

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TESLA, INC.

Petitioner,

v.

INTELLECTUAL VENTURES II LLC

Patent Owner.

Case No. IPR2025-00342

U.S. Patent No. 7,336,805

**BRIEF IN SUPPORT OF PATENT OWNER'S REQUEST FOR
DISCRETIONARY DENIAL**

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PATENT OWNER'S EXHIBIT LIST

EX2001	Petitioner's Answer to Complaint and Counterclaim, dated June 20, 2024, in <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2002	Docket from District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2003	Scheduling Order from District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2004	Defendant's Second Supplemental Preliminary Invalidity Contentions, dated January 9, 2025, in District Court Litigation, <i>Intellectual Ventures II LLC v. Tesla, Inc.</i> , C.A. 1:24-cv-00884-ADA (W.D. Tex.)
EX2005	Letter from Patent Owner to Associate General Counsel for Petitioner, dated August 20, 2020, enclosing copy of U.S. Pat. No. 7,181,143 and Claim Chart Presentation
EX2006	R. Sedgewick, Algorithms in C, Addison-Wesley Pub. Comp. Inc., 1990

I. INTRODUCTION

Pursuant to the Memorandum by the Acting Director dated March 26, 2025, setting forth the “Interim Processes for PTAB Workload Management” (the Memorandum), Patent Owner hereby sets forth the applicable bases for discretionary denial of the institution. This filing is being made within one month of the Notice Extending Deadline for Discretion Briefing dated April 11, 2025. Paper #6. As explained more fully below, all of the *Fintiv* factors, as well as several additional factors set forth in the Memorandum, favor the discretionary denial of institution in this case.

With respect to the *Fintiv* factors, Petitioner filed a Counterclaim on June 20, 2024 challenging the validity of U.S. Patent No. 7,181,805 (“‘805 Patent,” EX1001) in *Intellectual Ventures II LLC v. Tesla, Inc.*, C.A. 1:24-cv-00884-ADA (W.D. Tex.) (the “Parallel Litigation.”) EX2001, at 80-81 and EX2002, at 6-7. As discussed in detail below, the Parallel Litigation has already progressed significantly, including the filing of all claim construction briefing, completion of the Markman Hearing on April 10, 2025, and service of Preliminary Infringement and Invalidity Contentions. By the anticipated date of the institution decision in this matter (August 13, 2025), service of Final Infringement and Invalidity Contentions will be complete, the parties will be more than half-way through fact discovery (which opened April 11, 2025) and the Court will in all likelihood have issued its claim construction ruling.

EX2003, 2-3. The Trial is scheduled for May 14, 2026, about 3 months before the statutory deadline for issuing a Final Written Decision in this matter on August 13, 2026. EX2003, 4.¹

With respect to other factors identified in the Memorandum, The Petition improperly relies on extensive expert testimony to fill gaps in the prior art—particularly with respect to the “mathematical tree structure” limitation—contrary to the statutory requirements of 35 U.S.C. § 311(b), which restrict IPRs to challenges based solely on patents and printed publications. Additionally, the claims of the ‘805 Patent were in force for over 17 years, and the patent will expire during the course of this IPR if the matter is instituted. Despite having been specifically alerted to the ‘805 Patent in August 20, 2020 (and provided with a copy of ‘805 Patent at that time), Petitioner waited more than four years to file this IPR challenging the ‘805 Patent. EX2005, at 1-4, 8-10 (claim chart mapping representative product to claim 1 of ‘805 Patent) and 11-20 (copy of patent enclosed with letter).² These factors also weigh in favor of a discretionary denial.

¹ The Petition (at 83, note 10) incorrectly asserts that “[t]he district court has not entered an order scheduling a trial date.” As shown on the last page of the Court’s Scheduling Order, a jury trial is scheduled for May 14, 2026. EX2003, 4.

² The Petition (at 84) asserts that “Petitioner only learned which claims were being asserted in August 2024.” However, for almost 5 years Petitioner has been in possession of a claim chart supplied by Patent Owner mapping claim 1 of the ‘805 Patent to Petitioner’s products. EX2005, at 8-10. Claim 1 is the only independent claim that Petitioner is challenging in this IPR.

For all of these reasons, and as explained more fully below, the Director should exercise her discretion to deny institution.

II. THE FINTIV FACTORS FAVOR DISCRETIONARY DENIAL

The precedential order in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB March 20, 2020) (“*Fintiv*”) identifies six factors for the Board to consider in deciding whether to exercise discretion to deny institution based on parallel proceedings involving the same patent. Application of the present facts to these factors demonstrates that there are strong reasons for exercising discretion to deny institution here.

A. Factor 1 Weighs Against Institution Because A Stay Has Not Been Granted In The Parallel Litigation And There Is No Evidence That A Stay Would Be Granted If This IPR Was Instituted

No stay has even been requested in the Parallel Litigation. Pet., 98. In addition, even if this IPR was instituted (which would not occur until on or around July 29, 2025) it is unlikely that the Court (Judge Albright) would grant a stay. *See, generally, Continental Intermodal Grp. v. Sand Revolution LLC*, No. 7:18-cv-00147 (W.D. Tex. July 22, 2020) (Judge Albright) *Multimedia Content Mgmt. LLC v. Dish Network*, No. 6:18-CV-00207-ADA, 2019 U.S. Dist. LEXIS (W.D. Tex. May 30, 2018) (Judge Albright) (denying stay).

Thus, the first factor weighs against institution.

B. Factor 2 Weighs Against Institution Because The Parallel Litigation Has A Trial Date Scheduled Before The Projected Statutory Deadline For The Board's Final Written Decision

The Trial in the Parallel Litigation is scheduled for May 14, 2026, almost 3 months before the statutory deadline for issuing a Final Written Decision in this matter on August 13, 2026.

Rather than looking at the actual date trial is scheduled, the Petition relies on the median time from filing to case disposition in the Western District of Texas. However, on February 28, 2025, the Office *rescinded* former Director Vidal's 2022 memorandum on discretionary denials which had directed that such statistics be considered in lieu of the actual trial date scheduled by the court. The announcement rescinding former Director Vidal's 2022 memorandum went on to state that decisions relying on the 2022 memo will be "neither binding or persuasive on the PTAB." In view of the above, Petitioner's arguments based on the time to trial statistics cannot be considered persuasive and must be rejected. Finally, while the Memorandum issued by Administrative Patent Judge Boalick on March 24, 2025 indicates that time-to-trial statistics "may" still be considered along with any other evidence the parties may submit, the Acting Director's rescission of the 2022 Vidal Memo (which had directed the application of such statistics in lieu of an earlier actual trial date) demonstrates that such statistics have lesser importance where, as here, an actual trial date has been set by the Court.

Given that the actual trial date is before the due date for the Final Written Decision, the second factor favors discretionary denial.

