

NOTE

SECTION 284 REFORM:
GUIDING THE FUTURE OF PATENT DAMAGES
METHODOLOGIES

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I. INTRODUCTION

In *VLSI Technology v. Intel*, the parties' damages calculations diverged dramatically. The plaintiff sought over \$3 billion in damages, whereas Intel contended that the infringed technology was only worth \$2 million.¹ The jury ultimately awarded \$2.1 billion over two patents.² On appeal, the Court of Appeals for the Federal Circuit (the "Federal Circuit"), which hears all patent case appeals, held that *VLSI's* damages calculation was unreliable because it incorporated noninfringing inputs and therefore should have been excluded under Rule 702 of the Federal Rules of Evidence ("Rule 702").³

Rule 702 tasks trial judges with gatekeeping responsibilities over expert witness testimony, requiring that such testimony is relevant and reliable.⁴ Rule 104(a) of the Federal Rules of Evidence ("Rule 104(a)") governs the court's responsibility to determine the admissibility of expert testimony as a preliminary matter before such testimony is presented to the jury.⁵ Patent damages are governed by 35 U.S.C. § 284 ("§ 284"), which mandates damages of reasonable royalties to adequately compensate for infringement, but provides no guidance on what renders a royalty calculation reliable.⁶ Although case law recognizes several accepted damages methodologies, the absence of consistent Federal Circuit guidance and discrete congressional direction has resulted in inconsistent application of case law factors and recurring appellate reversals.⁷

Recent Federal Circuit damages jurisprudence remains unsettled, as illustrated by the court's en banc decision in *EcoFactor, Inc. v. Google LLC*, which reversed-in-part a divided two-to-one panel decision that affirmed the trial court's admission of the patentee's damages evidence.⁸ Sitting en banc, the Federal Circuit reaffirmed the trial court's Rule 702 obligation to ensure expert testimony is

¹ See *VLSI Tech. LLC v. Intel Corp.*, 87 F.4th 1332, 1338–40 (Fed. Cir. 2023).

² See *id.* at 1338.

³ See *id.* at 1346–50; FED. R. EVID. 702.

⁴ See FED. R. EVID. 702.

⁵ See *id.* at 104(a).

⁶ See 35 U.S.C. § 284.

⁷ See William F. Lee & Mark A. Lemley, *The Broken Balance: How "Built-In Apportionment" and the Failure to Apply Daubert Have Distorted Patent Infringement Damages*, 37 HARV. J.L. & TECH. 256, 305–07 (2024).

⁸ See *EcoFactor, Inc. v. Google LLC*, 137 F.4th 1333, 1336–38 (Fed. Cir. 2025) (en banc) [hereinafter *EcoFactor II*].

reliable and tied to the facts of the case.⁹ The court emphasized that the underlying calculation must be supported by facts in the evidence, but declined to adopt categorical factors governing damages calculations.¹⁰ Although some guidance was provided to the particular method used, uncertainty regarding acceptable valuation methodologies and their associated factors persists.¹¹ Trial courts are still tasked with relying on an ever-developing patent damages doctrine.¹² The en banc reversal-in-part of the panel judge opinion indicates further uncertainty within the Federal Circuit.¹³

In *VLSI*, the disparity in plaintiff and defendant damages calculations illustrates the wide range of calculation methodologies that can be presented to jurors during trial.¹⁴ The Federal Circuit's remand, based on the inclusion of noninfringing inputs, underscores the need for more discrete guidance to assist trial courts in evaluating the reliability of damages evidence before it reaches the jury.¹⁵ This Note does not contend that stronger guidance would eliminate disagreements between opposing damages experts, but rather that it may reduce the risk that unsound methodologies would influence jury awards through anchoring effects. Although cross-examination permits challenges to expert testimony, unreliable damages evidence may nonetheless prejudice jurors and result in inflated or deflated awards.¹⁶ Additionally, upon successful appeal to the Federal Circuit, unsound damages calculations findings often result in damages retrials because inconsistent trial court gatekeeping limited Federal Circuit analysis.¹⁷ These retrials risk disrupting judicial efficiency¹⁸ and increasing

⁹ See *id.* at 1339–41; FED. R. EVID. 702.

¹⁰ See *EcoFactor II*, 137 F.4th at 1340–42.

¹¹ See *id.* at 1340–41.

¹² See *id.* at 1339–41.

¹³ See *id.* at 1336–38.

¹⁴ See *VLSI Tech.*, 87 F.4th at 1336–38.

¹⁵ See *id.* at 1345–47.

¹⁶ See *id.* at 1343–45; *EcoFactor II*, 137 F.4th at 1346–47.

¹⁷ See Lee & Lemley, *supra* note 7, at 319–21.

¹⁸ See WILLIAM C. ROOKLIDGE ET AL., FED. JUD. CTR., COMPENSATORY DAMAGES ISSUES IN PATENT INFRINGEMENT CASES 58 (2nd ed. 2017) (highlighting the burden and resource demand of the discovery phase of damages trials).

litigation costs.¹⁹ These consequences demonstrate why codifying § 284 with clearer standards and factors could improve gatekeeping application and consistency resulting in reduced retrials.²⁰

Were Congress to codify calculation requirements under § 284, trial courts may be better aligned to consistently evaluate the admissibility of expert testimony. While past judicial reforms, such as the Supreme Court's decision in *Daubert v. Merrell Dow Pharmaceuticals*, took years to be uniformly applied, statutory codification would provide trial court judges with a clearer framework to apply from the outset.²¹ Similar to patent validity, which benefited from clearer legal frameworks governing novelty, nonobviousness, and disclosure, patent damages calculations, which remain highly discretionary due to complex economic, technological, and business considerations, would likely also benefit from clearer statutory guidance.²² Further, patent cases are some of the most complex and resource-demanding cases for courts and judges, requiring time-consuming in-depth analysis.²³

This Note proposes a targeted reform to 35 U.S.C. § 284, codifying three principally recognized patent damages calculations methodologies by the Federal Circuit: reasonable royalties, lost profits, and established royalty, alongside a non-exhaustive list of admissibility factors that still provide flexibility in overall analysis. This codification would help create a more uniform and predictable foundation for judicial decision-making, improving gatekeeping consistency under Rule 702 and ultimately restoring confidence in patent damages as a fair and reliable remedy.

II. BACKGROUND

U.S. patent law is rooted in the U.S. Constitution's Intellectual Property Clause, which authorizes Congress to grant limited exclusion rights to promote

¹⁹ See *id.* at 102 (2nd ed. 2017) (citing the difficult and expensive nature of an isolated patent damages trial); *VLSI Tech.*, 87 F.4th at 1349 (remanding in part for new damages trial).

²⁰ See *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993); John M. Golden, *Judicial Policing of Patent Damages Experts*, 98 TEX. L. REV. 1307, 1314–16 (2020).

²¹ See generally *Daubert*, 509 U.S. 579; Golden, *supra* note 20, at 1314–16.

²² See 35 U.S.C. §§ 102, 103, 112; *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406–07 (2007).

²³ See Jonathan H. Ashtor, *Opening Pandora's Box: Analyzing the Complexity of U.S. Patent Litigation*, 18 YALE J.L. & TECH. 217, 255 (2016).

technological progress.²⁴ Congress first implemented this authority in the Patent Act of 1790, followed by updates to the U.S. patent system to reflect changing innovation incentives and technological complexity.²⁵ Today's modern patent law, codified in Title 35 and most recently overhauled by the 2011 America Invents Act, sets the stage for damages reform that this Note argues.²⁶ This section introduces core patent law doctrines and patent litigation developments which are necessary to evaluate in order to assess the current reliability of patent damages calculations under § 284, and ultimately suggest reform.²⁷

A. INCENTIVIZING INNOVATION WITH MONETARY DAMAGES

The U.S. Constitution incentivizes inventors by granting Congress the power to provide to inventors “the exclusive Right to their respective Writings and Discoveries” for a limited time, thereby establishing the U.S. patent system.²⁸ This system allows patentees to have control over their inventions, which in turn incentivizes investment into research and development of new and improved technologies.²⁹ This right to control is enforced primarily by trial-awarded damages.³⁰ § 284, which governs patent cases' damages, enhances development incentives by allowing patentees to recover monetary damages when their patents are infringed, compensating the patent holder for unauthorized use.³¹

§ 284 currently states that at least a reasonable royalty rate shall be awarded to the patent holder, however it does not provide details on the calculation methodologies or key factors in determining these awards.³² As technology has advanced and products have become increasingly complex and multicomponent, this statutory silence has made patent damages calculations

²⁴ See U.S. CONST. art. I, § 8, cl. 8.

