

**United States Court of Appeals
for the Federal Circuit**

PRESIDIO COMPONENTS, INC.,
Plaintiff-Cross-Appellant

v.

AMERICAN TECHNICAL CERAMICS CORP.,
Defendant-Appellant

2016-2607, 2016-2650

Appeals from the United States District Court for the Southern District of California in No. 3:14-cv-02061-H-BGS, Judge Marilyn L. Huff.

Decided: November 21, 2017

BRETT A. SCHATZ, Wood, Herron & Evans, LLP, Cincinnati, OH, argued for plaintiff-cross-appellant. Also represented by GREGORY F. AHRENS.

RONALD E. CAHILL, Nutter McClennen & Fish LLP, Boston, MA, argued for defendant-appellant. Also represented by HEATHER BURNADETTE REPICKY; PETER F. SNELL, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., New York, NY.

Before DYK, MOORE, and TARANTO, *Circuit Judges*.

DYK, *Circuit Judge*.

Presidio filed suit against American Technical Ceramics Corp. (“ATC”) for patent infringement in the District Court for the Southern District of California. After separate jury and bench trials, the district court held the asserted claims were infringed and not invalid, and granted a permanent injunction. The district court limited damages due to intervening rights.

We affirm the district court’s holdings that the claims are not indefinite and that ATC is entitled to absolute intervening rights because a substantive amendment was made during reexamination. We conclude that the evidence does not support an award of lost profits and, therefore, reverse the award of lost profits and remand for determination of a reasonable royalty. We conclude that the district court did not abuse its discretion in declining to award enhanced damages. We vacate the permanent injunction, and remand for further proceedings with respect to the injunction.

BACKGROUND

Presidio’s suit against ATC, filed on September 2, 2014, alleged infringement of U.S. Patent No. 6,816,356 (“the ’356 patent”). The ’356 patent claims a multilayer capacitor design and teaches a multilayer integrated network of capacitors electrically connected in series and in parallel.

A capacitor is a passive electrical component that stores and releases energy. Generally, a capacitor comprises two parallel metal plates separated by a non-conductive material, known as a dielectric. When a capacitor is connected to a power source, electricity passes through the metal plates, but not through the dielectric material. This causes a positive charge to accumulate on one plate and a negative charge to accumulate on the

other plate. The capacitor will then release the stored energy when the two plates are connected to a conductive path that closes the circuit. The amount of energy that a capacitor can store is called its “capacitance.”

Multiple capacitors can be combined to form a multilayer capacitor. The claimed multilayer capacitor creates capacitance in the dielectric material between the parallel plate combinations. Moreover, when the electrodes of a multilayer capacitor are positioned in an edge-to-edge relationship, they form “fringe-effect” capacitance between the external contacts. “Fringe-effect” capacitance is the energy stored in between external contacts of the multilayer capacitor.

While the district court infringement suit was pending, in 2015, ATC sought an *ex parte* reexamination of the claims of the '356 patent in light of new prior art. The examiner rejected the claims as anticipated and obvious. Presidio amended the claims. The Patent and Trademark Office issued a reexamination certificate for the '356 patent.¹ Amended claim 1 of the '356 patent, the only independent claim asserted by Presidio in this action, is as follows, with the language added during reexamination underscored:

1. A capacitor comprising:
 - a substantially monolithic dielectric body;
 - a conductive first plate disposed within the dielectric body;

¹ The PTO previously issued a reexamination certificate for the '356 patent on September 13, 2011. This reexamination certificate did not alter any of the claims at issue in this case.

a conductive second plate disposed within the dielectric body and forming a capacitor with the first plate;

a conductive first contact disposed externally on the dielectric body and electrically connected to the first plate; and

a conductive second contact disposed externally on the dielectric body and electrically connected to the second plate, and the second contact being located sufficiently close to the first contact in an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.

U.S. Patent No. 6,816,356 C2, col. 1, ll. 23–36 (Reexamination Certificate filed Dec. 8, 2015).

On December 22, 2015, Presidio amended its district court complaint, alleging infringement of the '356 patent claims 1, 3, 5, 16, 18, and 19 as amended by the reexamination certificate. Presidio alleged that ATC's 550 line of capacitors infringed the asserted claims.

