

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.
Petitioner,

v.

PERCEPTIVE AUTOMATA LLC
Patent Owner.

Case No. IPR2025-01573
Patent 10,614,344

PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

TABLE OF CONTENTS

I.	CLAIM CONSTRUCTION	3
A.	PO never sets forth its construction	3
B.	PO and Dr. Saber’s interpretations of the claims are flawed.....	4
C.	Petitioner correctly applies the plain and ordinary meaning.....	6
II.	THE PRIOR ART SATISFIES THE CLAIMS	7
A.	Supervised learning models predict labels from training.....	7
B.	Ross and Cox teach limitations 1[b], 10[b], and 19[b]	8
C.	Ross, Cox, and Ogale teach limitations 1[b], 10[b], and 19[b]	10
D.	Zhang teaches limitations 1[b], 10[b], and 19[b]	12
E.	Limitations 1[c], 10[c], and 19[c]	13
III.	PERCEPTIVE IS RELYING ON PRINTED MATTER.....	14
IV.	A POSITA WOULD HAVE BEEN MOTIVATED TO COMBINE ROSS AND COX, AS WELL AS ROSS, COX, AND OGALE	16
A.	Ross and Cox.....	17
B.	Ross, Cox, and Ogale	21
V.	THE PETITION ADDRESSES THE GRAHAM FACTORS.....	21
VI.	DR. JANET IS A POSITA AND HIS TESTIMONY SHOULD BE GIVEN WEIGHT.....	23
VII.	CONCLUSION.....	24

TABLE OF AUTHORITIES

Page(s)

CASES

<i>Amazon.com, Inc. et al. v. Soundclear Technologies LLC</i> , IPR2025-00565, Paper 39 (PTAB July 27, 2026)	22
<i>C R Bard Inc. v. AngioDynamics, Inc.</i> , 979 F.3d 1372 (Fed. Cir. 2020)	15
<i>C.f., Enfish, LLC v. Microsoft Corp.</i> , 822 F.3d 1327 (Fed. Cir. 2016)	15
<i>Comcast Cable Communications, LLC v. Rovi Guides, Inc.</i> , IPR2019-00281, Paper 39 (PTAB June 26, 2020)	11, 13
<i>Data Engine Techs. LLC v. Google LLC</i> , 10 F.4th 1375 (Fed. Cir. 2021)	3
<i>eBay, Inc. v. Paid, Inc.</i> , CBM2014-00125, Paper 15 (PTAB Sept. 30, 2014)	22
<i>Eizo Corp. v. Barco N.V.</i> , IPR2014-00358, Paper 11 (PTAB July 23, 2014)	22
<i>Finnigan Corp. v. Int'l Trade Comm'n</i> , 180 F.3d 1354 (Fed. Cir. 1999)	3
<i>Google LLC v. DH International LTD.</i> , IPR2024-01322, Paper 33 (PTAB Feb. 10, 2026)	22
<i>In re Baxter Int'l</i> , 678 F.3d 1357 (Fed. Cir. 2012)	4
<i>In re Keller</i> , 642 F.2d 413 (CCPA 1981)	9
<i>In re Lowry</i> , 32 F.3d 1579 (Fed. Cir. 1994). POR, 36-37	15
<i>In re Merck & Co., Inc.</i> , 800 F.2d 1091 (Fed. Cir. 1986)	9

<i>Integrated DNA Technologies, Inc. v. Tecan Genomics, Inc.,</i> IPR2024-01504, Paper 41 (PTAB April 8, 2026)	23
<i>Kinetic Concepts, Inc. v. Smith & Nephew, Inc.,</i> 688 F.3d 1342 (Fed. Cir. 2012)	18
<i>Kyocera Senco Indus. Tools Inc. v. Int’l Trade Comm’n,</i> 22 F.4th 1369 (Fed. Cir. 2022)	23
<i>Moses Lake Indus., Inc. v. Enthone, Inc.,</i> IPR2014-00246, Paper 6 (PTAB June 18, 2014)	22
<i>Phillips v. AWH Corp.,</i> 415 F.3d 1303 (Fed. Cir. 2005)	4
<i>Praxair Distribution, Inc. v. Mallinckrodt Hosp. Prods. IP Ltd.,</i> 890 F.3d 1024 (Fed. Cir. 2018)	2
<i>Realtime Data, LLC v. Iancu,</i> 912 F.3d 1368 (Fed. Cir. 2019)	23
<i>Samsung Electronics Co. Ltd. et al. v. Harbor Island Dynamic, LLC,</i> IPR2024-01402, Paper 32 (PTAB Mar. 16, 2026)	11, 13
<i>Semiconductor Components Industries, LLC et al. v. Greenthread LLC,</i> IPR2023-01244, Paper 129 (PTAB Dec. 8, 2025)	23
<i>Unified Patents LLC v. Intellectual Ventures II LLC,</i> IPR2022-00429, Paper 36 (PTAB Aug. 9, 2023)	23