C. Factor 3 Weighs Against Institution Because The Parties Will Have Invested Significant Effort In The Parallel Litigation By The Time The Board’s Institution Decision Is Due

Factor 3 relates to investment in the Parallel Litigation by the District Court and the parties. *Fintiv*, Paper 11 at 9. This factor is judged from the date of the institution decision, which is expected to be no later than August 13, 2025. *Id.*

On April 10, 2025, the District Court held a Markman Hearing. Prior to the Hearing, the Court issued preliminary constructions based on extensive briefing submitted by the parties. The Markman Hearing occurred on time as set forth in the Scheduling Order. This demonstrates that the Parallel Litigation is on schedule, and that there has already been a significant investment by the Court and the parties in the Parallel Litigation.

The investment by the Court and the parties in the Parallel Litigation will continue to increase between the time of this filing and August 13, 2025, when the Board’s institution decision is due. By that time, all of the following will have been completed in the Parallel Litigation:

- PO’s Preliminary Infringement Contentions (served August 1, 2024);
- Petitioner’s Preliminary Invalidity Contentions (served October 24, 2024);
- Parties exchanged claim terms for construction (November 14, 2024);

- Parties exchanged proposed claim constructions (December 5, 2024);
- Parties disclosed extrinsic evidence for claim construction (December 12, 2024);
- Petitioner’s Opening Claim Construction Brief (January 9, 2025);
- PO’s Responsive Claim Construction Brief (February 10, 2025);
- Petitioner’s Reply Claim Construction Brief (March 3, 2025);
- PO’s Sur-Reply Claim Construction Brief (March 24, 2025);
- Parties technical tutorials submitted to Court (March 31, 2025);
- Markman Hearing (April 10, 2025); and
- Final Infringement and Invalidity Contentions (due May 22, 2025).

EX2003, 1-3. In addition, by the anticipated date of the institution decision on August 13, 2025, the parties will be more than half-way through fact discovery (which opened April 11, 2025) and the Court will in all likelihood have issued its claim construction ruling.

Clearly, the parties and the Court will have made a substantial investment in the Parallel Litigation by the expected date of the institution decision on August 13, 2025.

The Petition was filed on January 3, 2025. At that time, Petitioner asserted that “[t]he investment in the co-pending litigation has been minimal.” Pet., at 83. Patent Owner disagrees that the investment in the co-pending litigation was minimal

as of January 3, 2025. However, even if Petitioner's assertion about the state of affairs on January 3, 2025 was accurate, it is irrelevant. As explained in *Fintiv*, the investment in the Parallel Litigation by the District Court and the parties is judged from the date of the anticipated institution decision, which is expected to be about August 13, 2025 -- rather than January 3, 2025. *Fintiv*, Paper 11 at 9. There can be no argument that by August 13, 2025, the District Court and the parties will have made a substantial investment in the Parallel Litigation.

Thus, the third factor weighs against institution.

In a co-pending IPR challenging a different patent that is being asserted against Petitioner in the Parallel Litigation, Petitioner predicts that the Parallel Litigation will be bifurcated, causing delay of the trial date set forth in the Scheduling Order. *See*, IPR2025-00218, Paper #7, at 1. In support of this prediction, Petitioner relies on an article (IPR2025-00218, EX1021) quoting an out of court statement made by Judge Albright five years ago at a conference, and a prior bifurcation order in an unrelated case (IPR2025-00218, EX1020). However, Petitioner fails to acknowledge that the bifurcation order it cites resulted from a joint motion to bifurcate. No such motion has been filed in the Parallel Litigation, nor has either party sought bifurcation of the district court proceedings. In addition, Petitioner also omits the portion of the article in which "Judge Albright said he's presiding right now over a case with 'seven or eight' patents, and the parties have

made opposite requests about how to try the case.” IPR2025-00218, EX1021. This undercuts Petitioner’s position, as it demonstrates that trial structure decisions depend on actual party requests—which are absent here. In short, there is no evidence in the record that the district court will bifurcate the Parallel Litigation.

For these reasons, Factor 3 weighs in favor of discretionary denial.

D. Factor 4 weighs against institution because there is substantial overlap between the Parallel Litigation and this IPR

As mentioned above Petitioner filed a Counterclaim in the Parallel Litigation challenging the validity of ‘805 Patent as a whole. EX2001, at 80-81. The Counterclaim is not limited to any particular claim(s) of the ‘805 Patent, and therefore covers all claims of the ‘805 Patent -- including the claims challenged in this IPR.

On January 9, 2025 -- a few days after filing this IPR -- Petitioner filed its Second Supplemental Preliminary Invalidity Contentions in the District Court. As explained below, there is complete overlap between the prior art references advanced by the Petitioner in this IPR and those advanced by the Petitioner in the Parallel Litigation. Set forth below is a summary of the grounds raised in the Petition, and the prior art asserted in each ground:

Grounds	Claims	Pre-AIA Basis (§103)
#1	1-2, 9-10	Broggi, Huttenlocher, and Brady
#2	6-8, 11	Broggi, Huttenlocher, Brady, and Bertozzi

Pet., 8. Set forth below is an excerpt from Petitioner’s Second Supplemental Preliminary Invalidity Contentions in the Parallel Litigation showing the prior art relied on by Petitioner for challenging the ‘805 Patent in the District Court:

1. Prior Art Patents and Patent Publications

Ex. No.	Patent/ Publication	Referenced As	Publication / Priority Date
C4	U.S. Pat. App. Pub. No. 2003/0,191,568	Breed	October 9, 2003
C5	U.S. Pat. No. 5,434,927	Brady	July 18, 1995
C7	U.S. Pat. No. 6,453,056	Laumeyer	September 17, 2002

2. Prior Art Publications

Ex. No.	Patent/ Publication	Referenced As	Publication / Priority Date
C2	Alberto Broggi et al., <i>Visual Perception of Obstacles and Vehicles for Platooning</i> , 1(3) IEEE Transactions on Intelligent Transportation Systems 164–176 (September 2000)	Broggi	September 2000
C3	Daniel P. Huttenlocher & Shimon Ullman, <i>Object Recognition Using Alignment</i> , Image Understanding Workshop Sponsored by U.S. Defense Advanced Research Projects Agency, Los Angeles, 370-380 (Feb. 23-25, 1987)	Huttenlocher	February 23, 1987
C6	Reinhold Behringer & Nikolaus Muller, <i>Autonomous Road Vehicle Guidance from Autobahnen to Narrow Curves</i> , 14(5) IEEE Transactions on Robotics and Automation, 810-15 (October 1998)	Behringer	October 1998
C10	Thomas C. Henderson & Ernst Triendl, <i>Storing Feature Descriptions as 2-D Trees</i> , GE-24(2) IEEE Transactions on Geoscience and Remote Sensing 301-303 (March 1986)	Henderson	March 1986
C11	Alberto Broggi, Massimo Bertozzi, et al., <i>AUTOMATIC VEHICLE GUIDANCE: THE EXPERIENCE OF THE ARGO AUTONOMOUS VEHICLE</i> (1999)	Bertozzi	December 16, 1999

EX2004, 12-13; *see also*, 75-96. Thus, there is complete overlap between the

references being used by Petitioner in the District Court to challenge the claims of the '805 Patent and the references being used by Petitioner in these proceedings to challenge the '805 Patent.