ATC defended, as is relevant for present purposes, that the claims were indefinite; that the reexamination amendment entitled it to intervening rights, limiting damages; and that Presidio was not entitled to lost profits or enhanced damages. The district court granted ATC's motion for summary judgment on the affirmative defense of absolute intervening rights. The district court then held a jury trial. The jury returned a verdict finding direct infringement and induced infringement of claims 1, 3, 5, 16, 18, and 19 of the '356 patent by all of the accused products—ATC's 550 line of capacitors. In addition, the jury found that Presidio had proven by clear and convinc-

ing evidence that ATC's infringement of the asserted claims was willful. The jury awarded Presidio \$2,166,654 in lost profit damages. It did not reach Presidio's claim for a reasonable royalty. The jury also issued an advisory verdict as to indefiniteness, finding that ATC failed to prove by clear and convincing evidence that claim 1 of the '356 patent is indefinite.²

The district court thereafter rejected ATC's contention that the asserted claims of the '356 patent are invalid due to indefiniteness and denied ATC's motion that Presidio had failed as a matter of law to prove lost profits. The district court also denied Presidio's motion for enhanced damages, determining that enhanced damages were not warranted despite a jury finding of willful infringement. The district court then entered a permanent injunction against ATC.

ATC appealed, challenging the district court's determination that the claims were not indefinite, the award of lost profits, and the award of a permanent injunction. Presidio cross-appealed, challenging the district court's determination as to absolute intervening rights and the denial of enhanced damages. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

On October 21, 2016, we granted a partial stay of the injunction until March 17, 2017 with respect to ATC's customers that purchased infringing capacitors before June 17, 2016.

² Claims 3, 5, 16, 18, and 19 of the '356 patent all depend from claim 1. Thus, all claims in this suit contain the limitation from claim 1 at issue.

DISCUSSION

I

We first address whether the claims are indefinite. 35 U.S.C. § 112 provides that “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” Indefiniteness is a question of law that this court reviews de novo. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1341 (Fed. Cir. 2015). Underlying factual findings are reviewed for clear error. *UltimatePointer, LLC v. Nintendo Co.*, 816 F.3d 816, 826 (Fed. Cir. 2016). A patent is indefinite “if its claims, read in light of the specification delineating the patent, and the prosecution history, fail 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). The definiteness requirement “mandates clarity, while recognizing that absolute precision is unattainable.” *Id.* at 2129.

As noted earlier, the claims here cover multilayer capacitors with a fringe-effect capacitance between external contacts that is “capable of being determined by measurement in terms of a standard unit.” U.S. Patent No. 6,816,356 C2, col. 1, ll. 35–36 (Reexamination Certificate filed Dec. 8, 2015).

Here, the patent discloses a method of measuring capacitance called insertion loss testing. The patent specification references insertion loss testing as a method to measure the performance of capacitors. Figures 21A and 21B display insertion loss diagrams, which identify insertion loss testing as a method that may be used to measure performance of capacitors. ’356 patent, col. 6, ll. 10–15, col. 7, ll. 3–18. Moreover, in the prosecution history during the reexamination, Presidio amended the claims to require fringe effect capacitance capable of being determined “by measurement” and explained that the effects of

a capacitance according to the invention “can be shown by measurement, such as is done in the measurements of insertion loss referenced in the patent in Figs. 21A and 21B.” J.A. 2654, 2656. The method of insertion loss testing was well-known in the art, and there is no dispute that insertion loss testing can measure the overall performance of a capacitor. Indeed, ATC uses insertion loss testing itself to measure the performance of capacitors when comparing its products to Presidio’s products for purposes of determining whether Presidio lost sales to ATC. *See infra* Part III.

Insertion loss measures how much of a signal is lost when a capacitor is inserted into a circuit. To determine insertion loss, a network analyzer measures the ratio of the input power to the output power of the capacitor in a circuit, which indicates the efficiency with which the signal passes through the capacitor in the circuit. The measurement unit for insertion loss is decibels, and this measurement is a function of all of the capacitances, resistances, and inductances within the capacitor. Thus, the insertion loss value correlates to the overall capacitance of the capacitor. Although industry standards for insertion loss testing had not been published at the time the patent was filed, Presidio’s expert, Dr. Huebner, testified that insertion loss testing had been “well known for many decades” and that a person of ordinary skill could use insertion loss measurements to measure capacitance in terms of Farads, the standard unit of measurement for capacitance. J.A. 1513, 1376-80.

