

# United States Court of Appeals for the Federal Circuit

2006-1638

Z4 TECHNOLOGIES, INC.,

Plaintiff-Appellee,

v.

MICROSOFT CORPORATION,

Defendant-Appellant,

and

AUTODESK, INC.,

Defendant.

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Appealed from: United States District Court for the Eastern District of Texas

Judge Leonard Davis

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DECIDED: November 16, 2007

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Before LOURIE and LINN, Circuit Judges, and BUCKLO, District Judge.<sup>\*</sup>

LINN, Circuit Judge.

Microsoft Corporation (“Microsoft”) appeals from a final judgment of the United States District Court for the Eastern District of Texas, z4 Techs., Inc. v. Microsoft Corp., No. 06-cv-142 (E.D. Tex. Aug. 18, 2006). The district court denied Microsoft’s renewed motion for judgment as a matter of law (“JMOL”) following a jury trial in which the jury found that Microsoft had infringed z4 Technologies, Inc.’s (“z4’s”) U.S. Patents No. 6,044,471 (“the ’471 patent”) and No. 6,785,825 (“the ’825 patent”) and had failed to

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<sup>\*</sup> Honorable Elaine E. Bucklo, District Judge, United States District Court for the Northern District of Illinois, sitting by designation.

prove these patents invalid. z4 Techs., Inc. v. Microsoft Corp., No. 06-cv-142 (E.D. Tex. Aug. 18, 2006) (“JMOL Opinion”). Because substantial evidence supports the jury’s verdict, and because the district court did not abuse its discretion in denying Microsoft’s motion for a new trial, we affirm.

## I. BACKGROUND

z4 is the assignee of two patents related to the prevention of software piracy. The inventor of these patents, David Colvin (“Colvin”), founded and owns z4. The ’825 patent claims priority to the ’471 patent through continuation applications, and thus shares an effective filing date of June 4, 1998. Because these patents also share a common specification, we will refer generically to “the specification” in reference to both the ’471 and ’825 patents. These patents are directed specifically to the problem of “illicit copying and unauthorized use” of computer software. ’825 patent col.1 ll.21-25. The patent specification explains that “[t]he advent of the Internet has contributed to the proliferation of pirated software, known as ‘warez’, which is easily located and readily downloaded.” Id. col.1 ll.33-35. Prior art solutions to this problem were either easily circumvented or imposed substantial burdens on the consumer. For example, requiring the entry of a serial number was “easily defeated by transferring the serial number . . . to one or more unauthorized users.” Id. col.1 ll.45-51. Similarly, the use of “hardware keys,” which must be physically present to enable the software, proved “relatively expensive for the developer and cumbersome for the authorized user.” Id. col.1 ll.36-44.

z4’s invention “controls the number of copies of authorized software by monitoring registration information,” and by “[r]equiring authorized users to periodically

update a password or authorization code provided by a password administrator.” ’471 patent col.3 ll.15-24. More particularly, the patents disclose a multi-step user authorization scheme whereby an initial password or authorization code grants the user a “grace period” for a fixed number of uses or period of time. Users must then submit registration information to a representative of the software developer to receive a second password or authorization code, which is required to enable the product for use beyond this grace period. In the patented system, users are able to choose between a manual registration mode and an automatic or electronic registration mode. Upon receipt of the registration information, the software representative compares the submitted information to previously-stored registration information, and determines whether the user is authorized. If the user is not authorized, the software representative may disable the software.

On September 22, 2004, z4 sued Microsoft and Autodesk, Inc. (“Autodesk”)<sup>1</sup> alleging infringement of claim 32 of the ’471 patent and claims 44 and 131 of the ’825 patent. Claim 32 of the ’471 patent reads as follows, with disputed portions highlighted:

32. A computer readable storage medium having data stored therein representing software executable by a computer, the software including instructions to reduce use of the software by unauthorized users, the storage medium comprising:

instructions for requiring a password associated with the software;

instructions for enabling the software after the password has been communicated to the software;

instructions for subsequently requiring a new password to be communicated to the software for continued operation of the software; and

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<sup>1</sup> Autodesk was found to have willfully infringed two of the asserted claims by the jury, but entered into a settlement with z4 prior to the close of briefing in this appeal.

instructions for automatically contacting an authorized representative of the software to communicate registration information and obtaining authorization for continued operation of the software.

Claims 44 and 131 of the '825 patent are identical for purposes of this appeal.

They differ only in their definition of the "initial authorization period," or grace period.