Because there is complete overlap between this IPR and the Parallel Litigation, there are particularly strong “concerns of inefficiency and the possibility of conflicting decision” if this IPR is instituted. *Fintiv*, Paper 11 at 12.

Thus, the fourth factor weighs against institution.

At the time the Petition was filed on January 3, 2025, Petitioner argued that “[t]he extent of overlap is ... speculative at this point in time.” Pet., at 84. Just six days later on January 9, 2025, Petitioner filed its Second Supplemental Preliminary Invalidity Contentions in the Parallel Litigation -- a detailed 241-page document that did not materialize overnight. EX2004. Clearly, at the time Petitioner filed this IPR on January 3, 2025, Petitioner had every reason to anticipate that there would be significant overlap between the prior art references advanced by the Petitioner in this IPR and those advanced by the Petitioner in the Parallel Litigation. After all, the issue of overlap is completely within Petitioner’s control -- as Petitioner is the party that chose which references to assert in each forum. However, rather than deal with the overlap that Petitioner could have certainly foreseen, Petitioner made the strategic decision in the Petition to play games and characterize the extent of overlap as “speculative.” Pet., 84. To the extent Petitioner abandons its position that the

overlap is “speculative” in its reply in favor of a *Sotera* stipulation, Petitioner’s stipulation should be rejected.

In *SAS Institute Inc. v. Iancu*, 138 S. Ct. 1348, (2018), the United States Supreme Court held that an IPR must proceed in accordance with the petition. *SAS Inst., Inc. v. Iancu*, 584 U.S. 357, 365 (2018); see 35 U.S.C. § 312(a)(3). Because of the expedited nature of IPR proceedings, “[i]t is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition” lay out the entirety of Petitioner’s position, including all of Petitioner’s theories and evidence. *Henny Penny Corp. v. Frymaster LLC*, 938 F.3d 1324, 1330 (Fed. Cir. 2019). This requirement extends to a Petitioner’s theories as to why discretionary denial is not warranted, which likewise should be set forth in the Petition. In fact, the rules authorize a pre-institution reply only in circumstances where “good cause” exists, and a Petitioner lacks “good cause” to reply to arguments that the Petitioner should have anticipated would have been made by Patent Owner. 37 C.F.R. 42.108(c) (“A petitioner may seek leave to file a reply to the preliminary response in accordance with §§ 42.23 and 42.24(c). Any such request must make a showing of good cause”).

Moreover, even in cases where a Petitioner is granted an opportunity to file a pre-institution reply, the rules are clear that a Petitioner cannot pivot to a new theory in a reply, but instead “may only respond to arguments raised in the corresponding

opposition.” 37 C.F.R. 42.23(b); see e.g., *Juniper Networks, Inc. v. Swarm Technology, LLC*, IPR2021-01445, Paper 62 (P.T.A.B. 2023) (refusing to consider new theory presented for first time in a reply and citing statement in Trial Practice Guide that a “Petitioner may not submit new evidence or arguments in reply that it could have presented earlier”) (*citing*, Patent Trial and Appeal Board Consolidated Practice Guide 73 (Nov. 2019)). “Respond” in the context of 37 C.F.R. § 42.23(b), does not mean proceed in a new direction with a new approach as compared to the positions taken in a prior filing.” *Juniper Networks*, Paper 62, at 28. “While replies and sur-replies can help crystallize issues for decision, a reply or sur-reply that raises a new issue or belatedly presents evidence may not be considered.” *Id.*

As noted above, the issue of overlap was completely within Petitioner’s knowledge and control and, as a result, when Petitioner filed this IPR, Petitioner had every reason to foresee the overlap that Petitioner would create between this IPR and the Parallel Litigation. Nonetheless, Petitioner made the strategic decision to play games and characterize the extent of overlap as “speculative” in the Petition. Pet., 84. If the Petitioner attempts in its reply to pivot from its “speculative” argument in the Petition to a *Sotera* stipulation, Petitioner would be improperly proceeding “in a new direction with a new approach as compared to the positions taken in a prior filing.” *Juniper Networks*, Paper 62, at 28. Accordingly, to the extent Petitioner belatedly submits a *Sotera* stipulation with its reply, the stipulation should be

rejected as beyond the scope of a proper reply. Allowing a Petitioner who knows at the time of filing the Petition that there will be complete overlap in the prior art applied in both proceedings to hold back a *Sotera* stipulation in order “to wait and see” Patent Owner’s arguments before deciding whether to later commit to a *Sotera* stipulation in a reply would improperly “open the door to gamesmanship.” *NXP USA, Inc. v. Impinj, Inc.*, IPR2021-01556, Paper #13, at 4 (precedential).

For all of the above reasons, the fourth factor weighs against institution.

E. Factor 5 weighs against institution because the Patent Owner is the same and the Petitioner are the same parties as in the Parallel Litigation

Patent Owner and Petitioner are the same parties as in the Parallel Litigation.

Thus, the fifth factor weighs against institution.

F. Factor 6 weighs against institution because the merits of Petitioner’s challenge is weak

The challenges set forth in the Petition are flawed. For example, the Petitioner entirely neglects to construe the term “a mathematical tree structure” and instead relies solely on a conclusory and unsupported expert assertion that Huttenlocher’s Figure 4 satisfies this limitation. As discussed below, this reliance is misplaced, and the Petition lacks the required analysis necessary to support the grounds of unpatentability.

An IPR petition is required to include “[a] full statement of the reasons for relief requested, including a detailed explanation of the significance of the evidence

including material facts,” 37 C.F.R. § 42.22(a)(2), which must include a statement of “[h]ow the challenged claim is to be construed” and “[h]ow the construed claim is unpatentable,” id. § 42.104(b)(3)-(4). In the present case, Petitioner does not proffer an explanation for how “a mathematical tree structure” recited in the claims is to be construed so that it is met by the cited prior art.

Instead, Petitioner’s expert offers a conclusory statement that Figure 4 of Huttenlocher “is a mathematical tree structure because it includes the required features of a mathematical tree structure.” EX1003, ¶108. The expert further explains that “[s]pecifically, it is a multi-rooted tree where the subtree corresponding to each root includes nodes with defined relations represented by branches between nodes such that any two nodes **are connected by exactly one path consisting of a sequence of branches.**” EX1003, ¶108

However, Huttenlocher states:

Figure 4 shows this scale-space segment tree. **Each segment in the tree is indicated by its label from Figure 3,** and by the type of segment: straight, curve, and open-curve. EX1006, 17

As shown in Figure 4 of Huttenlocher, annotated below, one path consisting of a sequence of branches cannot be traversed between edge segments D3 and F1. So it is clear in Figure 4, there are multiple nodes that are not connected by a sequence of branches, which is contrary to Petitioner’s expert allegation.