While it was established that insertion loss testing could be used to measure overall performance of capacitors, it was not well known as a method to measure the comparative contributions from different capacitances within the multilayer capacitor. Nor does the patent specification describe how to apply the insertion loss method to determine the portion of the overall capacitance that is attributable to the fringe-effect capacitance.

However, at trial, Presidio presented expert testimony by Dr. Huebner that a person of skill in the art would know how to measure fringe-effect capacitance by using insertion loss measurements to measure the overall capacitance, by then removing the dielectric material between the multilayer plates, and by then taking insertion loss measurements to determine the remaining capacitance. Without the dielectric material, the remaining capacitance would necessarily be attributable to the fringe-effect capacitance. Thus, Dr. Huebner testified that a person skilled in the art could measure the impact of fringe-effect capacitance on performance of the capacitor. He also testified that a person skilled in the art would then be able to determine the capacitance in terms of the standard unit of Farads.

Under our post-*Nautilus* cases, a claim is not indefinite if a person of skill in the art would know how to utilize a standard measurement method, such as insertion loss, to make the necessary measurement. A patent need not explicitly include information that is already well known in the art. *Nautilus*, 134 S. Ct. at 2127; *see also Dow Chem. Co. v. Nova Chem. Corp.*, 809 F.3d 1223, 1225 (Fed. Cir. 2015) (Moore, J., concurring in the denial of the petition for rehearing en banc) (citing *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1367 (Fed. Cir. 2011)). “[I]f a skilled person would choose an established method of measurement, that may be sufficient to defeat a claim of indefiniteness, even if that method is not set forth *in haec verba* in the patent itself.” *Dow*, 809 F.3d at 1224 (Prost, C.J., Dyk & Wallach, JJ., concurring in the denial of the petition for rehearing en banc). For example, in *Ethicon Endo-Surgery, Inc. v. Covidien, Inc.*, 796 F.3d 1312, 1316 (Fed. Cir. 2015), claims covered surgical shears for cutting and sealing blood vessels that required a clamping pressure within a specified range. The specification provided guidance about how to measure the clamping pressure, even though there was no industry

standard measurement method and the details of the method utilized were not disclosed in the specification. *Id.* at 1317–19. Based on the guidance in the specification, we concluded the disclosure was sufficient to inform skilled artisans as to how clamping pressure should be measured. *Id.* And this is not a situation similar to *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335 (Fed. Cir. 2015) and *Dow Chemical Co. v. Nova Chemicals Corp.*, 803 F.3d 620 (Fed. Cir. 2015), in which the challenger has shown that there were competing existing methodologies that reached different results, and the patent failed to describe which of the multiple methods to use.

Nonetheless, ATC argues that Dr. Huebner’s methodology is not an established methodology because insertion loss testing had not previously been applied to measure fringe-effect capacitance, the patent itself provided no guidance as to how to make the measurement, and Dr. Huebner made subjective judgments in developing the test methodology for that purpose. In other words, ATC contends that Dr. Huebner developed a new test methodology rather than using an established test methodology or one for which the patent provided necessary guidance, and that the claims are therefore indefinite.

Even assuming that ATC is correct that an entirely new method could in some circumstances render the claims indefinite, this is not such a situation. Here, as we earlier noted, the insertion loss testing method was well established and referenced in the patent. Although the specific steps performed by Dr. Huebner had not been published in any industry publications or peer-reviewed articles, the general approach of making modifications to a capacitor to isolate the impact of discrete capacitances was within the knowledge of someone skilled in the art. Based on this record, the district court could properly conclude that such measurement was within the skill of a skilled artisan based on an established method.