LIST OF EXHIBITS

Ex. No.	Description	New
1001	U.S. Patent No. 10,614,344 (“344 Patent”)	
1002	File history of U.S. Patent No. 10,614,344	
1003	Declaration of Dr. Jason Janét	
1004	U.S. Patent No. 10,496,091 (“Ross”)	
1005	International Publication No. WO2014/210334 (“Cox”)	
1006	U.S. Patent Application Publication No. 2019/0072966 (“Zhang”)	
1007	U.S. Provisional Application 62/528,771	
1008	File history of U.S. Patent No. 10,402,687	
1009	U.S. Patent Application Publication No. 2016/0162456 (“Munro”)	
1010	U.S. Patent No. 10,733,506 (“Ogale”)	
1011	Complaint in Perceptive Automata LLC v. Tesla, Inc., Case No. 2:25-cv-00742 (E.D. Tex. filed July 23, 2025)	
1012	CV of Dr. Jason Janét	
1013	Tesla <i>Sotera-Plus</i> Stipulation	
1014	Personal Website of Dr. Samuel English Anthony (Link)	
1015	Patent Owner Voluntary Dismissal – EXTX-2:25-cv-00742 (filed December 29, 2025)	
1016	Patent Owner Complaint – WDTX-7:25-cv-00594 (filed December 29, 2025)	
1017	Motion to Stay – WDTX-7:25-cv-00594 (filed January 6, 2025)	
1018	Docket Navigator – Judge David Counts Statistics	
1019	Docket Navigator – Time to Trial Statistics for WDTX	
1020	Tesla Renewed <i>Sotera-Plus</i> Stipulation for WDTX	
1021	Docket – WDTX-7:25-cv-00594	
1022	Transcript of Deposition of Dr. Eli Saber (Day 1)	X
1023	Transcript of Deposition of Dr. Eli Saber (Day 2)	X

In its Patent Owner Response (Paper 15, “POR”), the only feature that Patent Owner Perceptive Automata LLC (“PO”) alleges is missing from the prior art is outputting a “*statistical summary characterizing a distribution of user responses expected to be received responsive to presenting the sensor data to a plurality of users,*”¹ in limitations 1[b], 10[b], and 19[b] (and similarly in limitations 1[c], 10[c], and 19[c]). However, PO’s argument rests on a narrow implicit construction of this limitation, which contradicts both the plain words in the claim and the specification. Worse, even though PO disagrees with Petitioner’s application of “plain and ordinary meaning,” PO and its expert, Dr. Saber, declined to provide their own competing construction or otherwise explain their interpretation of the phrase. POR, 10; EX2039, ¶62; EX1022, 111:9-19. PO’s strategic ambiguity appears aimed at allowing PO to argue for a narrow interpretation during this proceeding, and to later argue for a broad interpretation in district court proceedings. The Board should not tolerate this gamesmanship.

Nonetheless, the cited prior art renders obvious this limitation under the claims’ “plain and ordinary meaning.” PO’s expert confirmed that the supervised learning models of Ross, Cox, Ogale, and Zhang try to predict what label a human annotator would apply to a given input. EX1022, 55:21-56:10, 57:18-58:3, 66:2-67:6, 69:10-70:5, 225:15-22; *see, e.g.*, EX2039, ¶¶97, 99. So, when the Ross-Cox

¹ Claim language is italicized throughout unless otherwise noted.

model outputs “a set of possible intents or hypotheses [...] and associated likelihood values” from its supervised learning model, that output is a “*statistical summary*” that reflects what annotators would have said in response to the input. *See* Petition (Paper 1) (“Pet.”) at 30-32. And because this output reflects what annotators would have said, it thus “*characteriz[es] a distribution of user responses expected to be received responsive to presenting the sensor data to a plurality of users.*” *Id.*

The disputed limitation is also printed matter. The experts agree that prior art models are trained to output a prediction of what humans think a pictured object will do, just like the ’344 patent describes. *See, e.g.*, EX1022, 55:21-56:10, 57:18-58:3, 66:2-67:6, 69:10-70:5; EX2039, ¶¶97, 99. PO only disputes only what information is contained in that output, i.e., whether the output is a “statistical summary characterizing a distribution of user responses...[.]” But the information contained in the model output is printed matter. *Praxair Distribution, Inc. v. Mallinckrodt Hosp. Prods. IP Ltd.*, 890 F.3d 1024, 1032 (Fed. Cir. 2018). As such, the sole limitation in dispute is not even entitled to patentable weight.

PO’s other arguments are superficial. The Petition identified an appropriate motivation to combine each of Ross, Cox, and Ogale. And the Petition sufficiently addressed the relevant *Graham* factors for all grounds.