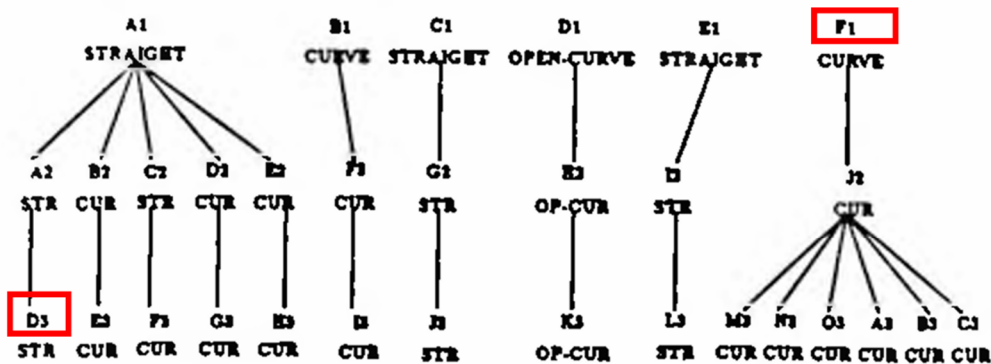


Figure 4. Multi-scale segmentation tree corresponding to the curvature scale-space segmentation in Figure 3.

EX1006, 18

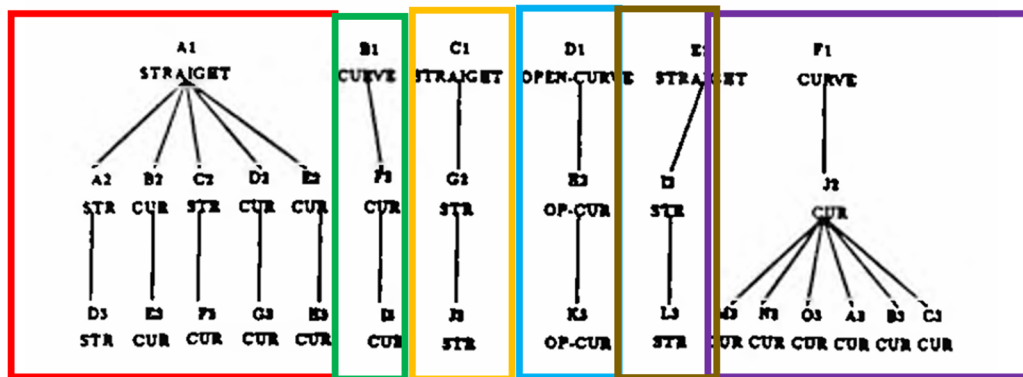
Petitioner’s expert further alleges that Figure 4 (above) shows that “The edge segments are stored in a hierarchical tree structure” and “the hierarchical segmentations “form a (multi-rooted) tree, where each region at a coarse scale corresponds to one or more regions at each finer scale. Ex. 1006, 373,” EX1003, ¶25. However, this interpretation of a hierarchical tree structure (i.e., “a mathematical tree structure”) is inapposite of the express language of the claims and contrary to the definition provided by Sedgewick (EX2006) that was cited in the ‘805 patent³.

Claim 1 of the ‘805 patent states:

performing an edge detection and edge segmentation on the image data so as to break down the image data into a plurality of edge segments and storing interrelationships of the plurality of edge segments in a mathematical tree structure;

³ See § III(A)(1) for discussion of Sedgewick in the ‘805 Patent.

Huttenlocher's multiscale segmentation cannot store "interrelationships" between the segments (e.g. F1 and D3) because there is no connection between the disjointed nodes in separate structures as shown in Patent Owner's annotation of Figure 4 below. Therefore, there is no known relationship between the disjointed segments (e.g. F1 and D3)



As a result, Huttenlocher's multiscale segmentation shown in Figure 4 cannot be "a mathematical tree structure" as recited in the claims because it does not store "interrelationships of the plurality of edge segments."

In addition, Petitioner's expert allegation that Huttenlocher's multiscale segmentation shown in Figure 4 is "a mathematical tree structure" is contrary the requirements for a tree structure as articulated by Sedgewick (EX2006). For example, Sedgewick states, "If there is more than one path between the root and some node, or if there is no path between the root and some node, then what we have is a graph (see Chapter 29), not a tree." EX2006, 51. Accordingly,

Huttenlocher’s multiscale segmentation shown in Figure 4 is a **graph** and **not a tree** because there are numerous nodes and roots for which there is no path.

Accordingly, Huttenlocher does not disclose “a mathematical tree structure” as required by the claims because its nodes are disjointed, and no continuous path can be traversed between certain nodes—such as between segments D3 and F1. This fundamental deficiency underscores Petitioner’s failure to satisfy the threshold requirements of 37 C.F.R. §§ 42.22(a)(2) and 42.104(b)(3)–(4), which mandate a complete and reasoned explanation of how each challenged claim should be construed and how, under that construction, it is rendered unpatentable. Petitioner provides neither. Instead, the Petition relies exclusively on a conclusory expert assertion that Figure 4 constitutes a mathematical tree structure—an assertion that is directly refuted by Huttenlocher’s own disclosure. As the annotated Figure 4 makes clear, the structure comprises disconnected nodes lacking any overarching hierarchy or common ancestry. This absence of connectivity disqualifies it from meeting the defining features of a tree structure, much less “a mathematical tree structure” as expressly required by the claims. Instead, this structure is a graph not a tree.

Petitioner’s failure to acknowledge or reconcile this contradiction, coupled with the absence of a proper claim construction, renders its unpatentability arguments incomplete, conclusory, and legally insufficient. The Petition must

therefore be denied for failure to comply with the applicable procedural and substantive requirements.

Thus, the sixth factor weighs against institution.

In summary, all of the *Fintiv* factors weigh against institution. Under §314(a) and, based on the totality of the *Fintiv* factors, institution should be denied.

III. ADDITIONAL FACTORS SET FORTH IN THE MEMORANDUM SUPPORT DISCRETIONARY DENIAL

In addition to the *Fintiv* factors that support a discretionary denial under 35 U.S.C. § 314(a), two further reasons set forth in the Memorandum support a discretionary denial of the Petition.

A. The Petition Relies Extensively on Expert Testimony

One of the relevant considerations for discretionary denial under 35 U.S.C. § 314(a), as identified in the Memorandum, is “[t]he extent of the petition’s reliance on expert testimony.” Memorandum, at 1. In this case, the Petition relies heavily on a 114-page expert declaration (EX1003) comprising 182 paragraphs—well beyond what is appropriate under the statutory framework governing inter partes review.

Specifically, under 35 U.S.C. § 311(b), “[a] petitioner in an inter partes review may request to cancel as unpatentable 1 or more claims of a patent only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications.”

Here, the Petition impermissibly relies on the declaration of its expert to fill gaps in the mappings that are not met by the references that are relied on. For example, Petitioner attempts to satisfy the claim limitations requiring a “mathematical tree structure” rests almost entirely on conclusory assertions by its expert, rather than on what Huttenlocher actually discloses.