Here, the claims do not require that fringe-effect capacitance exist at any particular level; they only require that it be capable of measurement in terms of a standard unit. To be sure, even where the claims require a particular test result, there may be (and often are) disputes between the parties as to the proper application of the test methodology in the circumstances of an individual case. But those disputes are disputes about whether there is infringement, not disputes about whether the patent claims are indefinite. Here, the general approach was sufficiently well established in the art and referenced in the patent to render the claims not indefinite. The claims do not rely on the “unpredictable vagaries of any one person’s opinion.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (quoting *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1350 (Fed. Cir. 2003)). We affirm the district court’s entry of judgment rejecting ATC’s indefiniteness challenge.

II

Next, we address the issue of intervening rights. Presidio cross-appeals the district court’s grant of summary judgment of absolute intervening rights to ATC, which barred damages for the period before December 8, 2015, the date that the reexamination certificate issued.³

An owner of a patent that survives reexamination is not entitled to infringement damages for the time period between the date of issuance of the original claims and the date of issuance of the reexamined claims if the original and amended claims are not “substantially identical.” 35 U.S.C. §§ 252, 307(b). In other words, if an amendment during reexamination makes a substantive change to an original claim, the patentee is only entitled to infringe-

³ The district court denied ATC’s motion for equitable intervening rights, which has not been appealed.

ment damages for the changed claim for the period following issuance of the reexamination certificate. *R+L Carriers, Inc. v. Qualcomm, Inc.*, 801 F.3d 1346, 1349 (Fed. Cir. 2015); *Bloom Eng'g Co. v. N. Am. Mfg. Co.*, 129 F.3d 1247, 1250 (Fed. Cir. 1997). The district court's assessment of the scope of the original and reexamined claims is reviewed de novo, and any subsidiary factual findings are reviewed for clear error. *R+L Carriers*, 801 F.3d at 1349–50.

Presidio amended claims of the '356 patent during an *ex parte* reexamination. As noted earlier, Presidio added the following underlined language to claim 1:

the second contact being located sufficiently close to the first contact in an edge to edge relationship in such proximity as to form a first fringe-effect capacitance with the first contact that is capable of being determined by measurement in terms of a standard unit.

The district court found that these amendments substantially changed the claim scope and, therefore, ATC was entitled to the defense of absolute intervening rights. In making this determination, the district court compared the scope of the original claims as construed by the district court in a prior lawsuit between the parties, *Presidio I*, with the interpretation of the claims as amended in the reexamination. *Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 723 F. Supp. 2d 1284 (S.D. Cal. 2010).

Presidio argues that the scope of its claims did not change during reexamination because its stated goal in amending the claims was to adopt the district court's construction in *Presidio I*. During reexamination, Presidio stated it was making the amendment “to incorporate and make explicit the interpretation of the independent claims that was established in [the *Presidio I*] litigation.” J.A. 128. However, the patentee's intent in making the amendment is not determinative or controlling in deter-

mining claim scope. *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 810 F.2d 1113, 1116 (Fed. Cir. 1987). As we have explained, “[u]nder the statute and our prior case law, it is irrelevant *why* an amended claim is narrowed during reexamination, or even whether the patentee intended to narrow the claim in a particular way.” *R+L Carriers*, 801 F.3d at 1350 (emphasis in original).

Instead, the relevant inquiry is whether the scope of the amended claims is actually identical to the scope of the original claims based on normal claim construction analysis, articulated in our en banc *Phillips* decision. See *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). To determine whether an amended claim is narrower in scope, “we determine whether there is any product or process that would infringe the original claim, but not infringe the amended claim.” *R+L Carriers*, 801 F.3d at 1350. Typically, we need to determine de novo the scope of the original and amended claims. Both parties here appear to agree that the scope of the original claims is determined by the construction of the claims in *Presidio I*, apparently as a matter of collateral estoppel. See *Hydranautics v. FilmTec Corp.*, 204 F.3d 880, 885 (9th Cir. 2000) (explaining that collateral estoppel applies when an issue is identical to one necessarily decided in a previous proceeding, the first proceeding ended in a final judgment on the merits, and the party against whom collateral estoppel is asserted was a party in the first proceeding); see also *Aspex Eyewear, Inc. v. Zenni Optical Inc.*, 713 F.3d 1377, 1380 (Fed. Cir. 2013) (explaining that the Federal Circuit applies the law of the circuit in which the district court sits for collateral estoppel). Thus, necessary to a determination of the scope of the original claims is an understanding of the district court’s claim construction in *Presidio I*.