Claim 44 reads as follows, with disputed portions highlighted:

44. A method for reducing unauthorized software use, the method comprising:

providing a representative to monitor software license compliance;

associating a first authorization code with the software, the first authorization code enabling the software on a computer for use by a user for an initial authorization period, the initial authorization period being based on usage of the software;

supplying the first authorization code with the software;

requiring the user to enter the first authorization code to at least partially enable the software on the computer for use by the user during the initial authorization period;

requiring the user to contact the representative for retrieval of at least one additional authorization code to repeat the enablement of the software on the computer for use by the user during a subsequent authorization period beyond the initial authorization period and allowing the repeat of the enablement of the software to be performed prior to the expiration of the initial authorization period so the enablement of the software can be continuous from the initial authorization period to the subsequent authorization period, the software being enabled on the computer for use by the user during the subsequent authorization period beyond the initial authorization period requiring without further communication with the representative following entry of the at least one additional authorization code;

requiring the user to selectively choose either manual or electronic registration and provide registration information to the representative prior to retrieval of the at least one additional authorization code, the registration information including computer specific information;

comparing previously stored registration information related to at least one of the software, the user, and the computer with the registration information provided by the user to the representative to determine if the user is an authorized or an unauthorized user; and

at least partially disabling, the software if the user [sic] an unauthorized user.

In the litigation, z4 alleged that Microsoft's "Product Activation" feature, as implemented in its "Office" group of software applications and its "Windows" operating system, infringed each of the asserted claims, beginning in 2000 and 2001, respectively. Microsoft countered that it did not infringe z4's patents, that the '471 and '825 patents were invalid for anticipation and obviousness, and that both patents were unenforceable due to inequitable conduct by Colvin. In particular, Microsoft contended that it had developed its own technology to reduce software piracy, called the Licensing Verification Program ("LVP"), which it implemented in its 1998 Brazilian Publisher ("BP 98") software product. Because this product was released prior to the filing date of z4's patents, Microsoft alleged that it constituted a prior invention sufficient to invalidate the asserted claims.

A magistrate judge held a Markman hearing, and subsequently construed several disputed claim terms. z4 Techs., Inc. v. Microsoft Corp., No. 06-cv-142 (E.D. Tex. Sep. 20, 2005) ("Claim Construction Opinion"). Later, during the course of the jury trial, the court construed an additional term, "user," which had become central to Microsoft's litigation arguments. z4 Techs., Inc. v. Microsoft Corp., No. 06-cv-142 (E.D. Tex. Apr. 12, 2006) ("Supplemental Claim Construction Opinion"). The jury returned a verdict of willful infringement of all three asserted claims against Microsoft and awarded damages of \$115 million.

Following the jury verdict, Microsoft filed various renewed motions for JMOL under Rule 50(b) and a motion for a new trial under Rule 59(a) of the Federal Rules of Civil Procedure. The district court denied all of Microsoft's motions for JMOL and a new trial, thereby upholding the jury's verdict in its entirety. The district court also held both patents to be enforceable. JMOL Opinion at 2. It declined, however, to issue a permanent injunction against Microsoft. See z4 Techs., Inc. v. Microsoft Corp., 434 F. Supp. 2d 437 (E.D. Tex. 2006).

Based on the jury's finding of willful infringement, z4 requested enhanced damages. Although the district court chose not to enhance damages to the maximum of three times the jury verdict, it did award an additional \$25 million against Microsoft. JMOL Opinion at 47. It also awarded attorney's fees to z4 based on the jury's willfulness verdict and its own determination of litigation misconduct by Microsoft. Id. at 43. Microsoft timely appealed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

## II. DISCUSSION

### A. Standard of Review

We review the denial of a motion for JMOL de novo, Harris Corp. v. Ericsson Inc., 417 F.3d 1241, 1248 (Fed. Cir. 2005), and thus affirm the jury's verdict unless "a reasonable jury would not have a legally sufficient evidentiary basis to find for the [winning] party," Fed. R. Civ. P. 50(a)(1). "The denial of a motion for judgment as a matter of law . . . is a procedural issue not unique to patent law, which we review under the law of the regional circuit where the appeal from the district court normally would lie." Riverwood Int'l Corp. v. R.A. Jones & Co., 324 F.3d 1346, 1352 (Fed. Cir. 2003).

“The United States Court of Appeals for the Fifth Circuit describes appellate review of a JMOL denial as a determination whether “the facts and inferences point so strongly and overwhelmingly in favor of one party that the court concludes that reasonable jurors could not arrive at a contrary verdict.” Harris, 417 F.3d at 1248 (quoting Bellows v. Amoco Oil Co., 118 F.3d 268, 273 (5th Cir. 1997)). “In reviewing the sufficiency of the evidence . . . we must affirm unless there is no legally sufficient evidentiary basis for the jury’s verdict. In this regard, the evidence, as well as all reasonable inferences from it, are viewed in the light most favorable to the verdict.” Lane v. R.A. Sims, Jr., Inc., 241 F.3d 439, 445 (5th Cir. 2001) (internal citations omitted). In performing this review, we are mindful of the fact that “[a]nticipation is a factual determination that is reviewed for substantial evidence when decided by a jury,” Koito Mfg. Co. v. Turn-Key-Tech, LLC, 381 F.3d 1142, 1149 (Fed. Cir. 2004), as is the jury’s determination of non-infringement, Acumed LLC v. Stryker Corp., 483 F.3d 800, 804 (Fed. Cir. 2007).