²⁵ See Patent Act of 1790, ch. 7, 1 Stat. 109 (1790); *see also* Patent Act of 1793, ch. 11, 1 Stat. 318 (1793); Patent Act of 1836, ch. 357, 5 Stat. 137 (1836).

²⁶ See Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011); *see generally* 35 U.S.C.

²⁷ *See generally* 35 U.S.C. § 284; Fed. R. Evid. 702; *Daubert*, 509 U.S.

²⁸ See U.S. CONST. art. I, § 8, cl. 8.

²⁹ *See Graham*, 383 U.S. at 9.

³⁰ *See eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 393–94 (2006) (limiting standard patent relief to damages awards by rejecting the presumption of automatic injunctive relief in patent cases).

³¹ *See* 35 U.S.C. § 284.

³² *See id.*

more difficult.³³ Although § 284's open-ended nature provides for flexibility, it has contributed to inconsistent application when evaluating the reliability of expert witness damages testimony.³⁴

In contrast, patent validity doctrines illustrate how Congress has successfully structured statutory refinement supplemented by judicial interpretation to address other complexities of patent litigation.³⁵ 35 U.S.C. §§ 102, 103, and 112 establish defined criteria for novelty, nonobviousness, and disclosure, while Supreme Court and Federal Circuit precedent have articulated factor-based tests that guide consistent application without eliminating judicial discretion.³⁶ By contrast, § 284 provides no comparable statutory framework for evaluating the reliability of damages methodologies, leaving courts to rely almost exclusively on case-by-case development.³⁷

Moving back to the development of patent damages precedent, apportionment has been a foundational requirement of patent damages calculations since the 1884 Supreme Court decision in *Garretson v. Clark*, which held that patentees must separate the value of the patented feature from unpatented components when seeking damages.³⁸ In the modern era, courts rely on judicial frameworks, such as the *Georgia-Pacific* factors, to calculate apportionment and to evaluate damages calculations.³⁹ However, the application

³³ See Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2006 (2007) (discussing the challenges of apportioning value in multi-component products).

³⁴ See *id.*; *VLSI Tech.*, 87 F.4th at 1345–47; *EcoFactor II*, 137 F.4th at 1339–42.

³⁵ See *Oil States Energy Servs., LLC v. Greene's Energy Grp., LLC*, 584 U.S. 325, 332–34 (2018); *Cuozzo Speed Techs., LLC v. Lee*, 579 U.S. 261, 275–77 (2016).

³⁶ 35 U.S.C. §§ 102, 103, 112 (as amended by the Leahy–Smith America Invents Act, Pub. L. No. 112–29, §§ 3–4, 125 Stat. 284, 285–93 (2011)) (codifying and refining judicially developed novelty and nonobviousness principles); *KSR*, 550 U.S. at 415–19 (pre–AIA nonobviousness framework later incorporated into AIA practice); *Graham*, 383 U.S. at 17–18 (1966); *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1347–51 (Fed. Cir. 2010) (en banc) (written description doctrine applied post–AIA).

³⁷ See 35 U.S.C. § 284; *EcoFactor II*, 137 F.4th at 1338–40; *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1315–18 (Fed. Cir. 2011).

³⁸ See *Garretson v. Clark*, 111 U.S. 120, 121 (1884).

³⁹ See *Georgia-Pac. Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970) (outlining a 15–factor test for reasonable royalty calculations).

of these frameworks has been inconsistent, leading to unpredictable damages awards and uncertainty for patent litigants.⁴⁰

This inconsistency in patent damages litigation undermines the incentives that the patent system is designed to promote. Unpredictable outcomes and frequent reversals make it difficult for patentees, accused infringers, and investors to assess litigation risk or to make informed decisions regarding licensing, settlement, and research and development.⁴¹ The Federal Circuit's recent *EcoFactor* cases illustrate this instability.⁴² During the initial three-judge panel, Judge Prost wrote an impactful dissent criticizing the majority for departing from established damages precedent:

"In recent years, our court has made some progress in clarifying important questions related to damages for patent infringement. Such clarifications relate to deriving a reasonable royalty from a lump-sum license and requiring the patentee to confine its damages to the value of the patented technology. Unfortunately, the majority opinion here at best muddles our precedent and at worst contradicts it."⁴³

Although the en banc court ultimately agreed that Rule 702 must be grounded in record evidence and reliably tied to the value of the patented invention, it declined to adopt categorical guidance on apportionment or the use of comparable licenses.⁴⁴ The en banc majority, vacated panel majority, and dissents from both cases illustrate a lack of consensus within the Federal Circuit.⁴⁵ This lack of internal agreement leaves district courts with limited, and even conflicting guidance, on how rigorously to police patent damages at the

⁴⁰ See *Uniloc USA*, 632 F.3d at 1315 (rejecting an outdated 25% rule as not economically justified, highlighting the need for statutory guidance on allowable methodologies).

⁴¹ See *Lee & Lemley*, *supra* note 7, at 267–70.

⁴² See *EcoFactor, Inc. v. Google LLC*, 104 F.4th 243, 243 (Fed. Cir. 2024), *vacated*, 137 F.4th 1347, 1347 (Fed. Cir. 2024) (en banc) [hereinafter *EcoFactor I*].

⁴³ See *EcoFactor I*, 104 F.4th at 257 (Prost, C.J., dissenting).

⁴⁴ See *EcoFactor II*, 137 F.4th at 1340–47 (en banc review means hearing or rehearing the case by all active judges of the court, rather than the usual three-judge panel).

⁴⁵ See *id.* at 1347–48, 1355–58; *EcoFactor I*, 104 F.4th at 243.

admissibility stage, increasing the likelihood of inconsistent rulings and appellate reversals.⁴⁶

B. THE ROLE OF EXPERT TESTIMONY IN PATENT INFRINGEMENT DAMAGES

Expert damages testimony plays a necessary role in patent litigation by presenting calculation rationales to jurors. Yet district courts are left without clear statutory direction on how to evaluate the sufficiency of such testimony.⁴⁷ Unlike other areas of law where accepted methodologies are codified or widely standardized (e.g., sentencing guidelines, antitrust market definition tests), patent damages remain governed by open-ended statutory text supplemented only by common law interpretations.⁴⁸ As a result, the admissibility threshold for expert opinions varies between courts and even among judges within the same district.⁴⁹

Patent cases often involve complex technologies where patent infringement claims are localized to one technology that sits inside layers of other, non-infringement alleged, technologies.⁵⁰ These layers of technology make determining the apportioned value of the specific technology in question difficult with respect to the price or cost of the device as a whole.⁵¹ Different methodologies can be argued by both plaintiffs and defendants to determine potential damages.⁵²

⁴⁶ See *Kove IO, Inc. v. Amazon Web Servs.*, 745 F. Supp. 3d 685, 714 (N.D. Ill. 2024) (citing *EcoFactor I*, 104 F.4th at 254, and *Exmark Mfg. Co. v. Briggs & Stratton Power Prods. Grp., LLC*, 879 F.3d 1332, 1349 (Fed. Cir. 2018), for the principle that damages assessment falls somewhere between “absolute precision” and amounts “plucked . . . out of nowhere”).

⁴⁷ See *EcoFactor I*, 104 F.4th at 263–66 (explaining the critical role expert testimony plays in patent damages and how the lack of statutory structure fosters inconsistency).

⁴⁸ See *Golden*, *supra* note 20, at 1312–13 (noting that unlike areas like antitrust or sentencing, patent damages lack codified methodological standards, contributing to variability in *Daubert* rulings).

