Note

Standing Up to Bad Patents: Allowing Non-Infringing Direct Competitors to Satisfy the Article III Standing Requirements Appealing an Adverse Inter Partes Review Decision to the Federal Circuit

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INTRODUCTION

Over the past decade, Congress has come to recognize the threat invalid patents[1] pose to innovation.[2] These invalid patents, issued by the United States Patent and Trademark Office (PTO or "Patent Office"), can stifle innovation by precluding competitors from utilizing the patented technology[3] or by subjecting competitors to a looming

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1. An invalid patent is a patent that fails to meet one or more of the statutory patentability requirements. To meet the patentability requirements, the patented invention must be: (1) patentable subject matter; (2) novel; (3) nonobvious; and (4) the patent must adequately describe the invention so that others may practice it. *See* 35 U.S.C. §§ 101–03, 112; Paul R. Gugliuzza, *(In)Valid Patents*, 92 NOTRE DAME L. REV. 271, 278–79 (2016). For a discussion of what is required to meet each of these requirements, see generally *infra* note 8. While every patent application is examined by the U.S. Patent Office to determine whether it meets these patentability requirements, some patents may still be issued without meeting them. This may be because the burden is on the Patent Office to prove that an application fails to meet one of these requirements, or, because of constrained resources, the Patent Office is incentivized to issue patents without performing a sufficient review. *See infra* Part I.A.

2. *See* H.R. REP. NO. 112-98, at 39 (2011) ("[Q]uestionable patents are too easily obtained and are too difficult to challenge."); *see also* S. REP. NO. 110-259, at 19 (2008) ("Despite Congress's attempts to improve the reexamination system, it remains troublesomely inefficient and ineffective as a truly viable alternative for resolving questions of patent validity.").

3. *See* 35 U.S.C. § 154; *infra* Part I.B.

threat of significant infringement damages.[4] When the Patent Office improperly issues these invalid patents, patent owners are able to monopolize technology that should otherwise remain in the public domain. Recognizing the threat that invalid patents pose, Congress established several post-issuance proceedings, including inter partes review (IPR), to "provid[e] a more efficient system for challenging patents that should not have issued"[5] to encourage direct competitors and other third parties to file and obtain invalidity rulings on these patents.[6] By obtaining an invalidity ruling on these patents, competitors can open the technology to public use, helping drive innovation.

Established in 2012, inter partes review is a trial proceeding conducted before the Patent Trial and Appeal Board (PTAB)[7] to assess whether the claims of a previously granted patent fail to meet the novelty and nonobviousness statutory requirements of patentability.[8] If

4. *See* 35 U.S.C. § 271. Infringement occurs when a third party utilizes the patented technology without the patent owner's permission. It is a strict liability offense and therefore does not require knowledge of the patent nor knowledge of use of the patent owner's technology to be held liable.

5. H.R. REP. NO. 112-98, at 39 (2011).

6. The various post-issuance proceedings seek to increase third-party participation in the policing of patent rights by allowing third parties to come forward with arguments that the granted patent is invalid for already being in the public domain or is otherwise unpatentable. *See AIA Trial Types*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/aia-trial-types [https://perma.cc/X7TG-8NPV].

7. The PTAB is an adjudicative body within the PTO, established through the America Invents Act (AIA) to conduct trials for the various post-grant proceedings to decide issues of patentability, including for IPRs, among other duties. *See generally* Janet Gongola, *The Patent Trial and Appeal Board: Who Are They and What Do They Do?*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/learning-and-resources/newsletter/inventors-eye/patent-trial-and-appeal-board-who-are-they-and-what [https://perma.cc/3TAS-GU8K] (July 8, 2019).

8. *See* 35 U.S.C. § 311. To obtain a patent, an applicant must invent something new, useful, and nonobvious. The main statutory requirements include: § 101 patentable subject matter; § 102 novelty; § 103 nonobviousness; and § 112 best mode, enablement, written description. Novelty assesses whether every element of the claimed invention is present in a single reference, disclosed to the public, prior to the inventor's application. *See* U.S. PAT. & TRADEMARK OFF., MANUAL OF PATENT EXAMINING PROCEDURE § 2131 (9th ed. 2018) [hereinafter MPEP]. Nonobviousness assesses whether the claimed invention would have been obvious to a person of ordinary skill in the art, based on what has been disclosed to the public, such that the applicant is not deserving of a patent. *See id.* § 2141. An invention is considered enabled if the invention is described in such terms that one of skill in the art can make and use the claimed invention. *See id.* § 2164.01. The written description requirement requires the applicant adequately describe the invention in sufficient detail such that one of ordinary skill in the art can recognize that the inventor has the knowledge, or possession, of the claimed invention. *See id.* § 2163.

the PTAB concludes that the patent is invalid, then the patent is no longer enforceable, opening up the technology for use by others without the risk of infringement.

If the patent challenger is unable to establish that the patent is invalid,[9] then it *may* appeal the PTAB decision to the Federal Circuit.[10] However, because the PTAB is part of an administrative agency, when appealing to the federal courts the patent challenger must meet the Article III standing requirements—suffering an injury in fact. Mere participation in the agency proceeding is not enough.[11] In the majority of IPR appeals, this is not an issue because the patent challenger is subject to a district court infringement action.[12] But in the approximately twenty percent of cases when the patent challenger is not allegedly infringing the challenged patent,[13] establishing an injury sufficient to confer Article III is more difficult. Through its recent decisions, the Federal Circuit has severely heightened what a direct competitor must show to establish an injury sufficient to confer Article III standing.[14] Regardless of how similar the patent challenger's technology is to the challenged patent, the Federal Circuit essentially requires the patent challenger to infringe the patent and risk treble damages and/or an injunction to satisfy the injury in fact requirements.[15]

This Note argues that, to better align with Congress's intent and Supreme Court precedent on the constitutional requirements of standing, the Federal Circuit should expand its interpretation of what constitutes an injury in fact for non-infringing direct competitors appealing an IPR decision. The proposed solution, the Direct Competitor Standing Test (DCS Test), better recognizes the unique injuries and interests at stake in patent cases. In the first step of the DCS Test, the patent challenger must show that it has either an existing patent portfolio[16] or existing design portfolio in a similar technology area as the

9. The patent challenger must establish the patent is invalid by a preponderance of the evidence during an IPR. 35 U.S.C. § 316(e). In contrast, in court litigation, a patent challenger must establish the patent is invalid by clear and convincing evidence. Microsoft Corp. v. i4i Ltd. P'ship, 564 U.S. 91, 95 (2011).

10. *See infra* Part I.C.2.

11. *See* Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2143–44 (2016) ("Parties that initiate the [IPR] proceeding need not have a concrete stake in the outcome; indeed, they may lack constitutional standing.").

12. *See infra* Part II.B.1.

13. *See infra* note 141.

14. *See infra* Part II.B.2.

15. *See infra* Part II.B.1.

16. A patent portfolio is a collection of patents owned by a single entity. The portfolio may include patents covering a range of related technologies or may cover a range

challenged patent.[17] In the second step, the patent challenger must establish its particularized injury by showing that its current designs solve similar problems using similar solutions.[18] Utilizing such an interpretation would enable non-infringing direct competitors to establish an injury in fact sufficient to meet the standing requirements, allowing competitors to proceed with their appeal of an adverse IPR decision.

Part I of this Note discusses the patent examination process and how current practice leads to the issuance of many invalid patents. Part I then explores the threat these invalid patents pose to innovation and why Congress established the various post-issuance proceedings, including IPR, to help alleviate this problem. Part II outlines the Supreme Court's articulation of the Article III standing requirements. Part II then argues that the Federal Circuit's current interpretation of the injury in fact requirement for patent challengers, specifically non-infringing direct competitors, appealing IPR decisions before the PTAB is overly narrow and out of line with Supreme Court precedent. Part III proposes an alternative interpretation, the DCS Test, for direct competitors to satisfy the constitutional requirements of standing to better recognize the injury in fact direct competitors face when an invalid patent precludes them from using technology that should otherwise be in the public domain. Under the DCS Test, a patent challenger may establish that it is a direct competitor, and therefore suffers an injury in fact, by demonstrating that it operates in the same field of endeavor and that it has designs or products that solve similar problems using similar solutions as the challenged patent. This expanded interpretation will help achieve Congress's goal of reducing the number of invalid patents, mitigating the negative effects such patents pose to innovation. An expanded interpretation will also help open technology that was improperly taken out of the public domain for all to use, spurring innovation for the technology of tomorrow.

I. THE PATENT EXAMINATION PROCESS CAN RESULT IN INVALID ISSUED PATENTS

In recent years, the Patent Office has faced increasing criticism that its current examination process may result in the issuance of low-

of unrelated technologies. Some patents in a portfolio may be used defensively, i.e., to protect the entity from a potential infringement suit, while other patents may be actively practiced by the owning entity.