We also review the denial of a motion for a new trial under regional circuit law, see Riverwood, 324 F.3d at 1352, which, in the Fifth Circuit, provides for reversal only upon an “abuse of discretion or a misapprehension of the law” by the district court. Prytania Park Hotel, Ltd. v. Gen. Star Indem. Co., 179 F.3d 169, 173 (5th Cir. 1999).

Claim construction is an issue of law, see Markman v. Westview Instruments, Inc., 52 F.3d 967, 970-71 (Fed. Cir. 1995) (en banc), aff’d, 517 U.S. 370 (1996), over which we exercise plenary review, Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc).



## B. Analysis

Microsoft argues that the district court erred as a matter of law by denying JMOL of non-infringement based on three claim limitations allegedly lacking in the accused products and by denying JMOL of invalidity under 35 U.S.C. § 102(g) based on Microsoft's BP 98 product. Microsoft also requests a new trial based on allegedly incorrect and prejudicial jury instructions. Microsoft further argues that the Supreme Court's recent decision in Microsoft Corp. v. AT&T Corp., 127 S. Ct. 1746 (2007) (addressing infringement under 35 U.S.C. § 271(f) with respect to software components), compels a remand for a new trial on damages. We address each of these arguments in turn.

### 1. Microsoft's Motion for JMOL of Non-Infringement

Microsoft disputes the district court's constructions of the "user" limitation of both patents, the "automatically" limitation of the '471 patent, and the "electronic" limitation of the '825 patent. It further challenges the jury's finding that the accused products meet these limitations as well as the "password" limitation of the '471 patent and the "authorization code" limitation of the '825 patent. z4 responds that Microsoft's accused products require the entry of a Product Key, which is a "password" or "activation code," that they also allow users to choose Internet activation, which performs all the steps of the "automatic" or "electronic" claim limitations, and that because Microsoft's Product Activation compares stored information regarding the software and the computer to registration information submitted by the user to activate the software, Microsoft infringes all of the asserted claims.

#### a. The “User” Limitation

The district court construed the term “user” to mean “a person, a person using a computer, a computer, or computers.” Supplemental Claim Construction Opinion at 3. Microsoft had attempted to limit “users” to “persons,” thereby excluding a computer or computers, while z4 advocated for the broad interpretation adopted by the district court. Id. at 1. Under its definition, Microsoft argues that the asserted claims require the authorization of a “particular user, regardless of what particular computer they are using,” while the accused products authorize “a particular computer, regardless of who is using it.” Microsoft thus asserts that there can be no infringement because its products do not recognize “unauthorized users,” but rather unauthorized computers. In its reply brief, however, Microsoft concedes a construction of “user” as including both “a person” and “a person using a computer.” Reply Br. at 4 (“Properly construed, a ‘user’ is a person or a person using a computer. . . . It is only the district court’s elimination of the person altogether, in allowing a computer by itself to be a ‘user,’ that we ask this Court to overrule as an error of law.”).

In construing a disputed claim term, we begin with the language of the claims. Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). Claims of the '825 patent include the limitations “enabling the software on a computer for use by a user,” and “comparing previously stored registration information . . . to at least one of the software, the user, and the computer.” In these recitations, the “user” and the “computer” are distinct entities. To construe the term “user” to mean a “computer” would result in the claim being interpreted to recite, for example, “enabling the software on a computer for use by a [computer].” The language of the claims does not

reasonably or logically permit such a construction. Likewise, the written description makes clear that the terms “users” and “computers” are distinct and used to describe different things. E.g., ’471 patent col.1 ll.48-51 (discussing “users who may have a legitimate need to . . . transfer a copy to a new computer”); id. col.7 ll.7-9 (“[T]he user installs . . . the software in his computer or computer network.”). Because a construction that would equate a “user” with a “computer or computers” conflicts with “both the plain language of the claims and the teachings of the specification,” NeoMagic Corp. v. Trident Microsystems, Inc., 287 F.3d 1062, 1070 (Fed. Cir. 2002), the district court’s inclusion of “computer or computers” in its claim construction cannot be sustained. Because we agree with Microsoft that the district court erred in construing “user” to include a computer or computers apart from a person, we modify the district court’s claim construction and hold that a “user” is properly construed as “a person or a person using a computer.”<sup>2</sup> This construction applies to all of the asserted claims. See Omega Eng’g, Inc., v. Raytek Corp., 334 F.3d 1314, 1334 (Fed. Cir. 2003) (“[W]e presume, unless otherwise compelled, that the same claim term in the same patent or related patents carries the same construed meaning.”).