⁴⁹ See *id.*

⁵⁰ See *Lemley & Shapiro*, *supra* note 33, at 1994 (arguing the difficulty in calculating the value in “only a small component of a much larger product . . .”).

⁵¹ See *id.*

⁵² See *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1324–25 (Fed. Cir. 2009) (describing various damages methodologies including lost profits and reasonable royalty approaches).

Although damages may only be awarded if liability is found, damages testimony is conducted during the trial.⁵³ The potential for expert witness testimony to influence the jury despite occurring prior to any finding of liability further highlights the need for sufficient gatekeeping pretrial.⁵⁴

Damages experts assist jurors in understanding the methodology underlying a proposed damages calculation.⁵⁵ Plaintiffs generally attempt to present calculations with higher royalty rates and vice versa for defendants.⁵⁶ Variations in party calculations can come from similar methodologies that use different input parameters, or entirely different methodologies.⁵⁷ The testimony and cross-examination of these witnesses allow the jury to assess the credibility of the proposed damages in determining any appropriate final award.⁵⁸ In order to ensure that jurors are not prejudicially impacted by unreliable expert witnesses, the trial court district judge is tasked as the gatekeeper in determining if expert testimony is reliable and relevant enough for the expert to present their testimony to jurors.⁵⁹ The reliability standards are discussed later in this Note.

⁵³ See WILLIAM C. ROOKLIDGE ET AL., *supra* note 18, at 99 (noting that damages testimony is typically presented at trial even though damages are contingent upon a liability finding).

⁵⁴ See *Daubert*, 509 U.S. at 589 (establishing the trial judge's role as a gatekeeper to ensure expert testimony is reliable before it reaches the jury).

⁵⁵ See WILLIAM C. ROOKLIDGE ET AL., *supra* note 18, at 78 (explaining the role of expert witnesses in presenting damages calculations and methodologies to jurors).

⁵⁶ See *Uniloc*, 632 F.3d 1292, 1315 (noting that plaintiffs tend to present damages calculations that favor a higher reasonable royalty, while defendants argue for lower figures).

⁵⁷ See *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1226–32 (Fed. Cir. 2014) (addressing competing hypothetical negotiation analysis based on Georgia Pacific factors where differing royalty bases, comparable licenses, and apportionment assumptions resulted substantially divergent proposed awards); *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1545–50 (Fed. Cir. 1995) (contrasting plausible reasonable royalty and lost profits damages theories). These damages theories and input factors are discussed in part C of the Background section.

⁵⁸ See *Daubert*, 509 U.S. at 596 (holding that cross-examination is a critical tool for assessing the credibility of expert testimony presented to the jury).

⁵⁹ See *id.* at 589 (establishing the trial judge's role as a “gatekeeper” in determining whether expert testimony is admissible under Federal Rule of Evidence 702).

Appellate reversals of patent damages typically arise from some mix of the following three buckets: misapplication of royalty calculations under § 284 (discussed above),⁶⁰ improper admission of expert testimony under Rule 702,⁶¹ and gatekeeping judge procedural errors under Rule 104(a).⁶² Rule 702 governs the admissibility of expert witness testimony, and requires that the witness and testimony meet four key criteria: (a) is qualified by relevant specialized knowledge with testimony that will assist the jury, (b) be based on sufficient facts or data, (c) be the product of reliable principles and methods, and (d) the principles and methods must be reliably tied to the facts of the case.⁶³ When a party challenges the admissibility of an expert witness under Rule 702,⁶⁴ the judge applies Rule 104(a) to determine whether the testimony is admissible.⁶⁵ At its core, this category of reversal stems from trial court judges serving as inconsistent gatekeepers when determining whether to admit or exclude expert witness testimony during trial.⁶⁶ In *EcoFactor*, the damages expert's testimony was improperly admitted (a Rule 104(a) gatekeeping failure) because the testimony rested on insufficient facts and data (Rule 702(b) issue).⁶⁷ Specifically, the expert's premise that prior licensees had agreed to a specific per-unit royalty rate was not supported by the license language itself, which in turn produced an unreliable § 284 royalty calculation.⁶⁸ Inconsistent gatekeeping of this kind can undermine the court's credibility, fairness, and efficiency, and may shift increased litigation costs to consumers.⁶⁹

⁶⁰ See 35 U.S.C. § 284.

⁶¹ See FED. R. EVID. 702.

⁶² See *id.* at 104(a).

⁶³ See *id.* at 702.

⁶⁴ See *id.*

⁶⁵ See *id.* at 104(a).

⁶⁶ See Lee & Lemley, *supra* note 7, at 264 (citing improper gatekeeping of *Daubert* motion application which undermined the court procedure process).

⁶⁷ See *EcoFactor II*, 137 F.4th at 1345–48.

⁶⁸ See *id.*

⁶⁹ See Lee & Lemley, *supra* note 7, at 258 (discussing that a disrupted balance in patent damages from admission of inflated expert witness testimony has passed litigation costs along to consumers); *Apple Inc. v. Wi-Lan Inc.*, 25 F.4th 960, 974–75 (Fed. Cir. 2022) (indicating this appeal was the second appeal on damages, indicating the remand for an additional damages trial would be the third, which follows that multiple damages trials due to insufficient

Under *Daubert*, which has been since codified under Rule 702, the trial judge must analyze expert damages testimony for reliability and relevance before it reaches the jury.⁷⁰ Arguably inadmissible testimony that reaches jurors has the ability to confuse jurors, who are generally not economists or finance experts, into finding for inflated damages that are vulnerable to reversal or remand on appeal.⁷¹

C. CALCULATION METHODOLOGIES

Patent damages calculations are essential to patent enforcement and to fulfilling the purpose of § 284, which statutorily requires that patentees receive compensation “adequate to compensate for the infringement.”⁷² Although § 284 acknowledges that patentees should be compensated by no less than reasonable royalties, it does not define the calculation methods by which such damages should be determined.⁷³ Courts have filled that gap through precedent, developing three primary damages methodologies: reasonable royalty, lost profits, and established royalty.⁷⁴ Each method has been shown through case law to appropriately serve different factual scenarios,⁷⁵ but all three have also been subject to inconsistent application at the district court level,⁷⁶ leading to frequent reversals and remands by the Federal Circuit.⁷⁷

gatekeeping would increase litigation costs given the high expense of damages trials previously noted).

⁷⁰ See Lee & Lemley, *supra* note 7, at 308.

⁷¹ See *id.* at 306.

⁷² See 35 U.S.C. § 284.

⁷³ See *id.*

⁷⁴ See WILLIAM C. ROOKLIDGE ET AL., *supra* note 18, at 2–12.

⁷⁵ See *id.*

⁷⁶ See *Versata Software, Inc. v. SAP America, Inc.*, 717 F.3d 1255, 1264 (Fed. Cir. 2013) (reversing in part due to concerns over the district court’s handling of lost profits evidence and the expert’s market reconstruction under Panduit); *LaserDynamics, Inc. v. Quanta Comput., Inc.*, 694 F.3d 51, 68–70 (Fed. Cir. 2012) (reversing \$52.1 million reasonable royalty award due to improper reliance on a non-comparable license and failure to apportion); *Lucent Techs.*, 580 F.3d at 1324 (vacating an established royalty damages award where the district court admitted weak licensing evidence and failed to require proof of consistency and market acceptance).

⁷⁷ See Lee & Lemley, *supra* note 7, at 305–07 (noting widespread failures of district courts to rigorously apply *Daubert* and Rule 702, leading to excessive or unreliable damages awards); Golden, *supra* note 20, at 1309–10 (discussing

Under Rule 702,⁷⁸ which codified the Supreme Court's decision in *Daubert*, expert testimony must present reliable methodologies and be properly grounded in the facts of the case.⁷⁹ In patent cases, this requires expert damages opinions to be economically grounded and consistent with Federal Circuit-approved methods.⁸⁰ District courts, however, vary in how they apply these standards, producing uncertainty in damages outcomes.⁸¹ The following sections examine the three damages methodologies, focusing on their doctrinal foundations and sources of inconsistency that have emerged in their application.