I. CLAIM CONSTRUCTION

The Board should not allow PO to rely on an ambiguous interpretation of disputed claim limitations. PO's refusal to state its position plainly likely reflects a strategic desire to "twist claims, like 'a nose of wax,' in 'one way to avoid [invalidity] and another to find infringement.'" *Data Engine Techs. LLC v. Google LLC*, 10 F.4th 1375, 1381 (Fed. Cir. 2021) (internal quotations and citations omitted). Such gamesmanship should not be tolerated. *Id.*

A. PO never sets forth its construction

Every argument PO makes to distinguish the cited art relies on an implicit construction of *predicting an output statistical summary characterizing a distribution of user responses expected to be received responsive to presenting the sensor data to a plurality of users* (limitations 1[b], 10[b], and 19[b]). POR, 13-18, 23-26, 29-33. Despite plainly disputing Petitioner's interpretation, PO **never explains** its own interpretation, instead asserting that "the Board need not construe any claim terms in a particular manner." *Id.*, 10; EX2039, ¶62; EX1022, 111:9-19. PO's expert, Dr. Saber, was similarly evasive when asked how he interpreted this language. *See, e.g.*, EX1022, 124:10-126:15, 128:16-130:2, 152:1-155:22. This strategic ambiguity is improper. PO's construction "should not be a moving target"—it should have been clearly presented so Petitioner could respond. *Finnigan Corp. v. Int'l Trade Comm'n*, 180 F.3d 1354, 1363 (Fed. Cir. 1999). Further, PO has

not demonstrated that its implied claim construction is proper under *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005). Having failed to do so in its POR, any further claim constructions arguments from PO are waived. *In re Baxter Int'l*, 678 F.3d 1357, 1362 (Fed. Cir. 2012).

B. PO and Dr. Saber's interpretations of the claims are flawed

Even without making an affirmative argument regarding the construction of the disputed phrase, PO and Dr. Saber implicitly construed this limitation such that the “statistical summary” must include a direct record of hypothetical user responses:

- PO argues that “[predictions] being ‘consistent with’ [decisions of the human annotators] does not equate to ‘predicting an output statistical summary characterizing a distribution of user responses expected to be received.’” POR, 15.
- PO argues that “nothing in the Petition explains how [optimizing the Ross-Cox model to minimize differences from human labeled training data] somehow teach ‘predicting an output statistical summary characterizing a distribution of user responses expected to be received[.]’” POR, 16.
- POR argues that training a model “that predicts how a human would have labeled the input sensor data” does not “disclose ‘an output statistical summary

characterizing *a distribution of user responses expected to be received.*” POR, 25 (emphasis original).

Dr. Saber’s deposition similarly confirmed that both he and PO are applying unstated narrow constructions:

- The *statistical summary* must give “a pretty good understanding of the distribution of user responses,” and is “not just a probability of [] one or two or three classes” because that is just “different.” EX1022, 147:8-19, 152:8-19, 284:1-20, 285:1-10.
- The *statistical summary* should include the “mean of the distribution, the variance, the covariances.” EX1022, 153:6-22, 157:17-158:7.
- A *distribution* is a “probability density function” such as a “Gaussian.” EX1022, 87:12-92:10, 156:22-158:7, 278:17-279:22, 280:1-282:15, 285:11-290:6.

As reflected above, PO and Dr. Saber are trying to rewrite the claims, to require that the output prediction from the model must **be** the hypothetical user responses. POR, 31 (arguing that the prior art “does not teach that its model predicts users’ responses.”). But the claims do not call for a *statistical summary* that **is itself a distribution of user responses[...]**. The claims call for a *statistical summary characterizing a distribution of user responses[...]*. And the specification is clear that “*characterizing*” does not require directly representing the content hypothetical user responses. See EX1001, 6:11-15 (“These summary statistics can characterize

the human observer responses in terms of certain parameters associated with the statistics, such as a content of a response, a time associated with entering a response, and a position of an eye of a human observer associated with the response.”); *see also id.*, 4:55-59, 6:1-25, 7:20-39, 9:49-55, 10:59-11:4, 12:2-20, 12:44-60, 13:8-15. Because “characterizing” in the ’344 patent does not require directly representing hypothetical user responses, PO’s proposed construction is incorrect.

C. Petitioner correctly applies the plain and ordinary meaning

Petitioner’s interpretation is a faithful application of the plain and ordinary meaning, which aligns with the intrinsic record. Breaking the relevant claim language into parts, the plain and ordinary meaning of “*predicting an output statistical summary*” includes predicting a set of data summarizing the predicted intents and likelihood values for an object, e.g., “a summary of the various predicted intents and likelihood values for a particular object in input raw camera image data.” Pet., 30-31. This aligns with the specification, which explains how predicted summary statistics are a “set of numbers.” EX1001, 12:44-46, Fig. 9; *see also id.*, 12:2-7.

Second, the plain meaning of “*characterizing a distribution of user responses expected to be received...*” includes providing information about how the model expects human annotators (“*a plurality of users*”) would have responded to the same input being analyzed by the model (“*presenting the sensor data to...*”). *See* Pet., 31-

32. This too aligns with the specification, which says “[t]hese [output] summary statistics are an estimate of what the summary statistics would be for a collection of human observers who were shown” the same stimulus. EX1001, 13:8-12; *see also id.*, 12:46-60; 13:9-15.