17. *See infra* Part III.A.2.b (discussing requirement 1).

18. *See infra* Part III.A.2.b (discussing requirement 2).

quality[19] patents that can stifle innovation. As several scholars note, the Patent Office appears to be issuing more and more low-quality, invalid patents—patents that fail to meet one or more of the statutory patentability requirements.[20] This supposed quality problem has reached a point that even the Patent Office itself recognizes it might have a problem. In 2016, it commissioned a study from the Government Accountability Office to review its procedures and provide recommendations on how to produce higher quality patents.[21] Allowing the problem to continue to grow with the issuance of more invalid patents can create a patent thicket,[22] forcing competitors to expend significant resources to avoid infringing these patents or face significant infringement damages. This phenomenon can stifle innovation. To help alleviate this potential problem, Congress established the Patent Trial and Appeal Board to assess the validity of some of these patents by enabling third parties to bring validity challenges under one or more patentability grounds.[23] While these proceedings have resulted in the invalidation of many previously granted patents, if the Federal

19. The term "patent quality" is used to describe the strength with which a patent meets the statutory patentability requirements. Because there is always some uncertainty as to whether a given invention is novel or nonobvious, these potential errors can cause legal uncertainty and increase the costs for all others in working in related technologies. *See generally Quality of Patents*, WORLD INTELL. PROP. ORG., https://www.wipo.int/patents/en/topics/quality_patents.html [https://perma.cc/VHD6-C239].

20. *See, e.g.*, ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 34 (2004) ("[T]he granting of patents despite clear evidence of invalidity, in the form of prior art that makes the invention not novel and/or obvious, has become all too common."); Roger A. Ford, *The Patent Spiral*, 164 U. PA. L. REV. 827, 837 (2016) ("[T]he empirical evidence shows clearly that examiners grant many invalid patents and grant many patents with vague claims."); Andres Sawicki, *Better Mistakes in Patent Law*, 39 FLA. ST. U. L. REV. 735, 736 (2012) ("The patent system makes many mistakes, frequently granting patents that should be denied and denying patents that should be granted.").

21. *See* U.S. GOV'T ACCOUNTABILITY OFF., INTELLECTUAL PROPERTY: PATENT OFFICE SHOULD DEFINE QUALITY, REASSESS INCENTIVES, AND IMPROVE CLARITY 37–39 (2016) [hereinafter 2016 ACCOUNTABILITY REPORT].

22. The "patent thicket" is "a dense web of overlapping intellectual property rights that a company must hack its way through in order to actually commercialize new technology." Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, 1 INNOVATION POL'Y & ECON. 119, 120 (2000).

23. For background on what grounds can be raised of invalidity in the various post-issuance proceedings, see generally *AIA Trial Types Comparison Chart: Major Differences Between IPR, PGR, and CBM*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patents-application-process/patent-trial-and-appeal-board/trials/aia-trial-types [https://perma.cc/X7TG-8NPV].

Circuit allowed non-infringing direct competitors to establish standing on appeal of an IPR, the court might help to further mitigate the effects of this patent quality problem.

A. THE PATENT EXAMINATION PROCESS FAVORS THE ISSUANCE OF PATENTS

Because of the constraints on the resources at the Patent Office, the examination process can favor the issuance of patents, even if it sometimes results in the issuance of invalid ones. Each year, the Patent Office receives approximately 600,000 utility patent applications.[24] Around seventy-one percent of these applications eventually issue as patents.[25] Part of this high issuance rate is a result of the burden being on the Patent Office to prove an applicant's invention unpatentable.[26] Applicants have no affirmative duty to search the prior art[27] themselves, nor show why their application deserves a patent.[28]

24. *U.S. Patent Statistics Chart Calendar Years 1963-2018*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm [https://perma.cc/48DY-G7CK] (Apr. 2019).

25. Michael Carley, Deepak Hegde & Alan Marco, *What Is the Probability of Receiving a U.S. Patent?*, 17 YALE J.L. & TECH. 203, 215 (2015); *see also USPTO Grant Rates*, PAT. BOTS, https://www.patentbots.com/stats/uspto-grant-rates [https://perma.cc/7JQR-LWDL] (detailing patent grant rates by technology area). The Patent Office's most recent statistics show that it issued around 300,000 applications each year. *See supra* note 24. This difference between applications received and the granting rate is due to the multi-year latency period, i.e., the backup at the Patent Office. It can take several years before a patent is even examined. So, while the Patent Office grants 300,000 patents, the number of applications is much lower than the 600,000 applications it received in the most recent year due to this latency.

26. *See In re* Stepan Co., 868 F.3d 1342, 1346 (Fed. Cir. 2017) (concluding that the Patent Office "improperly shifted to [the applicant] the burden of proving patentability"); *see also* Sean B. Seymore, *The Presumption of Patentability*, 97 MINN. L. REV. 990, 997–1003 (2013).

27. "Prior art" is anything that is already in the public domain and includes anything "patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before" the applicant's filing. 35 U.S.C. § 102(a)(1).

28. In at least one study, the author concluded that "[a]pplicants routinely fail to identify even their own previous patents [in their application], which suggests that, in many cases, applicants do not conduct even cursory searches for prior art." Bhaven N. Sampat, *When Do Applicants Search for Prior Art?*, 53 J.L. & ECON. 399, 401 (2010). The author estimated that almost half of all applications failed to cite even the applicant's own relevant patents, suggesting the applicant conducted no prior art search. *Id.* at 404. Instead of having an affirmative duty to search the prior art, an applicant merely has "a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability." 37 C.F.R. § 1.56(a) (2019). This duty merely requires that the applicant tell the Office of materials that other patent offices use in evaluating their application and other documents of which the applicant otherwise knows. It does not require seeking

Instead, the burden is on the Patent Office examiner to produce evidence that the applicant does *not* deserve a patent by providing a thorough rationale supporting any rejection.[29] With 600,000 applications to process each year and only 9,600 patent examiners,[30] examiners must quickly and efficiently review each application.[31]

Examiners operate under extremely restrictive examination times. On average, to meet their efficiency targets, examiners receive a mere twenty-two hours to review an application from start to finish (to issuance, abandonment, or final rejection).[32] This includes reading an applicant's specification (which can be more than one hundred pages), searching the prior art,[33] formulating and writing any rejections to the application,[34] conducting interviews with the applicant's attorney, and responding to any of the applicant's arguments or amendments in response to the examiner's rejection.[35] While the time allotment is individually tailored to each application,[36] over seventy percent of examiners believe that the time they receive to review an application is not enough to perform an adequate review.[37] Because

out any new information. Applicants may do a search of the prior art themselves to determine the claim scope in their application, but this is not required.

29. *See* 37 C.F.R. § 1.104 ("In rejecting claims . . . the examiner must cite the best references at his or her command. When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained . . . .").

30. U.S. PAT. & TRADEMARK OFF., FY2019 PERFORMANCE AND ACCOUNTABILITY REPORT 12 (2019) [hereinafter USPTO FY2019 REPORT].

31. After the Patent Office receives a patent application, a patent examiner employed by the Patent Office will review the application, review all of the prior art, and determine whether the patent applicant is entitled to the patent. Upon first review, the examiner will typically reject the application and require the patent applicant to narrow the scope of the claims to avoid what is already publicly known. This process is known as patent prosecution and can take multiple rounds of back-and-forth with the Patent Office before the applicant eventually receives their patent.

32. 2016 ACCOUNTABILITY REPORT, *supra* note 21, at 10. Another independent study estimated that examiners receive on average nineteen hours to review an application. Michael D. Frakes & Melissa F. Wasserman, *Is the Time Allocated to Review Patent Applications Inducing Examiners to Grant Invalid Patents? Evidence from Microlevel Application Data*, 99 REV. ECON. & STAT. 550, 552 (2017).

33. *See supra* note 27.

34. Rejections must "set forth a *prima facie* case of unpatentability" and include supporting rationale and a clear articulation of the grounds of rejection. *See* MPEP, *supra* note 8, § 2103(VI).

