

APPENDIX A
UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

MENTOR GRAPHICS CORPORATION,
AN OREGON CORPORATION,
Plaintiff-Cross-Appellant

v.

EVE-USA, INC., A DELAWARE CORPORA-
TION, SYNOPSIS EMULATION AND VERIFI-
CATION S.A.S., FORMED UNDER THE LAWS
OF FRANCE, SYNOPSIS, INC.,
A DELAWARE CORPORATION,
Defendants-Appellants

2015-1470, 2015-1554, 2015-1556

Appeals from the United States District Court for
the District of Oregon in Nos. 3:10-cv-00954-MO,
3:12-cv-01500-MO, 3:13-cv-00579-MO, Judge Michael
W. Mosman.

Decided: March 16, 2017

MARK E. MILLER, O'Melveny & Myers LLP, San
Francisco, CA, argued for plaintiff-cross-appellant.

Also represented by ANNE E. HUFFSMITH, LUANN LORRAINE SIMMONS.

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SEAN C. CUNNINGHAM, DLA Piper LLP (US), San Diego, CA, for amici curiae Hewlett-Packard Company, Aruba Networks, Inc., NETGEAR, Inc., Newegg Inc., Oracle America, Inc., Ruckus Wireless, Inc., Safeway Inc., SAS Institute Inc., Varian Medical Systems, Inc., VeriFone, Inc., VIZIO, Inc.

Before LOURIE, MOORE, and CHEN, *Circuit Judges*.
MOORE, *Circuit Judge*.

The present appeal arises from litigation in the District of Oregon between Mentor Graphics Corp. (“Mentor”) and Synopsys, Inc., Synopsys Emulation and Verification S.A.S., and EVE-USA, Inc. (“EVE”) (collectively, “Synopsys”).¹ Mentor asserted several patents against Synopsys, including U.S. Patent Nos. 6,240,376 (“the ’376 patent”), 6,947,882 (“the ’882 patent”), 6,009,531 (“the ’531 patent”), and 5,649,176 (“the ’176 patent”). Synopsys asserted two patents

¹ EVE is a subsidiary of Synopsys. References to Synopsys refer to all the Synopsys and EVE entities unless otherwise noted.

against Mentor—U.S. Patent Nos. 6,132,109 (“the ’109 patent”) and 7,069,526 (“the ’526 patent”).

The ’376 patent was the only patent tried to the jury. Prior to trial, the district court granted summary judgment barring Synopsys from challenging the ’376 patent’s validity because of assignor estoppel. It also granted Synopsys’ motion in limine precluding Mentor from introducing evidence of willful infringement. The jury found in favor of Mentor and found damages of approximately \$36,000,000. Synopsys appeals the infringement verdict, the damages award, and the summary judgment of assignor estoppel. Mentor cross-appeals the motion in limine regarding willfulness.

The district court granted summary judgment on the remaining patents prior to trial. It held that Synopsys’ ’109 patent was indefinite and Synopsys’ ’526 patent lacked patent-eligible subject matter. Synopsys appeals both decisions. The district court also held that the claims of Mentor’s ’882 patent lacked written description support and its infringement allegations relating to the ’531 and ’176 patents were barred by claim preclusion. Mentor cross-appeals both decisions.

We hold there was substantial evidence to support the jury’s infringement verdict regarding the ’376 patent and affirm the district court’s denial of judgment as a matter of law. We affirm the damages award. We affirm the summary judgment that assignor estoppel bars Synopsys from challenging the validity of the ’376 patent. We reverse the summary judgment that Synopsys’ ’109 patent is indefinite. We affirm the summary judgment that Synopsys’ ’526 patent lacks

patent-eligible subject matter. We vacate the motion in limine precluding Mentor from presenting evidence of willful infringement. We reverse the summary judgment that Mentor's '882 patent lacks written description support. Finally, we reverse the summary judgment that Mentor's infringement allegations regarding the '531 and '176 patents are barred by claim preclusion.

I. BACKGROUND

Every patent in this case involves simulation/emulation technology. The parties have a complicated litigation history, and only the relevant portions thereof are addressed here. In 1998, Mentor filed the application that would become the '376 patent. The two inventors, Dr. Alain Raynaud and Dr. Luc Burgun, were Mentor employees and assigned the invention to Mentor. Dr. Raynaud and Dr. Burgun subsequently left Mentor and founded EVE, with Dr. Burgun serving as president and CEO and Dr. Raynaud serving as a Technology Center Director. In 2006, Mentor sued EVE for infringement of the '376, '531, and '176 patents, alleging EVE's "ZeBu" emulation and verification system infringed the patents. Mentor and EVE settled prior to trial, and EVE obtained a license to the three patents. The license contained a provision terminating the license if EVE were acquired by another company in the emulation industry.

In 2012, Mentor learned Synopsys was in discussions to acquire EVE. Mentor's CEO contacted his counterpart at Synopsys and offered to waive the confidentiality provision of the Mentor-EVE license to inform Synopsys that the license would terminate if

Synopsys acquired EVE. Synopsys and EVE subsequently filed a declaratory judgment action, seeking a declaration that the '531, '176, and '376 patents were invalid and not infringed. One week later, Synopsys acquired EVE. Mentor answered the declaratory judgment complaint, adding counterclaims of willful infringement of the '531, '176, and '376 patents. Synopsys then amended its complaint to assert claims of infringement of the '526 and '109 patents against Mentor. The district court consolidated the suit with another involving Mentor's '882 patent.

The parties appeal the various summary judgment and post-trial rulings. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

II. ANALYSIS

A. Synopsys' Appeal

1. Infringement of Mentor's '376 Patent

The jury found Synopsys infringed claims 1, 24, and 26-28 of the '376 patent and awarded damages. Synopsys moved for JMOL that its products did not infringe. The district court denied the motion, and Synopsys appeals. We affirm the denial of JMOL.

We apply the law of the regional circuit when reviewing a denial of JMOL after a jury verdict. In the Ninth Circuit, JMOL is appropriate only “if the evidence, construed in the light most favorable to the nonmoving party, permits only one reasonable conclusion, and that conclusion is contrary to the jury’s verdict.” *Pavao v. Pagay*, 307 F.3d 915, 918 (9th Cir. 2002).

The '376 patent relates to debugging source code after synthesis. Synthesis is the process of transforming Hardware Description Language (“HDL”) into gate-level “netlists.” '376 patent at 1:26-27. Much of the patent’s disclosure addresses Register Transfer Level (“RTL”) source code, which is a subset of HDL. *See id.* at 1:27-31. The patent teaches that prior art HDL simulators were limited because a developer could only view the input and ultimate output of a netlist; there was no way to “step through” the intermediate gates. *Id.* at 2:1-17. Without the ability to measure intermediate values, “the ability to debug the design at the gate level [was] severely limited.” *Id.* at 2:20-23. Additionally, to the extent intermediate signals could be measured, there was no way to map a value within a netlist to its corresponding RTL logic within the source code. *Id.* at 2:13-17.

The '376 patent seeks to solve these problems by allowing developers to insert test probes at various stages of a netlist to monitor intermediate values. *Id.* at 2:30-39; Figs. 1, 2. The probe results are referred to as “instrumentation signals.” *Id.* at 6:32-34. The system correlates instrumentation signals with corresponding portions of the RTL code and displays the results to a user. *Id.* at 2:30-34. Asserted claim 1 is representative:

1. A method comprising the steps of:
 - a) identifying at least one statement within a register transfer level (RTL) synthesizable source code; and
 - b) synthesizing the source code into a gate-level netlist including at least one instru-

mentation signal, wherein the instrumentation signal is *indicative* of an execution status of the at least one statement.

Id. at 15:1-8 (emphasis added).

Mentor accused Synopsys' ZeBu emulators of infringing. The ZeBu emulators allow developers to insert "flexible probes" and "value-change probes" into a netlist. These probes measure values at various intermediate stages of a netlist. The ZeBu emulators output the test results to a waveform viewer. Mentor's expert Dr. Sarrafzadeh testified that each probe signal shown in the waveform viewer identifies a portion of RTL by name, and the RTL name can be used to locate the corresponding source code.

Synopsys argues it does not infringe because its ZeBu emulators do not "indicate" an RTL statement but rather merely provide the name of a block of RTL that a developer can use to locate corresponding code. It argues "you don't 'indicate' information by providing *other* data that might help you indirectly figure out the needed information." Synopsys Br. 32. We note at the outset that neither party asked the district court to construe "indicative," and the parties agreed the plain and ordinary meaning of the term governs.² The question presented on appeal is whether there is substantial evidence for the jury verdict that the ZeBu infringed.

We hold there was substantial evidence to support the jury's infringement verdict. A developer using the

² We have considered Synopsys' arguments regarding plain meaning and disclaimer and find them to be without merit.

ZeBu emulator can create a test file called a “Tcl” file and input test probes into a netlist using the “probe signals” command. J.A. 43212. Dr. Sarrafzadeh testified that the probe signal command creates instrumentation signals when the simulation is run. J.A. 41127:12-41129:14. He then explained how a developer could use the simulation results to locate a particular line of RTL code corresponding to an instrumentation signal. He explained that the Tcl file identifies a particular line of RTL code by identifying the name of a block of code, and then a developer can use that name to locate the specific lines of corresponding RTL code. J.A. 41130:7-21. He testified that “you look at the name of the signal, on flexible probes, for example, and you associate that back to the RTL source.” J.A. 42417:3-5; *see* J.A. 42423:10-18 (“Q: How do you know if you have tens of thousands of instrumentation signals, which signal corresponds to the RTL that you are looking at? A: Fantastic question. I look at the name of the signal. If the name is S, I go and look for it. If the name is S5, I will go and look for it. So based on the name of the signal, I will know, among millions of lines of code, which ones I’m talking about.”); J.A. 42426:7-10 (“Q: How would you find a particular process? A: Same thing, by looking at, for example, the sensitivity list and using its name identifier, you know which process you are talking about.”). This is substantial evidence to support the jury’s finding that the instrumentation signal indicates at least one RTL statement.

We affirm the district court’s denial of JMOL.

2. Assignor Estoppel of Mentor's '376 Patent

Synopsys briefly challenges the district court's grant of summary judgment that it was barred from challenging the validity of the '376 patent because of assignor estoppel. Synopsys does not dispute that assignor estoppel applies to the facts of this case, but it argues the Supreme Court "demolished the doctrinal underpinnings of assignor estoppel in the decision that abolished the comparable licensee estoppel in *Lear, Inc. v. Adkins*, 395 U.S. 653 (1969)." Synopsys Br. 42. We disagree. In *Diamond Scientific*, we emphasized the continued vitality of the doctrine of assignor estoppel after *Lear*. *Diamond Sci. Co. v. Ambico, Inc.*, 848 F.2d 1220, 1222-26 (Fed. Cir. 1988); see also *MAG Aerospace Indus., Inc. v. B/E Aerospace, Inc.*, 816 F.3d 1374, 1380-81 (Fed. Cir. 2016). The district court's grant of summary judgment that assignor estoppel applies is affirmed.

3. Damages for Synopsys' Infringement of Mentor's '376 Patent

At trial, Mentor argued it was entitled to obtain lost profit damages for lost sales of its Veloce emulators resulting from Synopsys' infringing sales of its ZeBu emulators because Mentor would have made additional Veloce sales but for Synopsys' infringing ZeBu sales. The district court gave detailed instructions to the jury about the standard for awarding lost profits, including extensive discussion of each of the four *Panduit* factors. J.A. 164-75. The jury ultimately awarded Mentor \$36,417,661 in lost profits and another \$242,110.45 in reasonable royalties. J.A. 187. Synopsys appeals arguing that the damage award

should be vacated because the district court failed to apportion the lost profits. We do not agree.

The Patent Act provides: “the court shall award [the patent owner] damages adequate to compensate for the infringement but in no event less than a reasonable royalty for the use made of the invention by the infringer.” 35 U.S.C. § 284. Under the statute, “damages adequate to compensate” means “full compensation for any ‘any damages’ [the patent owner] suffered as a result of the infringement.” *Gen. Motors Corp. v. Devex Corp.*, 461 U.S. 648, 654-55 (1983). As the Supreme Court explained in *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476, 507 (1964) (plurality opinion), the statutory measure of damages is “the difference between [the patent owner’s] pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred.” The Court went on to distinguish between disgorgement of defendant’s profits, which had been allowed prior to the 1946 statutory amendment, and the compensatory damages of § 284, which are defined as “compensation for pecuniary loss he (the patentee) has suffered from the infringement, without regard to the question whether the defendant has gained or lost by his unlawful acts.” *Id.* (quoting *Coupe v. Royer*, 155 U.S. 565, 582 (1895)).³ Section

³ Synopsys cites a number of pre-1946 Supreme Court cases discussing apportionment in the context of the pre-1946 state of the law which reference disgorgement of the defendant’s profits and patentee’s damages to argue that lost profits must be further apportioned after applying the *Panduit* factors. See *Garretson v. Clark*, 111 U.S. 120, 121 (1884); *Dowagiac Mfg. Co. v. Minn. Moline Plow Co.*, 235 U.S. 641, 646 (1915); *Seymour v. McCormick*, 57 U.S. 480, 487 (1853). While these pre-§ 284 cases apply to a different damages regime, nonetheless, we find the

284 damages “have been said to constitute ‘the difference between his pecuniary condition after the infringement, and what his condition would have been if the infringement had not occurred.’” *Id.* (quoting *Yale Lock Mfg. Co. v. Sargent*, 117 U.S. 536, 552 (1886)). Put simply, “[t]he question to be asked in determining damages is ‘how much had the Patent Holder and Licensee suffered by the infringement. And that question (is) primarily: had the Infringer not infringed, what would Patent Holder-Licensee have made?’” *Id.*

Compensatory damages are a staple across most every area of law. And compensatory damages under the patent statute, which calls for damages adequate to compensate the plaintiff for its loss due to the defendant’s infringement, should be treated no differently than the compensatory damages in other fields of law. *See Livesay Window Co. v. Livesay Indus., Inc.*, 251 F.2d 469, 471 (5th Cir. 1958) (“To allow a patent owner to recover lost profits from an infringer is no unique treatment of this one type of wrongdoing, and [it] is essentially the same problem which inheres in other instances of an interference with a valuable business right.”). Their form is fairly standard; “but for” some harmful act by a defendant, a plaintiff would be in a certain position. When a plaintiff proves it would have been in a certain position but for a defendant’s harmful act, it is entitled to damages to put it in the same position it would have occupied had the

basic principle of apportionment which they espouse applies in all of patent damages. We do not depart from this principle today. Rather we hold that in this case, on these facts, apportionment is achieved though the court’s use of the *Panduit* factors.

harmful act never occurred. In breach of contract disputes, injured parties are awarded expectancy damages designed to replicate full performance of the contract. The goal of expectancy damages is to put the non-breaching party in the position it would have occupied but for the breach. *See, e.g., Fifth Third Bank v. United States*, 518 F.3d 1368, 1374 (Fed. Cir. 2008); *California Fed. Bank v. United States*, 395 F.3d 1263, 1267 (Fed. Cir. 2005); *Glendale Fed. Bank, FSB v. United States*, 239 F.3d 1374, 1380 (Fed. Cir. 2001). Similarly, under tort law, injured parties receive damages sufficient to put them in the same position they would have occupied had the injury never occurred. *See, e.g., Cooper Indus., Inc. v. Leatherman Tool Grp., Inc.*, 532 U.S. 424, 432 (2001) (“[Compensatory damages] are intended to redress the concrete loss that the plaintiff has suffered by reason of the defendant’s wrongful conduct.”); *Kansas v. Colorado*, 533 U.S. 1, 13 (2001) (state against state tort); *New York, L.E. & W.R. Co. v. Estill*, 147 U.S. 591, 616-17 (1893) (business tort). The “but for” damages the patentee must establish in patent law, as the Supreme Court explained, are an answer to a simply stated question: “[H]ad the Infringer not infringed, what would the Patent Holder-Licensee have made?” *Aro Mfg. Co.*, 377 U.S. at 507.

