
Email: P52PTABDocket@orrick.com

Attorney for Patent Owner

CERTIFICATE OF SERVICE

The undersigned hereby confirms that the foregoing paper was caused to be served on March 25, 2025 via email upon the following counsel of record for Petitioner:

W. Karl Renner, Roberto Devoto, Gretchen A. DeVries
FISH & RICHARDSON P.C.
Email: IPR49649-0022IP1@fr.com

Ashraf A. Fawzy
TESLA, INC.
Email: afawzy@tesla.com

/K. Patrick Herman/

K. Patrick Herman, Reg. No. 75,018
Orrick, Herrington & Sutcliffe LLP
51 West 52nd Street
New York, NY 10019
Telephone: (212) 506-3596
Email: P52PTABDocket@orrick.com