

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

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

Case No. IPR2024-00499
U.S. Patent No. 10,829,002 B2

PATENT OWNER'S SUR-REPLY

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Patent Owner submits this sur-reply to Petitioner's reply ("Reply," Paper 13).

I. INTRODUCTION

The '002 patent's claims require storage of specific types of historical data—including data regarding past "route segments" and "sequences" of "route segments" a vehicle travelled—and use of this data to predict the vehicle's destination. Petitioner's prior art stores only data relating to one-dimensional points through which the vehicle passed. It is indifferent to the route—or route segments—the vehicle took. This a fundamental difference. Knowing you start in Los Angeles and end in Washington, D.C. provides no information on how you got there (by car, train or plane? Through Chicago or via Mexico City?). That is the difference between two points and the route or segments that connect them.

Petitioner spends its reply attempting to argue that the '002 patent's claims embrace a point-based system. According to Petitioner, the claims do not require storage of any information about the route or segments the vehicle took to travel between the points. But, this is simply not the case: the claims require storage of "data ... regarding ... route segments." If the stored data is unable to distinguish different route segments, then it does not meet the claims. Again, simply storing the fact that you started in Los Angeles and ended in Washington is not "data ... regarding ... route segments" you took to travel between those points.

Faced with this failure, Petitioners make a new argument: that contrary to its teachings Kudo 325 could be modified to store every point or intersection between the initial and final destination. But Petitioner did not argue that the primary reference in the petition—Kudo 325—operates this way in the Petition and it is too late for it to do so now. Even were the Board to consider this new argument, however, Petitioner not shown that it would have been obvious to modify Kudo 325 such that it stores every single intersection through which a vehicle passes. To the contrary, Kudo 325 itself says that it does not operate this way. Petitioner offers nothing beyond bald attorney argument in response.

Petitioner's dependent claim arguments are no better. For example, it argues that storing something other than "map coordinates" can satisfy claims 2 and 3 because the form in which data is stored is unimportant. Claims 2 and 3, however, expressly require storage of "map coordinates," not some other type of data. So, the form that data is stored is important. Indeed, it is the very limitation these claims add. Likewise, claims 8 and 10 require transmission of a "predicted destination" to a remote database. Transmitting the vehicle's final location upon arrival at that destination does not qualify (as the destination upon arrival is no longer "predicted," it is now the actual destination).

II. ARGUMENT

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

A. Petitioner’s Construction of a “Data Regarding ... Multiple Route Segments” Invites Error

Claims 1, 15, and 16 all require storage of specific types of “historical data.” In particular, the “historical data” must include “data ... regarding multiple route segments” and “data ... regarding multiple sequences of route segments.” As explained in Patent Owner’s response, “data ... regarding multiple route segments” and “multiple sequences of route segments” plainly requires storage of data regarding **portions** of a route. The stored data must be indicative of the route portions the vehicle travelled in the past. It is not enough to store just **individual points** along a route. Points are not indicative of the path the vehicle travelled. Thus, they are not “data ... regarding ... route segments.”

The parties do not dispute the type of data Kudo 325—the primary reference at issue in the Petition—stores. As Petitioner repeatedly admits in its reply, Kudo 325 stores only individual “node IDs” (*i.e.*, intersections, landmarks, or areas through which a vehicle has passed). *See, e.g.*, Reply at 7.

Thus, the dispute here is one of claim construction and interpretation. According to Petitioner, mere point storage—as opposed to storage of data indicative of the path the vehicle travelled—is all the ’002 patent’s claims require. This is

because, in Petitioner’s view, the claims do not require “any sort of characterization of the path” the vehicle took. *Id.* at 8. Instead, Petitioner posits that the claimed “data, regarding ... route segments” can simply be “a single point along each route segment.” *Id.* at 6. Petitioners argue this can be the case even if this point information provides no information whatsoever about the actual path traveled (*see id.* at 6-8) and does not allow one route segment or vehicle path to be distinguished from another (*see id.* at 10). According to Petitioner, for purposes of the claims, it is supposedly “irrelevant” whether Kudo 325’s stored data “distinguish[es]” between different route segments the vehicle traversed. *Id.* at 10.