Notwithstanding our modification of the district court’s claim construction, however, we find Microsoft’s contention that the asserted claims require the authorization of a “particular user, regardless of what particular computer they are using” to be artificial and inconsequential. Although the claims recite “software including instructions to reduce use of the software by unauthorized users,” ’471 patent claim 32,

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<sup>2</sup> In so holding, we rely in part on Microsoft’s concession that “user” includes both “a person” and “a person using a computer.” See Reply Br. at 4. Accordingly, we express no opinion as to whether “a person” and “a person using a computer” differ meaningfully.

and “determin[ing] if the user is an authorized or an unauthorized user,” ’825 patent claims 44, 131, both the claims and specification describe methods of making this determination based on computer-specific information, among other things. This conclusion is based on relevant language that appears in the claims and not on any particular construction of the term “user.” Specifically, the claims recite that the software representative may identify authorized users based on a comparison of “registration information provided by the user,” with “previously stored registration information related to at least one of the software, the user, and the computer.” Id. Because the “[u]se of the phrase ‘at least one’ means that there could be only one or more than one” of the listed types of previously stored registration information, Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed. Cir. 1999), the identification called for by the claims may be accomplished by comparing the registration information with previously-stored information related: (a) to the software installed by a person on the computer; (b) to the person using the computer; or (c) to the computer hardware. Microsoft’s argument that the asserted claims require the authorization of a “particular user, regardless of what particular computer they are using” ignores the language of the claims which, as noted above, permits the identification of authorized users based on, inter alia, “previously stored registration information related [only] to . . . the computer.” Our construction of the term “user” to mean “a person or a person using a computer” does not foreclose or in any way affect such a conclusion nor does it preclude a determination that the accused Microsoft products infringe. Thus, Microsoft’s argument, while correct as to the construction of the claim term “user,” is not determinative of the question of infringement.

With respect to infringement, substantial evidence supports the jury verdict, even under our modified construction. Because the claims explicitly contemplate tracking authorized users through, inter alia, the identity of the computers on which they install the software as discussed, supra, and because Microsoft admits that it makes Product Activation determinations based on registration information related to user's computers, see Reply Br. at 2, a reasonable juror could find that Microsoft infringed the asserted claims notwithstanding our modification of the district court's construction of the term user. See Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1328 (Fed. Cir. 2002) (noting that when we determine that the district court "has misinterpreted a patent claim, we independently construe the claim to determine its correct meaning," and that "[w]e may affirm the jury's findings on infringement . . . if substantial evidence appears in the record supporting the jury's verdict and if correction of the errors in a jury instruction on claim construction would not have changed the result, given the evidence presented").

b. The "Password" and "Authorization Code" Limitations

As discussed above, the patents disclose a system wherein an initial password or authorization code enables a software "grace period" for a fixed number of uses or period of time. Microsoft and z4 agree that the terms "authorization code" and "password" are used interchangeably. Claims 44 and 131 of the '825 patent recite "associating a first authorization code with the software, the first authorization code enabling the software . . . for an initial authorization period, . . . supplying the first authorization code with the software; [and] requiring the user to enter the first authorization code to [activate the grace period]" (emphases added). Similarly, claim 32 of the '471 patent recites "requiring a password associated with the software; . . . [and]

enabling the software after the password has been communicated to the software” (emphases added). The parties raise no claim construction issues related to these limitations, and we review them only for substantial evidence supporting the jury’s finding of infringement.

Although Microsoft admits that the accused products have a grace period, and that users are instructed to enter a “Product Key” provided with the software before this period may begin, it argues that this Product Key cannot be an “authorization code” or “password” because it is not “associated with the software” as required by the claims. Specifically, Microsoft asserts that any Product Key can enable the grace period on any copy of the software, and thus there is no association between a particular copy of software and the specific Product Key provided with that copy. We disagree. Not only was the jury presented with evidence that Microsoft directly instructed its users to input a specific Product Key provided with each copy of the software and that the Product Key was required as part of product installation, but one of Microsoft’s own witnesses admitted that unless users enabled the grace period using this specific Product Key, they would have been unable to complete the Product Activation process (i.e., to enable the software beyond the grace period).

Thus, substantial evidence supports a finding that in the ordinary course of activating a copy of the accused software, a user is required to enter an authorization code—the Product Key—associated with that copy of the software. Even if the potential use of unassociated Product Keys to enable software grace periods may be framed as a “non-infringing mode[] of operation,” our conclusion remains the same. See Hilgraeve Corp. v. Symantec Corp., 265 F.3d 1336, 1343 (Fed. Cir. 2001) (“[I]n determining

whether a product claim is infringed, we have held that an accused device may be found to infringe if it is reasonably capable of satisfying the claim limitations, even though it may also be capable of non-infringing modes of operation.”). We are likewise unpersuaded by Microsoft’s related assertion that it does not infringe because a single copy of the accused software can be installed on an unlimited number of machines using a single Product Key. As with the previous argument, infringement is not avoided merely because a non-infringing mode of operation is possible. The fact remains that Microsoft’s Product Activation process prevents the use of software installations beyond the grace period unless the associated Product Key is used to enable the grace period.