There is no particular required method to prove but for causation. One “useful, but non-exclusive” method to establish the patentee’s entitlement to lost profits is the *Panduit* test first articulated by the Sixth Circuit. *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1545 (Fed. Cir. 1995) (en banc) (citing *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152 (6th Cir. 1978)). When a patentee proves it

would have made additional sales but for a defendant's infringement, the patentee is entitled to be made whole for the profits it proves it lost. *See, e.g., Asetek Danmark A/S v. CMI USA Inc.*, 842 F.3d 1350, 1361 (Fed. Cir. 2016); *Versata Software, Inc. v. SAP Am., Inc.*, 717 F.3d 1255, 1263-64 (Fed. Cir. 2013); *Grain Processing Corp. v. Am. Maize-Prods. Co.*, 185 F.3d 1341, 1352-53 (Fed. Cir. 1999); *Photo Elecs. Corp. v. England*, 581 F.2d 772, 784 (9th Cir. 1978); *Livesay Window*, 251 F.2d at 471. The goal of lost profit damages is to place the patentee in the same position it would have occupied had there been no infringement.⁴ In this regard, lost profit patent damages are no different than breach of contract or general tort damages. Thus, the fact finder's job is to determine what would the patent holder have made (what would his profits have been) if the infringer had not infringed.

Under the *Panduit* test, a patentee is entitled to lost profit damages if it can establish four things:

- (1) demand for the patented product;
- (2) absence of acceptable non-infringing alternatives;
- (3) manufacturing and marketing capability to exploit the demand; and
- (4) the amount of profit it would have made.

⁴ As we explained in *Rite Hite*, lost profit damages are limited to those that are "reasonably foreseeable by an infringing competitor in the relevant market." *Rite-Hite*, 56 F.3d at 1546. Synopsys does not argue that Mentor's lost emulator sales were not reasonably foreseeable.

Panduit, 575 F.2d at 1156. Damages under *Panduit* are not easy to prove. See, e.g., Ian Ayres & Paul Klemperer, *Limiting Patentees' Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-Injunctive Remedies*, 97 MICH. L. REV. 985, 1030 (1999) (“The difficulties that patentees frequently have in proving the four *Panduit* prerequisites often mean that instead of being awarded lost profits (what amounts to make-whole damages), patentees must settle for the smaller reasonable royalty measure.”); Christopher Seaman, *Reconsidering the Georgia-Pacific Standard for Reasonable Royalty Patent Damages*, 2010 B.Y.U. L. REV. 1661, 1675 (2010) (“[S]uccessful claims for lost profits are becoming less common as courts have insisted on strict standards of proof for entitlement to lost profits.” (quotations omitted)); Mark Lemley, *Distinguishing Lost Profits from Reasonable Royalties*, 51 WM. & MARY L. REV. 655, 657 (2009) (“Proving lost profits has not been easy, however.”); see also *Grain Processing*, 185 F.3d at 1349-53 (patentee could not obtain damages under *Panduit* because a product that was not even sold on the market was considered an acceptable non-infringing alternative); *BIC Leisure Prods., Inc. v. Windsurfing Int’l, Inc.*, 1 F.3d 1214, 1218-19 (Fed. Cir. 1993) (patentee could not obtain damages under *Panduit* because it sold its products in a different price segment in the market than the infringing products); *SmithKline Diagnostics, Inc. v. Helena Labs. Corp.*, 926 F.2d 1161, 1165-66 (Fed. Cir. 1991).

We have explained the relationship between the first two *Panduit* factors. The first factor—demand for the patented product—considers demand for the

product as a whole. *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1330-31 (Fed. Cir. 2009). The second factor—the absence of non-infringing alternatives—considers demand for particular limitations or features of the claimed invention. *Id.* at 1331. Together, requiring patentees to prove demand for the product as a whole and the absence of non-infringing alternatives ties lost profit damages to specific claim limitations and ensures that damages are commensurate with the value of the patented features. *See Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 702 F.3d 1351, 1361 (Fed. Cir. 2012) (“[P]roducts lacking the advantages of the patented invention can hardly be termed a substitute acceptable to the customer who wants those advantages.” (quotations omitted)); *Grain Processing*, 185 F.3d at 1354 (holding that customers would have found a particular claim limitation “irrelevant,” so the patentee could not rely on that limitation for the second *Panduit* factor); *Standard Haven Prods., Inc. v. Gencor Indus., Inc.*, 953 F.2d 1360, 1373 (Fed. Cir. 1991) (“If purchasers are motivated to purchase because of particular features available only from the patented product, products without such features—even if otherwise competing in the marketplace—would not be acceptable noninfringing substitutes.”); *SmithKline Diagnostics*, 926 F.2d at 1166 (“If purchasers are motivated to purchase because of particular features of a product available only from the patent owner and infringers, products without such features would obviously not be *acceptable* noninfringing substitutes.”).

The second factor, absence of acceptable non-infringing alternatives, often proves the most difficult obstacle for patent holders. Under this factor, if there

is a non-infringing alternative which any given purchaser would have found acceptable and bought, then the patentee cannot obtain lost profits for that particular sale.⁵ For example, if the customer would have bought the infringing product without the patented feature or with a different, non-infringing alternative to the patented feature, then the patentee cannot establish entitlement to lost profits for that particular sale. And this determination is made on a customer-by-customer basis. For this reason, it is quite common to see damage awards where, as in this case, the patentee proves entitlement to lost profits for some of its sales, but not others. See *BIG Leisure*, 1 F.3d at 1219-20; *DePuy Spine*, 567 at 1333-34. For sales in which the patentee cannot prove the elements necessary to establish entitlement to lost profits, the statute guarantees the patentee a reasonable royalty for those sales. In those circumstances, the patentee obtains its lost profits on the sales where it can prove all the *Panduit* factors and a reasonable royalty on the other infringing sales.

The facts of this case are remarkably simple for a patent damages appeal and Synopsys does not dispute any of them. The relevant market (suppliers of emulators to Intel) contained two parties, Synopsys and Mentor. Mentor sold its own Veloce emulators to

⁵ In a complex market with numerous competitors, a patentee may be awarded lost profit damages calculated using its market share among its competitors. See *State Indus., Inc. v. Mor-Flo Indus., Inc.*, 883 F.3d 1573, 1577-78 (Fed. Cir. 1989). The market share theory is irrelevant in this case because the jury made a factual finding, which Synopsys does not challenge on appeal, that the relevant emulator market for sales to Intel was a two-supplier market. See J.A. 164.

Intel and Synopsys sold its ZeBu emulators to Intel which were found to infringe Mentor's '376 patent claims. Synopsys does not dispute that but for its infringement, Mentor would have made each of the infringing emulator sales to Intel. Nor does it dispute how much Mentor would have earned, the precise numbers of sales Mentor would have made, whether there were any alternatives that Intel may have preferred over the purchase of Mentor's product, or whether Intel would have chosen to purchase fewer emulators. In short, Synopsys does not dispute on appeal that for each infringing sale it made to Intel, Mentor lost that exact sale.

This is important as it makes this case quite narrow and unlike the complicated fact patterns that impact so many damages models in patent cases. The jury found, and Synopsys does not dispute on appeal, that Mentor satisfied all of the *Panduit* factors with regard to the sales to Intel for which the jury awarded lost profits:

- (1) there was a demand by Intel for the patented product;⁶
- (2) there were no non-infringing alternative emulator systems acceptable to Intel;
- (3) Mentor had the manufacturing and marketing capability to satisfy Intel's demand; and,

⁶ The jury was expressly instructed that it could not award lost profits unless it found that "there were only two acceptable, available alternatives in the Intel market during the damages period: Mentor-Graphics' emulation system and Synopsys' allegedly infringing emulation system." J.A. 164.

(4) Mentor established the amount of profit it would have made if Synopsys had not infringed.

Synopsys does not challenge the sufficiency of Mentor's evidence with regard to the individual *Panduit* factors. In this case, the jury found, and Synopsys does not dispute, that Intel would not have purchased the Synopsys emulator system without the two patented features and that there were no other alternatives available. Despite hearing evidence that there were many valuable and important features in the emulator system, this jury found that if Synopsys could not have sold its emulator system with the two infringing features (Mentor's patented features), Intel would have bought the emulators from Mentor. There were no other competitors, and the jury found there were no non-infringing alternative emulator systems which would have satisfied Intel. Thus, what did Mentor lose when Synopsys appropriated its two patented features? It lost the profits it would have made on the sale of its emulators to Intel. These are the simple, undisputed facts on appeal.

Synopsys largely ignores these facts and seeks to have us depart from basic compensatory damages principles equally applied across many areas of law. Synopsys advocates for a two-step process for calculating lost profits. First, Synopsys argues a patentee must calculate the amount of profits it lost as a result of the infringement using the *Panduit* factors. Second, Synopsys argues a patentee must further apportion its lost profits to cover only the patentee's inventive contribution. *See* Synopsys Br. 51. Synopsys does not dispute that "but for" its infringement, Mentor would have made \$36,417,661 in lost profits. Instead, Synopsys argues that the allegedly infringing features

were just two features of emulators that comprise thousands of hardware and software features. Synopsys Br. 48. Thus, according to Synopsys, Mentor is not entitled to recover what it lost, the amount necessary to make it whole for the sales it lost, but rather the value attributable to its patented features.

Synopsys argues that “[p]rinciples of apportionment play an especially vital role in this age of complex, multi-component electronic devices.” Synopsys Br. 44. Synopsys argues that the patentee does not “deserve,” *id.* at 46, lost profits for the whole emulator when it only invented some of the features on the emulator. Thus, according to Synopsys the damages should not be the profits the patentee lost when it lost the emulator sale because of Synopsys’ infringement, but rather only the amount of profit properly attributable to its patented features.

We agree with Synopsys that apportionment is an important component of damages law generally, and we believe it is necessary in both reasonable royalty and lost profits analysis. *See Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1226 (Fed. Cir. 2014) (“Apportionment is required even for non-royalty forms of damages.” (citing *Garretson*, 111 U.S. at 121)); *VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1326 (Fed. Cir. 2014) (“No matter what the form of the royalty, a patentee must take care to seek only those damages attributable to the infringing features.” (citing *Garretson*, 111 U.S. at 120-21)). In this case, apportionment was properly incorporated into the lost profits analysis and in particular through the *Panduit* factors. *Panduit*’s requirement that patentees prove demand for the product as a whole and the absence of non-infringing alternatives ties lost profit damages to

specific claim limitations and ensures that damages are commensurate with the value of the patented features. We leave for another day whether a different theory of “but for” damages adequately incorporates apportionment principles.⁷ We hold today that on the undisputed facts of this record, satisfaction of the *Panduit* factors satisfies principles of apportionment: Mentor’s damages are tied to the worth of its patented features.

The jury found, and Synopsys does not dispute, there were only two acceptable alternatives to Intel: Mentor’s emulator and Synopsys’ infringing emulator. The jury was properly instructed that if there were any other acceptable, non-infringing emulation system or if there were prototypes that may have been acceptable or if there was any acceptable non-infringing alternative that could have been made available (even if they did not already exist), then Mentor could not receive lost profits on those particular sales. J.A.

⁷ Synopsys argues that we have held in other cases that lost profits must be apportioned. Synopsys Br. 51-56. The cases cited by Synopsys, however, did not address whether lost profits were appropriate under the *Panduit* factors (where the apportionment was subsumed within the *Panduit* analysis). *Id.* (citing *Ferguson Beauregard/Logic Controls v. Mega Sys., LLC*, 350 F.3d 1327, 1345-46 (Fed. Cir. 2003); *Kori Corp. v. Wilco Marsh Buggies & Draglines, Inc.*, 761 F.2d 649, 656 (Fed. Cir. 1985)). Synopsys recognizes, however, that in other cases, we have declined to apportion when the four-part *Panduit* test establishing but for causation has been met. *See, e.g.*, Synopsys Rep. Br. 24-25 (citing *Paper Converting Mach. v. Magna-Graphics Corp.*, 745 F.2d 11, 22-23 (Fed. Cir. 1984) (declining to further apportion a lost profits award because the patentee proved it would have made the sales in question but for the infringing sales)).

164.⁸ The jury was also instructed that it could have found the patented features were not critical to Intel and that it would have purchased Synopsys' emulators without the features. The instruction expressly stated that Mentor could not obtain lost profit damages if "Synopsys could have made available during the damages period an acceptable, non-infringing alternative to Mentor-Graphics' emulation system and Synopsys' infringing emulation system." J.A. 164. Synopsys could have made its emulator system minus the two infringing features—that would have been an alternative to the "Synopsys infringing emulation system." However, the jury concluded, and Synopsys does not dispute on appeal the jury's *Panduit* fact findings, that there was no such non-infringing alternative that Intel would have purchased.

On appeal, Synopsys argues that its emulators "outperform Mentor's in price, size, speed, and capacity." Synopsys Br. 49. If the evidentiary record is as Synopsys claims it is, then it had recourse—it could have appealed the jury's *Panduit* fact findings as not supported by substantial evidence. But it did not. And thus on appeal, it is left with a jury fact finding that Intel would not have bought Synopsys' emulation system without the two infringing features, and Mentor would have made every single sale to Intel that Synopsys otherwise made. This is a highly factual case,

⁸ The instruction also explained that if Intel would have bought fewer or no emulation systems in place of those it bought from Synopsys then lost profits cannot be awarded on those sales. J.A. 165.

and Synopsys did not appeal any of the jury's fact findings relating to damages.