Petitioner’s interpretation of the ’002 patent’s claims negates the claim language and is divorced from the specification. The claims require storage of “data ... regarding ... route segments.” In the ’002 patent, a “segment” is a “portion[] of the route” being travelled by the vehicle. Ex. 1001, 14:2-8. Petitioner does not dispute this. Instead, it agrees that a “segment” of a route is “a separate piece of a route.” Reply, 3. The ’002 patent also repeatedly emphasizes that a route “segment” is different from points that may be on the route. *See id.*, 5:21-25; 12:65-13:12 (discussing single route points such as “segment destination[s],” “intermediate” destinations, “intersection[s],” or “junctions”). Indeed, claim 1 makes that the point/route distinction clear by requiring “a memory configured to store said sensor data samples for different points... along a route....” Here, the

claims all require storage of “data ... regarding ... route segments.” So, the data that must be stored plainly must convey information about the “route segments” the vehicle traversed. If stored data is not specific to a segment and fails to distinguish one route segment from another, it is not “regarding” a “route segment” and **cannot be** what the claims require.

Petitioner’s expansive interpretation of the claims also runs afoul of the ’002 patent’s specification. The entire purpose of the ’002 patent is to “optimize[] ... applied power” for the vehicle’s route. Ex. 1001, 7:1-17, 14:2-5, 17:32-35. In other words, the patent considers the vehicle’s likely destination, the path the vehicle is likely to take to reach that destination, and the conditions the vehicle is encountering, and then optimizes vehicle power in a way that matches the likely path and conditions. See *id.*, 17:31-59. So, contrary to Petitioner’s argument, “characterization of the path” the vehicle is currently taking and has taken in the past is **fundamental** to the ’002 patent’s power optimization system and method. 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). This, however, is what Petitioner improperly proposes here: it argues that a specification and claim directed to two dimensional “route segments” can be met by a one-dimensional point.

Petitioner relatedly argues that Kudo 325's stored points—because they represent intersections—“characterize the starting point and endpoint of a route segment” and thus are the claimed “data ... regarding ... route segments.” Reply, 8-9. Likewise, according to Petitioner, the fact that Kudo 325's data “relate[s] to ... different route segments” (even though it is unable to distinguish between these segments) “does not detract from the simple reality” that the data purportedly still “characterizes” the “route segments.” *Id.*, 10. This concedes the point. Stored data does not “characterize” a vehicle's route (or the segments of that route) if it is impossible to tell the route (or segment) that was traveled from that data. And one cannot determine the route traveled from Kudo 325's stored data. As Petitioner admits, and Kudo 325 itself explains, each of the points stored by Kudo 325 represents *many* different prior vehicle trips. See Kudo 325, ¶¶ [0093]-[0094] (each node includes a list of “dates and times” that the vehicle passed through that node in the past). And each of these trips can of course entail the vehicle traveling a different path. It is simply not possible to tell what path the vehicle travelled from the point information stored by Kudo 325. This problem is exacerbated by Kudo 325's exclusion of intersections where the vehicle did not turn from its transition state data. See Kudo 325, ¶¶ [0059], [0078].

Moreover, different route “segments” may of course share starting and end points. Because of this, simply storing the starting and ending points alone—and no

other information—is insufficient to identify a segment. The '002 patent provides an example of this. The patent discusses a number of vehicle trips with reference to Figure 3A. One such “trip” is “start→A→C.” Ex. 1001, 13:12-15. Another is “start→A→G→J→C→E.” *Id.*, 13:21. As can be seen, in both trips the vehicle passed through points A and C. In the first trip, the vehicle traveled directly from A→C. In the second trip, however, the vehicle took a longer path traveling from A→G→J→C. Simply storing points A and C would not constitute “data ... regarding ... route segments” because it would fail to identify which of the two routes the vehicle took between points A and C, either the direct route A→C or the indirect route A→G→J→C. This is where Kudo 325 falls short. Kudo 325 purposefully ignores the route taken and instead focuses exclusively on start and end points. In so doing, it fails to store data “regarding” “route segments.”