1. Reasonable Royalty

The most commonly applied and most litigated patent damages calculation methodology is the reasonable royalty.⁸² This framework centers on a hypothetical negotiation between the two parties prior to infringement.⁸³ Courts generally use the fifteen *Georgia-Pacific* factors to guide this analysis by considering comparable licenses, the nature and scope of the license, the commercial relationship between the parties, the technological importance of the invention, and the portion of profit attributable to the patented feature, among other variables.⁸⁴

Despite its use, the reasonable royalty method is also the most vulnerable to inconsistency.⁸⁵ In the 2011 case, *Uniloc USA, Inc. v. Microsoft Corp.*, the Federal Circuit rejected the long-used "25% rule of thumb," holding that damages must be economically grounded in order to satisfy Rule 702.⁸⁶ Since *Uniloc*, courts have

how the Federal Circuit has repeatedly overturned district court damages decisions due to insufficient judicial gatekeeping under *Daubert*).

⁷⁸ See FED. R. EVID. 702.

⁷⁹ See *Daubert*, 509 U.S. at 592–93; *Id.* at 702.

⁸⁰ See *Uniloc USA*, 632 F.3d at 1315; *LaserDynamics*, 694 F.3d at 68–70.

⁸¹ See *VLSI Tech.*, 87 F.4th at 1335–47.

⁸² See *Lucent Techs.*, 580 F.3d at 1324.

⁸³ See *id.*

⁸⁴ See *Georgia-Pac. Corp.*, 318 F. Supp. at 1120; *Ericsson*, 773 F.3d at 1226–27.

⁸⁵ See *Golden*, *supra* note 20, at 1322 (noting that the 25% rule, which awarded 25% of profits of the accused product, regardless of actual apportionment).

⁸⁶ See *Uniloc USA*, 632 F.3d at 1315.

emphasized the need for active gatekeeping to exclude speculative damages theories, particularly those relying on apportionment or comparable licenses.⁸⁷

EcoFactor illustrates the continued instability in this area.⁸⁸ Sitting en banc, the Federal Circuit reaffirmed that Rule 702 requires trial courts to ensure that reasonable royalty testimony is reliably connected to the economic value of the patented invention as practiced in the accused products.⁸⁹ At the same time, the court declined to adopt standards governing the use of comparable licenses and instead preserved trial court discretion.⁹⁰ *EcoFactor* clarified the importance of substantiating comparisons with factual support, however it left unanswered how rigorously courts must evaluate comparability and apportionment, perpetuating uncertainty in a highly utilized methodology.⁹¹ Codifying reasonable royalty within § 284, while explicitly listing relevant admissibility factors such as apportionment, comparability, and economic grounding, would help standardize trial court practices and ensure that expert opinions meet minimum reliability standards.⁹²

2. Lost Profits

Lost profits are intended to place the patentee in the economic position it would have been in, “but for” the infringement.⁹³ The leading framework is the *Panduit* test, which requires showing: (1) demand for the patented product, (2) absence of acceptable noninfringing alternatives, (3) manufacturing and marketing capacity to meet demand, and (4) the amount of profit that would have been made.⁹⁴ The Federal Circuit has affirmed these factors in numerous cases, including in *Rite-Hite Corp. v. Kelley Co.*⁹⁵

In *Versata Software, Inc. v. SAP America, Inc.*, the Federal Circuit held that expert testimony justifying a lost profits award was appropriately tied to lost

⁸⁷ See Lee & Lemley, *supra* note 7, at 269.

⁸⁸ See generally, *EcoFactor II*, 137 F.4th at 1333–59.

⁸⁹ See *id.* at 1340–41.

⁹⁰ See *id.* at 1341.

⁹¹ See *id.* at 1343.

⁹² See Lee & Lemley, *supra* note 7, at 305–07.

⁹³ See *Rite-Hite*, 56 F.3d at 1545.

⁹⁴ See *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156 (6th Cir. 1978).

⁹⁵ See *Rite-Hite*, 56 F.3d at 1545–46.

sales.⁹⁶ The expert used historical sales data and future projections to estimate what Versata would have earned absent SAP infringement.⁹⁷ The court found that the factual data provided by the testimony supported the *Panduit* framework and passed Rule 702 scrutiny.⁹⁸ *Sunoco Partners Marketing & Terminals L.P. v. Powder Springs Logistics, LLC* reflects the same doctrinal stability as *Versata*.⁹⁹ *Sunoco* confirms that the Federal Circuit's apportionment requirement, settled long before *Versata*, remains undisturbed.¹⁰⁰ There, Sunoco's expert witness attempted to relitigate the same unapportioned methodology that failed against a different defendant in a different district court.¹⁰¹ The Federal Circuit affirmed the district court's exclusion of the expert's opinion, holding that it failed *Panduit* factors one and four.¹⁰² For factor one, the expert measured demand for Sunoco's Butane Supply Agreements ("BSAs") as a whole, which bundled the patented butane-gasoline blending system with unpatented services, rather than isolating demand for the patented invention alone as required.¹⁰³ Factor four failed for the same reason as factor one: the expert calculated profit-per-gallon figures using the full, apportioned profit-share from the BSAs, rather than the profit attributable to the patented invention alone, thereby overstating Sunoco's lost profits.¹⁰⁴

Alternatively, the following two cases illustrate recent district court confusion in the application of *Panduit*. In *Wash World Inc. v. Belanger Inc.*, the Federal Circuit held that there was insufficient evidence to support a lost profits calculation based on convoyed sales, and that the district court should have granted the defendant's request for partial remittitur of the award.¹⁰⁵ Under *Rite-Hite*, to prove lost profits based on convoyed sales, the patentee must prove that the unpatented product and the patented product function together to form a

⁹⁶ See *Versata Software*, 717 F.3d at 1264–66.

⁹⁷ See *id.* at 1266–67.

⁹⁸ See *id.* at 1264.

⁹⁹ See *Sunoco Partners Marketing & Terminals L.P. v. Powder Springs Logistics, LLC*, No. 2023-1218, 2026 WL 122544, at *18 (Fed. Cir. Jan. 16, 2026) (citing the plaintiffs improper comparison to *Versata*, and reaffirming that Versata had appropriately isolated the patented value from the noninfringing value).

¹⁰⁰ See *id.* at *18.

¹⁰¹ See *id.* at *17.

¹⁰² See *id.* at *19.

¹⁰³ See *id.*

¹⁰⁴ See *id.* at *18.

¹⁰⁵ See *Wash World Inc. v. Belanger Inc.*, 131 F.4th 1360, 1364 (Fed. Cir. 2025).

single assembly or functional unit.¹⁰⁶ In *Wash World*, Belanger failed to present sufficient evidence showing that the unpatented car wash dryers shared a functional relationship with the patented spray arm system, rather than being included merely as an additional feature for customer convenience.¹⁰⁷ In *Inventist Inc. v. Ninebot Inc.*, the Federal Circuit found that the district court erred by failing to instruct the jury on *Panduit* factor two and by applying the wrong legal standard in excluding evidence that the jury may have found sufficient to defeat the lost profits award.¹⁰⁸ Factor two, the absence of acceptable noninfringing alternatives, requires the patentee to show that no other product on the market could have satisfied the customers demand without infringement.¹⁰⁹ Ninebot attempted to introduce evidence that an alternative unicycle design, not yet on the market, was a plausible noninfringing substitute.¹¹⁰ Federal Circuit precedent under *Grain Processing v. American Maize-Products Co.* has long held that a noninfringing substitute need not be on the market to defeat lost profits.¹¹¹ The district court nonetheless excluded this evidence solely because the product was not yet on sale during the infringement period.¹¹² The Federal Circuit therefore vacated the lost profits award and remanded for a new damages trial.¹¹³

Codification of lost profits would not resolve genuine doctrinal uncertainty within the Federal Circuit, since none exists there. Its value lies instead in providing trial courts and juries with a clear, accessible benchmark. Together, *Versata* and *Sunoco* demonstrate that guidance on apportionment has remained settled for more than a decade.¹¹⁴ Yet *Wash World* and *Inventist* show that this same settled guidance is not reliably applied where it matters most, at trial.¹¹⁵ The issue in the latter two cases is structural rather than doctrinal. District courts and juries continue to award damages based on lost profits theories that are insufficient as a

¹⁰⁶ See *id.* at 1376.