35. Frakes & Wasserman, *supra* note 32.

36. USPTO FY2019 REPORT, *supra* note 30, at 3.

37. *See* 2016 ACCOUNTABILITY REPORT, *supra* note 21, at 25–26 ("[A]bout 70 percent of examiners have less time than needed to complete a thorough examination.").

of the constrained resources, the Patent Office essentially incentivizes output instead of prioritizing quality.[38] In other words, the combination of having to develop well-reasoned arguments to reject an application and the limited time to review an application makes it easier for examiners to grant an application rather than to reject it.[39]

But only subjecting applications to a cursory review can result in the issuance of invalid patents—those that do not meet the statutory patentability requirements. A PTO review of its quality assurance practices concluded that around four percent of patent examinations included "unreasonable failure[] by the patent examiner to reject patent claims for one or more reasons provided in the patent laws."[40] Another researcher estimated that twenty-eight percent of currently issued patents would be declared invalid if litigated.[41] These patents may be invalid for a number of reasons,[42] but regardless of which statutory requirement it fails to meet, the consequences are the same. An invalid patent can allow the patent owner to improperly exclude others from utilizing the technology, deterring competitors from practicing the invention and innovating on the backdrop of the patented technology.[43] Granting this exclusionary right forces competitors to expend resources to avoid potential infringement, stifling innovation.

38. *See id.* at 10 ("Examiners are rated based on their production, or the number of examination tasks they perform, among other factors."); *see also* Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1511 (2001) ("[M]oney spent improving the PTO examination procedures will largely be wasted on examining the ninety-five percent of patents that will either never be used, or will be used in circumstances that don't crucially rely on the determination of validity.").

39. Ford, *supra* note 20, at 838 ("[R]ejecting a patent application takes more work than granting it."); *see also* Michael D. Frakes & Melissa F. Wasserman, *Does the U.S. Patent and Trademark Office Grant Too Many Bad Patents? Evidence from a Quasi-Experiment*, 67 STAN. L. REV. 613, 645 (2015) (citing evidence that when examiners are given less time to examine an application, they are more likely to allow claims than to reject them).

40. OFF. OF AUDIT & EVALUATION, U.S. DEP'T OF COM., FINAL REP. NO. OIG-15-026-A, USPTO NEEDS TO STRENGTHEN PATENT QUALITY ASSURANCE PRACTICES 10 (2015).

41. Shawn P. Miller, *Where's the Innovation: An Analysis of the Quantity and Qualities of Anticipated and Obvious Patents*, 18 VA. J.L. & TECH. 1, 52 (2013). The difference between this number and the Patent Office's review is likely down to the standards cited. The Patent Office used the standard of "unreasonable failure" in its review, while the courts judge a patent's validity by a clear and convincing evidence standard.

42. A patent may be invalid because it patented unpatentable subject matter, or for failing to be useful, new, or nonobvious. *See* MPEP, *supra* note 8, §§ 2106–2107, 2131, 2141; *cf. supra* note 8.

43. *See* 35 U.S.C. § 154 ("Every patent shall . . . grant to the patentee . . . the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States.").

B. INVALID PATENTS CAN STIFLE INNOVATION

An invalid patent can stifle innovation and hurt direct competitors. Any patent, regardless of its validity, may be far more valuable than the costs of obtaining the patent in the first place.[44] The value stems from the possibility that, even if invalid, a court or the PTAB may uphold the validity of the patent.[45] This provides the patent owner the right to exclude others from "making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States."[46]

But by improperly granting the patent and giving the owner the right to exclude, an invalid patent can improperly restrict competition and stifle innovation.[47] Instead of remaining in the public domain as it should, the technology is improperly recaptured and monopolized, barring others from freely utilizing the technology.[48] According to one researcher, upon the invalidation of a single patent, citations to that patent, on average, increased by fifty percent compared to pre-invalidation levels.[49] In other words, once a patent was invalidated, innovation in that technology area increased by fifty percent.[50] While the

44. *See* Ford, *supra* note 20, at 841.

45. *See* Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75, 80–83 (2005) (describing patents as "lottery tickets," and that among the many applications inventors file, the hope is a few among the bunch are valuable).

46. 35 U.S.C. § 154.

47. *See* Christopher R. Leslie, *The Anticompetitive Effects of Unenforced Invalid Patents*, 91 MINN. L. REV. 101, 113–29 (2006) (discussing various ways that "mere possession" of an invalid patent can stifle innovation by hurting competition); *see also* Ofer Tur-Sinai, *Cumulative Innovation in Patent Law: Making Sense of Incentives*, 50 IDEA: INTELL. PROP. L. REV. 723, 732–33 (2010) ("[T]here are numerous examples in which a patent had a chilling effect on follow-on research and development in the relevant field."). For some such examples, see generally Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 884–97 (1990).

48. *See* Graham v. John Deere Co. of Kan. City, 383 U.S. 1, 6 (1966) ("Congress may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available.").

49. Alberto Galasso & Mark Schankerman, *Patents and Cumulative Innovation: Causal Evidence from the Courts* 19 (Nat'l Bureau of Econ. Rsch., Working Paper No. 20,269, 2014). The researchers examined the number of times that the patent was cited by subsequent applications. Even though the patent was invalidated, it is still prior art against later-filed applications. Thus, when there was a higher number of citations to that patent, the researchers concluded that more innovation occurred, i.e., more patents were filed in that similar technology area.

50. *See id.* at 27 ("Patent rights can shape the industrial structure of innovation by impeding the entry of new innovators or the expansion of existing firms."). A higher number of citations to a patent presumably correlates to a higher amount of innovation in a given technology space because subsequent patents will cite that invalidated patent as prior art.

Constitution established the right to a limited monopoly to incentivize innovation, if the Patent Office grants invalid patents covering technology already in the public domain, it can drastically slow the rate of innovation and hurt the competitive market.[51] In effect, these rights "can have the perverse effect of stifling, not encouraging, innovation."[52]

But trying to fix the problem on the front end by improving the examination process may not be an efficient way to reduce the number, and alleviate the effects, of invalid patents. As some have properly argued, because so few patents are later commercially valuable, for the Patent Office to expend the resources to conduct a more "thorough" examination, and issue fewer invalid patents, would not justify the heightened up-front expense.[53] Recognizing the strain on resources, but still seeking to help mitigate any negative consequences of invalid patents, Congress established several administrative post-issuance proceedings, including IPR, to "provid[e] a more efficient system for challenging patents that should n[ever] have issued."[54]

C. INTER PARTES REVIEW

In 2011, through the Leahy-Smith America Invents Act (AIA), Congress established the inter partes review proceeding after recognizing "that questionable patents [were] too easily obtained and [were] too difficult to challenge."[55] With this new proceeding, Congress sought to "broade[n] participation rights" of third-party patent

51. *See* Merges & Nelson, *supra* note 47, at 908 ("While there are exceptions, where a few organizations controlled the development of a technology, technical advance appeared sluggish.").

52. Shapiro, *supra* note 22.

53. The Patent Office operates solely off fees paid by applicants submitting for a new patent and maintenance fees to maintain the rights of an issued patent through its full term. *See* U.S. PAT. & TRADEMARK OFF., FISCAL YEAR 2020 CONGRESSIONAL JUSTIFICATION 5 (2019) [hereinafter USPTO 2020 JUSTIFICATION]. When an applicant submits an application to the Patent Office, the initial fee covers the costs of the filing, search, and examination. 37 C.F.R. § 1.16 (2019). Thus, since the Patent Office covers the costs of examination through the collection of application fees, if the Office were to conduct a more thorough examination with longer time-allotments per application, the fees would inevitably increase accordingly. *See also* USPTO 2020 JUSTIFICATION, *supra*, at 17 ("The USPTO continues to conduct biennial fee reviews to ensure fees are aligned with the full cost of the relevant products and services to the greatest extent possible."). While it may seem questionable to allow any invalid patents to issue, the balance of keeping costs low to allow greater accessibility to patent rights makes economic sense.

54. H.R. REP. NO. 112-98, at 39–40 (2011).

55. *Id.* at 39.

challengers[56] because often a patent challenger "ha[s] the most relevant prior art available and incentive to seek to invalidate an allegedly defective patent."[57] By broadening participation rights, Congress sought to create a more adversarial proceeding and help fix the shortcomings of the previous post-issuance proceedings.[58]

Congress's first post-issuance review process, ex parte reexamination,[59] established in 1981, allowed third parties to bring relevant prior art of a particular patent to the attention of the Patent Office.[60] If the PTO concluded that the submitted prior art raised "a substantial new question of patentability,"[61] then the Patent Office reexamined the patent to determine whether it should have been granted in the first place. But ex parte reexamination proceeded without further input from the third party.[62] In practice, this meant it followed "the same inquisitorial process between patent owner and examiner as the initial Patent Office examination."[63] In other words, it followed the same process that granted the allegedly invalid patent in the first place. Congress believed this process was inefficient and failed to alleviate the problems invalid patents posed.[64] In response, in 2000, Congress established inter partes reexamination to allow the third-party requester to further participate throughout the reexamination proceeding.[65] However, in subsequent years, Congress concluded inter partes

56. *See* Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2137 (2016).