II. THE PRIOR ART SATISFIES THE CLAIMS

A. Supervised learning models predict labels from training

PO’s arguments about the prior art ignore the fundamental operation of the supervised learning models at issue in this proceeding: these models are trained on human annotations, and operate by predicting the annotations that hypothetical annotators would apply to a new input. PO’s own expert (Dr. Saber) said: “a POSITA would have known that the purpose of using annotated training data to train Ross’s model (or any machine learning model) is to make the model’s predictions consistent with the annotations in the training data.” EX2039, ¶97; EX1022, 65:7-10 ([by Dr. Saber:] “So you’re trying to train the network to predict basically an output that is close to the ground truth as possible.”) and 64:6-10 ([Q:] “To make sure I’m following what you’re saying, the ground truth in this context could be labels provided by human annotators or from another source? A: Correct.”); *see also* 64:11-16, 175:14-17.

This basic operation undercuts PO’s theory about why the prior art does not disclose limitations 1[b/c], 10[b/c], and 19[b/c]. PO does not dispute that the prior

art models are trained on human annotations and predict what objects around the car might do. *See* POR, 14 (“Ross [...] generate[s] a ‘set of possible intents or hypotheses identifying possible next actions (and predicted trajectories), [...] and associated likelihood values.”]; *id.* 31 (“Zhang’s model predicts ‘vehicle or object trajectories.’”). By the nature of the prior art supervised learning models (*supra*), these predictions necessarily reflect hypothetical responses that the models would expect to receive from users annotating the scene around the vehicle. Thus, values in the prior art describing the likelihood of these predicted trajectories are numerical summaries describing how many human annotators the prior art models expect would provide a given trajectory as an annotation to a scene, e.g., “*statistical summary characterizing a distribution of user responses expected to be received.*”

B. Ross and Cox teach limitations 1[b], 10[b], and 19[b]

In the Ross-Cox combination, the model output—the predicted “set of possible intents or hypotheses identifying possible next actions [...] and associated likelihood values”—is *an output statistical summary characterizing a distribution of user responses...* as claimed. As explained in the Petition, Ross teaches using a trained model to predict what cars and pedestrians around a vehicle are likely to do (Pet., 18-19, 20-24), and Cox teaches training a model using a crowdsourced collection of human annotations (Pet., 19-24). So, in this combination, the Ross-Cox model outputs predictions reflecting how a hypothetical set of human annotators

would label the input image. Pet., 18-24. The associated likelihood values thus *characteriz[e]* the distribution of this hypothetical set of human annotations, which is exactly what the claims require. *Id.*, 18-24, 28-34.

PO's superficial rebuttal arguments do not have merit. PO first faults Ross as "not disclos[ing] how the 'set of possible intents or hypotheses' or 'associated likelihood values' are generated or what form they take." POR, 14. As an initial matter, this argument is deficient because it ignores the combination, arguing against Ross in isolation. *In re Keller*, 642 F.2d 413, 426 (CCPA 1981); *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Moreover, PO also ignores the basic operation of the prior art supervised learning models, discussed above. *See supra*, Section II.A. The Petition explained that Ross's intent model (as combined with Cox's teachings) predicts the set of intents/hypotheses and likelihood values (e.g., numerical measurements) that reflect how a hypothetical collection of humans would have annotated a new input image in question. Pet., 20-24, 28-34.

PO's other arguments rely wholly on its unstated narrow construction. POR, 15-17. Without explanation, PO asserts that model predictions "consistent with" annotation decisions, as well as alleged "basic training aspects," do not teach "*predicting an output statistical summary characterizing a distribution of user responses expected to be received.*" *Id.* But PO does not dispute that the Ross-Cox combination's model (1) is trained based on human annotations, (2) predicts

trajectories for surrounding cars and pedestrians, and (3) outputs a likelihood value for the predicted trajectories, and the Petition demonstrated how this meets these limitations. POR, 14-16; Pet., 20-24, 28-34. Because the parties do not appear to dispute what the prior art is actually doing, this dispute comes down to claim construction: Petitioner contends that a “*statistical summary characertiz[es] a distribution of user responses expected to be received*” if the statistic provides information about how hypothetical human annotators would respond to the image in question, while PO (implicitly) contends that the “*statistical summary*” must directly describe a probability density function of hypothetical human annotations.

For the reasons described above (*supra*, Section I), Petitioner respectfully submits that both the plain and ordinary meaning of the claims and the intrinsic record supports Petitioner’s interpretation of 1[b], 10[b], and 19[b], and that the Ross-Cox combination teaches these limitations.

C. Ross, Cox, and Ogale teach limitations 1[b], 10[b], and 19[b]

As the Petition explained, the combination of Ogale with Ross and Cox confirms that the model predicts “how a human would have labeled the input [raw camera] data.” Pet., 53 (quoting EX1010, 14:7-9 (bracketing added)); *see also* Pet., 48-53. Ogale’s teaching aligns with the agreed operation of the prior art supervised learning models, as discussed by PO’s own expert. *See supra*, Section II.A. And as explained for the combination of Ross and Cox, because the output predictions

represent how human annotators would have labeled the camera data, the output likelihood values “*characteriz[e] a distribution of user responses expected to be received responsive to presenting the sensor data to a plurality of users.*” See *supra*, Section II.B; Pet., 51-53.