¹⁰⁷ *Id.* at 1375–76.

¹⁰⁸ See *Inventist Inc. v. Ninebot Inc.*, No. 2024-1010, 2025 WL 3182657, at *4–5 (Fed. Cir. Nov. 14, 2025).

¹⁰⁹ See *id.* at *4.

¹¹⁰ *Id.*

¹¹¹ See *id.* (citing *Grain Processing Corp. v. American Maize-Products Co.*, 185 F.3d 1341, 1349 (Fed. Cir. 1999)).

¹¹² *Id.*

¹¹³ *Id.* at *5.

¹¹⁴ See *Versata Software*, 717 F.3d at 1266–67; *Sunoco*, 2026 WL 122544, at *17–19.

¹¹⁵ See *Wash World*, 131 F.4th at 1375–76; *Inventist*, 2025 WL 3182657, at *4–5.

matter of settled law. These theories often survive full trial only to be substantially or entirely unwound on appeal,¹¹⁶ imposing years of delay and litigation costs.¹¹⁷ Codifying the settled apportionment principle directly into Section 284, rather than leaving it to trial courts to extract from sprawling case law would give trial courts and juries an accessible point of reference. This could meaningfully reduce the rate of costly reversals that currently result from misapplication rather than ambiguity in the underlying rule.

3. *Established Royalty*

Initially established in *Rude v. Westcott*, an established royalty reflects the market rate that parties have historically agreed upon for licensing the same patent.¹¹⁸ *LaserDynamics* applies this standard in more detail, requiring proof of consistent, arm's-length licenses to the patent-in-suit, entered into under similar economic and technological conditions and free from litigation pressure.¹¹⁹ The rate must be "paid by such a number of persons as to indicate a general acquiescence in its reasonableness."¹²⁰ The standard is high, however and courts have continued to apply this exacting standard narrowly. In *Monsanto Co. v. Ralph*, for example, the Federal Circuit rejected an established royalty argument on related grounds: although the licenses included a technology royalty fee, the fee was established for a narrow, different use than the infringing conduct at issue (single-season planting rather than unauthorized seed-saving and replanting).¹²¹ *Ralph* shows that even well-documented licenses fail to establish a royalty when they do not appropriately tie the license to the specific use at issue in the infringement.¹²²

While the Federal Circuit's legal test is well established, district court application is inconsistent, largely due to the infrequent use of this methodology.¹²³ Some judges unfamiliar with the stringent requirements may allow weak licensing evidence to go to a jury under the label of "established

¹¹⁶ See, e.g., *Inventist*, 2025 WL 3182657, at *4–5.

¹¹⁷ See *id.* at *4–5.

¹¹⁸ See *LaserDynamics*, 694 F.3d, at 77–79 (citing *Rude v. Westcott*, 130 U.S. 152, 165 (1889)).

¹¹⁹ See *id.*

¹²⁰ See *id.*

¹²¹ See *Monsanto Co. v. Ralph*, 382 F.3d, 1374, 1382–85 (Fed. Cir. 2004).

¹²² See *id.* at 1383–84.

¹²³ See *Golden*, *supra* note 20, at 1314.

royalty.”¹²⁴ Others may exclude all such claims, even when the license data arguably meets the historical criteria.¹²⁵ These inconsistent thresholds lead to uncertainty for litigants and an elevated risk of remand when the Federal Circuit finds that either the methodology was improperly admitted or unjustifiably excluded.¹²⁶ Codifying established royalty under § 284 would provide trial courts with clearer rules for admissibility.

D. IMPORTANCE OF RELIABLE EXPERT TESTIMONY (JUDICIAL GATEKEEPING)

Expert witness testimony is a critical resource for distilling complex litigation subject matter, such as damages calculations testimony, to judges and jurors.¹²⁷ To ensure that expert testimony will not unduly influence the jury, Rule 702 requires the trial court to assess both an expert's qualifications and the reliability of their testimony before it may be admitted.¹²⁸ Rule 104(a) supplies the procedural mechanism for this gatekeeping role, tasking the trial judge, rather than the jury, with deciding these preliminary questions of admissibility.¹²⁹

In 1993, the Supreme Court ruled in *Daubert* that, based on the Federal Rules of Evidence, “the trial judge must ensure that any and all scientific testimony or evidence admitted is not only relevant, but reliable.”¹³⁰ This established a trial court judge’s gatekeeping function that was later codified into Rule 702,¹³¹ further emphasizing the gatekeeping role in scrutinizing expert witness testimony for

¹²⁴ See *id.* at 1315–16.

¹²⁵ See *Mass Engineered Design, Inc. v. Planar Systems, Inc.*, No. 3:16-cv-1510-SI, 2017 WL 11820360, at *11–12 (D. Or. Aug. 31, 2017) (rejecting argument that *Rude* categorically bars litigation-induced licenses from reasonable-royalty calculations; *Prism Techs. LLC v. Sprint Spectrum L.P.*, 849 F.3d 1360, 1372–73 (Fed. Cir. 2017).

¹²⁶ See *Golden*, *supra* note 20, at 1324–25.

¹²⁷ See *Lee & Lemley*, *supra* note 7, at 311–12 (discussing the challenges of presenting a complex damages theory involving mathematical regression calculations).

¹²⁸ See FED. R. EVID. 702.

¹²⁹ See FED. R. EVID. 104(a).

¹³⁰ See *Daubert*, 509 U.S. at 591–92.

¹³¹ See FED. R. EVID. 702.

admissibility during trial.¹³² The trial judge shall determine if the testimony is based on sound methods, and that it is sufficiently grounded in the facts of the case, thereby assisting the jury in their deliberation of an issue.¹³³ If a party believes that opposing damages testimony is inadmissible, it party should file a pretrial *Daubert* motion.¹³⁴ During the subsequent *Daubert* hearing, each party will present arguments and the judge will determine admissibility without the jury present.¹³⁵

Reliable expert testimony in patent cases is vital because damages calculations of highly technical fields are complex, particularly where an infringing feature is embedded in a multi-layered product.¹³⁶ This challenge arises frequently in industries such as semiconductors, biotechnology, and software, where there are often intertwined layers of patented and unpatented technology.¹³⁷ In such cases, determining the economic value attributable to the patented feature requires careful apportionment rigorously supported by record evidence.¹³⁸ Because § 284 does not prescribe specific calculation methodologies or admissibility criteria, trial courts are left to evaluate competing expert opinions under Rule 702 without clear statutory benchmarks, increasing the risk of inconsistent gatekeeping outcomes.¹³⁹

In *EcoFactor*, the plaintiff's damages expert presented a reasonable royalty calculation based on a set of lump sum payments that EcoFactor claimed represented licensing rates.¹⁴⁰ These comparable benchmarks were used to

¹³² See *id.* advisory committee's note to 2023 amendment (emphasizing the judge's role as a gatekeeper for expert testimony).

¹³³ See *Daubert*, 509 U.S. at 591–92 (highlighting that expert testimony must be relevant and reliable to be admissible).

¹³⁴ See *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 142 (1997) (noting that expert testimony rulings are subject to abuse-of-discretion review).

¹³⁵ See FED. R. EVID. 104(a) (“The court must decide any preliminary question about whether a witness is qualified, a privilege exists, or evidence is admissible.”).

¹³⁶ See *Lucent Techs.*, 580 F.3d at 1324.

¹³⁷ See *ROOKLIDGE ET AL.*, *supra* note 18, at 10–12; *Ericsson*, 773 F.3d at 1226–27.

¹³⁸ See *Lucent Techs.*, 580 F.3d at 1324–26; *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d at 869–73; *Ericsson*, 773 F.3d at 1226–27.

¹³⁹ See 35 U.S.C. § 284; *Ericsson*, 773 F.3d at 1226–27; *Lucent Techs.*, 580 F.3d at 1324–25.