The ‘805 Patent expressly incorporates the definition of a tree structure set forth in Sedgewick’s Algorithms in C (EX2006), which requires, among other things, a single unique path between the root and each node. (see EX1001, 4:45-51) Huttenlocher’s Figure 4 does not meet this definition and instead depicts a disconnected forest of segments without shared ancestry. Petitioner’s expert does not identify any portion of Huttenlocher that demonstrates compliance with the required tree structure or the storage of interrelationships among edge segments. Instead, the expert substitutes unsupported opinion in place of evidence, asserting that Figure 4 shows features it plainly does not. Such testimony cannot remedy the absence of disclosure in the prior art, and Petitioner’s reliance on it underscores the weakness of the petition.

- 1. Petitioner Improperly Relies on Conclusory Expert Testimony to Mischaracterize Huttenlocher’s Figure 4 as a Tree Structure Contrary to the Definition Incorporated into the ‘805 Patent.**

Petitioner’s assertion that Huttenlocher’s Figure 4 depicts a “mathematical tree structure” is both incorrect and legally insufficient. The Petition relies on a conclusory statement by Petitioner’s expert that fails to engage with the controlling definition of a tree structure incorporated into the ‘805 Patent. The ‘805 Patent expressly references Sedgewick’s textbook, which provides a clear and widely accepted definition of a tree structure—one that requires, among other properties, a single unique path between the root and each node. Huttenlocher’s Figure 4 does not satisfy this requirement and instead depicts a forest of disconnected nodes lacking a common ancestor. Petitioner’s attempt to equate this disconnected structure with the claimed hierarchical tree structure not only misapplies the cited art, but also improperly attempts to fill a critical gap in the disclosure through expert testimony that is inconsistent with the intrinsic record.

Specifically, Petitioner’s expert alleges that “Huttenlocher’s multi-scale segmentation tree, as reflected in Figure 4 above, is a mathematical tree structure because it includes the required features of a mathematical tree structure,” EX1003, ¶108. However, as the expert and the Petition recognize that the ‘805 patent states, “Many different proven methods for creating and organizing such a hierarchical tree structure are available to one skilled in the art[.]” (Petition at 42) (marking in original). However, the Petition and Petitioner’s expert both ignore the second part

of the sentence from the quotation. The quoted portion of the '805 Patent states in its entirety:

Many different proven methods for creating and organizing such a hierarchical tree structure are available to one skilled in the art; reference is made here exemplarily to the comprehensive compilation and discussion of widely varying tree structures by Robert Sedgewick (R. Sedgewick, *Algorithms in C*, Chapter 4, Addison-Wesley Pub. Comp. Inc., 1990). EX1001, 4:45-51

Accordingly, the tree structure recited in the '805 patent must be interpreted in the context of Sedgewick (EX2006). Sedgewick states that a tree is:

A *tree* is a nonempty collection of *vertices* and *edges* that satisfies certain requirements. A vertex is a simple object (also referred to as a *node*) that can have a name and can carry other associated information; an edge is a connection between two vertices. A *path* in a tree is a list of distinct vertices in which successive vertices are connected by edges in the tree. One node in the tree is designated as the *root*—the defining property of a tree is that there is exactly one path between the root and each of the other nodes in the tree. If there is more than one path between the root and some node, or if there is no path between the root and some node, then what we have is a graph (see Chapter 29), not a tree. Figure 4.1 shows an example of a tree.

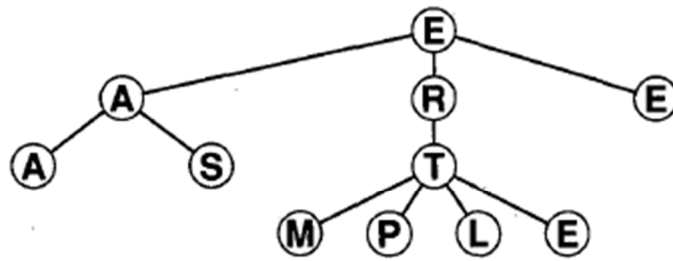
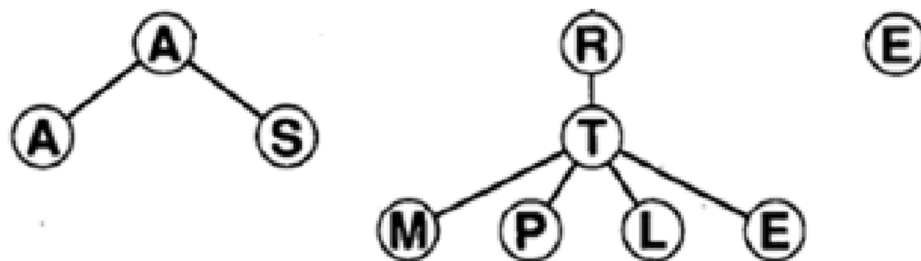


Figure 4.1 A sample tree.

EX2006, 51

Sedgewick distinguishes trees from forests. Specifically, Sedgewick states that “A set of trees is called a forest: for example, if we remove the root and the edges connecting it from the tree in Figure 4.1, we are left with a forest consisting of three trees rooted at A, R, and E.” EX2006, 51-52. Accordingly, as explained by Sedgewick and depicted in the Patent Owner’s annotated version of Figure 4.1, a forest is formed from disconnected trees.



A Sample Forest

Petitioner relies upon their expert to erroneously equate the forest shown in Huttenlocher's Figure 4 (reproduced below) and the tree structure required by the claims.

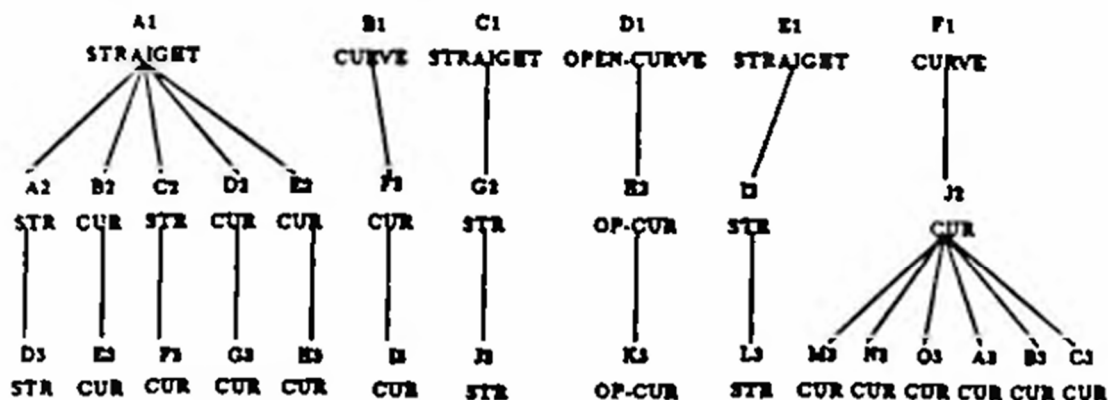


Figure 4. Multi-scale segmentation tree corresponding to the curvature scale-space segmentation in Figure 3.