57. H.R. REP. NO. 107-120, at 4 (2001).

58. *See* H.R. REP. NO. 112-98, at 45 ("The initial reexamination statute had several limitations that later proved to make it a less viable alternative to litigation for evaluating patent validity than Congress intended . . . . [I]n the original reexamination system, the third-party challenger had no role once the proceeding was initiated, while the patent holder had significant input throughout the entire process.").

59. Act of Dec. 12, 1980, Pub. L. No. 96-517, 94 Stat. 3015 (1980).

60. *See* 35 U.S.C. § 302.

61. *Id.* § 303.

62. S. REP. NO. 110-259, at 18–19 (2008).

63. SAS Inst., Inc. v. Iancu, 138 S. Ct. 1348, 1353 (2018) (citing 35 U.S.C. § 305).

64. *See* H.R. REP. NO. 112-98, at 45 (2011) ("A third party alleging a patent is invalid . . . had fewer challenges it could raise in the proceeding and, therefore, may instead opt to risk infringement and litigate the validity of the patent in court."); *see also* S. REP. NO. 96-617, at 2 (1980) ("The present innovation and productivity lag is worsened by distrust of the current patent system."); Mark D. Janis, *Rethinking Reexamination: Toward a Viable Administrative Revocation System for U.S. Patent Law*, 11 HARV. J.L. & TECH. 1, 9–10 (1997) (discussing a "fundamental lack of trust in the competency of the PTO to discover sources of relevant prior art and apply them properly under the statutory standards").

65. *See* 35 U.S.C. § 314(b) ("Each time that the patent owner files a response to an action on the merits from the Patent and Trademark Office, the third-party requester

reexamination was inefficient and needed revision.[66] Thus, just over ten years later, Congress established inter partes review to help further increase participation and incentivize competitors to challenge allegedly invalid patents.

Inter partes review is a trial proceeding conducted before the PTAB[67] to review the validity of one or more claims of a previously granted patent on the grounds of novelty and nonobviousness[68] "on the basis of prior art consisting of patents and printed publications."[69] Inter partes review has become widely popular. Since its inception in late 2012, over 11,000 petitions have been filed to challenge the validity of various patents.[70] In fiscal year 2019 alone, over 1,600 petitions

shall have one opportunity to file written comments addressing issues raised by the action of the Office or the patent owner's response thereto . . . .").

66. *See* S. REP. NO. 110-259, at 19 ("Despite Congress's attempts to improve the reexamination system, it remains troublesomely inefficient and ineffective as a truly viable alternative for resolving questions of patent validity.").

67. *See supra* note 7 and accompanying text.

68. To initially obtain a patent, one must invent or discover something that is "new and useful." 35 U.S.C. § 101. Once an applicant submits a patent application claiming what their "new and useful" invention is, a patent examiner at the Patent Office will review the application to determine whether the invention is actually "new." *See* 35 U.S.C. § 131. To be considered "new," the invention must be both novel and nonobvious over the prior art. Novelty is used to determine whether the applicant's invention has been previously disclosed, whether in a previous patent, printed publication, or other disclosure to the public. *See* 35 U.S.C. § 102. These types of disclosures form what is known as prior art. To lack novelty, every element set forth in the application must be set forth either expressly or inherently within a single prior art reference. Verdegaal Bros. v. Union Oil Co. of Cal., 814 F.2d 628, 631 (Fed. Cir. 1987). Nonobviousness considers whether the applicant's invention as claimed would have been obvious to a person of ordinary skill in the art based on what is already known in the prior art. It considers whether "the difference between the new thing [claimed] and what was known before is not considered sufficiently great to warrant a patent." Graham v. John Deere Co., 383 U.S. 1, 14 (1966) (quoting H.R. REP. NO. 82-1923 (1952)).

69. *Inter Partes Review*, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/patents-application-process/appealing-patent-decisions/trials/inter-partes-review [https://perma.cc/3VVY-8GWN]. One thing to note is that third parties may only argue invalidity under 35 U.S.C. §§ 102 and 103 and only with printed publications and patents. If challenging the validity in court, the challenger may argue invalidity under § 101, unpatentable subject matter; § 112, indefiniteness, lack of enablement, or inadequate written description; or §§ 102 and 103 for being on-sale, in public use, or otherwise available to the public. *See* 35 U.S.C. § 282; *see also* Ryan Kenny, *Which Invalidity Avenue to Take: Inter Partes Review Versus Post-Grant Review*, IP WATCHDOG (July 31, 2018), https://www.ipwatchdog.com/2018/07/31/which-invalidity-avenue-ipr-verses-post-grant-review [https://perma.cc/H2PC-YZUF]. Printed publications comprise mainly published patent applications, published eighteen months after filing of the application, *see* 35 U.S.C. § 122, but also comprise trade journals, sales brochures, or any other documents intended for the public.

70. PAT. TRIAL & APPEAL BD., TRIAL STATISTICS 3 (2020).

were filed,[71] a ten-fold increase compared to the previous post-issuance proceedings.[72] This growing popularity is likely due to the proceeding's relatively low cost and speed compared to normal district court litigation.[73] By allowing any third party to petition the PTAB to institute review of a previously granted patent and providing the right to appeal, Congress achieved its goal of increasing participation in seeking to invalidate low-quality patents.[74]

1. Any Third Party May Petition to Institute an IPR Before the PTAB

In establishing IPR, Congress opened up patent validity challenges to more third parties, allowing *any* third party to bring such a challenge, helping to provide a simpler, more efficient process to invalidate low-quality patents. For an IPR to begin, a third party (the patent challenger) must first file a petition with the Patent Office requesting the cancellation of one or more claims of another's granted patent.[75] After receiving the petition, the Patent Office reviews the petition and determines whether it "shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least [one] of the claims challenged in the petition."[76] If the petition meets this threshold, the Patent Office *may* institute an IPR to determine the validity of the challenged claims.[77] Once an IPR is instituted, the PTAB has one year to carry out the proceedings and issue a final determination on the matter.[78] The PTAB makes its final determination regarding the patentability of the challenged claims through a final written

71. *Id.* at 6, 8 (stating that 859 petitions were instituted, 510 were denied, and 259 were filed but settled prior to PTAB institution).

72. During the thirteen-year existence of inter partes reexamination, a total of 1,919 petitions were filed. U.S. PAT. & TRADEMARK OFF., INTER PARTES REEXAMINATION FILING DATA–SEPTEBER [sic] 30, 2017 (2017).

73. *See* 35 U.S.C. § 316(a)(11) (requiring that the PTAB issue a final written decision within one year of the proceeding being instituted). This is compared to the median district court litigation timeline of over thirty months. Robert M. Siminski, Matthew L. Cutler & Bryan K. Wheelock, *6 Reasons Inter Partes Review Was Popular in 2013*, LAW360 (Dec. 17, 2013, 11:24 PM), https://www.law360.com/ip/articles/495709 [https://perma.cc/C3VQ-MSM8].

74. *See* H.R. REP. NO. 112-98, at 45–48 (2011); *see also id.* at 39–40 (detailing the reasons for creating the IPR process, including "providing a more efficient system for challenging patents that should not have issued . . . and reducing unwarranted litigation costs").

75. 35 U.S.C. § 311.

76. *Id.* § 314(a).

77. *See id.*

78. *Id.* § 316(a)(11).

decision.[79] The PTAB may choose to invalidate all of the challenged claims, some of the challenged claims, or conclude that all of the challenged claims are valid.[80] By invalidating any of the claims, the PTAB decision opens the technology for use by competitors and the general public.

2. "Any" Party May Appeal an Adverse IPR Final Written Decision to the Federal Circuit

While any party may petition the PTAB to institute an IPR, an appeal to the Federal Circuit still requires the challenging party to meet the Article III standing requirements, leaving some challengers without the ability to appeal the PTAB decision. After an IPR proceeding concludes with a final written decision, "[any] party dissatisfied with the final written decision . . . may appeal the decision"[81] to the Federal Circuit and the Federal Circuit alone.[82] Following a conclusion of the IPR proceeding or a decision by the Federal Circuit, the patent challenger is estopped from challenging the validity of the same patent "on any ground that the petitioner raised or reasonably could have raised during that inter partes review," either in a concurrent or subsequent IPR, or in a later civil action.[83] Because it is an agency proceeding, the patent challenger does not need constitutional standing to file an IPR or participate in the proceeding.[84]

Even though any party *may* appeal an adverse decision, the PTAB's written decision alone is not enough to confer standing on the party.[85] Any appellant seeking to invalidate another's patent must still satisfy the elements of Article III standing before the Federal Circuit.[86] Thus, a patent challenger must establish that it suffers an adequate injury in fact for its appeal to proceed. Because patent challengers may

79. *Id.* § 318(a).