¹⁴⁰ See *EcoFactor II*, 137 F.4th at 1336–37.

estimate the economic value of the patented technology.¹⁴¹ Google challenged the relevance and comparability of these licenses, arguing that they were not economically similar to a hypothetical negotiation that would have occurred prior to infringement.¹⁴² In particular, Google contended that the expert failed to apportion the royalty rate, since the licenses covered EcoFactor's entire patent portfolio, rather than the asserted patent in isolation.¹⁴³ As such, the asserted royalty rate did not relationally represent a hypothetical negotiation for the value of the patent itself.¹⁴⁴ The en banc court agreed that Rule 702 requires damages testimony to be grounded in record evidence, and absent this evidence, reversed the district court's admission of EcoFactor's expert testimony.¹⁴⁵ Yet the majority and two dissenting opinions illustrate the absence of Federal Circuit consensus regarding how rigorously trial courts must police testimony. Judge Stark warned that, despite the narrowness of the majority's holding, the opinion risked being misread as inviting district judges to "invade the province of jurors and resolve fact disputes," opening the door to using Rule 702 as a tool for judicial fact finding generally reserved for jurors.¹⁴⁶

E. GATEKEEPING BURDEN OF PATENT DAMAGES TESTIMONY

One particular challenge for trial court judges in patent damages testimony is their already heavy workload, coupled with the complexity of a patent case.¹⁴⁷ Patent litigation is one of the most resource-intensive case types requiring judges to manage intensive discovery, technical expert testimony, and complex legal arguments.¹⁴⁸ Pertaining to the technical aspect, the Federal Circuit has recognized that judges are generally not trained scientists or engineers, and

¹⁴¹ See *id.* at 1337–38.

¹⁴² See *id.* at 1338–39.

¹⁴³ See *id.* at 1339–41.

¹⁴⁴ See *id.* at 1339–41.

¹⁴⁵ See *id.* at 1345–46.

¹⁴⁶ See *EcoFactor II*, 137 F.4th at 1355–58.

¹⁴⁷ See Lee & Lemley, *supra* note 7, at 319–21 (noting that district court judges often focus their limited time on claim construction and infringement or invalidity issues, leaving little time to analyze complex damages calculations).

¹⁴⁸ See Jonathan H. Ashtor, *Opening Pandora's Box: Analyzing the Complexity of U.S. Patent Litigation*, 18 YALE J.L. & TECH. 217, 255 (2016).

rely on the presentation of experts to assist in understanding case technologies.¹⁴⁹ This creates a difficult situation when a judge is a gatekeeper to an expert witness who may also be educating the judge about the technology and the associated economic damages calculation.¹⁵⁰

The requirement that trial courts act as gatekeepers for damages methodologies further strains already limited judicial resources.¹⁵¹ For busy trial judges, allocating sufficient time to evaluate complex damages calculations and the qualifications of expert witnesses is particularly challenging.¹⁵² These calculations often rely on intricate economic theories, financial models, and market assessments that not only require specialized knowledge but also require thoughtful and time-consuming analysis to assess methodological soundness.¹⁵³ Most judges do not have formal training in these areas as well, which further increases the analysis burden and may contribute to inconsistency in outcomes across courts.¹⁵⁴

Although the Federal Circuit has provided guidance regarding acceptable patent damages methodologies, the complexity of these calculations has produced varied thought approaches in the application of expert witness testimony standards, which have resulted in unpredictable outcomes at times.¹⁵⁵ In some cases, this variability has resulted in the admission of unreliable expert testimony that influenced jury verdicts and contributed to inflated damages awards. For example, in *VLSI*, the court remanded a \$1.5 billion patent damages award for retrial due to unreliable reasonable royalty calculations.¹⁵⁶ Similarly, in *Cyntec Company, Ltd. v. Chilis Electronics Corp.*, the court vacated a \$4.6 million lost

¹⁴⁹ See generally *In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303 (Fed. Cir. 2011).

¹⁵⁰ See *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388–89 (1996) (acknowledging the role of expert testimony in comprehending patent technology).

¹⁵¹ See *id.*

¹⁵² See *Lemley & Shapiro*, *supra* note 33, at 1994 (discussing the complexities and challenges of patent damages calculations).

¹⁵³ See *id.* at 1992.

¹⁵⁴ See *Ashtor*, *supra* note 148, at 255.

¹⁵⁵ See generally *ROOKLIDGE ET AL.*, *supra* note 18; See *LaserDynamics*, 694 F.3d at 67; *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283, 1296 (Fed. Cir. 2015).

¹⁵⁶ See *VLSI Tech.*, 87 F.4th at 1348, 1357.

profits award and instructed the trial court to exclude improperly admitted testimony on remand for a new trial on damages.¹⁵⁷

Damages awards based on unreliable expert witness testimony can be pass costs onto consumers due to inflated damages awards, increased litigation costs of lengthy appeal processes and retrials, or inflated settlement agreements to avoid further litigation.¹⁵⁸ Companies may hesitate to invest in research and development for fear of uncertainly costly litigation, which could chill innovation, the opposite of the desired effect of patent law.¹⁵⁹

Finally, the lack of uniform standards in patent damages awards may contribute to higher remand and reversal rates. In 2022 and 2024, 16% of federal private civil appeals that terminated on the merits were reversed or remanded.¹⁶⁰ Although there is little recent data, an empirical study for 2000-2007 found that Federal Circuit reversal and remand rates were 23% and 20% for lost profits and reasonable royalty rates respectively, much higher than other federal private civil cases.¹⁶¹ These rates, coupled with the following examples of massive awards, illustrate what is at stake when gatekeeping fails. Recent Federal Circuit decisions, such as *Apple Inc. v. Wi-LAN Inc.* remanded an \$85 million award for a third damages trial due to significant factual errors in expert testimony regarding comparable licenses,¹⁶² and *California Institute of Tech. v. Broadcom Ltd.*, where a \$1.1 billion damages award was vacated for a new trial due to an expert's flawed, two-tiered approach, highlight ongoing issues.¹⁶³ The unpredictability of damages

¹⁵⁷ See *Cyntec Co., Ltd. v. Chilisins Elecs. Corp.*, 84 F.4th 979, 990 (Fed. Cir. 2023).

¹⁵⁸ See Golden, *supra* note 20, at 1329.

¹⁵⁹ See *id.*

¹⁶⁰ Calculated from Other Private Civil cases determined on the merits and calculating the percent by reversals plus remands and dividing that by total cases $((651+61)/4,468)$. Other Private Civil includes patent cases, but some case types such as federal criminal and bankruptcy related civil cases. *Table B-5—U.S. Courts of Appeals Statistical Tables for the Federal Judiciary* (Dec. 31, 2025) <https://www.uscourts.gov/data-news/data-tables/2025/12/31/statistical-tables-federal-judiciary/b-5> [https://perma.cc/JA2X-VT8M].

¹⁶¹ Ted Sichelman, *Myths of (Un)Certainty at the Federal Circuit*, 43 LOY. L.A. L. REV. 1161, 1175 (2010).

¹⁶² See *Apple Inc. v. Wi-Lan Inc.*, 25 F.4th 960, 974–75 (Fed. Cir. 2022) (indicating this appeal was the second appeal on damages, indicating the remand for an additional damages trial would be the third).

¹⁶³ See *Cal. Inst. of Tech. v. Broadcom Ltd.*, 25 F.4th 976, 994 (Fed. Cir. 2022); *California Inst. of Tech. v. Broadcom Ltd.*, No. CV 16-3714-GW-AGRX, 2020

awards stems from the inconsistent applications of established tests like the *Panduit* factors for lost profits and the *Georgia-Pacific* factors for reasonable royalties.¹⁶⁴ A lack of consistency in applying factors in *Daubert* rulings also burdens appellate courts. Greater uniformity at the trial level would reduce the number of *Daubert* motion-related appeals that ultimately see reversal or remand. Although there were fewer appeals than in prior years, the reversal rate for expert testimony was higher, indicating either a decrease in trial court consistency or a desire by the Federal Circuit to shore up the current inconsistencies.¹⁶⁵ The inconsistency in *Daubert* rulings across the country continues to erode confidence in the judicial process, which undermines stability for inventors seeking fair compensation for infringement.¹⁶⁶ While more consistent application of Rule 702 might not decrease appeals overall, it would streamline the Federal Circuit review process and likely lead to fewer reversals or remands.¹⁶⁷ Reduction in remanded cases would increase judicial efficiency and bolster confidence in trial court awards with regard to patent cases. Without stronger guidance and greater uniformity in applying methodologies, patent damages will continue to result in unpredictable outcomes, impacting litigation, patentees, and investors.