Synopsys and the amicus brief argue that complex multi-feature devices necessitate change in patent damages law. They argue that not requiring an additional apportionment step after the *Panduit* test has been met would "allow multiple entities to obtain lost profits on the same product where each entity holds a patent on a different 'but for' feature of the same product." Amicus Br. 11. This claimed threat of "serial infringement claims" is not correct. Again, we do not speak to all damages models. Under *Panduit*, however, there can only be one recovery of lost profits for any particular sale.

This case, for example, involved lost profits for an emulator system with the two patented features based on certain sales Synopsys made to Intel. To be entitled to lost profits damages, Mentor had to prove no other supplier could have made those specific sales to Intel. If there were any acceptable non-infringing alternative Intel would have purchased instead of Mentor's emulator, then Mentor could not obtain lost profits.

The jury found (and Synopsys does not challenge on appeal) that Intel would not have purchased emulators without the features claimed in Mentor's '376 patent. While there may have been other features of the emulator that were important to Intel, only Mentor could sell Intel an emulator with *all* the features it required. Because Mentor had proprietary rights to the only means of satisfying this demand by Intel, because no other party could sell Intel an emulator with those two components, no one else had the right to sell

emulators to Intel that satisfied all of Intel’s requirements. In short, for these particular sales, no other party could satisfy the *Panduit* factors, making it impossible for multiple patentees to obtain lost profit damages for the same sales.

Applying this logic to Synopsys’ laptop example, Synopsys argues that “nearly every component is a but-for cause of most sales.” Synopsys Rep. Br. 20. Synopsys argues that “the reality” is “that sales of a complex product may be driven by ‘a plethora of features,’” many of which are patented. *Id.* If true, however, then lost profits on the laptop would not be available. In Synopsys’ example, the customer demands a laptop with a high resolution screen, responsive keyboard, a fast wireless network receiver, and an extended-life battery.⁹ *Id.* at 18. If each are patented by separate companies, and no manufacturer has the right to sell them all, then no manufacturer could obtain lost profits on such a laptop (none could satisfy the demand for everything). Thus, each patentee would get a reasonable royalty on their respective component.

With such multi-component products, it may often be the case that no one patentee can obtain lost profits on the overall product—the *Panduit* test is a demanding one. A patentee cannot obtain lost profits unless it and only it could have made the sale—there are no

⁹ Synopsys cites *LaserDynamics* for this example. *LaserDynamics*, however, does not analyze but for causation using the *Panduit* factors and is not even a lost profits case. The *LaserDynamics* analysis was limited to reasonable royalties. *LaserDynamics, Inc. v. Quanta Comp., Inc.*, 694 F.3d 51, 66 (Fed. Cir. 2012).

non-infringing alternatives or, put differently, the customer would not have purchased the product without the infringing feature.

Consider the laptop example. If the only patented component is the extended life battery and a customer will only buy a laptop with this battery (meaning a laptop with a lower quality battery is not an acceptable non-infringing alternative to the customer), then when an infringer who appropriates the patented extended life battery sells a laptop, the infringer has deprived the patentee of the lost profits on the laptop sale which only it could have made. If a laptop with a lower-quality battery would be an acceptable non-infringing alternative to certain customers, the patentee would not be entitled to lost profits for these laptop sales. For those customers, the patented battery was not a factor in their purchasing decision; it was not necessary for the sale. The only sales for which the patentee can obtain lost profits are the customers who would refuse to purchase laptops without the patented extended-life battery. For these lost customers, the extended-life battery drives their purchasing decisions.

When a patentee proves it is entitled to recover lost profit damages, as Synopsys concedes Mentor has done here, it is entitled to be made whole for the injuries it suffered as a result of the infringement. *See, e.g., State Indus.*, 883 F.2d at 1577 (“The measure of damages is an amount which will compensate the patent owner for the pecuniary loss sustained because of the infringement.”). In this case, the jury answered the question: “Had the Infringer not infringed, what would the Patent Holder/licensee have made?” Mentor has proven it would have earned certain profits

but for Synopsys' infringement. It is entitled to be made whole for the profits it proves it lost because Synopsys infringed. The jury found that if Synopsys had not infringed the Mentor patent by incorporating the two patented features into its emulators, Intel would not have purchased these products from Synopsys and would instead have purchased the emulators from Mentor—there were no non-infringing alternative emulators which would have satisfied Intel. *Panduit* limits lost profits to sales where there are no acceptable non-infringing alternatives that the customer would have purchased. We hold that the district court did not err in refusing to further apportion lost profits after the jury returned its verdict applying the *Panduit* factors. We conclude that, when the *Panduit* factors are met, they incorporate into their very analysis the value properly attributed to the patented feature. We affirm the district court's denial of judgment as a matter of law and/or motion for new trial with regard to damages.

4. Indefiniteness of Synopsys' '109 Patent

The district court granted summary judgment that claim 1 of Synopsys' '109 patent is indefinite. J.A. 121. A claim is indefinite if the claim, “read in light of the specification delineating the patent, and the prosecution history, fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). Definiteness requires clarity, though “absolute precision is unattainable.” *Id.* at 2129. Claims reciting terms of degree “ha[ve] long been found definite” if they provide reasonable certainty to a skilled artisan when read in the context of the patent. *Biosig Instruments, Inc. v. Nautilus,*

Inc., 783 F.3d 1374, 1378 (Fed. Cir. 2015) (quoting *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014)). This requires a patent to provide “some standard for measuring that [term of] degree.” *Id.* For example, in *Nautilus* we found the phrase “spaced relationship” definite because a “skilled artisan would understand the inherent parameters of the invention as provided in the intrinsic evidence.” *Id.* at 1384. In *Sonix Technology*, we found the phrase “visually negligible” definite based on examples from the specification and prosecution history. *Sonix Tech. Co. v. Publ’ns Int’l, Ltd.*, 844 F.3d 1370, 1379-80 (Fed. Cir. 2017). And in *DDR Holdings, LLC v. Hotels.com, L.P.*, we found the phrase “look and feel” definite because it had “an established meaning in the art by the relevant timeframe” consistent with how the phrase was used in the specification. 773 F.3d 1245, 1261 (Fed. Cir. 2014).

The ’109 patent discloses “a method for displaying the results of synthesized circuit analysis visually *near* the HDL source specification that generated the circuit.” ’109 patent at 7:57-59 (emphasis added). It explains that the method “uses information developed during translation to relate the results of the analysis to the HDL source” *Id.* at 11:29-32. It teaches that by displaying the circuit analysis results “near” the corresponding HDL code, “the present invention allows a designer to make more effective use of logic synthesis and reduce the complexity of the circuit debugging process.” *Id.* at 8:59-63.

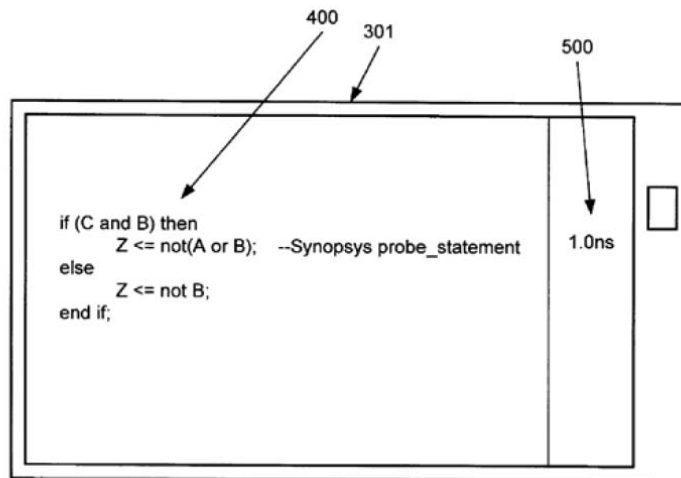
Claim 1 requires “displaying said characteristics associated with those said final circuit’s nets and parts that correspond directly with said initial cir-

cuit's nets and parts *near* said portions of said synthesis source text file that created said corresponding initial circuit parts and nets." *Id.* at 22:52-56 (emphasis added). Mentor moved for summary judgment that the word "near" was indefinite. The district court granted the motion, holding "[t]he patent's claims and specification do not permit a person of ordinary skill in the art to define the claim term 'near' with reasonable certainty." J.A. 121. We conclude that the court erred as a matter of law.

We hold the term "near" informs a person of ordinary skill in the art about the scope of the invention with reasonable certainty. A goal of the '109 patent is to aid developers when debugging HDL. '109 patent at 8:59-63. To accomplish this, the patent "relates" circuit analysis results with the HDL corresponding to a particular result, and then places the two pieces of information "near" each other on the display screen. *Id.* at 7:57-64. This allows a developer to identify and fix problems with specific lines of HDL when debugging. *Id.* at 11:29-35. In order for the patent's stated objective to occur, the system must display the related HDL and analysis results "near" enough to each other such that a developer would "relate" the two. Thus, we hold a skilled artisan would understand "near" requires the HDL code and its corresponding circuit analysis to be displayed in a manner that physically associates the two.

The patent provides examples of HDL displayed near the corresponding circuit tracing results. Figure 11 discloses HDL code fragment 400 displayed next to timing result 500:

28a



Id. at Fig. 11. The specification explains that the circuit analysis “can be displayed next to the appropriate line of the output.” *Id.* at 13:25-28. Similarly, Figure 19 displays “timing and area analysis” next to the corresponding HDL code:

	TIME	AREA
<pre>entity interrupt_controller is port(new_request : in bit_vector(3 downto 1); current_level: in bit_vector(1 downto 0); should_service: out bit); end; architecture synthesizable of interrupt_controller is signal new_level: bit_vector(1 downto 0); begin --Synopsys block_probe_begin decode: process(new_request) begin if(new_request(3) = '1') then new_level <= "11"; elsif(new_request(2) = '1') then new_level <= "10"; elsif(new_request(1) = '1') then new_level <= "01"; else new_level <= "00"; end if; end process; --Synopsys block_probe_end compare: process(current_level,new_level) begin if(new_level(1) > current_level(1)) then should_service <= '1'; elsif(new_level(1) < current_level(1)) then should_service <= '0'; elsif(new_level(0) > current_level(0)) then should_service <= '1'; else should_service <= '0'; end if; end process; end;</pre>	9 ns	5 gates
	15 ns	6 gates

Figure 19

Id. at Fig. 19, 14:32-34. A skilled artisan viewing Figures 11 and 19 would readily understand which HDL code corresponds to which timing result, based on the way the information is displayed on the screen. These examples support the conclusion that skilled artisans

would understand the meaning of “near” with reasonable certainty. *See Sonix Tech.*, 844 F.3d at 1379-80 (relying on specific examples from the specification to find a term definite).

Mentor cites Figure 30, which it argues demonstrates “near” is ambiguous:

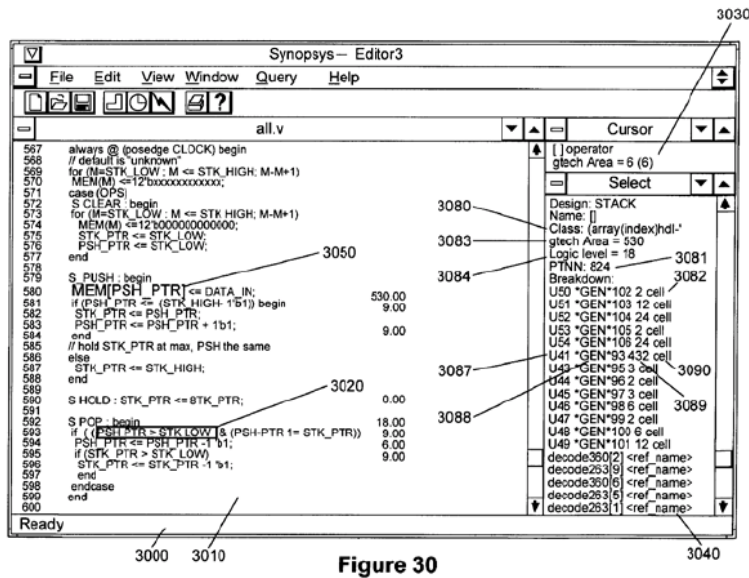


Figure 30

'109 patent at Fig. 30. Figure 30 discloses an embodiment where the circuit analysis 3030 is displayed in a separate window in the corner of the display screen. *Id.* at 21:2-3. Circuit analysis 3030 corresponds to the HDL code high-lighted in text box 3020. *Id.* at 21:8-9. In this embodiment, the circuit analysis and corresponding HDL are not displayed necessarily “near” each other.

We conclude that the Figure 30 embodiment is a different embodiment than the claimed embodiment. *See Intamin Ltd. v. Magnetar Techs., Corp.*, 483 F.3d

1328, 1336-37 (Fed. Cir. 2007) (claims may exclude embodiments if the specification discloses multiple embodiments); *Baran v. Med. Device Techs., Inc.*, 616 F.3d 1309, 1316 (Fed. Cir. 2010). The purpose of the claimed “near” requirement is to allow a developer to associate HDL with its corresponding tracing analysis. *See* ’109 patent at 7:61-64 (“The present invention relates the analysis results of each portion of the synthesized circuit to the particular part of the HDL specification that generated that circuit portion.”). This includes the embodiments shown in Figures 11 and 19. Figure 30 discloses an alternative scheme for associating HDL and circuit analysis. Rather than placing HDL code and tracing results “near” one another, the HDL code is highlighted (3020 in Fig. 30) and the tracing results for the highlighted code are placed in a separate window (3030 in Fig. 30). *Id.* at 21:2-9. Thus, there is no need to place the HDL code and circuit analysis near each other because they are already associated by alternative means. *See id.* at 21:15-16 (“Here, cursor window 3030 could display other characteristics *associated with* the object under the cursor.”) (emphasis added).

We reverse the grant of summary judgment of indefiniteness of claim 1 of the ’109 patent. We hold that the term “near” informs those of skill in the art about the scope of the invention with reasonable certainty.

5. Patent-eligibility of Synopsys’ ’526 Patent

The district court granted summary judgment that claims 19, 24, 28, 30, and 33 of the ’526 patent lack patentable subject matter, holding the “claims embrace unpatentable electromagnetic carrier waves.” J.A. 121. We affirm.

Mentor argues the term “machine-readable medium,” present in every challenged claim, renders the claimed subject matter invalid under 35 U.S.C. § 101. A patentee is free to be his own lexicographer. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc). Here, the specification expressly defines the term: “The computer readable medium is any data storage device that can store data which can be thereafter be [sic] read by a computer system. Examples of the computer readable medium include read-only memory, random-access memory, CD-ROMs, magnetic tape, optical data storage devices, *carrier waves*.” ’526 patent at 52:31-36 (emphasis added). Mentor argues that because the ’526 patent defines a “machine-readable medium” as including “carrier waves,” the claims are invalid under *In re Nuijten*, 500 F.3d 1346 (Fed. Cir. 2007).