Microsoft further argues that z4—through criticism of prior art in the patent specification—disclaimed the use of authorization codes that, like serial numbers in the prior art, can be used to install multiple copies of the software. It again contends that its own Product Key cannot be considered an “authorization code” because a single Product Key can enable the grace period for any copy of the software. See Astrazeneca AB v. Mut. Pharm. Co., 384 F.3d 1333, 1340 (Fed. Cir. 2004) (discussing disavowal of claim scope through criticism of other products in the general summary or description of the invention). We find this argument disingenuous at best because the patent language cited by Microsoft distinguishes prior art systems relying on a single authorization code, such as a serial number, from the disclosed invention, which utilizes a dual authorization code scheme. It is undisputed that Microsoft’s Product Activation, like the claimed invention, requires dual authorization codes and that the Product Key enables only a limited grace period.

For all of these reasons, we affirm the jury's verdict of infringement as to these limitations.

c. The "Automatic" and "Electronic" Limitations

The parties also dispute the level of user interaction required by the claims to complete the registration step and to enable the software beyond the grace period previously enabled by the initial authorization code. This dispute implicates two related limitations recited in the asserted claims. Claims 44 and 131 of the '471 patent recite "requiring the user to selectively choose either manual or electronic registration" (emphasis added), while claim 32 of the '825 patent recites "instructions for automatically contacting an authorized representative . . . to communicate registration information and obtaining authorization for continued operation" (emphasis added). Despite the difference in the language of the claims, the parties agree that for purposes of this appeal, the terms "automatic" and "electronic" may be analyzed together.

At the district court, Microsoft suggested a construction of the term "automatically" to be "without user discretion or intervention." The district court disagreed and instead construed the term to mean "instructions (i.e. a computer code) that enable a user's computer to contact an authorized representative of the software." Claim Construction Opinion at 6-8. The court did not construe the term "electronic," but noted that "[i]n open court, the parties agreed to use the claim language for this term." Id. at 8. Microsoft further agreed that it would not argue at trial "that 'electronic' means 'without user intervention' without leave of Court." Id.



On appeal, Microsoft contends that once users choose the electronic or automatic registration mode (as contrasted with the manual mode), the initiation of the registration communication must commence without any user interaction.

We find Microsoft's claim construction arguments to be without merit. As the district court carefully observed, the claims are silent as to the initiation of the registration process, although the claims and specification "clearly contemplate[] a user choice as to whether registration will be automatic or manual." Id. at 6 (citing '471 patent col.7 ll.7-18 ("The user is allowed to choose between automatic or manual registration.")); see also '825 patent claims 44 & 131 ("requiring the user to selectively choose either manual or electronic registration"). Although the specification discloses that automatic registration is performed "without user intervention," '471 patent col.4 ll.50-54 (emphasis added), the claims require at least a minimal level of user interaction to select this registration mode. Indeed, nothing in the claims or specification precludes user interaction in the selection or initialization of the automatic registration. Thus, the district court correctly rejected Microsoft's attempt to exclude any user interaction from the claims, and we affirm its construction of this term. Microsoft makes no effort to argue non-infringement under this construction, and its own product documentation, which was presented to the jury, characterizes the Internet option as "automatically activating the [accused product]."

Moreover, even under Microsoft's proposed construction, its sole non-infringement argument is artificial at best. Specifically, Microsoft argues that although the accused products allow users to choose between Internet (i.e., automatic or electronic) or phone (i.e., manual) activation, if the user chooses the Internet option,

“nothing happens after that manual choice until the user additionally manually presses the ‘next’ button . . . .” Microsoft Br. at 23. Thus, even under Microsoft’s construction, a reasonable juror could find that “manually press[ing] the ‘next’ button” is merely part of the selection process. Therefore, we affirm the judgment of infringement with respect to these limitations as well.

## 2. Microsoft’s Motion for JMOL of Invalidity by Anticipation

Before the district court, Microsoft argued a number of points in support of its motion for JMOL of invalidity based on anticipation by its BP 98 product. The district court denied the motion based solely on its conclusion that in light of “the evidence presented at trial, a reasonable jury could have concluded that BP 98 did not work for its intended purpose, to stop piracy.” JMOL Opinion at 7. On appeal, Microsoft repeats many of the arguments it raised before the district court. Because we agree with the district court’s determination on the point it considered and find it dispositive, we discuss only that point and need not and do not address Microsoft’s other contentions.

Microsoft argues that the LVP feature of its BP 98 software product anticipates the asserted claims under section 102(g)(2). That section provides that a patent is invalid if “before such person’s invention thereof, the invention was made in this country by another inventor . . . .” 35 U.S.C. § 102(g)(2). “This court has interpreted § 102(g) to provide that ‘priority of invention goes to the first party to reduce an invention to practice unless the other party can show that it was the first to conceive the invention and that it exercised reasonable diligence in later reducing that invention to practice.’” Monsanto Co. v. Mycogen Plant Sci., Inc., 261 F.3d 1356, 1362 (Fed. Cir. 2001) (quoting Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1577 (Fed. Cir. 1996)).