One established practice to assist trial court judges in burdensome pretrial proceedings that could also benefit from § 284 codification is the use of magistrate judges. Magistrate judges are judicial officers who may conduct any pretrial proceeding, evidentiary hearing, or other matters as permitted by statute.¹⁶⁸ In antitrust litigation, magistrate judges often assess complex economic expert

WL 10054680 at *16 (C.D. Cal. July 17, 2020), *aff'd in part, vacated in part, remanded*, 25 F.4th 976 (Fed. Cir. 2022).

¹⁶⁴ See *Panduit Corp.*, 575 F.2d at 1156; *Georgia-Pac. Corp.*, 318 F. Supp. at 1120.

¹⁶⁵ See Sherry Zhang & Joanne Johnson, *Daubert Motion Trends in Patent Cases Reveal Damages Shift*, LAW360 (Aug. 14, 2024), <https://www.law360.com/articles/1868366/daubert-motion-trends-in-patent-cases-reveal-damages-shift> [<https://perma.cc/3S7E-BX6G>]; Megan S. Woodworth & Sophia Gunzburg, *The Most Important Federal Circuit Decisions from the Second Half of 2024*, IPWATCHDOG (Dec. 19, 2024), <https://ipwatchdog.com/2024/12/19/important-federal-circuit-decisions-second-half-2024/> [<https://perma.cc/85NL-NEGA>].

¹⁶⁶ See Zhang & Johnson, *supra* note 165 (highlighting the inconsistent application of *Daubert* standards in recent patent cases and the impact on damages awards).

¹⁶⁷ See *id.*

¹⁶⁸ See 28 U.S.C. § 636(b)(1)(A) (authorizing magistrate judges to “hear and determine any pretrial matter pending before the court”).

reports to ensure compliance with Rule 702, which resembles expert testimony evaluation in patent cases.¹⁶⁹ Magistrates can assist in screening for speculative or unreliable testimony, ideally improving gatekeeping consistency and reducing appellate reversals.¹⁷⁰ Magistrate judges have also played critical roles in patent case *Markman* hearings,¹⁷¹ class certification, and e-discovery disputes,¹⁷² where courts rely on the magistrates to manage highly technical and procedurally intensive issues.¹⁷³ The assignment of magistrates frees up trial judges to focus on broader case management and learning needed concepts, while encouraging quality pretrial decision-making.¹⁷⁴

These examples show the competency of magistrates in applying *Daubert* standards and other procedural aspects to specialized financial testimony in high-stakes litigation.¹⁷⁵ Magistrates can improve trial court efficiency and add specialized patent case knowledge,¹⁷⁶ but are not a foundation solution where guidance is lacking.¹⁷⁷ Inconsistent damages awards based on unreliable calculation methodologies and expert witness testimony demonstrate that clearer guidance should benefit all adjudicating parties.¹⁷⁸

¹⁶⁹ See Golden, *supra* note 20, at 1313–14.

¹⁷⁰ See *id.* at 1324–25.

¹⁷¹ See *Markman*, 517 U.S. at 372, 384–91; Andrew T. Zidel, *Patent Claim Construction in the Trial Courts: A Study Showing the Need for Clear Guidance from the Federal Circuit*, 33 SETON HALL L. REV. 711, 748 (2003).

¹⁷² See MENELL ET AL., A PATENT CASE MANAGEMENT JUDICIAL GUIDE ch. 4, 24 (3d ed. 2016).

¹⁷³ See 28 U.S.C. § 636(b)(1)(A) (authorizing magistrate judges to “hear and determine any pretrial matter pending before the court,” subject to specified exceptions); *Pressure Prods. Med. Supplies, Inc. v. Greatbatch Ltd.*, 599 F.3d 1308, 1311 (Fed. Cir. 2010) (describing a magistrate judge’s role in conducting claim construction proceedings and issuing a report and recommendation to the district court).

¹⁷⁴ See MENELL ET AL., *supra* note 172, at ch. 4, 24 (3d ed. 2016).

¹⁷⁵ See Zidel, *supra* note 171, at 748.

¹⁷⁶ See MENELL ET AL., *supra* note 172, at ch. 4, 24 (3d ed. 2016).

¹⁷⁷ See *Exafer Ltd v. Microsoft Corporation*, 169 F.4th 1089, 1092–94 (Fed. Cir. 2026) (holding the trial court erred in affirming the magistrate’s exclusion of expert damages opinion).

¹⁷⁸ See *EcoFactor II*, 137 F.4th at 1340–44 (vacating damages award due to insufficiently supported reasonable royalty analysis); *VLSI Tech.*, 87 F.4th at

III. ANALYSIS

This section proposes damages calculations methodologies codification to § 284, and codification application to the *VLSI* and *EcoFactor* cases.

A. CODIFYING DAMAGES METHODOLOGIES IN § 284

The open-ended language of § 284, by design, provides trial courts with discretion in allowable damages calculations.¹⁷⁹ While this flexibility allows adaptation to the facts of the case, it also places significant weight on judicial gatekeeping at the expert admissibility stage. In practice, damages disputes under § 284 frequently turn not on the ultimate merits of the damages theory, but on whether the expert testimony survives scrutiny under Rule 702 and *Daubert*.

Although the Federal Circuit has repeatedly emphasized that patent damages must be grounded in case-specific facts, its guidance has remained just that, case-specific. Decisions such as *Uniloc*, *LaserDynamics, Inc. v. Quanta Comput., Inc.*, *VLSI*, and *EcoFactor* articulate governing principles rather than concrete rules, leaving trial courts to assess admissibility without uniform benchmarks.¹⁸⁰ As a result, district courts, particularly those with busy dockets or limited experience in patent litigation, can vary in how they interpret and apply appellate guidance.¹⁸¹ This common law evolution has refined the damages doctrine, but it has also contributed to unpredictable *Daubert* rulings, inconsistent admission or exclusion of expert testimony, and an increased frequency of reversals or remands on appeal.¹⁸²

This section proposes an amendment to § 284 that would codify the three principal damages methodologies recognized in Federal Circuit case law, as well

1348–55 (remanding damages award where expert relied on unreliable regression inputs); *Uniloc USA*, 632 F.3d at 1315–18 (rejecting damages methodology not grounded in case-specific evidence).

¹⁷⁸ See Zhang & Johnson, *supra* note 166.

¹⁷⁹ See Golden, *supra* note 20, at 1312–13.

¹⁸⁰ See *Uniloc USA*, 632 F.3d at 1315–18; *LaserDynamics*, 694 F.3d; *VLSI Tech.*, 87 F.4th at 1348–55; *EcoFactor II*, 137 F.4th at 1340–44.

¹⁸¹ See *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999) (trial courts have “considerable leeway” in assessing expert reliability); *Gen. Elec.*, 522 U.S. at 141–43 (holding that expert admissibility rulings are reviewed by appellate courts for abuse of discretion, under which appellate courts give deference to district courts absent clear error).

¹⁸² See *id.*

as factors that courts often consider when gatekeeping expert admissibility under Rule 702 and Rule 104(a). The goal is not to limit judicial discretion and bottleneck courts at the *Daubert* stage, but to provide structured guidance that aligns with precedent to reduce variability in expert admissibility.

Codifying the three accepted methodologies would provide much needed clarity. Courts already refer to them regularly, and experts structure their reports around them.¹⁸³ Including them in the statutory text of § 284 would affirm their continued relevance and provide a formal framework for parties and judges to reference during *Daubert* challenges. More importantly, pairing these methodologies with a non-exhaustive list of analytical factors, drawn directly from existing Federal Circuit precedent, would support more consistent application of Rule 702 in the patent damages context.