In *Nuijten*, we addressed whether a claim covering a signal was eligible for patenting under 35 U.S.C. § 101. The claimed signal in *Nuijten* was not limited to a particular medium or carrier but rather covered “*any* tangible means of information carriage.” *Id.* at 1353. We held that a “transitory, propagating signal” did not fall within any statutory category of subject matter: process, machine, manufacture, or composition of matter. *Id.* Therefore, because the claims covered “the signal itself,” they were not eligible subject matter. *Id.* at 1357.

Because the challenged ’526 claims are expressly defined by the specification to cover carrier waves, they are similar to the ineligible *Nuijten* claims. Here, the specification defined the claimed machine-readable medium as including read-only memory, random-access memory, CD-ROMs, magnetic tape, optical

data storage devices, and carrier waves. Even though carrier waves differ greatly from the other disclosed mediums (such as CD-ROMs or magnetic tape), we are bound by the patentee’s lexicography. *See Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). Thus, the claims cover carrier signals themselves. The “presence of [other] acts recited in the claim[s] does not transform a claim covering a thing—the signal itself—into one covering the process by which that thing was made.” *Nuijten*, 500 F.3d at 1355.

The challenged ’526 claims present a scenario where there are multiple covered embodiments, and not all covered embodiments are patent-eligible. For example, if the machine-readable medium used was a “random-access memory” or “optical data storage device,” the claims would not run afoul of *Nuijten*. Synopsys contends a “nonexclusive example, from an alternate embodiment” does not render the entire claim ineligible. Synopsys Br. 69. While not binding on our court, the Manual of Patent Examining Procedure (“MPEP”) is instructive on this point. The MPEP instructs that when a claim covers “both statutory and non-statutory embodiments,” it is not eligible for patenting. MPEP § 2106 (9th ed. Mar. 2014). As an example, it states that “a claim to a computer readable medium that can be a compact disc or a carrier wave covers a non-statutory embodiment and therefore should be rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.”¹⁰ *Id.*

¹⁰ We note that Synopsys was later granted a second patent based on the ’526 patent’s disclosure (U.S. Patent No. 8,099,271) in which Synopsys drafted its claims to cover a “*non-transitory*

We affirm the district court's grant of summary judgment that claims 19, 24, 28, 30, and 33 of the '526 patent lack patentable subject matter.

B. Mentor's Cross-Appeal

1. Mentor's Allegations of Willful Infringement of the '376 Patent

The district court granted a motion in limine precluding Mentor from presenting evidence of willful infringement of the '376 patent. J.A. 40,545-47. We reverse.

We review evidentiary rulings under Ninth Circuit law, which reviews for abuse of discretion. *Advance Cardiovascular Sys. v. Medtronic, Inc.*, 265 F.3d 1294, 1308 (Fed. Cir. 2001). After Synopsys filed an action seeking declaratory judgment that the '376 patent was invalid and not infringed, Mentor answered and counterclaimed that Synopsys willfully infringed. The district court granted Synopsys' motion in limine to preclude Mentor from presenting evidence of willfulness. The court held that Mentor was precluded from presenting evidence of willfulness because it relied exclusively on post-suit willfulness conduct, and it had not first sought a preliminary injunction. It stated, "I think Synopsys is right about what we will call the *Seagate* rule, which is if you don't seek an injunction, you can't seek willful infringement for post-filing conduct." J.A. 40,547; see *In re Seagate Tech., LLC*, 497 F.3d 1360, 1374 (Fed. Cir. 2007) ("[W]hen an accused infringer's post-filing conduct is reckless, a patentee

machine-readable medium," thereby excluding the carrier waves embodiment.

can move for a preliminary injunction, which generally provides an adequate remedy for combating post-filing willful infringement.” (citations omitted)). On route to this conclusion, the district court made two errors. First, it erred in determining that the alleged conduct was post-suit conduct because it erred in determining the filing date of the relevant suit. Second, it erred in concluding that Synopsys could not present evidence of post-filing willful infringement because Synopsys did not seek a preliminary injunction.

The relevant date for determining which conduct is pre-suit is the date of the patentee’s affirmative allegation of infringement, in this case the date of Mentor’s counterclaim. *See Seagate*, 497 F.3d at 1374 (explaining that “in ordinary circumstances, willfulness will depend on an infringer’s prelitigation conduct” because “a patentee must have a good faith basis for alleging willful infringement”). Mentor relies on Synopsys’ acquisition of EVE, which terminated the license and rendered all subsequent sales infringing. These events occurred after the declaratory judgment was filed but prior to Mentor’s counterclaim for infringement. The alleged acts of infringement are thus pre-suit acts, and there is accordingly no basis for excluding Mentor’s evidence of willfulness.

We also disagree with the district court’s second decision—that Mentor could not assert willful infringement because it did not seek a preliminary injunction. As we noted in *Aqua Shield*, there is “no rigid rule” that a patentee must seek a preliminary injunction in order to seek enhanced damages. *Aqua Shield v. Inter Pool Cover Team*, 774 F.3d 766, 773-74 (Fed. Cir. 2014); *see Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1934 (2016) (“[W]e eschew any

rigid formula for awarding enhanced damages under § 284”).

We hold that the district court abused its discretion in precluding Mentor from presenting evidence of willful infringement. Because the district court determined Mentor’s willfulness allegations were improper, there are no findings on willfulness for appellate review. We vacate the district court’s grant of the motion in limine and remand for further proceedings consistent with *Halo*.

2. Written Description of Mentor’s ’882 Patent

The district court granted summary judgment that claims 7, 9, and 13 of the ’882 patent are invalid for lack of written description. We reverse.

The ’882 patent discloses an emulator comprised of a series of field programmable gate arrays (FPGAs, also referred to as “reconfigurable logic devices” in the patent). ’882 patent at 2:10-13. Each FPGA is comprised of a collection of smaller logic elements (called “reconfigurable logic elements”). *Id.* Some simulations require more than one FPGA to model. *Id.* at 2:13-21. When that occurs, the emulator connects multiple FPGAs to create larger circuits. *Id.* This can lead to timing errors if signals progress through individual FPGAs at different lengths of time. *Id.* at 1:21-32. To address this problem, the ’882 patent discloses using at least two different clocks: a user clock for the logic elements within a FPGA, and a signal routing clock for the timing between FPGAs. *Id.* at 4:13-16.

Each asserted claim requires that “the signal routing clock is independent of the first clock signal and the second clock signal.” The district court construed

“independent” as “wherein there is no required timing relationship between clock edges.” J.A. 10,848. Synopsys moved for summary judgment that the ’882 patent’s specification failed to disclose written description support for an “independent” signal routing clock. The district court granted the motion:

The motion is GRANTED with respect to invalidity of claims 7, 9, and 13 of U.S. Patent No. 6,947,882. The 882 Patents [sic] specification describes the minimum frequency relationship between the signal routing clock signal and the first and second clock signals as an exception to independent clocking. As a result, the specification does not demonstrate possession of the unqualifiedly independent clocking that the asserted claims require, and the claims do not meet the written description requirement.

J.A. 23,749-50.

A patent satisfies the written description requirement when “the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010). We review a grant of summary judgment of no written description de novo. *Crown Packaging Tech. v. Ball Metal Beverage*, 635 F.3d 1373, 1380 (Fed. Cir. 2011).

Synopsys’ argument before the district court and on appeal is based on the following passage from the ’882 patent’s specification:

As illustrated in FIG. 2, I/O circuitry 115 and 116 are clocked by signal routing clocks 117 whereas the LEs are clocked by a different clock signal (or signals), user clock(s) 118. *Except for the relationship that each of signal routing clock 117 having a higher frequency than an associated user clock 118, signal routing clocks 117 are independent of user clocks 118.*

'882 patent at 4:13-19 (emphasis added). Synopsys argues this passage requires each signal routing clock to run faster than its associated user clock. It argues this means there is a relationship between the signal routing clock and the user clock, given that the signal routing clock must operate at a higher frequency than the user clock. Therefore, the specification does not disclose an “independent” signal routing clock.

We do not agree. The very language of claim 1 which the court held was not supported by the specification was present in the originally-filed claims. Original claims are part of the original specification and in many cases will satisfy the written description requirement. *Ariad*, 598 F.3d at 1349; *see ScriptPro LLC v. Innovation Assocs., Inc.*, 833 F.3d 1336, 1341 (Fed. Cir. 2016); *Crown Packaging*, 635 F.3d at 1381. These claims raise none of the genus/species concerns that have caused us to question whether originally filed claims satisfy written description. *See, e.g., Ariad*, 598 F.3d at 1349-51. The claims at issue in this case are indistinguishable from other cases relying on originally-filed claims to satisfy the written description requirement. Like *Crown Packaging*, the “original claims clearly show that the applicants recognized and were claiming [the disputed limitation] These claims show, as *Ariad* recognized many original

claims do, that the applicants had in mind the invention as claimed” and described it. 635 F.3d at 1381. Original claim 1 recites “one or more signal routing clock signals which are independent of the first and second clock signals.” J.A. 19,441. This is the precise language the district court found missing from the ’882 specification. *See* J.A. 23,749-50 (“[T]he specification does not demonstrate possession of the unqualifiedly independent clocking that the asserted claims require”) (JMOL order); *compare ScriptPro*, 833 F.3d at 1341 (finding written description support when the original claims and the challenged claims recited the same limitation). We conclude that this original claim language clearly demonstrates that the inventor possessed an invention including “one or more signal routing clock signals which are independent of the first and second clock signals” and described it.

We reverse the grant of summary judgment that claims 7, 9, and 13 of the ’882 patent are invalid for lack of written description and remand for further proceedings.¹¹

¹¹ Synopsys filed a motion to strike portions of Mentor’s reply brief. Docket No. 90. Synopsys argues Mentor raised five new arguments relating to the ’882 patent’s written description that it did not raise before the district court or in its opening brief to our court, and it contends those arguments should be struck. Because we decide the written description issue in Mentor’s favor on the argument it undisputedly properly raised, we need not consider the arguments arguably made for the first time in the reply brief. We deny the motion.

3. Claim Preclusion Relating to Mentor's
'531 and '176 Patents

The '176 and '531 patents are two of the three patents litigated in the 2006 lawsuit between Mentor and EVE. Mentor and EVE settled the litigation when EVE took a license to the asserted patents, and Mentor dismissed its claims with prejudice. Synopsys' 2012 acquisition of EVE automatically terminated the Mentor/EVE license. Synopsys then filed a declaratory judgment action for non-infringement of the '176 and '531 patents, and Mentor counterclaimed for infringement. Mentor contends its infringement allegations were “based exclusively on acts of infringement that occurred after October 4, 2012”—the date Synopsys acquired EVE. Mentor Br. 72. Synopsys moved for summary judgment that claim preclusion barred Mentor's infringement allegations, and the district court granted the motion.

Whether a cause of action is barred by claim preclusion is a question of law reviewed without deference. *Brain Life, LLC v. Elekta Inc.*, 746 F.3d 1045, 1052 (Fed. Cir. 2014). We apply regional circuit law when determining whether claim preclusion applies. *Id.* In the Ninth Circuit, claim preclusion applies when the prior suit: (1) involved the same claim or cause of action as the later suit; (2) reached a final judgment on the merits; and (3) involved the same parties or privies. *Id.* (citing *Mpoyo v. Litton Electro-Optical Sys.*, 430 F.3d 985, 987 (9th Cir. 2005)). Whether two infringement allegations constitute the same claim or cause of action is an issue particular to patent law, and we apply our own law. *Id.*

Mentor and Synopsys dispute the applicable law. Our recent decisions in *Aspex Eyewear* and *Brain Life* are squarely on point. In *Aspex Eyewear*, we addressed the third suit in a series of related actions involving the same patent and patentee. *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335 (Fed. Cir. 2012). In the first action, the patentee asserted the patent against a first defendant. *Id.* at 1338. The district court found the patent infringed and not invalid. *Id.* at 1339. After a jury trial on damages, we affirmed. *Id.* In the second action, the patentee asserted the patent against a second defendant. *Id.* The parties ultimately settled. *Id.* The settlement agreement contained a provision that the parties “stipulate to dismissal with prejudice of [the action], including all claims and counterclaims, and any claim which would have been had by and between the Parties arising from or connected with [the action].” *Id.* (alterations in original). Subsequently, the patentee filed a third action asserting the same patent against the same defendants from the two prior actions, this time alleging infringement by newer models of the previously-accused products. *Id.* at 1340. The district court granted summary judgment that the patentee’s claims were barred by claim preclusion. *Id.* It held that the patentee’s infringement allegations “were the same as the claims that either were, or could have been, raised in the [previous actions]” and that the new accused products were “essentially the same” as the previously litigated ones. *Id.*

We reversed. We explained that claim preclusion does not bar later infringement allegations “with respect to accused products that were not in existence

at the time of the [previous actions] for the simple reason that [claim preclusion] requires that in order for a particular claim to be barred, it is necessary that the claim either was asserted, or could have been asserted, in the prior action.” *Id.* at 1342. We explained that claim preclusion did not bar infringement allegations that “did not exist at the time of the earlier action.” *Id.* We held that “if the party could not have asserted particular claims [in a previous action]—because the tortious conduct in question had not occurred at that time—those claims could not have been asserted and therefore are not barred.” *Id.* (citing *Lawlor v. Nat’l Screen Serv. Corp.*, 349 U.S. 322, 328 (1955)). And we explained that for products made or sold after the previous actions, it did not matter whether the new products were “essentially the same” as the previously accused products—claim preclusion did not bar the infringement allegations as to the new products. *Id.*

We reemphasized that decision in *Brain Life*, where we addressed a second action involving the same patent as a prior litigation. *Brain Life*, 746 F.3d at 1050. In the first action, the jury found infringement and awarded damages. *Id.* We reversed on claim construction grounds, and the district court entered final judgment of no infringement. *Id.* After the final judgment, the patentee licensed the asserted patent to a new entity, and the new licensee filed suit against the same defendant from the first action. *Id.* at 1050-51. The licensee accused new products (that were not at issue in the prior litigation) of infringement, but it conceded “there was no material difference between the currently accused products and the previously adjudicated noninfringing products.” *Id.* at 1051. The

district court granted summary judgment that claim preclusion barred the licensee's infringement allegations. *Id.* We reversed. We held that claim preclusion did not bar any infringement allegations that postdated the prior judgment. *Id.* at 1054 (“We find that [the patentee’s] second suit is not barred by claim preclusion— regardless of whether the same transactional facts are present in both suits—to the extent [the patentee’s] current infringement allegations are temporally limited to acts occurring after the final judgment was entered in the first suit.”). We explained that claim preclusion did not bar allegations of infringement occurring after the prior final judgment because the patentee *could not* have brought those claims in the prior case. *Id.*