Microsoft bore the burden of demonstrating by clear and convincing evidence that BP 98 constituted an actual reduction to practice of the invention claimed in z4's patents. See, e.g., SRAM Corp. v. AD-II Eng'g, Inc., 465 F.3d 1351, 1357 (Fed. Cir. 2006) ("Under the patent statutes, a patent enjoys a presumption of validity, see 35 U.S.C. § 282, which can be overcome only through facts supported by clear and convincing evidence."). "In order to establish an actual reduction to practice, the inventor must prove that: (1) he constructed an embodiment or performed a process that met all the limitations . . . and (2) he determined that the invention would work for its intended purpose." Cooper v. Goldfarb, 154 F.3d 1321, 1327 (Fed. Cir. 1998). "Testing is required to demonstrate reduction to practice in some instances because without such testing there cannot be sufficient certainty that the invention will work for its intended purpose." Slip Track Sys., Inc. v. Metal-Lite, Inc., 304 F.3d 1256, 1267 (Fed. Cir. 2002). Because the necessity and sufficiency of such testing are factual issues, see id. at 1268, substantial evidence in the record supporting a finding that Microsoft's LVP software did not work for its intended purpose will suffice to support the jury's verdict that z4's patents are not invalid for anticipation, see Eli Lilly & Co. v. Aradigm Corp., 376 F.3d 1352, 1362 (Fed. Cir. 2004) (noting that when we review the denial of a post-verdict JMOL "on a mixed question of law and fact . . . we must sustain the jury's conclusion unless the jury was not presented with substantial evidence to support any set of implicit findings sufficient under the law to arrive at its conclusion"); Taskett v. Dentlinger, 344 F.3d 1337, 1339 (Fed. Cir. 2003) (noting that reduction to practice is a question of law predicated on subsidiary factual findings).

As an initial matter, Microsoft contends that the district court incorrectly defined the “intended purpose” of the invention as “to stop piracy,” and thus erred in holding that a prior invention must “stop piracy” to qualify as invalidating art under § 102(g). See JMOL Opinion at 7. We agree. z4’s patents do not disclose a method or apparatus to completely eliminate software piracy, and the claim language indicates that the purpose of the invention is merely the reduction, rather than the elimination, of such piracy. See ’471 patent claim 32 (claiming “instructions to reduce use of the software by unauthorized users” (emphasis added)); ’825 patent claims 44 & 131 (claiming “[a] method for reducing unauthorized software use” (emphasis added)).

We agree with z4, however, that the record contains substantial evidence for a reasonable jury to conclude that the anti-piracy feature of BP 98 did not work even to reduce piracy. For example, a reasonable juror could have relied upon the internal Microsoft presentation of April 28, 1998, which indicated that “effectiveness” was not known, and that Microsoft “[could] only measure [effectiveness] once enabled fully in a country w/ [sic] a real product.” The testimony of Microsoft’s own witness, Mr. Hughes, indicates that the anti-piracy software found in the accused products was “virtually a complete rewrite” of the software in BP 98. Additionally, an internal Microsoft e-mail dated November 18, 1998—more than five months subsequent to z4’s filing date—indicated a problem with the LVP software and documented an instance of the “same CD being installed in almost 40 different machines with different user names.” It also noted that one user had registered 34 times, and others had registered more than 15 times. z4’s expert testified at trial that this e-mail “affirm[ed] [his] opinion that Brazilian Publisher 98 is not prior art because there was no recognition or appreciation that it

worked for its intended purpose.” We also note that Microsoft failed to produce the document containing the e-mail until the day before the trial started, and then only because z4 uncovered it during a last-minute deposition, see JMOL Opinion at 40, resulting in the district court sanctioning Microsoft by instructing the jury that

z4 has offered [the document containing the e-mail] into evidence to show that Brazilian Publisher 98 did not work for its intended purpose . . . . You are instructed that Microsoft, although it had knowledge of this document, did not produce it to z4 as it was required to do under controlling discovery rules. You’re instructed that . . . under the law and rules of this Court, that Microsoft improperly withheld this document and you may infer, although you are not required to do so, that Microsoft improperly withheld the document because it was harmful to the positions it has taken in this case.

Microsoft has not appealed this sanction.

Collectively, this evidence comprises “more than a mere scintilla” and is “such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” Consol. Edison Co. v. NLRB, 305 U.S. 197, 229 (1938) (discussing substantial evidence review); see also Teleflex, 299 F.3d at 1323-24. Because substantial evidence supports the jury verdict, we affirm the district court’s denial of Microsoft’s motion for JMOL of invalidity by anticipation.