EX1006, 18

The fact that Figure 4 is not a tree structure is demonstrated by the fact that Figure 4 violates the first property of tree structures. Sedgewick states:

Property 4.1 *There is exactly one path connecting any two nodes in a tree.*

Any two nodes have a *least common ancestor*: a node that is on the path from both nodes to the root, but with none of its children having the same property. For example, 0 is the least common ancestor of C and L in the tree of Figure 4.3. The least common ancestor must always exist because either the root is the least common ancestor, or both of the nodes are in the subtree rooted at one of the children of the root; in the latter case either that node is the least common ancestor, or both of

the nodes are in the subtree rooted at one of its children, etc. There is a path from each of the nodes to the least common ancestor-patching these two paths together gives a path connecting the two nodes.

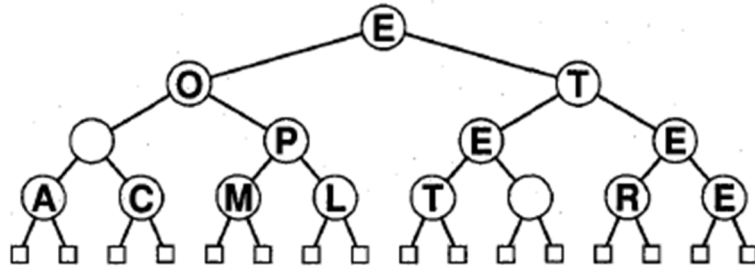
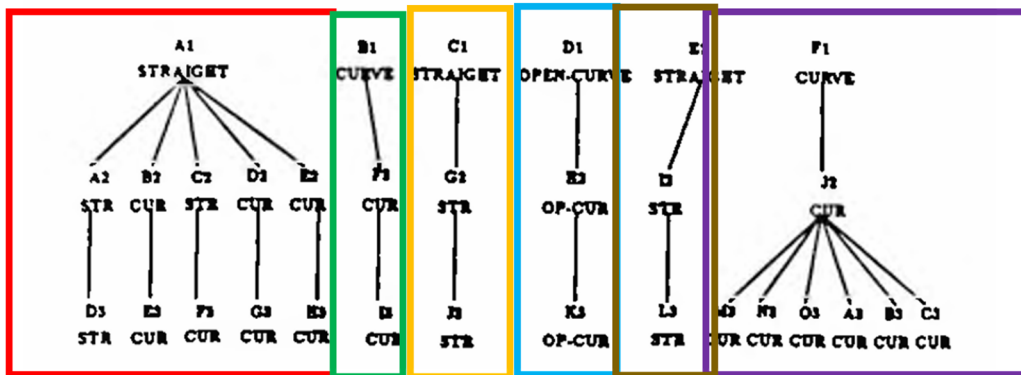


Figure 4.3 A complete binary tree.

EX2006, 53-54

Comparing Sedgewick's tree structure (above) to Huttenlocher's (annotated) forest makes the difference clear:



In Figure 4 of Huttenlocher, no path exists connecting any of A1, B1, C1, D1, E1, F1. Further, as shown in Huttenlocher, the majority of the nodes do not share a common ancestor. Therefore, as defined by Sedgewick, Huttenlocher's Figure 4 does not illustrate a tree structure.

In view of the foregoing, Petitioner’s reliance on Huttenlocher’s Figure 4 as disclosing a “tree structure” within the meaning of the claims is fundamentally flawed. The expert’s assertion that Huttenlocher depicts a mathematical tree structure is not only unsupported by the intrinsic record but directly contradicted by the authoritative definition set forth in Sedgewick, which is incorporated into the ‘805 Patent. As demonstrated, Huttenlocher’s Figure 4 fails to satisfy the essential defining characteristic of a tree—namely, that there exists *exactly one path* between the root and each node. The absence of such a structure in Huttenlocher’s figure, and Petitioner’s expert’s attempt to impermissibly bridge that gap with conclusory assertions, underscores the Petition’s failure to meet its burden of establishing that the cited reference teaches or suggests the claimed tree structure.

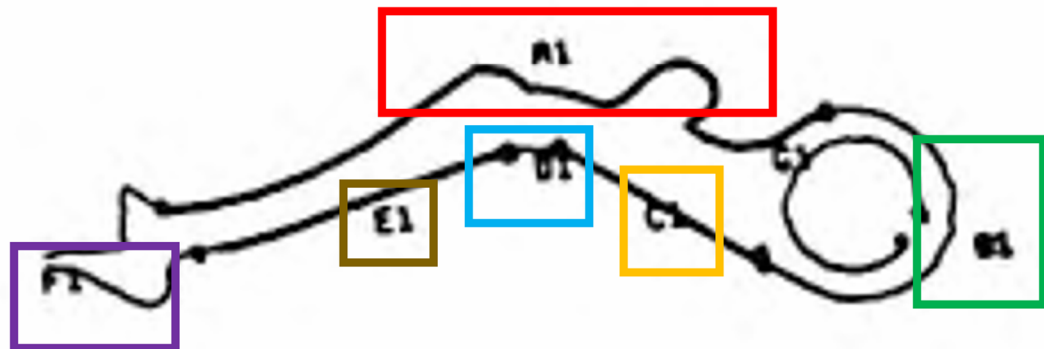
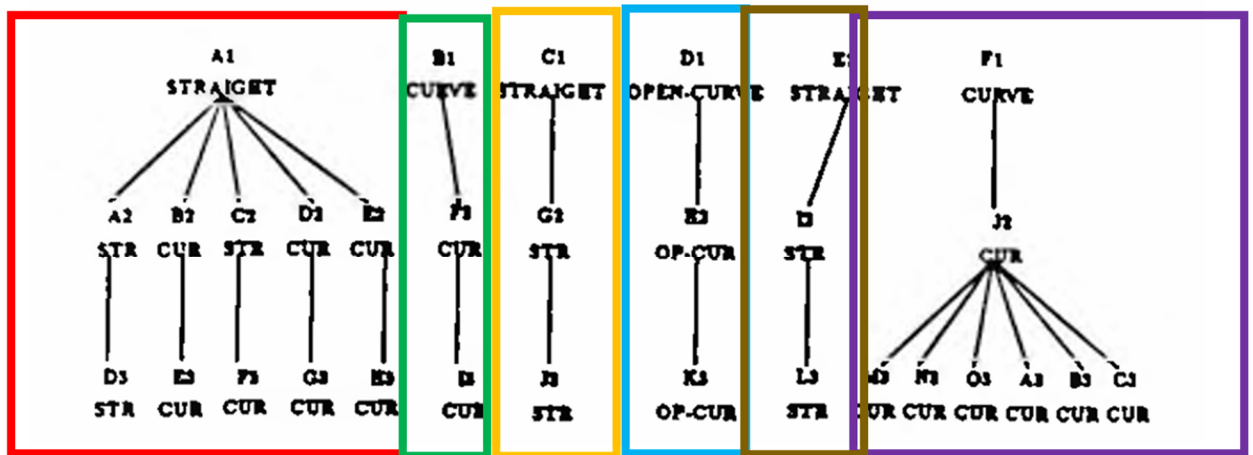
2. Petitioner Improperly Relies on Unsupported Expert Testimony to Supply Missing Disclosure Regarding Interrelationships of Edge Segments in a Tree Structure.