PO again does not engage with what the prior art models are doing, or with Ogale’s statement about the model predicting human labels. POR, 24-25. Even though Ogale’s predictions expressly reflect reflecting “how a human would have labeled the input sensor data” (EX1010, 14:7-9)—e.g., expected annotator/user responses—PO states without explanation that this does not “disclose ‘an output statistical summary characterizing *a distribution of user responses expected to be received.*’” POR, 25. PO’s mere denial is insufficient to rebut the Petition. *Samsung Electronics Co. Ltd. et al. v. Harbor Island Dynamic, LLC*, IPR2024-01402, Paper 32 at 16 (PTAB Mar. 16, 2026); *Comcast Cable Communications, LLC v. Rovi Guides, Inc.*, IPR2019-00281, Paper 39 at 88 (PTAB June 26, 2020).

Even though PO does not explain its reasoning, context suggests that PO is applying an unidentified, narrow interpretation of *characterizing a distribution...* POR, 25; EX1022, 156:22-158:7 (PO’s expert arguing that “characterizing a distribution” requires a probability density function). Such a narrow construction is unsupported and contrary to the specification. *Supra*, Section I.B. PO’s arguments should thus be rejected.

D. Zhang teaches limitations 1[b], 10[b], and 19[b]

As an initial matter, PO's complaint that the Petition's analysis of Zhang is "difficult to follow" is meritless and irrelevant. POR, 30-31. The fact that Zhang includes a significant amount of relevant disclosure support's Petitioner's analysis; PO's complaint is essentially that the prior art is "too good." *See id.* While PO suggests that Petitioner may have incorrectly mixed embodiments in Zhang, PO does not identify any specific inconsistencies in Petitioner's analysis. *Id.* It is unremarkable that similar disclosures appear across multiple example embodiments in Zhang, and phrases like "an example embodiment" and "a particular embodiment" are commonplace in most patents. *Id.* The '344 patent itself uses the phrase "some embodiments" over forty times. *See generally* EX1001. PO had months to study Petitioner's analysis of Zhang, and PO's inability to identify any actual inconsistency is telling.

PO's thin arguments against Zhang on the merits also fail. First, the bulk of PO's arguments allege that "trajectories" alone are not an *output statistical summary* as claimed, but this does not fully address the Petition. POR, 31. The Petition explained how Zhang's "set of predicted trajectories **and confidence levels**" form the *output statistical summary*. Pet., 63-67. PO's half-baked arguments are thus unresponsive and should be disregarded. PO's arguments also fail for the same reasons as the other Grounds addressed above: PO does not dispute that Zhang's

model is trained on human-labeled data to make predictions about what objects on a road are likely to do. *See* POR, 31-32; Pet., 63-67. So again, the parties agree on what the prior art is doing, and the only dispute is claim construction. But again, PO has not identified its construction or explained how its narrow interpretation is supported, and its argument amounts to mere denial without any other explanation, which is insufficient. POR, 31-32; IPR2024-01402, Paper 32 at 16; IPR2019-00281, Paper 39 at 88. Because Zhang’s predicted trajectories represent how the model predicts hypothetical human labelers would have labeled the input data, under the correct plain and ordinary meaning applied by Petitioner, the corresponding confidence levels in Zhang “*characteriz[e] a distribution*” of how those hypothetical human labelers would have responded, e.g. “*a distribution of user responses expected to be received responsive to presenting the sensor data to a plurality of users.*” Pet., 63-67.

E. Limitations 1[c], 10[c], and 19[c]

For each ground, PO relies on the same flawed arguments regarding limitations 1[b], 10[b], and 19[b] to allege that the prior art does not teach limitations 1[c], 10[c], and 19[c]. POR, 17, 26, and 32-33. PO’s arguments for limitations 1[c], 10[c], and 19[c] thus fail for the same reasons discussed above. *Supra*, Sections II.B, II.C, and II.D.

III. PERCEPTIVE IS RELYING ON PRINTED MATTER

Even applying PO's incorrect claim, the Board should still find the challenged claims obvious because PO's only dispute revolves entirely around the content of information in a model output. As explained above, it remains Petitioner's position that the output from the prior art model aligns with the plain and ordinary meaning of a "*statistical summary characterizing a distribution of user responses expected to be received responsive to presenting the sensor data to a plurality of users.*" However, even if the Board concludes that this phrase should be construed to require a probability density function that directly describes hypothetical user responses—as PO incorrectly suggests—that difference is purely about the content of the model's prediction. Such content is printed matter.

Again, the parties do not dispute what both the prior art and the claims are doing: a supervised learning model is trained on human labeled data to output a "*statistical summary*" that predicts what objects around a self-driving car are likely to do, and the self-driving car is then controlled based on that prediction. *See supra*, Sections II.A-G. The only dispute has to do with the content of the alleged "*statistical summary*" that is output from the prior art models. Petitioner's position is that numerical measures of how likely a hypothetical human labeler would be to provide a specific predicted trajectory (e.g., likelihood values; confidence values) is sufficient, and PO's position is that something further is required in the output. *Id.*

But whatever else PO believes is required in this output, it has no impact on what the models are actually doing. PO's dispute is limited solely to what information the output contains, which is printed matter.