Presidio I was an infringement suit against ATC for the ’356 patent, filed on February 21, 2008. In *Presidio I*, Chief Judge Gonzalez construed the claims to require

fringe-effect capacitance “that is capable of being determined in terms of a standard unit.” J.A. 5243. In this respect, the original and amended claims are the same, as both require fringe-effect capacitance that is capable of being determined in terms of a standard unit. But in other respects, the *Presidio I* construction and the amended claims are materially different. This is so because under the claim construction of the original claims, fringe-effect capacitance could be determined by theoretical calculations that are insufficient under the amended claims.

During the *Presidio I* trial, Dr. Huebner’s testimony that ATC’s products infringed used a purely theoretical calculation of fringe-effect capacitance. Dr. Huebner took measurements of dimensions and used a formula, $C=kA/d$,⁴ to determine capacitance rather than measuring capacitance with actual instruments, as done in insertion loss testing. Chief Judge Gonzalez affirmed the jury finding of infringement based on this purely theoretical measurement, noting that Dr. Huebner:

measured a determinable fringe-effect capacitance in the 545L capacitor by using the $C=kA/d$ formula and inputting the actual thickness of the external contact, the actual separation distance, and a lower and upper boundary for what the dielectric constant might be. Accordingly, there was sufficient evidence for the jury to credit Dr. Huebner’s opinion and to find that the 545L capacitor had a ‘fringe-effect capacitance’ between the external contacts.

⁴ In the formula $C=kA/d$, C is the capacitance in farads, k is the dielectric constant of the insulating material between the plates, A is the area of each of the opposed plates in square meters, and d is the separation distance between the plates.

J.A. 5303. Therefore, the district court concluded that the scope of the original claims included fringe-effect capacitance measured through purely theoretical measurements.⁵

The amended claims have a different scope. During the reexamination, the examiner rejected the original claims in light of a prior art reference that disclosed a capacitor arrangement where the fringe-effect capacitance of the arrangement could be determined using $C=kA/d$ —the same theoretical calculation method used by Presidio’s expert in *Presidio I* to opine on infringement. Presidio then amended the claims to overcome this rejection. The amendment added the words “by measurement.” When Presidio submitted the proposed amendments, it stated that the amended claim language excludes determinations of fringe-effect capacitance that “rel[y] entirely upon theoretical calculation” and argued that the rejections should be withdrawn because the prior art disclosed only an arrangement where fringe-effect capacitance could be determined “by way of theoretical computations” and not actual measurement. J.A. 128, 137. The patentee explained that “determinable” includes “only what is practically measurable, not merely what is theoretical or simulated.” J.A. 2659. Based on this explanation, the amended claims were allowed. Whether viewed as a disclaimer or as evidence relevant to the proper claim construction, it is clear that the amended claims exclude

⁵ Presidio repeatedly and inaccurately states that Chief Judge Gonzalez held that the original claims did not include “theoretically calculated fringe-effect capacitance.” Presidio Br. 29, 37, 66, 70, 72; Presidio Reply Br. 1, 3, 7, 12. In fact, Chief Judge Gonzalez only held that the claims exclude fringe-effect capacitance that is merely “negligible.” J.A. 5334.

capacitors with fringe-effect capacitance that could be determined purely through theoretical calculation.

Therefore, there was a substantive change in claim scope. Under the scope of the original claims, theoretical calculations are sufficient to satisfy the claim limitations. Under the amendment claims, they are not. Based on this substantive change in claim scope, the district court properly granted the affirmative defense of absolute intervening rights.

III

The third issue is whether the district court correctly awarded lost profits. The district court held that the jury verdict awarding lost profits was supported by substantial evidence and denied judgment as a matter of law. The question is whether Presidio established its right to recover lost profits for its sales of the BB capacitors, which Presidio claimed were adversely affected by the sale of ATC's infringing 550 line of capacitors.