Petitioner’s assertion that Huttenlocher discloses the claimed limitation of storing interrelationships of edge segments in a mathematical tree structure is not supported by the reference itself. The ‘805 Patent expressly requires that edge detection and segmentation be performed “so as to break down the image data into a plurality of edge segments” and that the “interrelationships of the plurality of edge segments” be stored “in a mathematical tree structure.” Petitioner attempts to satisfy this limitation by relying on its expert’s statement that Huttenlocher’s Figure 4

reflects such interrelationships. However, this assertion mischaracterizes Huttenlocher and introduces elements that are neither disclosed nor suggested by the reference.

For example, Petitioner's expert alleges, "As shown, the tree of Fig. 4 stores the interrelationships of the plurality of edge segments based on granularity and relative position." EX1003, ¶68. This statement is false.

Huttenlocher states with regard to Figure 4 that "[e]ach segment in the tree is indicated by its label from Figure 3, and by the type of segment: straight, curve, and open-curve." EX1006, 17. As shown in Patent Owner's annotated combined version of Huttenlocher's Figures 3 (bottom) and Figure 4 (top), Figure 4 does not show the inter-relationships between the edge segments A1, B1, C1, D1, E1, and F1.



The Petitioner’s expert further states “[t]he edge segments are stored in a hierarchical tree structure.” EX1003, ¶43. However, as shown above, the edge segments **A1**, **B1**, **C1**, **D1**, **E1**, and **F1** are not stored in a hierarchical tree structure. Instead, **A1**, **B1**, **C1**, **D1**, **E1**, and **F1** are in a disjointed data structure where there is no hierarchy among **A1**, **B1**, **C1**, **D1**, **E1**, and **F1**.

Accordingly, Petitioner’s expert is not interpreting what Huttenlocher actually discloses, but is instead attempting to impermissibly supply missing claim elements

by asserting that Figure 4 depicts interrelationships among edge segments A1, B1, C1, D1, E1, and F1—despite the fact that no such interrelationships are shown.

As shown, these segments do not share a common ancestor, nor is there any connecting path between them. Petitioner has therefore failed to establish that Huttenlocher teaches the claimed requirement of storing interrelationships of edge segments in a mathematical tree structure. The reference itself does not disclose such interrelationships, and Petitioner’s expert fails to cite any supporting passage in the reference demonstrating otherwise. Rather, the expert’s assertion contradicts the plain content of Huttenlocher and represents an improper attempt to fill evidentiary gaps with conclusory statements.

Therefore, Petitioner’s reliance on expert testimony in an attempt to demonstrate that Huttenlocher discloses the claimed “mathematical tree structure” and corresponding interrelationships of edge segments is both improper and unpersuasive. The record makes clear that the Petition does not point to any actual disclosure in Huttenlocher that meets the limitations required by the claims. Instead, Petitioner substitutes unsupported expert opinion for evidence, relying on conclusory statements that are inconsistent with both the reference and the controlling definition of a tree structure expressly incorporated into the ‘805 Patent. Sedgewick’s authoritative definition requires a connected hierarchical arrangement in which each node has a unique path to a root—a condition that Huttenlocher’s

Figure 4, which depicts a disconnected forest of nodes with no shared ancestry, plainly fails to meet.

3. Petitioner’s Attempt to Rely on Expert Testimony to Supply Missing Claim Limitations Is Improper and Cannot Cure the Deficiencies in the Cited Prior Art.

The expert’s assertion that Figure 4 satisfies these structural requirements is not an interpretation of the reference, but an attempt to rewrite it. The expert fails to cite any textual support in Huttenlocher demonstrating that the edge segments are arranged in a manner consistent with the claimed hierarchical tree structure, nor does the expert address the fundamental disconnect between the graphical structure shown in Figure 4 and the definitional properties of a tree recited in Sedgewick. This is not a case of reasonable disagreement over interpretation—it is a clear example of attempting to supply missing disclosure through post hoc expert speculation, which is prohibited. As the Federal Circuit and the Board have repeatedly held, expert testimony that merely recites conclusory assertions without grounding in the reference cannot satisfy the burden of proving unpatentability.

The deficiencies in Petitioner’s approach are not minor or isolated—they go to the heart of the claim limitations at issue. Where the claims require a specific structural organization of data—in this case, a mathematical tree structure storing edge segment interrelationships—Petitioner must identify where and how that structure is disclosed in the prior art. Petitioner has failed to do so. Instead, it has

relied on expert opinion that mischaracterizes the disclosure of Huttenlocher and offers no substantive explanation grounded in the intrinsic record.

Given the extensive and improper use of expert testimony, the Petition fails to comply with statutory requirements and undermines the integrity of the IPR process. Accordingly, this factor further supports discretionary denial under 35 U.S.C. § 314(a) and the guidance of the Memorandum. The Director should exercise her discretion and deny institution.

B. The ‘805 Patent Has Been In Force Since 2008 And Petitioner Has Been Aware Of The ‘805 Patent Since At Least 2020

A further relevant consideration identified in the Memorandum was “[s]ettled expectations of the parties, such as the length of time the claims have been in force.” Memorandum, at 1. In this case, the claims of the ‘805 Patent have been in force for over 17 years, and the patent will expire before these proceedings conclude if institution is granted. Despite having been specifically alerted to the ‘805 Patent on August 20, 2020 (and provided with a copy of ‘805 Patent at that time), Petitioner waited more than four years to file this IPR challenging the ‘805 Patent. Under these circumstances, the Petitioner’s delay in filing this IPR is a further factor that favors discretionary denial.

Specifically, Patent Owner sent a letter to the Associate General Counsel of Petitioner on August 7, 2020 (hereinafter, “the Letter”), which is more than four

years ago. EX2005, at 1-4. The Letter was sent by email and contained several attachments, including a claim chart mapping a representative product to claim 1 of ‘805 Patent (at 8-1) (hereinafter “the Claim Chart”) and a copy of ‘805 Patent (at 11-20).

The Letter was addressed to Petitioner’s Associate General Counsel, and stated in part:

The following is a list of exemplary patents and exemplary infringing products. I am further attaching brief descriptions of the exemplary IV patents listed below in the form of patent infringement summaries. In addition to the attached patent overview summaries, I am attaching a copy of each patent for your convenience. EX2005, at 2.

The Letter included a list of patents which, as shown below, included the ‘805 Patent.