80. *See id.*

81. *Id.* § 319.

82. *Id.* § 141.

83. *Id.* § 315(e). While the challenger may be estopped from arguing the same grounds in a subsequent civil action, the Federal Circuit has not yet decided the issue of whether this still applies to patent challengers unable to meet the standing requirements to appeal the case to the Federal Circuit. AVX Corp. v. Presidio Components, Inc., 923 F.3d 1357, 1363 (Fed. Cir. 2019).

84. Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2143–44 (2016) ("Parties that initiate the [IPR] proceeding need not have a concrete stake in the outcome; indeed, they may lack constitutional standing.").

85. *See* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1221 (Fed. Cir. 2018) (noting that mere participation in the IPR and the potential estoppel provisions do not constitute an injury in fact).

86. *See id.*

actively avoid infringing a direct competitor's patent because of the risk of significant infringement damages, meeting this requirement can pose a significant obstacle to patent challengers seeking to appeal the PTAB decision. Limiting the number of IPR appeals to the Federal Circuit favors patent owners and can allow invalid patents to continue to exist and stifle innovation.

II. THE FEDERAL CIRCUIT'S STANDING TEST FOR PATENT CHALLENGERS IN IPR APPEALS IS OVERLY RESTRICTIVE

In establishing inter partes review, Congress sought to broaden the participation rights of third parties in challenges of previously issued patents by providing third parties a right to appeal.[87] But to appeal the PTAB's decision, the patent challenger must still satisfy the Article III standing requirements. As discussed in this section, the Federal Circuit's current interpretation of standing in IPR appeals severely restricts the challenges brought by direct competitors. The Federal Circuit's current requirements narrow the Supreme Court's constitutional requirements of standing and deviate from Congress's efforts to alleviate the problems of invalid patents by enabling competitors with "the most relevant prior art available and incentive to seek to invalidate an allegedly defective patent"[88] to proceed in an appeal of an adverse decision to the court.

A. ARTICLE III STANDING REQUIREMENTS

The Supreme Court has described Article III standing as a concept used "to identify those disputes which [may be] appropriately resolved through the judicial process."[89] However, the courts can also use standing as a gatekeeper to outright avoid deciding cases. This is true of the Federal Circuit's approach to standing of direct competitors appealing an adverse IPR decision. Under its current interpretation, the Federal Circuit protects patent owners from a court appeal unless the patent challenger is actively infringing the patent, severely limiting the ability of competitors to knock out invalid patents.[90] This can stifle innovation.

Upon a patent challenger's appeal to the Federal Circuit, the patent challenger must meet the requirements of Article III.[91] To satisfy

87. *See* H.R. REP. NO. 107-120, at 4 (2001).

88. *Id.*

89. Lujan v. Defs. of Wildlife, 504 U.S. 555, 560 (1992) (quoting Whitmore v. Arkansas, 495 U.S. 149, 155 (1990)).

90. *See JTEKT*, 898 F.3d at 1220.

91. *Id.* Because of Congress's intent to grant broad participation rights in IPRs, the

the requirements of Article III, a party must establish (1) an injury in fact, (2) a causal connection between the injury and the defendant's action, and (3) that it is "likely" that a favorable decision will redress the plaintiff's alleged injury in fact.[92] In the context of patents, the causation and redressability elements are typically easily satisfied.[93] Patent challengers meet the causation requirement because they are unable to use the patented technology and face a continual threat of litigation due to the patent holder's right to exclude.[94] Challengers meet the redressability requirement because if the court were to invalidate the patent on appeal, such action would allow the patent challenger to utilize the technology free of risk of infringement claims.[95] Accordingly, the only element the Federal Circuit has so far used to deny standing to a patent challenger is the injury in fact requirement. However, the Federal Circuit has interpreted the Supreme Court's outline of the injury in fact requirement narrowly in IPR appeals.[96]

1. The General Requirements to Establish an Injury in Fact

To meet the constitutional requirements of Article III standing, a plaintiff must establish that they suffer an "injury in fact."[97] An injury in fact occurs when there is "an invasion of a legally protected interest," that is concrete, particularized to the plaintiff, and actual or imminent.[98] If one of these elements is missing, a plaintiff has failed to satisfy the requirements of Article III standing.[99] Despite direct competitors suffering a concrete, particularized injury, the Federal Circuit has so far denied patent challengers seeking to establish Article III

prudential considerations of standing are most likely met, as the Federal Circuit has so far not used them to deny standing to a patent challenger.

92. *Lujan*, 504 U.S. at 560–61.

93. For element two, it is the patent owner's monopoly that prohibits the patent challenger from using the technology, therefore, there is a causal connection. For element three, if the court were to invalidate the patent, it would redress the challenger's injury by allowing them to utilize the technology free of risk of infringement damages.

94. *See* Leslie, *supra* note 47, at 113–29 ("The monopolist's possession of a patent—even an invalid one—serves as a head on a pike.").

95. *See* Blonder-Tongue Lab'ys, Inc. v. Univ. of Ill. Found., 402 U.S. 313, 350 (1971) (holding that a patent holder is estopped from asserting validity of a patent that has been previously declared invalid).

96. *See infra* Part II.B.

97. *Lujan*, 504 U.S. at 560.

98. *Id.*

99. *See id.* at 561 (stating that each element must be "supported in the same way as any other matter on which the plaintiff bears the burden of proof, *i.e.*, with the manner and degree of evidence required at the successive stages of litigation").

standing unless they establish active infringement of the challenged patent.[100]

a. The Injury Must Be Concrete, Not Hypothetical

Because of a patent's preclusive effect, direct competitors suffer a concrete injury when an invalid patent is permitted to exist. An injury is concrete if it actually exists and is "real" and not "abstract."[101] While the injury must actually exist, meeting the concreteness requirement does not require a plaintiff to easily prove or measure an injury. A real risk of harm can satisfy the requirement of concreteness. For example, in declaratory judgments, potential patent infringers are able to satisfy the concreteness requirement even when they are only in "reasonable apprehension of suit."[102] Even though the patent challenger is not subject to any current damages, courts have considered "an explicit threat or other action by the patentee, which creates a reasonable apprehension on the part of the declaratory plaintiff that it will face an infringement suit"[103] as enough to constitute a concrete injury. In other words, the potential of future infringement damages is sufficient to establish a concrete injury.

b. The Injury Must Be Particularized

For an injury to be sufficiently particularized, it "must affect the plaintiff in a personal and individual way."[104] Thus, it cannot be merely a generalized assertion that is true of all members of the public.[105] This is one of the most significant requirements for a party to satisfy when pleading standing in an appeal of an IPR because "raising only a generally available grievance about [the] government—claiming only harm to his and every citizen's interest . . . and seeking relief that no more directly and tangibly benefits him than it does the public at large" does not adequately assert a particularized injury.[106] However,

100. *See* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1220 (Fed. Cir. 2018).

101. Spokeo, Inc. v. Robins, 136 S. Ct. 1540, 1548 (2016).

102. *See* Teva Pharms. USA, Inc. v. Novartis Pharms. Corp., 482 F.3d 1330, 1339 (Fed. Cir. 2007).

103. *Id.* (citing Teva Pharms. USA, Inc. v. Pfizer, Inc., 395 F.3d 1324, 1332–33 (Fed. Cir. 2005)).

104. *Spokeo*, 136 S. Ct. at 1548 (2016) (quoting *Lujan*, 504 U.S. at 560 n.1).

105. United States v. Richardson, 418 U.S. 166, 178 (1974) ("[I]t is not sufficient that [the plaintiff] has merely a general interest common to all members of the public." (quoting *Ex parte* Levitt, 302 U.S. 633, 634 (1937))). As stated by the Supreme Court, "[v]indicating the *public* interest . . . is the function of Congress and the Chief Executive." *Lujan*, 504 U.S. at 576.

106. *Lujan*, 504 U.S. at 573–74.

as detailed in the next section, direct competitors do suffer a sufficiently particularized injury because they are operating in the same or very similar design space, which inherently limits which patent challengers can satisfy the standing requirements.

c. The Injury Must Be Actual or Imminent

To establish a suitable injury in fact, a plaintiff must further show that it faces an actual or imminent risk upon which relief may be granted.[107] The plaintiff must assert either an injury they already sustained or an injury they face imminently.[108] While imminence is not strictly defined,[109] courts have established that some future injury is not enough to meet the injury in fact requirements.[110] Thus, some future intention without something more suitably concrete is not enough to meet the actual or imminence requirements.[111] While in patent cases this usually requires the patent challenger to be producing something utilizing the patented technology, patent challengers in an IPR also meet this requirement when working to solve similar problems with similar solutions as the alleged invalid patent.[112]

2. Establishing a Sufficient Injury in Fact in Patent Cases

Patent cases pose a unique problem to the establishment of standing because often parties seek to avoid infringing a competitor's patent due to the risk of infringement damages. Because of the unique interests at stake in patent cases, the Supreme Court has been more expansive in its interpretation of the injury in fact requirements for patent challengers. Yet the Federal Circuit has incorrectly interpreted

107. *Id.* at 560.