### 3. Microsoft’s Request for a New Trial

Microsoft requests a remand for a new trial based on three allegedly erroneous jury instructions and an intervening change in law concerning infringement under 35 U.S.C. § 271(f). We do not find these arguments persuasive.

#### a. Jury Instructions

Under the law of the Fifth Circuit, two requirements must be met before a new trial will be granted based on an erroneous jury instruction: “First, the challenger must demonstrate that the charge as a whole creates substantial and ineradicable doubt

whether the jury has been properly guided in its deliberations. Second, even if the jury instructions were erroneous, we will not reverse if we determine, based upon the entire record, that the challenged instruction could not have affected the outcome of the case.” Hartsell v. Doctor Pepper Bottling Co., 207 F.3d 269, 272 (5th Cir. 2000).

i. Jury Instruction Regarding “Single Document” Corroboration

The district court instructed the jury that “[a]n inventor’s testimony of conception must be corroborated in a single document.” It later conceded that this instruction was “improper,” but nonetheless held that it did not “constitute harmful error under the circumstances” because Microsoft never presented, much less relied, on the testimony of an individual inventor. Instead, Microsoft represented to the court that “[f]or its § 102(g) defense, Microsoft did not need to name a particular person . . . . Microsoft corporately both conceived and reduced to practice before Mr. Colvin.” JMOL Opinion at 26 (quoting Microsoft’s JMOL motion) (emphasis added). The district court expressed reservations concerning the propriety of asserting corporate conception, but it expressly declined to decide this issue, and simply held that because Microsoft admitted that it “never presented oral testimony of an individual inventor who allegedly conceived the anti-piracy portion of BP 98,” this instruction was simply not relevant to the verdict. Id. at 27 & n.10. Because we agree that this instruction was not relevant, we need not and do not address the merits of Microsoft’s claims regarding corporate conception.

On appeal, Microsoft now contends that the jury could have assumed that one of its witnesses, Mr. Hughes, was an inventor. This argument is not persuasive. Microsoft cannot argue below that it did not and need not name an individual inventor, see id. at

26-27, yet now assert that the jury would have concluded precisely the opposite. Therefore, as the district court correctly concluded, “whether such testimony must be corroborated by a ‘single document’ was not an issue in the case.” Thus, “the improper instruction could not create sufficient error to warrant a new trial on the issue of anticipation.” Id. at 27-28. Furthermore, this instruction “could not have affected the outcome of the case,” Hartsell, 207 F.3d at 272, in light of the substantial evidence supporting the conclusion that Microsoft’s BP 98 was not a reduction to practice of the asserted claims as discussed supra.

ii. Jury Instruction Regarding Burden of Proof on Invalidity

Although the district court properly instructed the jury that Microsoft had the burden of proving invalidity by clear and convincing evidence, see SRAM, 465 F.3d at 1357, Microsoft contends that the district court abused its discretion by refusing to further instruct the jury that Microsoft’s “burden is more easily carried when the references on which the assertion is based were not directly considered by the examiner during prosecution.” We disagree. See Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1050 (Fed. Cir. 1988) (“The burden of proof is not reduced when prior art is presented to the court which was not considered by the PTO.”); Bio-Red Labs., Inc. v. Nicolet Instruments Corp., 739 F.2d 604, 615 (Fed. Cir. 1984) (“The introduction of prior art not considered by the PTO does not change the burden of proof or the requirement that evidence establish the presumption-defeating facts clearly and convincingly.”), abrogated on other grounds by Markman, 52 F.3d 967. Despite Microsoft’s reliance on cases indicating that a party may more easily meet this clear and convincing evidence burden when the references at issue were not before the

examiner, see, e.g., Am. Hoist & Derrick Co. v. Sowa & Sons, Inc., 725 F.2d 1350, 1359-60 (Fed. Cir. 1984), it cites no authority compelling courts to provide such an instruction, and we agree with the district court that “it might lead the jury to believe that the burden of proof is less than clear and convincing when prior art was not considered by the PTO.” JMOL Opinion at 22. Accordingly, we hold that the district court did not abuse its discretion in refusing to provide the jury with Microsoft’s requested instruction.

### iii. Jury Instruction Regarding Obviousness

Microsoft also requests a remand in light of the Supreme Court’s decision in KSR Int’l Co. v. Teleflex Inc., 127 S. Ct. 1727 (2007), based on the district court’s instruction to the jury that “to find an asserted claim obvious, you must find that there was some teaching, suggestion or incentive to combine the items in the prior art into the particular claimed combination.” z4 responds that Microsoft would not be entitled to a new trial regardless of the outcome in KSR<sup>3</sup> because the only direct evidence of obviousness introduced by Microsoft was the conclusory testimony of its expert. See Upjohn Co. v. Mova Pharm. Corp., 225 F.3d 1306, 1311 (Fed. Cir. 2000) (noting that “there must be factual support for an expert’s conclusory opinion”); see also JMOL Opinion at 10 (noting that it was “questionable whether Defendants even established a prima facie case of obviousness”). Although Microsoft asserts that “the jury certainly could have reached a conclusion of obviousness on this record,” Reply Br. at 30, it fails to identify specific evidence or arguments establishing even a prima facie case of obviousness under the factors outlined in Graham v. John Deere Co., 383 U.S. 1, 17 (1966). Therefore, we find no abuse of discretion here by the district court.