To recover lost profits, the patentee bears the burden of proof to show a "reasonable probability that, 'but for' infringement, it would have made the sales that were made by the infringer." *Crystal Semiconductor Corp. v. TriTech Microelecs. Int'l, Inc.*, 246 F.3d 1336, 1353 (Fed. Cir. 2001); *BIC Leisure Prods, Inc. v. Windsurfing, Int'l, Inc.*, 1 F.3d 1214, 1218 (Fed. Cir. 1993). "But-for" causation can be proven using the test given in *Panduit Corp. v. Stahl Bros. Fibre Works, Inc.*, 575 F.2d 1156 (6th Cir. 1978). See *Versata Software, Inc. v. SAP Am., Inc.*, 717 F.3d 1255, 1264 (Fed. Cir. 2013). The four-factor *Panduit* test requires the patentee to show: (1) demand for the patented product; (2) an absence of acceptable, non-infringing substitutes; (3) manufacturing and marketing capability to exploit the demand; and (4) the amount of profit that would have been made. *Panduit*, 575 F.2d at 1156. Presidio did not and does not seek to establish an

entitlement to lost profits other than through the *Panduit* framework.

We review the denial of judgment as a matter of law de novo, and we uphold the jury verdict if supported by substantial evidence. *Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1366 (Fed. Cir. 2005). A patentee can recover lost profits even if its product does not practice the claimed invention, where the product directly competes with the infringing device. *Presidio Components v. Am. Tech. Ceramics*, 702 F.3d 1351, 1360 (Fed. Cir. 2012). Although the BB capacitor does not practice the '356 patent, Presidio could still recover lost profits because the BB capacitor competes directly with the infringing 550 capacitors.

ATC argues that the district court erred by finding that substantial evidence supported that Presidio had satisfied the second prong of *Panduit* analysis—the absence of an acceptable, non-infringing alternative. To prove the absence of acceptable, non-infringing alternatives, the patentee may prove either that the potential alternative was not acceptable to potential customers or was not available at the time. *Grain-Processing Corp. v. Am. Maize-Prod. Co.*, 185 F.3d 1341, 1353–55 (Fed. Cir. 1999).

At the time of infringement, ATC sold two types of capacitors: the 550 series capacitors, which were found to infringe, and the 560L capacitor, which was never accused of infringement. The district court found that sufficient evidence supported the jury's finding that the 560L capacitor was not an acceptable and available substitute.

As to the “acceptable substitute” question, the district court stated that “ATC's own witness testified that the 560 capacitors are not as good as the 550 capacitors,” and concluded that “the 560L [capacitor] was not an acceptable, noninfringing alternative.” J.A. 82. On appeal, Presid-

io argues that “the 560L product did not perform as well as the infringing 550 capacitor.” Presidio Br. 56-57.

The district court’s analysis and Presidio’s argument were flawed. The correct inquiry under *Panduit* is whether a non-infringing alternative would be acceptable compared to the patent owner’s product, not whether it is a substitute for the infringing product. “The ‘but for’ inquiry therefore requires a reconstruction of the market, as it would have developed absent the infringing product, to determine what [sales] the patentee ‘would . . . have made.’” *Grain Processing*, 185 F.3d at 1350. The district court erred by relying on evidence about sales of the 560L capacitor in competition with the currently infringing product, rather than comparing the 560L capacitor to Presidio’s BB capacitor in a hypothetical market without the infringing 550 capacitor. There was not substantial evidence in the record upon which a jury could conclude that the 560L was not an acceptable, noninfringing alternative for Presidio’s BB capacitors. Undisputed evidence showed that the 560L capacitor was less expensive than Presidio’s BB capacitor and also had lower insertion loss for at least some frequencies, which indicates better performance.

On the question of availability, the district court determined that sufficient evidence supported the finding that the 560L capacitor was not an available substitute because unlike the infringing 550 capacitors, ATC sold the 560L capacitor only to a single customer and did not list it on its website. An alternative does not need to be on the market to be available. *Grain Processing*, 185 F.3d at 1356. But here, the alternative was on the market. The undisputed evidence shows ATC sold 88,000 560L capacitors to the customer. The fact that ATC only sold the 560L capacitor to a single customer does not establish that it was unavailable. Moreover, the fact that the 560L capacitor was not widely advertised when sold in a market with the 550 capacitor does not show a lack of availability. In a

hypothetical market including the 550 capacitors, ATC may have chosen not to advertise the 560L capacitor. However,

[w]ithout the infringing product, a rational would-be infringer is likely to offer an acceptable, noninfringing alternative, if available, to compete with the patent owner rather than leave the market altogether. The competitor in the “but for” marketplace is hardly likely to surrender its complete market share when faced with a patent, if it can compete in some other lawful manner.