108. *Id.* at 575 ("[T]o entitle a private individual to invoke the judicial power to determine the validity of executive or legislative action he must show that he has sustained or is immediately in danger of sustaining a direct injury as the result of that action . . . ." (quoting *Ex parte* Levitt, 302 U.S. at 634)).

109. *See* Clapper v. Amnesty Int'l USA, 568 U.S. 398, 409 (2013) ("Although imminence is concededly a somewhat elastic concept, it cannot be stretched beyond its purpose, which is to ensure that the alleged injury is not too speculative . . . that the injury is *certainly* impending." (quoting *Lujan*, 504 U.S. at 565 n.2)).

110. *See id.* at 401 ("[*F*]*uture* injury is too speculative to satisfy the well-established requirement that threatened injury must be 'certainly impending.'").

111. *See Lujan*, 504 U.S. at 564.

112. *See* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1221 (Fed. Cir. 2018) ("[W]here the party relies on potential infringement liability as a basis for injury in fact, but is not currently engaging in infringing activity, it must establish that it has concrete plans for future activity that creates a substantial risk of future infringement or likely cause the patentee to assert a claim of infringement.").

the Supreme Court's precedent and has adopted an overly narrow approach to Article III standing. The Supreme Court, in its relatively few patent cases examining standing, recognized that the threat of infringement damages and a possible injunction[113] can force competitors to avoid practicing an invention, even if competitors believe the patent is invalid.[114] Accordingly, just because the competitor seeking to invalidate a patent has not actively infringed the patent does not preclude it from establishing Article III standing. Additionally, the Court has recognized that competitors possess a concrete interest in definitively knowing whether a patent is invalid, and a court should decide the challenge.

In *MedImmune, Inc. v. Genentech, Inc.*,[115] the Supreme Court held that a patent challenger does *not* need to actively infringe the challenged patent to meet the injury in fact requirements sufficient to establish Article III standing.[116] As discussed in the next section, contrary to the *MedImmune* decision, the Federal Circuit imposes this exact requirement on patent challengers appealing an adverse IPR decision.[117]

MedImmune had entered into a licensing agreement for the right to "make, use, and sell" products covered by an issued Genentech patent, and a second, then-pending, Genentech patent application.[118] When the then-pending patent application later issued as a patent, MedImmune concluded that it did not owe royalties on that patent because the patent was "invalid and unenforceable," and alternatively, that MedImmune's products did not infringe the Genentech patent.[119] Fearing litigation, MedImmune filed a declaratory judgment action seeking to invalidate Genentech's patent.[120] However, while the litigation was ongoing, MedImmune continued to pay royalties to Genentech for the patent it sought to invalidate.[121] Genentech moved to dismiss MedImmune's declaratory action, arguing that because MedImmune continued to pay royalties, it was not at risk of an infringement action.[122] In other words, by continuing to pay royalties,

113. *See* 35 U.S.C. § 271.
114. *See, e.g.*, MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118 (2007).
115. *Id.*
116. *Id.* at 137.
117. *See infra* Part II.B.1.
118. *MedImmune*, 549 U.S. at 121.
119. *Id.* at 121–22.
120. *Id.* at 122.
121. *Id.* at 128.
122. *Id.*

MedImmune's "own acts . . . eliminate[d] the threat of harm" and "ma[de] what would otherwise be an imminent threat at least remote, if not nonexistent."[123]

Nonetheless, the Court concluded that continuing to pay royalties under the licensing agreement did not preclude MedImmune from establishing Article III standing.[124] The Court asserted that "[t]he rule that a plaintiff must destroy a large building, bet the farm, or (as here) risk treble damages . . . finds no support in Article III."[125] In other words, the Supreme Court established that a patent challenger need not actively infringe the challenged patent, exposing itself to treble damages and an injunction, to be able to challenge the validity of an issued patent in the courts.[126] Under its current interpretation, the Federal Circuit fails to recognize this decision, and instead requires that a patent challenger appealing an adverse IPR decision must show that it is actively at risk of an infringement action to satisfy the injury in fact requirements of Article III.[127]

In another Supreme Court decision, *Cardinal Chemical Co. v. Morton International, Inc.*, the Court recognized that in some circumstances, even when a patent challenger is no longer at risk of an infringement action, the challenger may still have an interest in invalidating a patent and may still satisfy the standing requirements of Article III.[128] In its decision, the Court overturned the Federal Circuit's long-standing practice of dismissing a defendant's declaratory judgment action challenging the validity of a patent following an adjudication that the defendant was not infringing the patent.[129] The Court concluded that even if a patent challenger's activity has already been adjudicated as non-infringing, and there is no longer a risk of an infringement action, a court may still decide the validity of the asserted patent in a co-pending declaratory judgment action.[130] The Court reasoned that the "validity [challenge of the patent] has greater public

123. *Id.*

124. *Id.* at 137.

125. *Id.* at 134.

126. *See id.*

127. *See* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1220 (Fed. Cir. 2018) (quoting Consumer Watchdog v. Wis. Alumni Rsch. Found., 753 F.3d 1258, 1262 (Fed. Cir. 2014)) (holding that the patent challenger failed to establish Article III standing because the design of its product was not certain enough to potentially infringe the challenged patent).

128. Cardinal Chem. Co., v. Morton Int'l, Inc., 508 U.S. 83, 96 (1993).

129. *Id.* at 101–02; *see* Vieau v. Japax, 823 F.2d 1510 (Fed. Cir. 1987); Fonar Corp. v. Johnson & Johnson, 821 F.2d 627 (Fed. Cir. 1987).

130. *Cardinal Chem Co.*, 508 U.S. at 98.

importance" than the conclusion of non-infringement and therefore cannot preclude a court from inquiring fully into the validity of a patent.[131] Thus, even though the patent challenger was not infringing the patent, it could still proceed with a validity challenge of the patent in a separate declaratory judgment action.[132] There was no requirement that a party "have any duty to disclose its future plans," to show that it would face a future infringement action, because the validity of the patent "imposes ongoing burdens on competitors who are convinced that a patent [i]s . . . invalid."[133]

These two decisions make clear that a patent challenger does not need to face current liability to a patent owner to meet the concrete, particularized, and actual requirements needed to establish an injury in fact and Article III standing. In contrast, in deciding patent challengers' assertion of standing during appeal of an adverse IPR decision, the Federal Circuit requires exactly that, as discussed in the next Section. The Federal Circuit fails to recognize that the validity of a patent "imposes ongoing burdens on competitors who are convinced that a patent [i]s . . . invalid,"[134] which establishes a concrete, particularized, and actual injury in fact.

B. FEDERAL CIRCUIT DECISIONS DECIDING STANDING UPON IPR APPEAL

Because Congress established a low bar to petition the PTAB to institute an IPR and challenge the validity of a patent,[135] not every party has standing to appeal an adverse decision to the Federal Circuit.[136] Meeting the requirements of standing as a *patent owner* on appeal is simple to satisfy. If a patent owner has one or more claims invalidated through an adverse IPR decision, it can establish that its injury in fact is concrete and particularized because it has potentially lost its patent rights.[137] The patent owner may even establish an injury

131. *Id.* at 100 (quoting Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 330 (1945)).

132. *Id.*

133. *Id.* at 100–01.

134. *Id.* at 101.

135. In actuality, a party in an IPR challenges the individual claims of a patent rather than the patent as a whole. For simplicity, this Note will discuss a patent challenger as if they are challenging the patent as a whole rather than the specific claims of the patent. While the proper way to frame the issue would be to discuss only challenging the claims, it can make the discussion more confusing and take away focus from the proper issue, a party's assertion of an injury in fact.

136. *See* Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2143–44 (2016).