Exactly like *Aspex Eyewear* and *Brain Life*, Mentor’s infringement allegations are based on alleged acts of infringement that occurred after the Mentor/EVE license terminated and were not part of the previous lawsuit. *See* J.A. 1223-27 (Mentor’s 2013 counterclaims of infringement); Mentor Br. 72. Claim preclusion does not bar these allegations because Mentor could not have previously brought them. *See Brain Life*, 746 F.3d at 1054. The present lawsuit is based on post-license conduct, so the alleged infringement did not exist during the previous action. *See Lawlor*, 349 U.S. at 328 (“[The prior judgment] cannot be given the effect of extinguishing claims which did not even then exist and which could not possibly have been sued upon in the previous case.”); *Asetek Denmark*, 842 F.3d at 1362 (“It is well established, however, that the difference in timing means that the two situations do not involve the same ‘claim’ for claim-preclusion purposes, even if all the conduct is alleged

to be unlawful for the same reason.”). Thus, Mentor’s allegations are not barred. *See Aspex Eyewear*, 672 F.3d at 1342. Because the allegations could not have been brought in the first action, we need not determine whether the newly accused products are “essentially the same” as the products litigated in the first action. *See id.*

Synopsys contends *Aspex Eyewear* and *Brain Life* are inconsistent with our decisions in the *Foster* cases, which it argues control because they were issued prior to *Aspex Eyewear* and *Brain Life*. *See Foster v. Hallco Mfg. Co.*, 947 F.2d 469 (Fed. Cir. 1991) (“*Foster I*”); *Hallco Mfg. Co. v. Foster*, 256 F.3d 1290 (Fed. Cir. 2001) (“*Foster II*”). *Foster I* addressed a second action after a previous action ended with a consent judgment. *Foster I*, 947 F.2d at 472. In the first action, the parties settled, and the defendant obtained a license to the asserted patents. *Id.* The consent judgment contained a provision saying the asserted patents were “valid and enforceable in all respects.” *Id.* The defendant subsequently began manufacturing new products and filed suit seeking a declaration that the asserted patents were invalid and the new products did not infringe. *Id.* at 473. We held that claim preclusion barred relitigation of the patents’ validity only if the patentee’s “claim” was identical to its previous claims. *Id.* at 478. We explained that “a ‘claim’ rests on a particular factual transaction or series thereof on which a suit is brought.” *Id.* at 479. We were “unpersuaded that an ‘infringement claim,’ for purposes of claim preclusion, embraces more than the specific devices before the court in the first suit.” *Id.* In *Foster II*—an unrelated lawsuit involving the same parties—we ad-

dressed whether a defendant could challenge a patent's validity in a second action after a first action involving the patent was dismissed with prejudice after a settlement. *Foster II*, 256 F.3d at 1294. We held that claim preclusion bars relitigation of the patent's validity only if the accused devices "are essentially the same, or if any differences between them are merely colorable." *Id.* at 1297.

There is language in the *Foster* cases that could be read as inconsistent with *Aspex Eyewear* and *Brain Life*. However, the cases addressed different factual issues. *Foster I* and *Foster II* both addressed whether a defendant could re-raise validity challenges in a subsequent action. In *Foster II*, we specifically characterized *Foster I* as addressing "under what circumstances, if any, claim preclusion would operate to prevent a subsequent challenge to patent validity when the device in the second action was not involved in the first action." *Foster II*, 256 F.3d at 1295. Neither case addressed whether a patentee could bring new *infringement* allegations based on conduct occurring after a previous litigation ended. This is the precise issue addressed in *Aspex Eyewear* and *Brain Life* and the precise issue now before us.

Reading the *Foster* cases as Synopsys requests—that claim preclusion bars successive infringement suits when the accused products are essentially the same—would not only create an intra-circuit split, but also would be inconsistent with the Supreme Court's decision in *Lawlor*. In *Lawlor*, the Supreme Court instructed that a prior judgment "cannot be given the effect of extinguishing claims which did not even then exist and which could not possibly have been sued upon in the previous case." *Lawlor*, 349

U.S. at 328. *Aspex Eyewear* and *Brain Life* are consistent with this holding. Conversely, interpreting the *Foster* cases as barring a patentee from asserting infringement allegations that did not exist at the time of a previous action would be at odds with *Lawlor*.

The facts of the underlying case further weigh against Synopsys' position. Synopsys consciously terminated the Mentor/EVE license by acquiring EVE. Similarly, EVE consciously terminated the Mentor/EVE license by allowing itself to be acquired by Synopsys. Synopsys/EVE should not be able to use the fact that it voluntarily terminated the Mentor/EVE license as a shield from further infringement liability. If we adopted Synopsys' position, any licensee holding a license obtained through litigation could breach that license, yet prevent the patentee from asserting infringement against new products not covered by the license. A licensee should not be able to use the fact that it voluntarily terminated a license as a shield against future infringement liability.¹²

Synopsys also argues Mentor's infringement allegations are barred by the *Kessler* decision. See *Kessler v. Eldred*, 206 U.S. 285 (1907). The *Kessler* decision permits an adjudicated non-infringer "to continue the same activity in which it engaged prior to the infringement allegations once it ha[s] defeated those contentions in the first suit." *Brain Life*, 746 F.3d at

¹² Mentor filed its '176 and '531 infringement allegations as a counterclaim to Synopsys' declaratory judgment of non-infringement. J.A. 1216-29. It would be strange to hold that claim preclusion barred a patentee from raising a counterclaim of infringement when it was sued for a declaration of non-infringement.

1056. It allows “an adjudged *non-infringer* to avoid repeated harassment for continuing its business as usual post-final judgment in a patent action where circumstances justify that result.” *Id.* (emphasis in original). EVE is not an adjudicated non-infringer; it was a willing licensee that was granted a license to the ’176 and ’531 patents, which terminated when it was acquired by Synopsys. Without a valid license from Mentor, it could not “continue the same activity in which it engaged prior to the infringement allegations.” The *Kessler* decision does not apply.

Consistent with the Supreme Court’s *Lawlor* decision and our decisions in *Aspex Eyewear* and *Brain Life*, we hold that claim preclusion does not bar a patentee from bringing infringement claims for acts of infringement occurring after the final judgment in a previous case. We reverse the grant of summary judgment that claim preclusion barred Mentor’s assertion of the ’531 and ’176 patents and remand for further proceedings.

III. CONCLUSION

We hold there was substantial evidence to support the jury’s infringement verdict regarding the ’376 patent and affirm the district court’s denial of judgment as a matter of law. We affirm the damages award. We affirm the summary judgment that assignor estoppel bars Synopsys from challenging the validity of the ’376 patent. We reverse the summary judgment that Synopsys’ ’109 patent is indefinite. We affirm the summary judgment that Synopsys’ ’526 patent lacks eligible subject matter. We vacate the order granting the motion in limine precluding Mentor from presenting evidence of willful infringement and remand for a

trial of that issue and assessment of Mentor's claim for enhanced damages. We reverse the summary judgment that Mentor's '882 patent lacks written description support. Finally, we reverse the summary judgment that Mentor's infringement allegations regarding the '531 and '176 patents are barred by claim preclusion.

We remand for further proceedings consistent with this opinion.

**AFFIRMED-IN-PART, REVERSED-IN-PART,
VACATED-IN-PART, AND REMANDED**

COSTS

Costs to Mentor.

APPENDIX B

**UNITED STATES DISTRICT COURT
DISTRICT OF OREGON
PORTLAND DIVISION**

**MENTOR GRAPHICS CORPORATION,
AN OREGON CORPORATION,**
Plaintiff/Counter-defendant

v.

**EVE-USA, INC., A DELAWARE CORPORA-
TION, SYNOPSIS EMULATION AND VERIFI-
CATION S.A.S., FORMED UNDER THE LAWS
OF FRANCE, SYNOPSIS, INC.,
A DELAWARE CORPORATION,**
Defendants/Counter-claimants

Case No. 3:10-cv-954-MO (lead),
Case No. 3:12-cv-1500-MO, Case No. 3:13-cv-579-MO

OPINION AND ORDER

MOSMAN, J.,

On October 10, 2014, a jury entered a verdict finding that Defendants (collectively “Synopsis”) were liable for direct and contributory infringement of Plaintiff’s (“Mentor”) patent. Verdict [722] at 1-3. The jury awarded Mentor \$36,417,661 for lost profits from sales Mentor proved it would have made but for the infringement and 5% of \$4,842,209 as a reasonable

royalty for sales that Mentor failed to prove it would have made but for the infringement. *Id.* at 3. Since the entry of the jury verdict, Mentor filed a Motion for Accounting [783] and Synopsys filed a Motion for Judgment as a Matter of Law (“JMOL”) [787] and a Motion for New Trial on Damages [790].

On March 3, 2015, an oral argument was held regarding these motions. This opinion and order will dispose of all the issues taken under advisement at the close of oral argument.

I. Motion for Accounting

Mentor’s Motion for Accounting [783] is DENIED. For the reasons stated on the record at oral argument, I order that a new trial be held to determine the amount of supplemental damages Mentor is entitled to receive. The two remaining sets of issues after oral argument were: (1) whether a jury trial would be necessary to determine the amount of supplemental damages Mentor is entitled to, and whether that trial would result in what I called a jury trial trap; and (2) whether Mentor would be able to seek pre-verdict supplemental damages at this new trial. For the following reasons, I do not believe this order will result in a jury trial trap, and I believe that Mentor has the right to seek pre-verdict supplemental damages.

A. Jury Trial Issues

1. The Right to a Jury Trial

At oral argument and in its reply brief, Mentor argued that I had the discretion to decide how to determine the amount of supplemental damages Mentor was entitled to; a jury trial was not required. In addition, Mentor raised the issue of a potential jury trial

trap if I were to order a new jury trial to determine the supplemental damages at issue. In other words, there would be a trap because using a jury trial would trigger a line of Federal Circuit opinions regarding res judicata that in this context would require me to dismiss the supplemental damages trial. I believe a jury trial is required to determine the amount of supplemental damages Mentor is entitled to, but I do not believe it is appropriate to determine the potential jury trial trap issue at this time.

At oral argument and in its briefing, Mentor argued that I was not required to hold a jury trial to determine supplemental damages. Mentor relied on *SynQor, Inc. v. Artesyn Technologies, Inc.*, in which the Federal Circuit held:

[T]he amount of supplemental damages following a jury verdict is a matter committed to the sound discretion of the district court [A] jury right is not implicated every time the district court is required to determine factual matters before awarding supplemental damages to compensate the patentee for post-verdict infringement.

709 F.3d 1365, 1384 (Fed. Cir. 2013) (internal quotations omitted). I believe Mentor's reliance on this case is misplaced. The fact that the Federal Circuit said a jury right is not implicated *every time* when it could have said that a jury right is *never* implicated indicates there are circumstances where determining certain factual matters would trigger a jury right. I believe this to be such a case. In *Apple, Inc. v. Samsung Electronics Co., Ltd.*, the district court held it could

award supplemental lost profits damages, but not royalty damages, without triggering a jury trial right. 926 F. Supp. 2d 1100, 1106 (N.D. Cal 2013). With respect to supplemental lost profits damages, the court held, “Because the jury returned an award for each product separately, the Court can simply divide the jury award for each product by that product’s number of sales to calculate [the lost profits] per-product amount.” *Id.* With respect to supplemental royalty damages, the court held, “Here, the jury did not make a finding as to the appropriate royalty rate, and the Court cannot now do so without treading on Samsung’s Seventh Amendment right to a jury trial on that issue.” *Id.* In other words, where an award for supplemental damages would require the district court to engage in additional fact-finding of essential facts to the proffered damages theory, a jury right is triggered. In *Apple*, the court was able to award lost profits because no additional fact-finding was required. The district court was able to take the per-product lost profits amount found by the jury and apply it to any undisputed sales not considered by the jury. However, the district court could not award supplemental royalty damages because that would have required the district court to determine the appropriate royalty rate, i.e. an essential fact to a royalty award not determined by the jury.

In our case, in order to extrapolate an award of supplemental lost profits from the jury award I would need to find that the Intel two-supplier market continued after December 31, 2013. An Intel two-supplier market is an essential fact to Mentor’s damages theory, but the jury was not required to determine, nor given any evidence to determine, whether the two-

supplier market continued after December 31, 2013. Synopsys argues that sometime in 2014, Intel acquired a small tech company called Avago, which had a Palladium emulator. Defs.' Response in Opposition [808] at 3-4. Synopsys argues that it can prove that the Palladium met Intel's needs and that historical precedent would show that once an emulation provider has a foothold within a company, such as the Palladium emulator in this case, it is likely to grow its presence. *Id.* This would undermine an essential factual basis of the jury award—i.e. a two-supplier Intel market. Based on the principal found in *Apple*, this alleged factual change triggers a jury trial right.

2. Jury Trial Trap

Mentor argues that if I grant Synopsys's request for a jury trial to determine supplemental damages, Synopsys will then argue that a line of Federal Circuit cases bars the trial I have just ordered—this is what I called the jury trial trap at oral argument. Pl.'s Reply [816] at 8. Although I expressed some tentative views on this issue at oral argument, I do not believe this issue is ripe. Mentor may be correct that Synopsys will raise this argument when Mentor moves for a trial on supplemental damages, but because Mentor is yet to move for a trial and because Synopsys has not yet made this argument, it is too early for me rule on this issue. Whether or not there is a jury trial trap does nothing to change the fact that Synopsys's Seventh Amendment rights require that there be a trial. I leave it to a later summary judgment motion to decide whether or not a jury trial is barred by *res judicata*.