Id. at 1351. The patentee failed to establish the 560L capacitor was not an available substitute.

In summary, Presidio failed to provide evidence that the 560L capacitor was either not an acceptable or available substitute to Presidio’s BB capacitor. We reverse the denial of judgment as a matter of law. The jury’s award of lost profits is set aside; Presidio is only entitled to receive a reasonable royalty award. Because the jury instructions and verdict form only directed the jury to consider a reasonable royalty award if Presidio had not proven it was entitled to lost profits, the jury did not return a finding about a reasonable royalty rate. Under these circumstances, a new trial is needed to determine the reasonable royalty award.⁶

IV

Next, we address the issue of enhanced damages. The jury found that ATC willfully infringed the ’356 patent, and the district court denied judgment as a matter of law of no willful infringement. Despite the jury finding of

⁶ It may be that the parties agree that 25 cents per unit is the appropriate reasonable royalty rate, rendering a new trial unnecessary. J.A. 1094, 1116, 1477–78.

willfulness, the district court declined to award enhanced damages. We review the determination not to award enhanced damages for abuse of discretion. *WBIP, LLC v. Kohler, Co.*, 829 F.3d 1317, 1339 (Fed. Cir. 2016) (citing *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1934 (2016)).

In patent infringement cases, district courts have discretion to “increase damages up to three times the amount found or assessed.” 35 U.S.C. § 284; *Halo*, 136 S. Ct. at 1931. Enhanced damages are generally only appropriate in egregious cases of misconduct, such as willful, wanton, or malicious behavior. *Halo*, 136 S. Ct. at 1932. But an award of enhanced damages does not necessarily flow from a willfulness finding. *Id.*; *WBIP*, 829 F.3d at 1341 n.13. Discretion remains with the court to determine whether the conduct is sufficiently egregious to warrant enhanced damages. *WBIP*, 829 F.3d at 1341 n.13. In determining whether enhanced damages are appropriate, courts should consider the overall circumstances of the case. *Halo*, 136 S. Ct. at 1933.

The district court here appropriately analyzed ATC’s culpability only during the period beginning when the reexamination certificate issued on December 8, 2015. The district court noted that at that point, ATC and Presidio were already involved in the present litigation, and ATC had been selling the 550 capacitors for almost six years without a finding of infringement. At that point, ATC had received the district court’s claim construction order and developed defense theories. Additionally, ATC had just succeeded in causing Presidio to narrow the scope of its claims during reexamination proceedings instituted by ATC. The district court further noted that ATC’s invalidity defense at trial was not meritless, though ultimately rejected by the jury. Therefore, the district court concluded that the present case was a “garden-variety” hard-fought patent case, rather than an

egregious case of misconduct, and declined to award enhanced damages. J.A. 98-99.

Presidio argues that the district court erred as a matter of law by failing to explicitly address each of the *Read* factors set forth in our decision in *Read* as relevant to an award of enhanced damages. See *Read Corp. v. Portec, Inc.*, 970 F.2d 816 (Fed. Cir. 1992), *abrogated in part on other grounds by Markman v. Westview Instruments, Inc.*, 116 S. Ct. 1384 (1996). However, the district court is not required to discuss the *Read* factors. When the Supreme Court articulated the current controlling test for decisions to award enhanced damages, it did not require the *Read* factors as part of the analysis. *Halo*, 136 S. Ct. at 1935; see *Georgetown Rail Equip. v. Holland L.P.*, 867 F.3d 1229, 1244 (Fed. Cir. 2017) (describing the *Read* factors as “non-exclusive”).⁷ The *Halo* test merely requires the district court to consider the particular circumstances of the case to determine whether it is egregious. Here, the district court considered the particular circumstances of the case and determined the situation was not sufficiently egregious to warrant enhanced damages. The district court did not abuse its discretion in declining to award enhanced damages.