137. *See* Sony Corp. v. Iancu, 924 F.3d 1235, 1238 n.1 (Fed. Cir. 2019).

in fact after the patent term has expired.[138] In contrast, for a *patent challenger*, establishing an injury in fact can be significantly more difficult.[139] Even though by statute "a party dissatisfied with the final written decision . . . may appeal the decision,"[140] that does not eliminate need to satisfy the injury in fact requirements.[141] No matter what rights Congress confers on a party, "the requirement of injury in fact is a hard floor of Article III jurisdiction that cannot be removed by statute."[142] However, under the Federal Circuit's current interpretation to establish an injury in fact, the patent challenger cannot be merely a direct competitor.[143] It must show it is either currently subject to an infringement suit or that it is engaged in conduct that will almost certainly give rise to a possible infringement suit.[144]

138. A patent holder has an interest in the validity of a patent's claims for up to six years following the patent's expiration because, under the statute of limitations, it can still serve as a basis for an infringement claim. *See id.* (dismissing the dissent's argument that even though the challenged patent had already expired, the patent owner still had satisfied the case or controversy requirement of Article III); *see also* Benjamin R. Holt, *Article III Standing for an IPR Appeal Despite Patent Expiration and No Pending Litigation*, ROTHWELL FIGG, https://www.ptablaw.com/2019/06/04/article-iii-standing-for-an-ipr-appeal-despite-patent-expiration-and-no-pending-litigation [https://perma.cc/QPG8-VWU3] ("[The Federal Circuit] found a controversy sufficient to satisfy Article III for the patent owner's appeal despite the fact that the patent at issue had expired.").

139. *See* Phigenix, Inc. v. Immunogen, Inc., 845 F.3d 1168, 1175 (Fed. Cir. 2017) ("[T]he exercise of its right to appeal does not necessarily establish that it possesses Article III standing."); *see also* Consumer Watchdog v. Wis. Alumni Rsch. Found., 753 F.3d 1258, 1262 (Fed. Cir. 2014) ("The statute d[oes] not guarantee a particular outcome favorable to the requester.").

140. 35 U.S.C. § 319.

141. *See Cuozzo Speed Techs.*, 136 S. Ct. at 2143–44; *see also* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1219 (Fed. Cir. 2018) (stating that 35 U.S.C. § 141(c) "cannot be read to dispense with the Article III injury-in-fact requirement for appeal to [the Federal Circuit]"). Section 141(c), similar to § 319, states that "[a] party to an inter partes review . . . who is dissatisfied with the final written decision of the Patent Trial and Appeal Board . . . may appeal the Board's decision only to the United States Court of Appeals for the Federal Circuit." 35 U.S.C. § 141(c).

142. *Consumer Watchdog*, 753 F.3d at 1261 (quoting Summers v. Earth Island Inst., 555 U.S. 488, 497 (2009)).

143. For an early discussion of why non-competitors, and specifically public interest groups, should have the ability to appeal IPR challenges of invalid patents to the Federal Circuit, see generally Sapna Kumar, *Standing Against Bad Patents*, 32 BERKELEY TECH. L.J. 87 (2017). Professor Kumar's discussion pre-dated many of the cases discussed here, in which the Federal Circuit severely limited even competitors' abilities to challenge invalid patents.

144. *JTEKT Corp.*, 898 F.3d at 1220–21.

1. Active Infringement or Concrete Plans to Infringe Establish an Adequate Injury in Fact

The simplest, most straightforward way a patent challenger may establish an injury in fact following an adverse IPR decision is by showing that it is actively infringing the patent and is subject to an infringement suit.[145] It is estimated that around eighty percent of the IPR petitions filed each year are filed in response to assertions of infringement in district court litigation.[146] Instead of going through costly litigation in district court, the patent challenger may opt to challenge the validity in an IPR,[147] helping to expedite litigation.[148] But if the patent challenger loses its invalidity challenge in the IPR, it still meets the injury in fact requirements because it faces the risk of infringement damages in the district court action and may appeal the decision.[149] This is directly in line with Supreme Court precedent.

145. *See, e.g.*, Aylus Networks, Inc. v. Apple Inc., 856 F.3d 1353, 1358 (Fed. Cir. 2017) ("Aylus sued Apple for infringement of the '412 patent. Apple then filed two separate petitions for inter partes review with the Patent Trial and Appeal Board, each challenging different claims of the '412 patent."); GoPro, Inc. v. 360Heros, Inc., No. IPR2018-01754 (P.T.A.B. Apr. 3, 2019) (discussing whether the PTAB could decide the merits of the IPR challenge after GoPro was sued for infringement, "[360Heros] argues, '[GoPro] failed to file an IPR petition within the statutory one year deadline of being served with a counterclaim of infringement'").

A party may choose to file an IPR challenging the claims of the asserted patent to lower the costs of litigation as well as expedite review of the patent. An IPR, while allowing for fewer grounds of invalidity challenges, is significantly cheaper and faster as the PTAB must issue a final written decision within eighteen months.

146. Pedram Sameni, *Patexia Insight 44: Eighty Percent of IPR Filings Are for Defensive Purposes*, PATEXIA (Nov. 8, 2017), https://www.patexia.com/feed/patexia-chart-44-80-percent-of-ipr-filings-are-for-defensive-purposes-20171107 [https://perma.cc/4QNS-VDF3].

147. *See* AIPLA, AIPLA 2019 REPORT OF THE ECONOMIC SURVEY 56, 61 (2019) (reporting compiled costs of patent infringement litigation when less than $1 million at stake totaling more than $725,000 through appeal, while reporting costs of an IPR through appeal of $443,000); 35 U.S.C. § 315(b) ("An inter partes review may not be instituted if the petition requesting the proceeding is filed more than 1 year after the date on which the petitioner, real party in interest, or privy of the petitioner is served with a complaint alleging infringement of the patent.").

148. *See, e.g.*, Milwaukee Elec. Tool Corp. v. Hilti, Inc., 138 F. Supp. 1032, 1038 (E.D. Wis. 2015) ("[I]f . . . some claims are invalidated or canceled [during the IPR], then the [c]ourt and the parties will not have to address the validity or infringement of those claims."); Evolutionary Intel. LLC v. Yelp Inc, No. C-13-03587, 2013 WL 6672451, at *6 (N.D. Cal. 2013) ("[I]f the PTAB cancels *all* of the asserted claims of the Asserted Patents, this action will be rendered moot. Should the PTAB cancel or narrow *any* of the asserted claims of the Asserted Patents, the scope of this litigation may be significantly simplified.").

149. *See* John Marlott, *Do Only Certain IPR Petitioners Have Standing to Appeal Adverse PTAB Decisions?*, PTAB LITIG. BLOG (Dec. 28, 2018), https://www

However, when the patent challenger is *not* the subject of an infringement suit, under the Federal Circuit's current interpretation, the patent challenger must establish an injury in fact by showing that it is either actively infringing the challenged patent or has imminent plans to infringe.[150] The challenger may not simply assert that it plans to use the challenged patent. Instead, it must show that is either already practicing the challenged claims, or that it is far enough in its plans to practice the claims that it is near certain it will practice the challenged claims.[151] While the Federal Circuit has properly interpreted Supreme Court precedent to allow *infringing* patent challengers to sufficiently assert standing, the Federal Circuit overly limits its interpretation of what constitutes an injury in fact when a patent challenger has yet to actively infringe the allegedly invalid patent.

In *E.I. DuPont de Nemours & Co. v. Synvina C.V.*,[152] the Federal Circuit followed Supreme Court precedent and held that when a patent challenger will concretely practice the challenged claims and actively infringe the claims, it satisfies the Article III standing requirements.[153] The patent challenger suffers an injury in fact by being precluded from use of the patented technology. The Federal Circuit concluded that the patent challenger (DuPont) adequately established that it had concrete plans to practice the claims of the challenged patent.[154] DuPont submitted a declaration in which it asserted that it had publicly announced a plan to build a production plant that, according to three scientists hired by DuPont, was "capable of operating under conditions

.ptablitigationblog.com/do-only-certain-ipr-petitioners-have-standing-to-appeal-adverse-ptab-decisions [https://perma.cc/4CLM-4P68] ("[I]f the litigation-defendant-petitioner loses at the PTAB, there is no question about the petitioner's standing to appeal the PTAB's adverse decision to the Federal Circuit, because the petitioner is facing live claims of infringement of the patent in a district court action.").

150. *See* E.I. DuPont de Nemours & Co. v. Synvina C.V., 904 F.3d 996, 1005 (Fed. Cir. 2018) ("[A] petitioner who appeals from an IPR decision need not face 'a specific threat of infringement litigation by the patentee' to establish jurisdiction." (quoting ABB Inc. v. Cooper Indus., LLC, 635 F.3d 1345, 1348 (Fed. Cir. 2011))); *see also* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1220 (Fed. Cir. 2018) ("Our cases establish that typically in order to demonstrate the requisite injury in an IPR appeal, the appellant/petitioner must show that it is engaged or will likely engage 'in an[] activity that would give rise to a possible infringement suit.'" (quoting Consumer Watchdog v. Wis. Alumni Rsch. Found., 753 F.3d 1258, 1262 (Fed. Cir. 2014))).