B. Pre-Verdict Supplemental Damages

District courts have the authority to award supplemental damages based on pre-verdict infringement not considered by the jury. *See Metso Minerals, Inc. v. Powerscreen Int'l Distrib. Ltd.*, 833 F. Supp. 2d 333, 351 (E.D. N.Y. 2011) (awarding supplemental damages for pre-verdict infringement not considered by jury); *ActiveVideo Networks, Inc. v. Verizon Commc'ns., Inc.*, No. 10 Civ. 248, 2011 WL 4899922, at *4 (E.D. Va. Oct. 14, 2011) (awarding supplemental damages for the approximate five month period pre-dating the trial and jury verdict); *Hynix Semiconductor, Inc. v. Rambus, Inc.*, 609 F. Supp. 2d 951, 959-60, 987 (N.D. Cal. 2009) (awarding pre-verdict supplemental damages after “the last date for which [the patentee] was able to present evidence of [infringing] sales to the jury”); *Itron, Inc. v. Benghiat*, No. CIV.99-501 (JRT/FLN), 2003 WL 22037710, at *15-16 (D. Minn. Aug. 29, 2003) (awarding damages for pre-verdict period of infringement for which infringer provided no sales data); *Mikohn Gaming v. Acres Gaming, Inc.*, No. CV-S-97-1383-EJW, 2001 WL 34778689, at *19 (D. Nev. Aug. 2, 2001) (awarding supplemental damages that include pre-verdict infringing sales not contained in the damages experts’ reports nor presented to the jury). However, Synopsys correctly cites *Oscar Mayer Food Corporation v. Conagra, Inc.* for the proposition that “[if] it is not clear whether the jury awarded damages for the period of time up to and including the date of trial,” the “awarding [of] additional amounts for damages” would improperly invade “the jury’s province to determine actual damages.” 869 F. Supp. 656, 668 (W.D. Wis. 1994). Synopsys argued that it is not clear whether the jury

awarded damages for the pre-verdict period starting with the close of discovery and running up to when the verdict was entered because: (1) the verdict form and instructions did not contain a damages cutoff date; and (2) a jury question [was] [*sic*] submitted just prior to the jury entering a verdict. I do not find these arguments to be sufficiently persuasive to justify barring Mentor from seeking pre-verdict supplemental damages.

In *Telecordia Technologies, Inc. v. Cisco Systems, Inc.*, the Federal Circuit held that “[d]istrict courts have broad discretion to interpret an ambiguous verdict form, because district courts witness and participate directly in the jury trial process. The district court was in a position to assess whether the verdict figure represented past infringement as well as ongoing infringement.” 612 F.3d 1365, 1378 (Fed. Cir. 2010). Although the verdict form and jury instructions did not contain an explicit damages cutoff date, based on the evidence presented at trial, I believe the jury did not consider or award damages for the period of time between the close of discovery (December 31, 2013) and the entry of the verdict (October 10, 2014). First, as Mentor points out in its briefing, both sides’ experts limited their damages calculations to sales and market conditions up to and including December 31, 2013. Neither expert included models or a proposed methodology for how those calculations could be projected into the future. Second, I do not view the jury note as strong evidence that the jury awarded damages for any period of time after December 31, 2013. The jury question stated, “Where in the binders can we find Eve sales to Intel from 2006 to present.” Jury Question [724]. Although the question asks for

data up to the “present,” this could simply have been imprecise language from the jury. It is not unreasonable to think that when the jury asked for data up to the present, it meant up until 2013—the cutoff for the relevant time period it heard about at trial. What is more telling, is that the jury only asked for sales data from Eve to Intel, and not Eve to all customers. If the jury had intended to award damages for the period of time after December 31, 2013 through the verdict, it should have been asking for all Eve sales data regardless of the customer. Just as the jury had not received any sales data for Eve to Intel post-2013—which it apparently looked for and could not find—it had not received any sales data of Eve to other companies, and therefore would not have been able to find all the necessary Eve sales data had it tried to award damages for that period. Although the verdict form and jury instructions could have been clearer, based on the evidence presented at trial, it is clear that the jury did not award damages for any period of time after December 31, 2013. Mentor is therefore entitled to seek pre-verdict supplemental damages.

II. Motion for Judgment as a Matter of Law

Synopsys’s Motion for JMOL [787] is GRANTED in part and DENIED in part. For the reasons stated on the record, I reject Synopsys’s arguments that: (1) Mentor failed to prove direct infringement; (2) Mentor failed to apportion its damages; (3) Mentor failed to prove that the relevant market was inelastic; (4) Mentor failed to prove Intel was in a two-supplier market; and (5) Mentor failed to properly support its reasonable royalty arguments. The two remaining issues after oral argument were: (1) whether Mentor in fact made a prima facie case of contributory infringement;

and (2) whether Mentor's use of the Veloce Quattro in its damages calculation was proper. For the following reasons, I do not believe Mentor established a prima facie case of contributory infringement, but I do believe it was proper for Mentor to use the Veloce Quattro in its damages calculations. Synopsys's JMOL motion is therefore granted with respect to its contributory infringement arguments, but denied in all other regards.

A. *Contributory Infringement*

In order to establish a claim for contributory infringement, a plaintiff must show that the accused material or apparatus used in the patented process lacks a substantial non-infringing use. *In Re Bill of Lading Transmission*, 681 F.3d 1323, 1337 (Fed. Cir. 2012) (internal quotation marks and citations omitted). "For purposes of contributory infringement, the inquiry focuses on whether the accused products can be used for purposes *other than* infringement." *Id.* at 1338 (emphasis in original). "Where the product is equally capable of, and interchangeably capable of both infringing and substantial non-infringing uses, a claim for contributory infringement does not lie." *Id.* Based on the evidence presented at trial, in the briefing, and at oral argument, I agree with Synopsys that Mentor failed to prove that flexible and value change probes lacked a substantial non-infringing use. In its response, Mentor states, "[We] made [our] prima facie case by demonstrating that the flexible and value change probes practice the '376 Patent." Pl.'s Response in Opposition [809] at 21. Merely showing infringement, however, is not sufficient to establish a claim for contributory infringement; Mentor also had to show that flexible and value change probes lacked

any substantial non-infringing use. Mentor has failed to point to any evidence in the record presented at trial from which the jury could reasonably have concluded that flexible and value change probes lacked a substantial non-infringing use. I therefore grant Synopsys Motion for JMOL with regards to Mentor's contributory infringement claim.

B. Use of the Veloce Quattro in Damages Calculation

Synopsys argued that Mentor's use of the Veloce Quattro in its damages presentation fatally flawed its damages theory because the evidence showed the Veloce Quattro was not suitable for Intel. Synopsys argues that because Mentor failed to prove it had a product Intel would have actually bought had ZeBu been pulled off the shelf, Mentor failed to prove that but for Synopsys's infringement of the '376 Patent it would have made any additional profits.

Synopsys's argument that there was extensive evidence that the Intel processor group would not buy the Veloce Quattro in place of the ZeBu has no basis. Defs.' Reply [819] at 28-29. The fact that the Intel processor group had not purchased the Veloce Quattro in the past, when purchasing an infringing ZeBu was an option, tells us little about what it would have done had ZeBu been pulled from the market. The jury heard several pieces of evidence that would have allowed it to determine what the Intel processor group would have done had ZeBu been pulled from the shelves. First, the jury heard testimony that at least some Intel groups had purchased Veloce Quattro emulators in the past. *See, e.g.*, Pl.'s Response [809] at Ex. C; Trial Ex. 458 at lines 866, 931, 975, and 978;

Trial Tr. [737] at 691:4-6. Second, Synopsys's only argument for why the Veloce Quattro was an unacceptable alternative to ZeBu for Intel's processor group was that it lacked sufficient capacity—not speed, price, performance or foot print. However, the jury heard testimony from Dr. Degnan that it was possible to connect several emulators together to create increased capacity, and that many consumers in the emulator market were doing just that. Trial Tr. [737] at 733:18-22. Although Synopsys attacked the reliability of that testimony, it never objected to Dr. Degnan presenting it to the jury. Therefore, on the evidence the jury received, it could have reasonably concluded that even if at all times a single Veloce Quattro had insufficient capacity to meet Intel's needs, but for Synopsys's infringement Intel would have bought multiple Veloce Quattro emulators and simply connected them together to overcome their capacity shortcomings. Nothing about Mentor's use of the Veloce Quattro in its damages calculation fatally flaws the jury award.

III. Motion for New Trial on Damages

Synopsys's Motion for New Trial on Damages [790] is DENIED. For the reasons stated on the record, I reject Synopsys's arguments that: (1) Synopsys was prejudiced by a last minute change in the jury instructions; (2) the lost profits and two-supplier market instructions were clearly erroneous; and (3) the jury verdict awards Mentor double recovery. The only open issue after oral argument was whether or not *Ericsson, Inc. v. D-Link Systems, Inc.* would demonstrate that the lost profits instructions were clearly erroneous. 773 F.3d 1201 (Fed. Cir. 2014). It did not.

Synopsys argues that I should focus on the portion of *Ericsson* that merely recites the default rule that a patent owner who proves infringement is only entitled to receive damages based on the value of the patent feature—no value from non-patented features should be added. However, as both sides are well aware, there is an exception to this rule. In *State Industries, Inc. v. Mor-Flo Industries, Inc.*, the Federal Circuit held, “the entire market value rule ... permits recovery of damages based on the value of the entire apparatus containing several features, where the patent related feature is the basis for consumer demand.” 883 F.2d 1573, 1580 (Fed. Cir. 1989). The court went on to cite *Kori Corp. v. Wilco Marsh Buggies & Draglines, Inc.* for the proposition that the entire market value rule is properly applied when the nonpatented devices cannot be sold without the patented features. *Id.* (citing 761 F.2d 649, 656 (Fed. Cir. 1985) (“The ultimate determining factor is whether the patentee or its licensee can normally anticipate the sale of the unpatented components together with the patented components”). This case fits within the rule stated in *State Industries* and *Kori Corp.* There was no evidence at trial that consumers could, or ever did, purchase the unpatented features separate from the patented features. Consumers were presented with an emulator and they either bought it or they did not. There was no ability to separate the patented feature from the unpatented features and purchase some but not all of the features. Because Mentor proved at trial that it could normally anticipate the sale of the unpatented components together with the patented components, the lost profits instruction in this case did not offend or contradict the

entire market value rule. The *Ericsson* recitation of the default rule does nothing to change that conclusion.

CONCLUSION

For the reasons stated above, Mentor's Motion for Accounting [783] is DENIED. Synopsys's Motion for JMOL [787] is GRANTED with respect to Mentor's contributory infringement claim and DENIED in all other respects. Synopsys's Motion for New Trial on Damages [790] is DENIED.

IT IS SO ORDERED.

DATED this 11th day of March, 2015.

/s/ Michael W. Mosman
MICHAEL W. MOSMAN
United States District Judge

62a

APPENDIX C

[Email header omitted]

**UNITED STATES DISTRICT COURT
DISTRICT OF OREGON
PORTLAND DIVISION**

Notice of Electronic Filing

The following transaction was entered on 2/21/2014 at 11:17 AM PST and filed on 2/21/2014

Case Name: Mentor Graphics Corporation
v. EVE-USA, Inc. et al

Case Number: 3:10-cv-00954-MO

Filer:

Document Number: 472 (No document attached)

Docket Text:

ORDER: Mentor Graphics's motion [365] for partial summary judgment is GRANTED with respect to Mentor Graphics's assertion of assignor estoppel and DENIED in all other respects. Synopsys S.A., EVE, S.A., and EVE-USA's motion [371] for partial summary judgment will remain under advisement until after this Court issues a claim construction order. Ordered by Judge Michael W. Mosman. (dls)

[Additional email recipients omitted]

APPENDIX D

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

**MENTOR GRAPHICS CORPORATION,
AN OREGON CORPORATION,**
Plaintiff-Cross-Appellant

v.

**EVE-USA, INC., A DELAWARE CORPORA-
TION, SYNOPSIS EMULATION AND VERIFI-
CATION S.A.S., FORMED UNDER THE LAWS
OF FRANCE, SYNOPSIS, INC.,
A DELAWARE CORPORATION,**
Defendants-Appellants

2015-1470, 2015-1554, 2015-1556

Appeals from the United States District Court for
the District of Oregon in Nos. 3:10-cv-00954-MO,
3:12-cv-01500-MO, 3:13-cv-00579-MO, Judge Michael
W. Mosman.

ON PETITION FOR REHEARING EN BANC

MARK E. MILLER, O'Melveny & Myers LLP, San
Francisco, CA, filed a response to the petition for
plaintiff-cross-appellant. Also represented by ANNE E.
HUFFSMITH, LUANN LORAIN SIMMONS.

E. JOSHUA ROSENKRANZ, Orrick, Herrington & Sutcliffe LLP, New York, NY, filed a petition for rehearing en banc for defendants-appellants. Also represented by DANIEL A. RUBENS, ANDREW D. SILVERMAN; ROBERT M. LOEB, ERIC SHUMSKY, Washington, DC; VICKI L. FEEMAN, TRAVIS JENSEN, SCOTT T. LONARDO, Menlo Park, CA; WILLIAM H. WRIGHT, Los Angeles, CA; INDRA NEEL CHATTERJEE, Goodwin Procter LLP, Menlo Park, CA.

ERIC E. BENSEN, Garden City, NY, as amicus curiae.

PHILLIP R. MALONE, Stanford Law School, Stanford, CA, for amici curiae Public Knowledge and Jeremy W. Bock, *et al.* Also represented by JEFFREY THEODORE PEARLMAN.

Before PROST, *Chief Judge*, NEWMAN, LOURIE, DYK, MOORE, O'MALLEY, REYNA, WALLACH, TARANTO, CHEN, HUGHES, and STOLL, *Circuit Judges*.

STOLL, *Circuit Judge*, with whom NEWMAN, MOORE, O'MALLEY, REYNA, and WALLACH, *Circuit Judges*, join, concurring in the denial of rehearing en banc.

DYK, *Circuit Judge*, with whom HUGHES, *Circuit Judge*, joins, dissenting from the denial of rehearing en banc.

MOORE, *Circuit Judge*, with whom CHEN, *Circuit Judge*, joins, concurring in the denial of panel rehearing.

PER CURIAM.

ORDER

Appellants EVE-USA, Inc., Synopsys Emulation and Verification S.A.S., and Synopsys, Inc. filed a petition for rehearing en banc. A response to the petition was invited by the court and filed by the cross-appellant Mentor Graphics Corporation. Two motions for leave to file amici curiae briefs were also filed and granted by the court.

The petition, response, and briefs of amici curiae were referred to the panel that heard the appeal, and thereafter were referred to the circuit judges who are in regular active service. A poll was requested, taken, and failed.

Upon consideration thereof,

IT IS ORDERED THAT:

The petition for panel rehearing is denied.

The petition for rehearing en banc is denied.

The mandate of the court will be issued on September 8, 2017.

FOR THE COURT

September 1, 2017

Date

/s/ Peter R. Marksteiner

Peter R. Marksteiner

Clerk of Court

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

**MENTOR GRAPHICS CORPORATION,
AN OREGON CORPORATION,**
Plaintiff-Cross-Appellant

v.

**EVE-USA, INC., A DELAWARE CORPORA-
TION, SYNOPSIS EMULATION AND VERIFI-
CATION S.A.S., FORMED UNDER THE LAWS
OF FRANCE, SYNOPSIS, INC.,
A DELAWARE CORPORATION,**
Defendants-Appellants

2015-1470, 2015-1554, 2015-1556

Appeals from the United States District Court for
the District of Oregon in Nos. 3:10-cv-00954-MO,
3:12-cv-01500-MO, 3:13-cv-00579-MO, Judge Michael
W. Mosman.