In sum, the claims here plainly and unambiguously require storage of information about the path the vehicle traveled in the past. Interpreting the claims as Petitioner proposes—to include stored information that does not indicate “how the vehicle actually got from one point to another” (*e.g.*, Reply, 4)—turns the claims into something other than what they are.

B. Petitioner’s New Arguments Regarding Kudo 325’s Operation Are Untimely and Lack Evidentiary Support

Apparently recognizing the deficiencies with its original grounds, Petitioner now seeks to inject an improper new argument regarding Kudo 325’s operation into

this proceeding. According to Petitioner, while Kudo 325 “can decline to record some intersections as nodes, it is not necessarily the case that it must ignore certain intersections.” Reply, 12-13. Thus, Petitioner posits that it is possible that in some circumstances, Kudo 325 may engage in the “recording of all intersections as nodes.” *Id.*, 14.

This argument was not made in the Petition. There, Petitioner simply relied on Kudo 325’s Figure 5 and argued that that shows storage of the types of data the claims require. See Petition (Paper 2), 42-45. Figure 5 does not show storage of “all” the intersections a vehicle passed through. Instead, the figure’s data is generated by a “node judgment section 102” that determines when intersections should be stored. Ex. 1004, ¶ [0078]. And an intersection is only stored as a node when the vehicle “travelled” through the intersection “in two or more directions. *Id.*, ¶ [0059]; see also *id.*, ¶ [0085].

“The petitioner’s petition ... guide[s]” the scope of an IPR proceeding. *SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355-56 (2018). Further, a petitioner is prohibited from introducing new arguments in reply. See *VidStream LLC v. Twitter, Inc.*, 981 F.3d 1060, 1064 (Fed. Cir. 2020) (noting that a “[p]etitioner may not submit new evidence or argument in reply that it could have presented earlier”). This includes pointing to new, or different, functionality in the prior art that was not discussed in the petition. See *Rembrandt Diagnostics, LP v. Alere, Inc.*, 76 F.4th

1376, 1385 (Fed. Cir. 2023) (explaining that a petitioner is not permitted to “rel[y] on an embodiment of the prior art that was not discussed in the petition to switch theories between its petition and reply.”) This is exactly what Petitioner attempts to do here. It did not argue in the Petition that Kudo 325 records “all” intersections through which the vehicle passes. It is not permitted to change course and do so now.

Even if the Board were to consider Petitioner’s new argument, it is devoid of evidentiary support. Petitioner’s expert did not discuss in his declaration the process Kudo 325 employs when determining what nodes to include in (or remove from) its database. *See generally* Ex. 1003. Further, Petitioner did not meaningfully question Patent Owner’s expert Dr. Bevly during deposition about this aspect of Kudo 325’s operation. *See generally* Ex. 1052. Petitioner also did not submit a supplementary expert declaration relating to the ’002 patent with its reply. So, Petitioner now relies entirely on **attorney argument**. Attorney argument is not evidence. *See Enzo Biochem, Inc. v. Gen-Probe Inc.*, 424 F.3d 1276, 1285 (Fed. Cir. 2005) (“[a]ttorney argument is no substitute for evidence”); *see also Wasica Finance GmbH v. Continental Auto Sys.*, 853 F.3d 1272, 1284 (Fed. Cir. 2017) (finding that it was “reasonable for the Board to accept” one party’s “expert testimony over” the other party’s “bare attorney argument”).

If this were not enough, Petitioner’s attorney argument does nothing more than allege that Kudo 325 “can” operate in a way such that it stores all intersections through which the vehicle travels. *See* Reply, 13-14. For its argument to succeed, Petitioner was required to show that a POSITA **would** have operated Kudo 325 such that it stores all intersections through which a vehicle passes. Merely alleging that this is possible is not enough. Moreover, Kudo 325 itself explains that it is designed to store only some—but not all—intersections through which a vehicle passes. And Dr. Bevely explained why this means that Kudo 325’s stored data is unable to distinguish different routes travelled by the vehicle. *See* Response (Paper 11), 11-14. That is the evidence the Board must consider. Petitioner’s attorney argument—and the theoretical, unsupported possibility it raises—is entitled to no weight.