List of Exemplary Patents and Products:

U.S. Patent No.	Title	Inventor	Tesla Products
7,639,943	Computer-implemented system and method for automated image uploading and sharing from camera-enabled mobile devices	Kalajan, Kevin E	Models S, X, 3, Y
9,934,628	Video recorder	Kreiner, Barrett Morris et al.	Models S, X, 3, Y
7,810,140	System, method, and computer readable medium for processing a message in a transport	Lipari, Paul A et al.	Models S, X, 3, Y
9,866,632	Reusable multimodal application	Anderl, Ewald C.	Models S, X, 3, Y
7,484,008	Apparatus for vehicle internetworks	Gelvin, David C et al.	Models S, X, 3, Y
7,206,672	Vehicle data bus system	Mueller, Achim	Models S, X, 3, Y
7,336,805	Docking assistant	Gehring, Ottmar et al.	Models S, X, 3, Y

EX2005, at 3. The Letter also included the Claim Chart identifying how Petitioner infringed Claim 1 of the ‘805 Patent. EX2005, at 8-10.

In addition, the Claim Chart clearly identified that Tesla’s usage of its “auto lane change” function infringed claim 1 of the ‘805. (EX2005, at 9 “At least Claim 1 of US Patent 7,336,805 reads on Tesla -- Auto Lane Change.”) As noted above, Claim 1 is the only challenged independent claim in this IPR.

The Claim Chart further provided evidence that demonstrating Petitioner’s usage of its “Auto Lane Change” function (an example is shown below):



Source: <https://www.tesla.com/autopilot>

- **Auto Lane Change**: Assists in moving to an adjacent lane on the highway when Autosteer is engaged

Source: <https://www.tesla.com/support/autopilot>

EX2005, 10. Accordingly, on August 7, 2020, the Patent Owner notified Petitioner of the '805 Patent, provided Petitioner with evidence that Petitioner infringed claim 1 of the '805 Patent, and furnished Petitioner with a copy of the '805 Patent. Patent Owner and Petitioner subsequently discussed the content of the Letter.

Despite irrefutable evidence to the contrary, the Petition states:

Petitioner only learned which claims were being asserted in August 2024. See Ex.1014 (infringement contentions cover pleading). Since then, Petitioner has worked expeditiously to file this Petition within four months. Pet., at 84.

Petitioner's assertion that it only learned which claims were being asserted in August, 2024 is belied by the facts, which demonstrate that Petitioner was aware of at least the only independent claim challenged over four years prior in August, 2020. Despite having early and detailed notice, Petitioner waited more than four years to file the present Petition. The settled expectations of the parties, the length of time the claims were in force, and Petitioner's prolonged and unexplained delay all weigh strongly in favor of discretionary denial under 35 U.S.C. § 314(a) and the guidance set forth in the Memorandum.

C. The Director Should Deny Institution Under § 314(a) Due to Petitioner's Improper Reliance on Expert Testimony and Undue Delay in Filing.

Taken together, the Petition's excessive reliance on expert testimony and the Petitioner's prolonged, unjustified delay in filing this IPR weigh heavily in favor of discretionary denial under 35 U.S.C. § 314(a). The Petition improperly depends on a 114-page expert declaration to add elements missing from the prior art, in contravention of the statutory limitation under § 311(b), which restricts IPR challenges to patents or printed publications.

Additionally, the settled expectations of the parties and the timeline of events provide further grounds for denial. Petitioner was clearly notified in August 2020 that it was infringing Claim 1 of the ‘805 Patent—the very claim challenged here—and was provided with detailed claim charts, supporting evidence, and a copy of the patent itself. Petitioner engaged in discussions regarding the Letter, yet waited over four years to file this Petition. The Petitioner’s assertion that it acted expeditiously is directly contradicted by the record.

These facts reflect not only a misuse of the IPR process but also raise concerns about fairness, efficiency, and respect for the statutory framework. Accordingly, the Director should exercise her discretion under § 314(a) and the Memorandum to deny institution of this untimely and improperly supported Petition.

IV. CONCLUSION

Institution of inter partes review should be denied under 35 U.S.C. § 314(a) based on the totality of the circumstances presented in this case. All six *Fintiv* factors weigh against institution, including the advanced stage of the Parallel Litigation, the scheduled trial date occurring before the projected Final Written Decision, the parties’ substantial investment in the litigation, and the complete overlap of parties, issues, and prior art between the district court and this IPR. These factors raise serious concerns about duplicative proceedings, inefficiency, and the risk of conflicting outcomes.

In addition, the Petition suffers from two independent and compelling defects identified in the Memorandum. First, Petitioner improperly relies on a voluminous expert declaration to supply missing claim limitations—particularly with respect to the “mathematical tree structure” limitation—contrary to the statutory requirement that IPRs be based solely on patents or printed publications. This overreliance on expert testimony to fill gaps in the prior art violates the evidentiary boundaries established under 35 U.S.C. § 311(b) and undermines the integrity of the IPR process. Second, the Petitioner delayed over four years in bringing this IPR despite having received detailed infringement contentions, supporting evidence, and a copy of the ‘805 Patent back in August 2020. The Petitioner’s claim of only recent awareness is contradicted by the record, and the delay disrupts the settled expectations of the Patent Owner, particularly in light of the patent’s expiration.

Each of these issues independently supports discretionary denial. Considered together, they present a compelling case for the Director to exercise her discretion and deny institution of this untimely and inefficient Petition in accordance with § 314(a).

Respectfully submitted,

Dated: April 12, 2025

By: /Brandon R. Theiss/
Brandon R. Theiss
Registration No. 70,507

*Counsel for Patent Owner
Intellectual Ventures II LLC*

CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this **BRIEF IN SUPPORT OF PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL** complies with the type-volume limits set forth in the Memorandum and 37 C.F.R. § 42.24 because it contains 6,946 words, excluding the parts of the Brief that are exempted by 37 C.F.R. § 42.24(a), according to the word processing system used to prepare this Brief.

Respectfully submitted,

Dated: April 12, 2025

By: /Brandon R. Theiss/
Brandon R. Theiss
Registration No. 70,507

*Counsel for Patent Owner
Intellectual Ventures II LLC*

CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **BRIEF IN SUPPORT OF PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL** was served via email (as consented to by counsel) on April 12, 2025 to lead and backup counsel of record for Petitioner as follows:

Jonathan R. Bowser
jon.bowser.ipr@haynesboone.com
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201

Scott T. Jarratt
scott.jarratt.ipr@haynesboone.com
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201

Gregory P. Webb
greg.webb.ipr@haynesboone.com
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201

Matthew Beck
matthew.beck.ipr@haynesboone.com
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201

Michael McCarty
michael.mccarty@haynesboone.com
HAYNES AND BOONE, LLP
2801 N. Harwood Street, Suite 2300
Dallas, TX 75201

Ashraf Fawzy
afawzy@tesla.com
TESLA, INC.
1 Tesla Road
Austin, Texas 78725

Dated: April 12, 2025

By: /Brandon R. Theiss/
Brandon R. Theiss
Registration No. 70,507
Counsel for Patent Owner
Intellectual Ventures II LLC