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<sup>3</sup> The parties completed briefing in this case prior to the Supreme Court’s decision in KSR.



b. Damages Based On Foreign Sales Under § 271(f)

Finally, Microsoft requests a remand for a new trial on damages in light of Microsoft v. AT&T, because the jury made its damages determination based on worldwide sales of the accused products. Although the Supreme Court issued the Microsoft v. AT&T opinion after the parties had filed their briefs in this case, Microsoft argues that it preserved its right to argue damages under 35 U.S.C. § 271(f) by moving in limine to exclude evidence of foreign sales of the accused products. See Micro Chem., Inc. v. Lextron, Inc., 317 F.3d 1387, 1391 (Fed. Cir. 2003) (holding that under Rule 103(a) of the Federal Rules of Evidence, once a court makes a definitive evidentiary ruling on the record, a party need not renew an objection to preserve appeal rights). z4 counters that Microsoft has no basis to argue damages based on global sales because it failed to renew its motion in limine on this issue, see Fed. R. Civ. P. 50(b); Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc., 546 U.S. 394, 404 (2006) (holding that “a party is not entitled to pursue a new trial on appeal unless that party makes an appropriate postverdict motion in the district court”), and because Microsoft failed to properly present the issue on appeal by mentioning it only in a footnote in its opening brief. See SmithKline Beecham Corp. v. Apotex Corp., 439 F.3d 1312 (Fed. Cir. 2006) (holding that arguments raised only in footnotes are not preserved).

We reject Microsoft’s request for a retrial on damages because we find no properly-defined § 271(f) issue in the record. While we question the merits of Microsoft’s reliance on its denied motion in limine to preserve this argument for appeal in light of the district court’s admonition that its “rulings on the pre-trial motions in limine were not definitive rulings,” JMOL Opinion at 17; Fed R. Evid. 103(a) (requiring a

“definitive ruling” to preserve a claim of error for appeal without renewing an objection), we need not decide whether Microsoft properly preserved any § 271(f) arguments. This is because the jury did not and could not have relied on § 271(f) in determining its damages award. The complaint alleged infringement using only language from § 271(a) (“[W]hoever without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor, infringes the patent.”). The jury instructions similarly only paralleled the language of § 271(a):

Any person or business entity that, without the patent owner’s permission, makes, uses, offers for sale, or sells within the United States any product or method that is covered by at least one claim of a patent, before the patent expires, infringes the patent.

At oral argument, Microsoft asserted that Microsoft v. AT&T is relevant because this case involves accused products that were identical to those of the Microsoft v. AT&T case and distributed using the same “golden master” distribution system discussed in that opinion. See Oral Arg. at 36:05-36:46, available at <http://www.cafc.uscourts.gov/oralarguments/mp3/2006-1638.mp3>. While that may be true, the asserted claims in this case differ significantly from those at issue in Microsoft v. AT&T, and thus raise different infringement issues. Moreover, Microsoft points to nothing in the record to establish that z4 ever argued that Microsoft

supplie[d] or cause[d] to be supplied in or from the United States all or a substantial portion of the components of a patented invention, where such components are uncombined in whole or in part, in such manner as to actively induce the combination of such components outside of the United States in a manner that would infringe the patent if such combination occurred within the United States.

35 U.S.C. § 271(f)(1). Because no § 271(f) issues were presented to the jury, and because the jury instructions communicated the requirements for finding infringement only under § 271(a), we must assume that the jury properly confined its analysis and ultimate finding of liability to the instructions given under § 271(a). See, e.g., Shannon v. United States, 512 U.S. 573, 585 (1994) (declining “to depart from the almost invariable assumption of the law that jurors follow their instructions”). Without more, a damages award based in part on global sales does not necessarily implicate § 271(f).

Microsoft may or may not have legitimate arguments regarding the propriety of considering specific foreign sales in a damages calculation for infringement under § 271(a), but it raised no such arguments here. Additionally, we find no evidence in the record that Microsoft presented any evidence to the district court segregating domestic and foreign sales. Therefore, we find no merit in Microsoft’s request for a remand on these grounds. Because Microsoft failed to explain what § 271(f) issues it defined below, let alone preserved, we deny Microsoft’s request for a new trial on damages.

#### CONCLUSION

For the above reasons, we conclude that the district court properly denied Microsoft’s motions for JMOL and a new trial, and thus its judgment is

AFFIRMED.