PO's legal arguments regarding printed matter are misguided, particularly with respect to *In re Lowry*, 32 F.3d 1579 (Fed. Cir. 1994). POR, 36-37. The content at issue in *Lowry* was a data structure specifically tied to the performance of computer memory. 32 F.3d at 1583. Because memory data structures improve the operation of a computer, it makes sense that this type of content would be outside the scope of printed matter, a doctrine which originates from subject matter eligibility restrictions. *C.f.*, *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016) (holding that “data structure designed to improve the way a computer stores and retrieves data in memory” were subject matter eligible under Section 101). With this context, *Lowry* should not be read to categorically exclude information processed by a computer from the printed matter doctrine. Indeed, more modern cases have expressly rejected limiting the printed matter doctrine based on the medium used: “the doctrine has evolved over time to guard against attempts to monopolize the conveyance of information *using any medium.*” *C R Bard Inc. v. AngioDynamics, Inc.*, 979 F.3d 1372, 1381 (Fed. Cir. 2020) (collecting cases).

PO also misapplies the distinction between claiming types of information, versus the content of information. *Contra* POR, 38-39. A limitation requiring

“sensor data” claims a type of information, but a limitation specifying that the sensor data must “display[] an object on the road” claims the content of that information. *Contra id.* Just so, even if a *statistical summary* is (arguably) a type of data, the information contained in the data—i.e., what that *statistical summary* *characteriz[es]*—is printed matter.

PO’s arguments about an alleged functional relationship with the substrate are similarly misguided. POR, 41-42. The content of the “*statistical summary*” has no functional role at all in the claims. Nothing in the ’344 patent suggests that any operation depends on whether the predicted “*statistical summary*” directly describes a hypothetical probability density for annotator responses, versus a “*statistical summary*” characterizing hypothetical responses through a measure of the likelihood for a give trajectory. Indeed, the ’344 patent describes a wide variety of possible statistics that can characterize user responses. *See* EX1001, 6:11-15 (*supra*). Certainly, there is no suggestion that the basic computer silicon—the substrate in this context—changes operation based on the content of a “*statistical summary*.”

IV. A POSITA WOULD HAVE BEEN MOTIVATED TO COMBINE ROSS AND COX, AS WELL AS ROSS, COX, AND OGALE

PO’s arguments about motivations to combine are contradicted by PO’s own statements and the references themselves.

A. Ross and Cox

PO's arguments about motivation to combine mistakenly focus on statements of the intended combination in the Petition, which PO misconstrues as Petitioner's only purported motivations to combine. *Compare* Pet., 20-24 *with* POR 19-21 (addressing "Tesla's first assertion" and "Tesla's second assertion"). Petitioner thorough explained multiple motivations to combine, which PO did not address, such as "Cox simply expand's on Ross's disclosure..." and how "the combination [with Cox] would have benefitted Ross's system" Pet., 20-24. PO does not directly address these arguments regarding motivation to combine.

Instead, PO wrongly argues that a POSITA would not have been motivated to combine Ross with Cox because Ross already describes its own training process. POR, 19. But PO (and its expert) acknowledge that the disclosure related to annotating training data in Ross is open-ended. POR, 19 ("Ross's disclosure does not make clear whether this marking of the action is performed by a human annotator or by the system"); EX2039, ¶95 (same). In this regard, Cox supplies details about generating a set of training data, expanding on Ross' disclosure. Pet., 20-24. PO is also wrong to suggest that Ross's training data looking into the future weighs against a combination with Cox. POR, 19-20. The disclosure in Cox about using the "accuracy" of human annotations confirms that Cox may also use future information when generating training data. EX1005, ¶¶0008, 0010, 0026-28, 0036.

Relatedly, PO's reliance on *Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, is misplaced. POR, 20 (citing 688 F.3d 1342, 1369 (Fed. Cir. 2012)). PO wrongly contends there is no reason to combine Ross and Cox because both teach "training their models to reduce prediction errors using annotated/marked training data" and "independently accomplish similar functions." POR, 20. But PO's acknowledgement that Ross does not include the same details about generating training data undercuts this position. *Id.*, 19. Moreover, on the very next page, PO argues that "Ross and Cox are directed to fundamentally different types of machine learning systems with distinct aims." *Id.*, 21. PO cannot credibly argue that Cox and Ross are both too different to combine and too similar to combine.

PO's argument that Petitioner "does not even explain what this 'further configuration' would entail" is also false. POR, 21. The Petition thoroughly explains how Cox would be utilized to modify Ross. *See* Pet., 20-24 and 28-33. And the fact that "a POSITA would have known that the purpose of using annotated training data to train Ross's model (or any machine learning model) is to make the model's predictions consistent with the annotations in the training data" does not undercut the combination. *Id.* Instead, this confirms that a POSITA would have understood how to combine Cox's additional details about training with Ross.