C. The Prior Art Fails to Teach The Additional Limitations Dependent Claims 2 and 3 Add

Dependent claim 2 requires that claim 1’s “telemetry data comprises map coordinates determined in response to a GPS signal.” Claim 3 provides that this same “telemetry data comprises map coordinates determined by a map service.” In other words, both claims 2 and 3 require storage of “map coordinates” in memory.

The prior art referenced in the petition does not store “map coordinates.” Petitioner points only to Kudo 325. But rather than storing map coordinates, Kudo 325’s system stores only “nodes.” The nodes correspond to “intersections,

landmarks, area names, and the like.” Ex. 1004, ¶ [0081]. Each such intersection, landmark, or area is associated with “ranges” positions. *Id.*, ¶¶ [0082]-[0083].

According to Petitioner, this does not matter because “[t]he precise form of the representation of that position data that is stored—e.g., whether stored as node ID or coordinates—is a merely a question of convenience and practicality.” Reply, 18. Once again, this completely lacks evidentiary support. It is also contrary to the art’s teachings. Kudo 325 specifically converts position information to nodes both to reduce the amount of data to store and enable the performance of its destination prediction calculations. *See, e.g.*, Ex. 1004, ¶ [0087]. This is not simply a matter of “convenience”: it is how Kudo 325 has chosen to design and operate its system. Petitioner points to nothing that even remotely indicates how Kudo 325’s system would operate (or even if it could operate) if modified to store map coordinates instead of nodes.

Next, Petitioner is simply wrong when it argues that storage as node IDs as opposed to coordinates does not matter for purposes of the claims. Claims 2 and 3 require storage of “map coordinates.” Thus, storage of other, different information—like nodes—is outside the claim scope. Nor are the nodes “equivalent” to map coordinates. Map coordinates represent one, unique position on a map. The nodes do not represent unique positions and instead correspond “ranges” of positions.

**D. The Prior Art Fails to Teach The Additional Limitations
Dependent Claim 10 Requires**

Claim 10—via its dependency on claim 8—requires transmitting both sensor data samples and a predicted destination to a remote database. Ex. 1001, claims 8, 10. According to Petitioner, these limitations are satisfied because “Kudo-325 explicitly contemplates storage of historical data at the server: ‘the history information accumulated in the history DB 104 is uploaded to the server.’” Petition at 68 (quoting Ex. 1004, ¶ [0108].) As Patent Owner explained in its Response, this does not show that a “predicted destination” is transmitted to a remote database. All that is transmitted is historical position information. See Response, 19-20.

Petitioner replies by arguing that “[w]hen the vehicle reaches the end of its trip, its location matches its predicted location, and thus the sensor data sample that is transmitted to the remote history database” will be “the node ID for the predicted destination....” Reply, 19. This is non-sensical. Transmitting the vehicle’s current location upon arrival at its destination is not transmitting a “predicted destination” as claims 8 and 10 require. In such circumstances, there no longer is a predicted destination. There is only an actual destination. To transmit a predicted destination, it is necessary to transmit information about a point the vehicle has not yet reached. This is what the word “predicted” means.

Next, as the Response noted, Kudo 325 teaches only two alternatives: (1) travel history data is maintained on the vehicle such that the vehicle performs

destination prediction; or (2) travel history data is transmitted to a remote database such that the remote database performs the prediction. Neither alternative entails transmission of prediction information to the remote database. In the first alternative, the predicted destination is maintained on the vehicle. In the second alternative, the prediction originates on (and thus is not transmitted to) the remote server. *See Response*, 19-20.

Ignoring this, Petitioner seek to go beyond the teaching of the prior art. According to Petitioner, Kudo 325 is “not so limited” because it broadly says that “part of the functions that a car navigation system has may be provided in a server.” Reply, 20. But Petitioner points to nothing in Kudo 325 even remotely teaching the type of hybrid system the claims here require: Kudo 325 nowhere says that travel history data is transmitted off the vehicle at the same time prediction is performed on the vehicle. Moreover, Petitioner—as it does throughout its reply—offers no explanation of why a POSITA would have been motivated to cobble Kudo 325 together this way. This, however, was what was required to show obviousness.

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 ’002 patent’s claims.

Respectfully submitted,

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