STOLL, *Circuit Judge*, with whom NEWMAN, MOORE,
O'MALLEY, REYNA, and WALLACH, *Circuit Judges*,
join, concurring in the denial of rehearing en banc.

Because the panel’s decision is consistent with long-standing patent law damages principles,¹ I concur in the denial of rehearing en banc.

We have consistently held that where an infringing product is a multi-component product with patented and unpatented components, apportionment is required. *See VirnetX, Inc. v. Cisco Sys., Inc.*, 767 F.3d 1308, 1326 (Fed. Cir. 2014) (“No matter what the form of the royalty, a patentee must take care to seek only those damages attributable to the infringing features.”); *Commonwealth Sci. & Indus. Research Org. v. Cisco Sys., Inc.*, 809 F.3d 1295, 1301 (Fed. Cir. 2015) (“[D]amages awarded for patent infringement ‘must reflect the value attributable to the infringing features of the product, and no more.’”) (quoting *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1226 (Fed. Cir. 2014)); *Ericsson*, 773 F.3d at 1226 (“[A]pportionment is required even for non-royalty forms of damages.”). The apportionment requirement dates back to *Garretson v. Clark*, 111 U.S. 120 (1884), where the Supreme Court held that “[t]he patentee ... must in every case give evidence tending to separate or apportion the defendant’s profits and the patentee’s damages between the patented feature and the unpatented features.” *Garretson*, 111 U.S. at 121.

Garretson, however, also holds that damages for patent infringement may be based on the value of the entire infringing product if the patentee can show

¹ I also believe the panel decision to be consistent with long-standing damages principles in property, tort and contract. I do not agree with the dissent that there should be a special rule for damages in patent cases which is at odds with mainstream damages principles.

that “the entire value of the whole machine ... is properly and legally attributable to the patented feature.” *Id.* In other words, “[i]f it can be shown that the patented feature drives the demand for an entire multi-component product, a patentee may be awarded damages as a percentage of revenues or profits attributable to the entire product.” *LaserDynamics, Inc. v. Quanta Comput., Inc.*, 694 F.3d 51, 67 (Fed. Cir. 2012).

In this case, on the question of lost profits, the jury was instructed to consider the *Panduit* factors, including “demand for the patented product” (factor one) and an “absence of acceptable noninfringing substitutes” (factor two). *See Panduit Corp. v. Stahlin Bros. Fibre Works, Inc.*, 575 F.2d 1152, 1156 (6th Cir. 1978). As the panel recognized, these two factors together “consider[] demand for the patented product as a whole” and “consider[] demand for particular limitations or features of the claimed invention.” *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1285 (Fed. Cir. 2017) (citing *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1330-31 (Fed. Cir. 2009)). As the panel noted, the jury found that “Intel would not have purchased the [infringing] Synopsys emulator system without the two patented features and that there were no other alternatives available.” *Id.* at 1287. This undisputed fact finding established that Mentor proved that the patented features were what imbued the combined features that made up the emulator with marketable value. Under these circumstances, further apportionment is unnecessary. *See Ericsson*, 773 F.3d at 1227 (“[W]here the entire value of a machine as a marketable article is

‘properly and legally attributable to the patented feature,’ the damages owed to the patentee may be calculated by reference to [the entire value of the machine.]” (quoting *LaserDynamics*, 694 F.3d at 67); *VirnetX*, 767 F.3d at 1326. Whether one views this in terms of what imbues value to the ultimate combination of features or what is a driver of demand for those combined features, the result is the same: the apportionment required by *Garretson* is satisfied.

In my view, the dissent mischaracterizes the panel’s holding in this case, suggesting the panel held that in all cases where lost profits are awarded, apportionment is not required. Dissent Op. 1. To the contrary, the panel made clear that apportionment is typically necessary in both reasonable royalty and lost profits analyses. See *Mentor Graphics*, 851 F.3d at 1287-88. Under the narrow facts of this case, however, the panel determined that because the *Panduit* factors are satisfied, the damages award properly accounted for apportionment. I do not read the panel’s decision to apply broadly to all lost profits analyses.

Accordingly, based on the jury’s undisputed fact findings on the *Panduit* factors in this case, I agree with the panel that Mentor properly accounted for apportionment of lost profits between the patented and unpatented features of the infringing emulator system. For this reason, I concur in the denial of rehearing en banc.

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

**MENTOR GRAPHICS CORPORATION,
AN OREGON CORPORATION,**
Plaintiff-Cross-Appellant

v.

**EVE-USA, INC., A DELAWARE CORPORA-
TION, SYNOPSIS EMULATION AND VERIFI-
CATION S.A.S., FORMED UNDER THE LAWS
OF FRANCE, SYNOPSIS, INC.,
A DELAWARE CORPORATION,**
Defendants-Appellants

2015-1470, 2015-1554, 2015-1556

Appeals from the United States District Court for the District of Oregon in Nos. 3:10-cv-00954-MO, 3:12-cv-01500-MO, 3:13-cv-00579-MO, Judge Michael W. Mosman.

DYK, *Circuit Judge*, with whom HUGHES, *Circuit Judge*, joins, dissenting from the denial of rehearing en banc.

I respectfully dissent from the court's decision to not rehear this case en banc. In my view, the panel decision here improperly holds that when lost profits are awarded for patent infringement, there is no requirement for apportionment between patented and

unpatented features, contrary to longstanding Supreme Court authority.

For over a century, it has been established by both the decisions of the Supreme Court and this court that awards of lost profits or reasonable royalties for patent infringement must be apportioned between patented and unpatented features. *See, e.g., Dowagiac Mfg. Co. v. Minn. Moline Plow Co.*, 235 U.S. 641, 646-48 (1915); *Dobson v. Hartford Carpet Co.*, 114 U.S. 439, 443-44 (1885); *Blake v. Robertson*, 94 U.S. (4 Otto) 728, 733-34 (1876); *Garretson v. Clark*, 111 U.S. 120, 121 (1884); *Seymour v. McCormick*, 57 U.S. (16 How.) 480, 489-90 (1853); *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1226 (Fed. Cir. 2014). Indeed, the panel opinion acknowledges that “apportionment is ... necessary in both reasonable royalty and lost profits analysis.” *Mentor Graphics Corp. v. EVE-USA, Inc.*, 851 F.3d 1275, 1287 (Fed. Cir. 2017). At the same time, the case law is also clear that any award of lost profits is not appropriate unless the patentee establishes that it would have sold the item but for the infringement. *See, e.g., Grain Processing Corp. v. Am. Maize-Prods. Co.*, 185 F.3d 1341, 1349 (Fed. Cir. 1999). This but-for requirement is encapsulated in the first and second *Panduit* factors, which are “demand for the patented product” and the “absence of acceptable noninfringing substitutes,” i.e., alternatives that could have prevented the patentee from itself making the sale.¹

¹ In *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1152 (6th Cir. 1978), the Sixth Circuit held that a patentee can recover lost profits only if it can prove “(1) demand for the

The panel here holds that applying the first and second *Panduit* factors results in the required apportionment. See *Mentor*, 851 F.3d at 1285 (“[T]he absence of non-infringing alternatives ties lost profit damages to specific claim limitations and ensures that damages are commensurate with the value of the patented features.”). But calling the first and second *Panduit* factors apportionment “ignore[s] the ancient wisdom that calling a thing by a name does not make it so.” *City of Madison, Joint Sch. Dist. No. 8 v. Wis. Emp. Relations Comm.*, 429 U.S. 167, 174 (1976). In my view, the panel opinion simply does not apportion—even though it purportedly recognizes apportionment’s importance.

The panel cites cases from the Supreme Court and other circuits holding that but-for causation is necessary both for lost profits generally and for an award of lost profits damages in the patent area. See *Mentor*, 851 F.3d at 1283-84 (citing, *inter alia*, *Aro Mfg. Co. v. Convertible Top Replacement Co.*, 377 U.S. 476 (1964) and *Livesay Window Co. v. Livesay Indus., Inc.*, 251 F.2d 469 (5th Cir. 1958)). Cases outside the patent area shed little light on this issue, since contracts and tort cases involving lost profits generally do not require apportionment. Although the patent cases relied upon by the panel hold that but-for causation is

patented product, (2) absence of acceptable noninfringing substitutes, (3) his manufacturing and marketing capability to exploit the demand, and (4) the amount of the profit he would have made.” *Id.* at 1156. However, *Panduit* did not deal with apportionment since the patent in *Panduit* is directed to an electrical wiring duct that constituted the entire product in dispute. *Id.* at 1155.

required, none remotely suggests that but-for causation and apportionment are the same thing. And they are not.

Rather, the Supreme Court's patent cases make quite clear that more than but-for causation is required for apportionment. The claimed damages must be apportioned between patented and unpatented features. This principle was established by Supreme Court cases involving both the disgorgement of the defendant's profits (allowed before 1946) and the recovery of the patentee's own lost profits (the current rule). As the panel recognizes, both types of cases are pertinent because "the basic principle of apportionment which they espouse applies in all of patent damages." *Mentor*, 851 F.3d at 1283 n.3.

In *Seymour v. McCormick*, the Court held that one who invents some improvement ... could not claim that the profits of the whole [invention] should be the measure of damages for the use of his improvement [Likewise,] [w]hen he has himself established the market value of his improvement, ... he can have no claim ... to make the profits of the whole machine the measure of his demand.

57 U.S. (16 How.) at 489-90. In *Garretson v. Clark* the Court further explained that "[w]hen a patent is ... not for an entire[] ... machine or contrivance, the patentee must ... give evidence tending to separate or *apportion* the defendant's profits ... between the patented feature and the unpatented features." 111 U.S. at 121 (emphasis added) (internal quotation marks omitted). And in *Dobson v. Hartford Carpet Co.*, the Court held that it was error to conclude "that the price

per yard allowed as damages was the entire profit to the plaintiffs, per yard, in the manufacture and sale of carpets of the patented designs, and not merely the value which the designs contributed to the carpets.” 114 U.S. at 443-44. Finally, in *Blake v. Robertson*, the Court held that

[t]he complainant made a profit of forty dollars ... [on] the numerous machines he had sold. But inventions covered by other patents were embraced in those machines. It was not shown how much of the profit was due to those other patents The complainant was, therefore, entitled only to nominal damages It would have been error to give more.

94 U.S. (4 Otto) at 733-34.²

So too does our own case law require apportionment for lost profits recovery—particularly where, as

² To be sure, *Dobson* and *Garretson* both also hold that recovery for all of the profits for a product is permitted if it can be shown that consumer demand is attributable to the patented feature. See *Dobson*, 114 U.S. at 444; *Garretson*, 111 U.S. at 121. This rule has become known as the entire market value rule. For the entire market value rule to apply, “the patentee must prove that ‘the patent-related feature is the “basis for customer demand.”” *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1336 (Fed. Cir. 2009) (quoting *Rite-Hite Corp. v. Kelley Co.*, 56 F.3d 1538, 1549 (Fed. Cir. 1995)(en banc)). When the entire market value rule applies, no apportionment is required. *LaserDynamics, Inc. v. Quanta Computer, Inc.*, 694 F.3d 51, 67-68 (Fed. Cir. 2012). Here, however, the panel opinion does not invoke the entire market value rule, and the accused infringer was precluded by the district court from introducing evidence that the entire market value rule is inapplicable. See J.A. 42,241.

here, the patented feature is only part of the infringing product. In *Ericsson*, we held that “apportionment is required even for non-royalty forms of damages,” including lost profits. 773 F.3d at 1226 (citing *Garretson*, 111 U.S. at 121).

The panel decision is therefore directly contrary to these cases, the logical foundation for which is readily apparent. Thus, for example, even if “but for” a patented feature the item would not have been purchased, it could be equally true that but for an unpatented feature (or a feature covered by another patent) the item would not have been purchased. Apportionment between features covered by the asserted patents and other features makes eminent sense. The panel makes no such apportionment. Nor do the *Panduit* factors.

Four other issues reinforce the appropriateness of en banc review.

First, EVE-USA properly raised the issue of apportionment in district court by seeking to present evidence of apportionment, which the district court excluded. *See* Appellant Br. 19-20; Appellee Br. 29-30 n.3. Specifically, the district court sustained an objection to exclude the appellant’s damages expert from presenting “a slide about how other features of the sold products were important to customers ... [because] it is really just an apportionment argument when it comes to lost profits.” J.A. 42,241. The district court held that it is “not appropriate ... to say that 90 percent of the purchase price really had nothing to do with the patented feature. That’s apportionment. You can’t do that ... on lost profits.” *Id.*

Second, in denying a post-trial motion for a new trial, the district court recognized that its failure to apportion was in error. The district court agreed that determining lost profits is “a two-step process,” that satisfying the but-for test of the *Panduit* factors is only step one, and that “there was an error in the trial on that score” to subsequently not determine whether the entire value of the product is attributable to the patented feature. J.A. 42,600.³

Third, unlike the panel, the patentee did not suggest that applying the *Panduit* factors is equivalent to apportionment. Quite to the contrary, the patentee explicitly argued that “the value of the patent is considered as part of the ‘but for’ analysis, not in ... apportionment,” Appellee Br. 33, that “lost profits should not be apportioned,” *id.* at 32, and that “apportioned lost profits can never adequately compensate a patentee for sales lost as a result of infringement,” *id.* at 30. In other words, the panel’s effort to equate but-for causation and apportionment is a new theory not even adopted by the patent holder in this case.

Finally, apportionment is an important issue that will likely arise in every future lost profits case.

* * * * *

Respectfully, Judge Stoll’s opinion (joined by various others) does nothing to rehabilitate the panel opinion. First, the theory that the panel found the application of the *Panduit* factors to be the same as the entire market value rule is not tenable. Judge Stoll

³ The district court deemed this error harmless. J.A. 42,601.

Concurrence at 3-4. The combination of consumer demand and but-for causation (i.e., that customers would not have purchased the product without the two patented features) is not remotely the same as the entire market value rule. Consumer demand for the patented feature and but-for causation may exist (and satisfy the *Panduit* factors), but this does not mean that other features do not contribute to consumer demand. The entire market value rule only applies if consumer demand is driven by the patented feature. Consumer demand for the patented feature and but-for causation do not establish that consumer demand is only attributable to the patented feature. Consumer demand may also be driven by other features in the product, which may be just as necessary to purchasing decisions, leading to the required apportionment. The panel never says or even suggests that the *Panduit* factors and the entire market value rule are the same. And the accused infringer here never had the opportunity to address the entire market value rule on the facts of this particular case.