And while PO contends that Ross and Cox "are directed to fundamentally different types of machine learning systems with distinct aims," the references

themselves refute that characterization. *Contra* POR, 21. Cox explains that its system identifies cars, busses, and streets (EX1005, ¶0016) and expressly states that its disclosure is applicable to autonomous (i.e., driverless) vehicles (*id.*, ¶0056 (“driverless/semiautonomous vehicles” identified as an “[i]mportant application area[] [that] may also benefit from embodiments of the invention”)). PO never addresses this explicit disclosure in Cox; instead, PO and its expert ***simply ignore it*** in both the POR and expert declaration. POR, 21-22; EX2039. But what’s worse, PO’s expert dismissed this disclosure as “just marketing and hand-waving”— a brazen attempt to rewrite the prior art. POR, 21-22; EX1022, 304:9-305:2; *see also id.*, 296:18-300:18, 305:22-306:1 (further referring to Cox’s autonomous vehicle disclosures as “marketing,” “hand-waving,” and “stretching a bit”). PO and Dr. Saber cannot strike disclosures from the prior art, simply because these disclosures contradict PO.

Moreover, the shared technical lineage between Cox and the ’344 patent confirm that Cox is applicable to autonomous vehicle technology, like Ross. Cox and the ’344 patent name a common inventor, Sam Anthony. Cox’s disclosure is specifically based on Mr. Anthony’s work at the Harvard Vision Sciences Lab during his pursuit of his PhD. EX1005, Title page (listing President and Fellows of Harvard College as the Applicant). Mr. Anthony’s own personal website states that his “***PhD work was at the heart of the technology we built at Perceptive Automata,***”

which includes the '344 patent. EX1014. Given this statement, it strains credulity for PO to argue that Cox is directed to a fundamentally different endeavor from self-driving vehicles.

Third, Cox is useful for a specific problem Ross sets out to solve and that PO says is difficult: predicting pedestrian behavior. POR, 22. Cox's training and ability to predict state of mind is directly relevant to solving this problem, enhancing Ross so that its prediction model better considers the state of mind of road users and what they might be thinking within the environment of an autonomous vehicle. Pet., 23; EX1003, ¶84. Indeed, Ross explains that when "a pedestrian is predicted not to cross a roadway in a predetermined period of time, but the intent prediction is that the pedestrian would like to cross the roadway," the vehicle should "allow the pedestrian to cross the roadway," so that the vehicle "function[s] in a more 'human-like' or 'polite' way." EX1004, 5:1-12; Pet., 22-23. Understanding the "state of mind" of such a pedestrian and generating predictions that "better mimic human performance," as taught by Cox, would have thus furthered at least these aspects of Ross. *Id.* PO further identified additional prior art references that confirm predicting pedestrian behavior was a particular challenge for self driving cars. POR, 22 (citing EX2041, EX2042). A POSITA seeking to improve Ross's handling of this known problem would have understood that training the model as taught by Cox would assist in this prediction of human behavior, addressing this problem. Pet., 22-24.

B. Ross, Cox, and Ogale

PO's arguments with respect to Ground 2 (Ross, Cox, and Ogale) rely entirely on PO's arguments with respect to Ground 1 (Ross and Cox). POR, 27-28. For the reasons stated above, a POSITA would have been motivated to combine Ross and Cox, and PO has not articulated any other defect in Petitioner's proposed combination of Ross, Cox, and Ogale. *Supra*, Section IV.A.

V. THE PETITION ADDRESSES THE GRAHAM FACTORS

PO's arguments about the *Graham* factors are entirely form over function. The Petition performed a detailed obviousness analysis that identified the relevant level of skill in the art, thoroughly discussed every prior art reference at issue, and compared those references to the challenged claims.

PO baldly asserts that Petitioner "has not properly considered the *Graham* factors" with respect to Ground 1, but that is the extent of its argument. POR, 13; *id.*, 14-22. Because PO does not identify how or why Ground 1 does not comply with *Graham*, PO's argument should be disregarded.

With respect to Ground 2, PO's primary complaint appears to be that Petitioner included Ogale as a fallback reference supporting limitations 1[b/c], 10[b/c], and 19[b/c], despite also arguing that the combination of Ross and Cox satisfied this limitation. POR, 28-29. Pleading and arguing in the alternative is a well-established practice, and there is nothing improper about Petitioner presenting

an alternative argument for these limitations. *See, e.g., Amazon.com, Inc. et al. v. Soundclear Technologies LLC*, IPR2025-00565, Paper 39 at 95-97, 104-105 (PTAB July 27, 2026); *Google LLC v. DH International LTD.*, IPR2024-01322, Paper 33 at 25, 63, 75 (PTAB Feb. 10, 2026).

Moreover, this case is nothing like the panel decisions in *Ezio Corp.*, *Moses Lake*, or *eBay*. POR, 28-29. Unlike *Eizo*, where the petitioner made conclusory assertions regarding claim limitations addressed by a secondary reference, the Petition here identified the specific, discrete issue where Petitioner (correctly) anticipated that PO would disagree with Petitioner’s primary argument and articulated a specific fallback argument that further addressed this argument. *Compare Eizo Corp. v. Barco N.V.*, IPR2014-00358, Paper 11 at 29-30 (PTAB July 23, 2014), *with Pet.*, 47, 52-53. *Moses Lake* is irrelevant because that dealt with when a Petition “merely recite[d] different elements” of “Other References” and “did not indicate how or why those elements would have been adopted” to be “used in the methods” of the references they were combined with, which is again not at issue here. *Moses Lake Indus., Inc. v. Enthone, Inc.*, IPR2014-00246, Paper 6 at 16-17 (PTAB June 18, 2014). *Ebay* is also irrelevant because that dealt with a single-reference ground, not a specific proposed combination. *eBay, Inc. v. Paid, Inc.*, CBM2014-00125, Paper 15 at 21 (PTAB Sept. 30, 2014).