The proposed amendment to § 284 would add the following language after the second paragraph to formally identify the three established Federal Circuit methodologies and their primary admissibility factors (footnotes omitted):

In calculating damages under this section, the court shall ensure that damages theories presented to the jury are reliable, methodically sound, and tied to the facts of the case. Subject to those requirements, the court may consider, and expert witnesses may present, the following:¹⁸⁴

1. Reasonable royalty, including comparable licenses¹⁸⁵ and valuation methods reasonably designed to apportion the value of the patented feature in relation to the economic contribution of the invention from unpatented components;¹⁸⁶
2. Lost profits, including, but not limited to, the existence of demand for the patented invention, the absence of commercially acceptable noninfringing alternatives, the

¹⁸³ See ROOKLIDGE ET AL., *supra* note 18, at 5–7 (listing and discussing lost profits, established royalty, and reasonable royalty methods).

¹⁸⁴ See *Uniloc USA*, 632 F.3d at 1317.

¹⁸⁵ See *id.* at 1316–17.

¹⁸⁶ See *id.*

patentee's ability to meet increased demand, and identifiable loss of profits attributable to the infringement;¹⁸⁷ and

3. Established royalty, based on royalty rates consistently paid by others for comparable technology under comparable conditions, and shown to reflect arms-length transactions rather than coercion or litigation pressure.¹⁸⁸

This amendment reflects current practice and judicial expectations without imposing rigid requirements, essentially harmonizing court inputs.¹⁸⁹ Courts would still retain full discretion to exclude unreliable testimony and to consider alternative methods or considerations when appropriate. However, by enumerating the methodologies and associated admissibility factors, the statute would create a more predictable foundation for judges and litigants alike.

Moreover, the amendment would help harmonize *Daubert* rulings across districts by providing a clear, enumerated foundation for analysis. Currently, litigants face a patchwork of admissibility outcomes depending on the jurisdiction, judge, or even courtroom.¹⁹⁰ A codified framework in § 284 would ensure that district judges are working from the same statutory deck of cards, which would also reduce the risk of forum shopping, along with increasing the likelihood that expert opinions are uniformly scrutinized.

Codification would also help the Federal Circuit streamline review from clearer guided trial court judges and help trial courts by reducing remand from inconsistent admissibility applications. With a clear statutory basis for both methodology recognition and admissibility factors, trial courts would be better equipped to conduct robust gatekeeping consistent with evolved standards under Rule 702 and *Daubert*.

B. APPLICATION

The lack of clarity in § 284 guidance has consequences in trial courts and the Federal Circuit, particularly in cases involving complex damages

¹⁸⁷ See *Panduit Corp.*, 575 F.2d at 1164.

¹⁸⁸ See generally *Monsanto*, 382 F.3d.

¹⁸⁹ See *Georgia-Pac. Corp.*, 318 F. Supp. at 1120 (describing reasonable royalty factors); *Panduit Corp.*, 575 F.2d at 1156 (describing lost profits factors); *Monsanto*, 382 F.3d, at 1382–85 (describing established royalty factors); see also *Kumho Tire*, 526 U.S. at 152 (holding that trial courts have “considerable leeway” in determining how to assess expert reliability).

¹⁹⁰ See *Golden*, *supra* note 20, at 1316.

methodologies. Recent Federal Circuit decisions illustrate how unreliable expert testimony can survive initial admissibility scrutiny, only to be rejected on appeal after substantial judicial and litigant resources have already been expended.

In *VLSI*, the Federal Circuit vacated a \$1.5 billion damages award after concluding that the expert witness's royalty regression model relied on incorrect inputs when calculating the power savings apportionment of the underlying royalty figure.¹⁹¹ The expert's failure to tie the inputs to the infringing functionality made the testimony untethered to the facts of the case and therefore unreliable under Rule 702.¹⁹² Additionally, due to insufficient record evidence upon appellate review, the Federal Circuit was unable to determine if the incorrect inputs made a material change in the calculation.¹⁹³

Had the proposed amendment to § 284 been in place, the trial court's gatekeeping analysis would have been more clearly anchored in statutory factors emphasizing methodology reliability, infringed technology application, and record evidence. The amendment's requirement that damages theories be soundly tied to the facts of the case would have highlighted the need for closer scrutiny on whether the regression model measures the economic value of the infringed product specifically. Moreover, because the regression model was not among the enumerated methodologies, its use would have required heightened scrutiny to ensure that it satisfied the statute's reliability threshold, increasing the likelihood that the expert testimony would have been further scrutinized at the *Daubert* stage rather than upon appeal. That earlier scrutiny may have excluded the testimony altogether or required the expert to ground the royalty rate calculation more sufficiently in the case's facts. Closer scrutiny may have also encouraged a more developed record of the calculation's functionality, allowing the Federal Circuit to isolate the effect of the improper inputs on the award and potentially obviating the need for a full retrial.

A similar issue arose in *EcoFactor*, where the Federal Circuit vacated a \$20 million verdict after the Federal Circuit found that the plaintiff's reasonable royalty analysis relied on testimony that was not adequately tied to the infringing technology.¹⁹⁴ The court faulted the expert for failing to account for differences in technology scope, licensing context, and influence of litigation pressure, all of which question the reliability of the testimony.¹⁹⁵

¹⁹¹ See *VLSI Tech.*, 87 F.4th at 1348–49.

¹⁹² See *id.*

¹⁹³ *Id.* at 1349.

¹⁹⁴ See *EcoFactor II*, 137 F.4th at 1342.

¹⁹⁵ See *id.* at 1342–45.

Under the proposed amendment, the deficiencies would have been squarely within the mandated factors for determining reliability and admissibility. The amendment's direct reference to comparable licenses, comparable conditions, and valuation methods designed to apportion the economic value would have directed the court to scrutinize whether the asserted license was an arm's-length transaction with comparable technology. Further, the emphasis on apportionment and case-specific facts would have reinforced the need to evaluate whether the rate corresponded to the economic contribution of the infringed technology, rather than the value of a portfolio of products.

In both *VLSI* and *EcoFactor*, the problem was not the absence of Federal Circuit precedent addressing calculation methods, but the lack of statutory guidance on the most impactful trial court factors to evaluate prior to expert testimony in front of a jury, which is highly scrutinized during appeal.¹⁹⁶ By codifying methodologies and admissibility factors in § 284, the proposed amendment would encourage more consistent exclusion of unreliable damages calculations. That heightened scrutiny would, in turn, incentivize parties to ground their damages calculations in substantiated record evidence, narrower calculation gaps between competing experts, and jury testimony that reflects economically sound and reliable damages assessments.

IV. CONCLUSION

Patent litigation is at a critical juncture. As technology continues to grow more complex, disputes involving patented inventions will increasingly rely on expert witness testimony to distill complex damages calculations to lay jurors. The growth in complexity is not temporary, and it will only intensify in the decades ahead.

Meaningful progress has been made through Rule 702, which codified judges as gatekeepers and established a structure for evaluating the reliability of expert witness testimony before it reaches the jury. However, more than twenty five years after that codification, patent damages law remains governed by an open-ended statutory framework coupled with case-specific doctrinal development rather than clear legislative guidance. In patent cases, where damages calculations are uniquely complicated and often outcome determinative,

¹⁹⁶ See *VLSI Tech.*, 87 F.4th at 1344–49 (vacating damages award for unreliable application of a hedonic regression analysis despite existing precedent on reasonable royalty principles); *EcoFactor II*, 137 F.4th at 1340–44 (reaffirming factual grounding of expert witness testimony, by declining to adopt categorical rules governing methodologies).

this statutory silence has led to inconsistent trial court rulings and a costly increase in appellate vacatur and remands.

For the reasons outlined above, § 284 should be amended to codify recognized patent damages calculation methodologies to provide greater guidance for evaluating expert testimony at the trial court level. Such an amendment would likely promote greater consistency in damages determinations, strengthen trial court gatekeeping, and support innovation and investment in an increasingly technological world.