Second, Judge Stoll suggests that the dissent “mischaracterizes” the majority opinion by suggesting that it does not require apportionment when it does. To be sure, the panel says that it is requiring apportionment. But in fact it does not. Instead, it equates consumer demand and but-for causation with apportionment, contrary to the clear holding of the Supreme Court that the apportionment must be between patented and unpatented features, an apportionment that the panel here rejects. Since the factual findings necessary to satisfy the *Panduit* factors are a necessary predicate for lost profits, the result here is that

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true apportionment will never be required for lost profits.

I respectfully dissent from the court's decision to not rehear this case en banc.

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

**MENTOR GRAPHICS CORPORATION,
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Plaintiff-Cross-Appellant

v.

**EVE-USA, INC., A DELAWARE CORPORA-
TION, SYNOPSIS EMULATION AND VERIFI-
CATION S.A.S., FORMED UNDER THE LAWS
OF FRANCE, SYNOPSIS, INC.,
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Defendants-Appellants

2015-1470, 2015-1554, 2015-1556

Appeals from the United States District Court for the District of Oregon in Nos. 3:10-cv-00954-MO, 3:12-cv-01500-MO, 3:13-cv-00579-MO, Judge Michael W. Mosman.

MOORE, *Circuit Judge*, with whom CHEN, *Circuit Judge*, joins, concurring in the denial of panel rehearing.

Synopsis, Inc., Synopsis Emulation and Verification S.A.S., and EVE-USA, Inc. (“EVE”) (collectively,

“Synopsis”)¹ petition for rehearing, arguing our court should abolish assignor estoppel. We recognize that assignor estoppel may arise in multiple fact patterns, each of which would result in a unique balancing of the equities. We may be inclined to reconsider the breadth of the doctrine of assignor estoppel, but this case is not a proper vehicle to do so. Synopsis devoted approximately one page of its brief to this court to the issue of assignor estoppel where it argued nothing other than we should eliminate the doctrine because in *Lear, Inc. v. Adkins*, 395 U.S. 653 (1969), the Supreme Court “demolished the doctrinal underpinnings of assignor estoppel.” Synopsis Br. 42. Synopsis’ petition for rehearing was no more detailed. In a little over two pages it argues that the doctrine of assignor estoppel should be abolished. Synopsis PFR Br. 13-15.

To be clear, Synopsis has made no arguments to this court regarding the scope of the assignor estoppel doctrine or its applicability to this particular case. For example, it makes no arguments in any briefing that applying the doctrine to this case would be improper because of rules of privity, the facts of this case, the nature of the employee/employer relationship, the nature of the compensation conveyed for the assignment, or that the assignment was not knowing or voluntary. It has asked this court to take the case en banc to answer a binary question: abolish or not. It has not argued that the doctrine is too broad as applied in this case. Because we do not believe we can or

¹ EVE is a subsidiary of Synopsis. References to Synopsis refer to all the Synopsis and EVE entities unless otherwise noted.

should eliminate the doctrine in its entirety, we decide not to rehear this case.

An amicus brief (the “Professors Brief”) argues we should rehear this case en banc because “there is no basis for expanding assignor estoppel outside the narrow circumstances addressed in the Supreme Court’s cases.” Professors Br. 7. The Professors Brief does not argue that we can or should abrogate assignor estoppel but rather that our court has expanded it in ways which undermine important public policy goals and interfere with employee mobility. *Id.* at 5-7; *see also* Mark Lemley, *Rethinking Assignor Estoppel*, 54 HOUS. L. REV. 513, 540-42 (2016) (recognizing the wisdom of a continued role for the doctrine). There may someday be a case which argues these points to this court (which Synopsys has not) and presents a record which would allow us to consider these issues in the context of an actual case, but this is not such a case.

The Professors Brief complains that the Federal Circuit has expanded privity notions beyond appropriate bounds,² Professors Br. 5-7, and “has expanded

² The question of privity and the extent to which assignor estoppel ought to prohibit a future employer of the inventor/assignor from challenging the validity of the patent is an interesting one not raised by the parties on appeal in this case. This court has held that whether the assignor estoppel doctrine ought to apply to a future employer is a case specific determination that depends on the equities and the nature of the employee’s role in the new company. *See, e.g., Shamrock Tech., Inc. v. Med. Sterilization, Inc.*, 903 F.2d 789 (Fed. Cir. 1990). Given that Synopsys has made no arguments at any stage of this appeal challenging the extension of the inventor’s assignor estoppel to it, this case does not provide a vehicle for consideration of these privity issues.

the doctrine beyond cases where an inventor knowingly and voluntarily transfers a patent.” *Id.* at 6. The Professors Brief does not suggest, nor does the party briefing suggest, that any such expansion has occurred in this case. Synopsys made arguments related to privity before the district court, which it lost. And it chose not to appeal those issues. As already explained, there is no dispute presented to this court which causes us to consider whether the equities in this case warrant application of the assignor estoppel doctrine to Synopsys. We are not an academic tribunal. Our job is to decide cases based on their facts. And in this case, Synopsys did not argue applying assignor estoppel *to the facts of this case* is unjust, unfair, or in any manner inequitable.

Synopsys’ argument that we should eliminate assignor estoppel is foreclosed by *Westinghouse*, where the Supreme Court held that an assignor could be estopped from challenging the validity of a patent in certain situations. *See Westinghouse Elec. & Mfg. Co. v. Formica Insulation Co.*, 266 U.S. 342, 353 (1924). We are bound by this precedent. *Cf. Rodriguez de Quijas v. Shearson/Am. Express, Inc.*, 490 U.S. 477, 484 (1989) (“If a precedent of this Court has direct application in a case, yet appears to rest on reasons rejected in some other line of decisions, the Court of Appeals should follow the case which directly controls, leaving to this Court the prerogative of overruling its own decisions.”).

In particular, the Supreme Court analogized assignor estoppel to estoppel by deed in *Westinghouse*. 266 U.S. at 349-50; *see also Gottfried v. Miller*, 104 U.S. 21 (1881). Estoppel by deed prevents the grantor from later denying the truth of the deed. The Supreme

Court applied this principle from the law of real property to intellectual property in *Westinghouse*:

The analogy between estoppel in conveyances of land and estoppel in assignments of a patent right is clear. If one lawfully conveys to another a patented right to exclude the public from the making, using and vending of an invention, fair dealing should prevent him from derogating from the title he has assigned, just as it estops a grantor of a deed of land from impeaching the effect of his solemn act as against his grantee. The grantor purports to convey the right to exclude others, in the one instance, from a defined tract of land, and in the other, from a described and limited field of the useful arts.

Westinghouse, 266 U.S. at 350. Thus, the Supreme Court has endorsed at least one application of assignor estoppel, and we are therefore precluded from doing away with the doctrine in its entirety.

Synopsys' primary criticism of assignor estoppel is that fifty years ago the Supreme Court eliminated licensee estoppel in *Lear*, and according to Synopsys, the same logic ought to result in the elimination of assignor estoppel. In *Lear*, the Supreme Court ultimately held that the public interest in the free use of ideas in the public domain outweighed the unfairness of potentially depriving the licensor of the full value of his contractual rights. *Id.* at 670-71. However, the issue of assignor estoppel was not squarely before the Court in *Lear*.

When an inventor/assignor assigns his patent rights to someone else for value, he may make an implicit representation that what he sold has value. *See*

Diamond Scientific Co. v. Ambico, Inc., 848 F.2d 1220, 1224-25 (Fed. Cir. 1988). This implicit representation may warrant application of assignor estoppel. *Id.* at 1225. A licensee has not made a similar representation. The licensee did not sell the patent itself to the licensor. The licensee did not sign oaths or declarations or make assertions implicitly or explicitly about the patent's validity before inducing another to make an investment based on the perceived worth of the patent. Thus, the Supreme Court's abolition of licensee estoppel in *Lear* does not directly bear on the continued vitality of assignor estoppel. *Diamond Scientific*, 848 F.3d at 1224 ("Unlike the licensee, who, without *Lear* might be forced to continue to pay for a potentially invalid patent, the assignor who would challenge the patent has already been fully paid for the patent rights.").

Because the record in this case and the arguments put forth by the parties do not convince us that we can or should entirely abolish the doctrine of assignor estoppel, we decide not to rehear this case.

APPENDIX E

**UNITED STATES DISTRICT COURT
DISTRICT OF OREGON
PORTLAND DIVISION**

**MENTOR GRAPHICS CORPORATION,
AN OREGON CORPORATION,**
Plaintiff/Counter-defendant

v.

**EVE-USA, INC., A DELAWARE CORPORA-
TION, SYNOPSIS EMULATION AND VERIFI-
CATION S.A.S., FORMED UNDER THE LAWS
OF FRANCE, SYNOPSIS, INC.,
A DELAWARE CORPORATION,**
Defendants/Counter-claimants

Case No. 3:10-cv-954-MO (lead),
Case No. 3:12-cv-1500-MO, Case No. 3:13-cv-579-MO

FINAL JUDGMENT

In these consolidated actions, Mentor Graphics Corporation (“Mentor Graphics”) asserted five counts of patent infringement: infringement of U.S. Patent Nos. 6,876,962 (“the ’962 patent”); 6,947,882 (“the ’882 patent”); 6,240,376 (“the ’376 patent”); 6,009,531 (“the ’531 patent”); and 5,649,176 (“the ’176 patent”). Synopsys, Inc., EVE-USA, Inc. and Synopsys Emulation and Verification S.A. (“Synopsys”) asserted two counts for declaratory relief that the ’376, ’531, and

'176 patents were invalid and not infringed, and Synopsys, Inc. asserted two counts of infringement, namely infringement of U.S. Patent Nos. 7,069,526 (“the '526 patent”) and 6,132,109 (“the '109 patent”).

This action came before the Court through various summary judgment motions and a jury trial, and was resolved as follows:

U.S. Patent No. 6,240,376

As set forth in the Court’s February 21, 2014 summary judgment order, judgment is entered in favor of Mentor Graphics on Synopsys’ declaratory relief claim that the '376 patent is invalid on the ground that assignor estoppel bars Synopsys from challenging the validity of the '376 patent. (Dkt. 472.)

On October 10, 2014, the jury rendered its verdict. With respect to and in accordance with that verdict, judgment is entered in favor of Mentor Graphics as follows:

1. Synopsys’ use, sale or importation of ZeBu emulators using flexible probes and value change probes, in the manner set forth by Mentor Graphics at trial, directly infringes claims 1, 24, 26, 27, and 28 of U.S. Patent No. 6,240,376.
2. Synopsys’ use, sale or importation of ZeBu emulators using flexible probes and value change probes, in the manner set forth by Mentor Graphics at trial, induces infringement of claims 1, 24, 26, 27, and 28 of U.S. Patent No. 6,240,376.
3. Synopsys’ use, sale or importation of ZeBu emulators using flexible probes and value change probes, in the manner set forth by Mentor

Graphics at trial, contributes to the infringement of claims 1, 24, 26, 27, and 28 of U.S. Patent No. 6,240,376.

4. Mentor Graphics is awarded \$36,417,661.00 in lost profits.
5. Mentor Graphics is also awarded royalty payments of \$242,110.45, which is 5% of \$4,842,209.00.

(Dkt. 723.)

U.S. Patent No. 5,649,176

As set forth in the Court's June 4, 2014 summary judgment order, judgment is entered in favor of Synopsys on Mentor Graphics' claims for infringement of the '176 patent on the ground that the doctrine of claim preclusion bars such claims. (Dkt. 524.) As set forth in the parties' Stipulation to Dismiss Without Prejudice Synopsys' Claims for Declarations of Invalidity and Non-Infringement of U.S. Patent Nos. 5,649,176 and 6,009,531, Synopsys' claim for declaratory judgment of invalidity and non-infringement of the '176 patent has been dismissed without prejudice. (Dkt. 729.)

U.S. Patent No. 6,009,531

As set forth in the Court's June 4, 2014 summary judgment order, judgment is entered in favor of Synopsys on Mentor Graphics' claims for infringement of the '531 patent on the ground that the doctrine of claim preclusion bars such claims. (Dkt. 524.) As set forth in the parties' Stipulation to Dismiss Without Prejudice Synopsys' Claims for Declarations of Invalidity and Non-Infringement of U.S. Patent

Nos. 5,649,176 and 6,009,531, Synopsys' claim for declaratory judgment of invalidity and non-infringement of the '531 patent has been dismissed without prejudice. (Dkt. 729.)

U.S. Patent No. 6,132,109

As set forth in the Court's July 25, 2014 summary judgment order, judgment is entered in favor of Mentor Graphics on Synopsys' claims for infringement of the '109 patent on the ground that Claim 1 is invalid. (Dkt. 581).

U.S. Patent No. 7,069,526

As set forth in the Court's July 25, 2014 summary judgment order, judgment is entered in favor of Mentor Graphics on Synopsys' claims for infringement of the '526 patent on the grounds that Claims 19, 24, 28, 30, and 33 are invalid. (Dkt. 581).

U.S. Patent No. 6,876,962

As set forth in the Court's July 29, 2014 summary judgment order, judgment is entered in favor of Synopsys on Mentor Graphics' claim for infringement of the '962 patent on the grounds that Claims 3, 5, 6, and 8 are not infringed. (Dkt. 582).

U.S. Patent No. 6,947,882

As set forth in the Court's July 25, 2014 summary judgment order, judgment is entered in favor of Synopsys on Mentor Graphics claim for infringement of the '882 Patent on the grounds that Claims 2 and 4 are not infringed. (Dkt. 581.) As set forth in the Court's July 29, 2014 summary judgment order, judgment is entered in favor of Synopsys on Mentor Graphics' claim for infringement of the '882 patent on

the grounds that Claims 7, 9, and 13 are invalid. (Dkt. 582.)

Therefore, IT IS HEREBY ORDERED AND ADJUDGED that judgment is entered in favor of Synopsys on Mentor Graphics' claims for infringement of the '962, '882, '531, and '176 patents. Synopsys' claims for a declaration that the '531 and '176 patents are invalid and not infringed have been dismissed without prejudice. It is further ORDERED AND ADJUDGED that judgment be entered in favor of Mentor Graphics on Mentor Graphics' claim for infringement of the '376 patent, on Synopsys' claims for infringement of the '109 and '526 patents, and on Synopsys' claim for a declaration that the '376 patent is not infringed and is invalid. Mentor Graphics is awarded \$36,417,661.00 in lost profits damages and a royalty payment of 5% of \$4,842,209.00, which is \$242,110.45.

The parties agree that each party shall bear its own costs, and neither party shall seek to recover attorneys' fees arising from any claims or causes of action resolved by this final judgment.

DATED: November 17, 2014

/s/ Michael W. Mosman
MICHAEL W. MOSMAN
United States District Judge