With respect to Ground 3 (Zhang), PO suggests that the Petition must identify a missing limitation from Zhang in order to present an obviousness challenge. POR, 33-35. That is incorrect. The Federal Circuit has made it clear that a disclosure that teaches all limitations of a claim (i.e., anticipates under Section 102) also renders the claim invalid under Section 103, “for anticipation is the epitome of obviousness.” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1373 (Fed. Cir. 2019). Board panels have followed suit. *See, e.g., Semiconductor Components Industries, LLC et al. v. Greenthread LLC*, IPR2023-01244, Paper 129 at 58-59 (PTAB Dec. 8, 2025); *Integrated DNA Technologies, Inc. v. Tecan Genomics, Inc.*, IPR2024-01504, Paper 41 at 51-52 (PTAB April 8, 2026); *Unified Patents LLC v. Intellectual Ventures II LLC*, IPR2022-00429, Paper 36 at 34-35 (PTAB Aug. 9, 2023).

PO also asserts the Petition is deficient “to the extent” Ground 3 “attempt[s] to supplement an alleged missing element in Zhang with expert testimony,” but PO identifies no such element in which the Ground 3 allegedly does this. POR, 34. PO’s argument thus should be disregarded.

VI. DR. JANET IS A POSITA AND HIS TESTIMONY SHOULD BE GIVEN WEIGHT

PO makes two baseless challenges to the testimony of Petitioner’s expert, Dr. Janét. First, PO’s citation to *Kyocera Senco* is inapposite because that case dealt with an expert who did not qualify as a POSITA, which is not the case here. POR, 9; *Kyocera Senco Indus. Tools Inc. v. Int’l Trade Comm’n*, 22 F.4th 1369, 1377-78

(Fed. Cir. 2022). Dr. Janét’s education (e.g., Ph.D. in Electrical and Computer Engineering, awarded in 1998) and work experience (e.g., “robotics, sensors, artificial intelligence, pattern analysis, and automation fields” since 1991) plainly demonstrates that he met the agreed standard for a POSITA at the relevant time. EX1003, ¶¶2-21; EX2039, ¶52. Second, PO argues throughout the POR that Dr. Janét’s declaration “adds nothing” and his testimony should be given “little to no weight,” citing various cases as alleged support. POR, 16, 23, 25, 28, 32. But those cases are irrelevant, as Dr. Janét’s testimony is not conclusory. Instead, Dr. Janét appropriately included the reasoning and underlying facts that support his positions, and he explained why he arrived at them, complying. *See, e.g.*, EX1003, ¶¶80-85 (e.g., explaining why a POSITA would have been motivated to combine Ross and Cox), 96-102 (e.g., explaining how prior art maps to element 1[b]), 143-146 (e.g., explaining why a POSITA would have been motivated to combine Ross, Cox, and Ogale), 149-152 (e.g., explaining how prior art maps to element 1[b]), 172-177 (e.g., explaining how prior art maps to element 1[b]). Dr. Janét’s testimony should thus be given appropriate weight.

VII. CONCLUSION

Petitioner respectfully requests that the Board find the challenged claims of the ’344 Patent unpatentable.

Respectfully Submitted,

Date: September 8, 2026

/Roger Fulghum/

Roger Fulghum

Reg. No. 39,678

Lead Counsel for Petitioner, Tesla, Inc.

CERTIFICATE OF COMPLIANCE

I hereby certify that this Petitioner's Reply to Patent Owner's Response complies with the type-volume limitations of 37 C.F.R. § 42.24(c)(1) because it contains 5,495 words (as determined by the Microsoft Word word-processing system used to prepare the reply), excluding the parts of the reply exempted by 37 C.F.R. § 42.24(c).

Respectfully submitted,

BAKER BOTTS L.L.P.

/Roger Fulghum/

Roger Fulghum

Reg. No. 39,678

Lead Counsel for Petitioner, Tesla, Inc.

Date: September 8, 2026

Baker Botts L.L.P.

910 Louisiana Street

Houston, TX 77002

Phone: (713) 229-1707

roger.fulghum@bakerbotts.com

CERTIFICATE OF SERVICE

The undersigned certifies that on September 8, 2026, a complete and entire copy of the **PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE**, including exhibits EX1022-1023, were served on Patent Owner electronically via email on the following counsel of record for Patent Owner:

Charles Austin Ginnings (austin@nelbum.com)

John P. Murphy (murphy@nelbum.com)

perceptive@nelbum.com

Date: September 8, 2026

/Roger Fulghum/
Roger Fulghum,
Reg. No. 39,678
Lead Counsel for Petitioner, Tesla, Inc.