V

Lastly, the district court issued a permanent injunction, which enjoined ATC from selling any 550 capacitors. We review the district court’s grant of an injunction for abuse of discretion. *eBay Inc. v. MercExchange, LLC*, 547

⁷ Moreover, even before the *Halo* decision, explicit discussion of the *Read* factors was not mandatory. See, e.g., *Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1371 (Fed. Cir. 2004) (affirming a district court award of enhanced damages where the district court did not discuss the *Read* factors for enhanced damages).

U.S. 388, 391 (2006). A district court abuses its discretion when it makes “a clear error of judgment in weighing relevant factors or exercise[s] its discretion based upon an error of law or clearly erroneous factual findings.” *In-nogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1379 (Fed. Cir. 2008).

A permanent injunction may be entered against an infringer where the patentee can prove: (1) it has suffered an irreparable injury; (2) legal remedies, such as money damages, are inadequate to compensate for that injury; (3) the balance of hardships between the plaintiff and defendant warrants an injunction; and (4) the public interest would not be disserved by an injunction. *eBay*, 547 U.S. at 391. We review the district court’s conclusion as to each *eBay* factor for abuse of discretion and its underlying factual findings for clear error. *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 861 (Fed. Cir. 2010). Here, the focus is whether Presidio has established irreparable injury.

To prove irreparable injury, a patentee must show “1) that absent an injunction, it will suffer irreparable harm, and 2) that a sufficiently strong causal nexus relates the alleged harm to the alleged infringement.” *Apple Inc. v. Samsung Elecs. Co.*, 695 F.3d 1370, 1374 (Fed. Cir. 2012). To determine whether the patentee will suffer irreparable harm absent an injunction, the court may consider factors such as the nature of competition between the patentee and the infringer, the willingness of a patentee to license, and any lost sales the patentee has proven. *Douglas Dynamics, LLC v. Buyers Prods. Co.*, 717 F.3d 1336, 1344–45 (Fed. Cir. 2013); *Presidio*, 702 F.3d at 1363–64; *Robert Bosch LLC v. Pylon Mfg Corp.*, 659 F.3d 1142, 1152–55 (Fed. Cir. 2011).

Where irreparable injury is based on lost sales, “a likelihood of irreparable harm cannot be shown if sales would be lost regardless of the infringing conduct.” *Apple*

Inc. v. Samsung Elecs. Co., 678 F.3d 1314, 1324 (Fed. Cir. 2012). Here, the district court correctly pointed out that a jury award of lost profits may support a finding of irreparable harm because it necessarily results in a finding that the patentee lost sales and would continue to lose sales in the future. *Presidio*, 702 F.3d at 1363. The district court then based its conclusion as to irreparable injury on the jury's lost profits award. The district court reasoned that "[t]he jury's lost profits award also supports a finding of irreparable injury" because "the jury necessarily found ATC's [550] capacitor sales caused Presidio to lose BB capacitor sales." J.A. 87. In light of our reversal of the lost profits award for lack of proof of past lost sales, we must vacate the injunction.

However, we do not decide whether this should be the end of the matter. The district court has discretion to determine whether other evidence could support a finding of irreparable injury. In this respect, on remand, the district court should reopen the record and consider current evidence of irreparable harm. Since March 17, 2017, the injunction against ATC from selling 550 capacitors has been in effect. Based on the arguments and evidence presented to this court, it appears that this injunction may have created the hypothetical market necessary to determine whether consumers would purchase Presidio's BB capacitors in the absence of ATC's 550 series capacitors. On remand, the district court should consider whether consumers have turned to non-infringing alternatives to the BB capacitor, such as the 560L capacitor, after the 550 series capacitors became unavailable or whether Presidio's sales of the BB capacitor have increased because the 550 series is no longer on the market. Based on this further evidence and other relevant evidence, the district court should determine whether Presidio has established irreparable injury and the appropriateness of an injunction.

CONCLUSION

We affirm the district court's finding of definiteness, grant of absolute intervening rights, and denial of enhanced damages. We reverse the award of lost profits because Presidio failed to show the absence of an acceptable, non-infringing substitute. On remand, the damages award should be limited to a reasonable royalty, and a new trial should be conducted as necessary to determine the reasonable royalty rate. We vacate the permanent injunction, and remand with instructions to consider the relevant evidence and to determine whether Presidio has established irreparable injury.

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

COSTS

No costs.