151. *See* Phigenix, Inc. v. Immunogen, Inc., 845 F.3d 1168, 1174 (Fed. Cir. 2017) (concluding that the patent challenger did not assert adequate facts to establish that it would infringe the challenged patent).

152. *E.I. DuPont de Nemours & Co.*, 904 F.3d 996.

153. *Id.* at 1005.

154. *Id.* ("[W]e conclude that DuPont has satisfied the injury in fact requirement for Article III standing.").

within the claimed ranges of the [challenged] patent."[155] DuPont filed its IPR in August of 2015[156] and the production plant became operational in early 2018.[157] Despite this nearly three-year delay, because DuPont had shown a "significant 'involvement in research [and] commercial activities involving' the claimed subject matter of the [challenged] patent," it still met the injury in fact requirements.[158] Properly following Supreme Court precedent, the Federal Circuit concluded that DuPont adequately established its injury in fact because it had concrete "plans to take . . . action that would implicate the [challenged] patent."[159]

However, in its decision in *JTEKT Corp. v. GKN Automotive Ltd.*, the Federal Circuit failed to follow Supreme Court precedent and held that the patent challenger (JTEKT) failed to satisfy the injury in fact requirements because it was not actively infringing the challenged patent.[160] The Federal Circuit concluded that while JTEKT was working in the same technology area and seeking to solve similar problems with its developmental designs, it failed to establish that it was injured by the challenged patent.[161] However, as described in further detail in the next section, direct competitors working in the same technology *do* suffer an injury in fact caused by the preclusive effect of a patent. What the Federal Circuit failed to recognize, but the Court outlined in *MedImmune* and *Cardinal Chemical*, is that an invalid patent forces direct competitors to expend resources to first, learn of the patents, and second, to ensure they avoid possible claims of infringement by designing around these patents.[162]

In the case, JTEKT submitted two declarations supporting its assertion of standing based on its plans to practice the claims of the challenged patent.[163] However, the Federal Circuit concluded that JTEKT's declarations failed to show that its planned design "would create a

155. *Id.* at 1003.

156. Petition for Inter Partes Review, E.I. DuPont de Nemours & Co. v. Synvina C.V., No. IPR2015-01838, 2015 WL 5666096 (P.T.A.B. Aug. 25, 2015).

157. *E.I. DuPont de Nemours & Co.*, 904 F.3d at 1004. Additionally, DuPont did not publicly announce its plans for the production plant until 2016. *Id.*

158. *Id.* at 1005 (first alteration in original) (quoting Consumer Watchdog v. Wis. Alumni Rsch. Found., 753 F.3d 1258, 1260 (Fed. Cir. 2014)).

159. *Id.* (internal quotation marks omitted) (quoting Phigenix, Inc. v. Immunogen, Inc., 845 F.3d 1168, 1173–74 (Fed. Cir. 2017)).

160. JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1221 (Fed. Cir. 2018).

161. *Id.*

162. *See* MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118 (2007); Cardinal Chem. Co. v. Morton Int'l, Inc., 508 U.S. 83 (1993).

163. *JTEKT Corp.*, 898 F.3d at 1221.

substantial risk" of infringing the challenged patent.[164] The Federal Circuit formed this conclusion largely on JTEKT's concession that it had not yet finalized its design which it asserted posed a direct infringement risk.[165] JTEKT's Chief Engineer stated that its designed product "will continue to evolve and may change until it is completely finalized."[166] Yet providing a finality of judgment about the potential invalidity of a patent is exactly what the Supreme Court upheld in *Cardinal Chemical*.[167] If the Federal Circuit provided an invalidity judgment, then JTEKT could incorporate the patent's technology in its design without risk of future infringement damages. While JTEKT's design may have still been in progress, the remaining patent still forced JTEKT to design around it. Despite this, the Federal Circuit concluded that JTEKT's declarations merely stated a general grievance, and therefore it did not suffer a concrete injury,[168] contrary to Court precedent.[169]

In essence, if a patent challenger is not subject to an active suit for infringement, to satisfy the concrete and particularized requirements of asserting an injury in fact, under the Federal Circuit's current approach, a patent challenger must establish that is either actively practicing the patented claims or is definitively going to practice the invention in the very near future.[170] However, in order to avoid being subject to treble damages or a possible injunction in a future infringement suit, many patent challengers choose not to practice the claimed invention. But under its current interpretation, the Federal Circuit has denied recognizing a sufficiently concrete and particularized injury by direct competitors unless they show that they are actively infringing the patent, contrary to the Supreme Court's precedent.

2. Direct Competition Does Not Establish an Adequate Injury in Fact

As an alternative to showing active infringement, some patent challengers have attempted to assert that as competitors to the owners of the challenged patent, they are limited in what designs they can

164. *Id.*

165. *See id.* ("JTEKT expressly conceded that 'no product is yet finalized.'").

166. *Id.*

167. *See Cardinal Chem. Co.*, 508 U.S. at 102–03.

168. *JTEKT Corp.*, 898 F.3d at 1221.

169. *See Cardinal Chem. Co.*, 508 U.S. at 100–03.

170. *See JTEKT Corp.*, 898 F.3d at 1221 ("[The patent challenger] must establish that it has concrete plans for future activity that creates a substantial risk of future infringement or likely cause the patentee to assert a claim of infringement.").

produce, and therefore suffer an injury in fact.[171] So far, the Federal Circuit has denied such claims on the grounds that they fail to meet the concrete requirements of an injury. This is in contrast to the Supreme Court's recognition in *Cardinal Chemical* that the potential validity of a patent "imposes ongoing burdens on competitors who are convinced that a patent [i]s . . . invalid"[172] and can utilize the technology in their own designs. The Federal Circuit's decisions interpreting a competitor's standing has thus far failed to recognize this.

In *AVX Corp. v. Presidio Components, Inc.*, the Federal Circuit denied AVX's assertion of standing on the grounds of being a direct competitor of Presidio,[173] despite the Supreme Court's explicit recognition that direct competitors suffer "ongoing burdens" from the presence of an allegedly invalid patent in *Cardinal Chemical*.[174] AVX submitted several declarations detailing the competitive nature of the two companies, noting that "since 2008, there ha[d] been four district court actions between AVX and Presidio involving potential infringement of various capacitor patents."[175] AVX claimed that this established that the two companies competed in the same market and this resulted in a "substantial" threat of future infringement litigation.[176] However, the Federal Circuit concluded that this was merely speculative and not sufficient to establish Article III standing.[177]

Similarly, the Federal Circuit ignored the Court's recognition that direct competitors face "ongoing burdens" and suffer an injury sufficient for courts to grant patent challengers Article III standing in *General Electric Co. v. United Technologies Corp.*[178] GE sought to establish standing on the basis that first, it researched a design that implicated the United Technologies (UTC) patent, and second, that as a direct competitor of UTC, UTC's patent impeded its ability to design new

171. As discussed in the next Section, as long as the direct competitor operates in the same field of endeavor and it has designs or products that solve similar problems with similar solutions, this should be enough to meet the Supreme Court's standard of Article III standing.

172. *Cardinal Chem. Co.*, 508 U.S. at 101.

173. AVX Corp. v. Presidio Components, Inc., 923 F.3d 1357, 1367 (Fed. Cir. 2019).

174. *Cardinal Chem. Co.*, 508 U.S. at 101.

175. *AVX Corp.*, 923 F.3d at 1360.

176. *Id.* at 1361.

177. *See id.* at 1365 ("AVX's suspicion that Presidio would assert the upheld claims against AVX if it had a reasonable basis for doing so does not mean that there is any reasonable basis right now." (internal citation omitted)).

178. Gen. Elec. Co. v. United Techs. Corp., 928 F.3d 1349 (Fed. Cir. 2019).

commercial aircraft engines.[179] GE first alleged it researched an engine design that "would potentially implicate [UTC's] 605 Patent," expending resources to develop a design for a contract bid proposal.[180] The Federal Circuit concluded that this assertion failed to allege a sufficient injury in fact.[181] GE could not simply allege that it "expended some unspecified amount of time and money to consider engine designs that could *potentially* implicate the [challenged] patent."[182] Second, GE asserted that as one of the three major turbine engine manufacturers directly competing with UTC, UTC's patent impeded its ability to use its own 1970s turbofan engine design as a basis to develop its future designs.[183] GE asserted that this forced it to design around UTC's patent, "restrict[ing] GE's design choices" and forcing it to "incur additional research and development expenses."[184] But the Federal Circuit again concluded that this failed to establish an adequate injury in fact because GE must still have a "nonspeculative interest in engaging in conduct . . . covered by the patent claims at issue."[185] However, because GE is solving similar problems with similar solutions, as described in the next Part, GE sufficiently meets the Supreme Court's requirements of Article III standing.

These recent Federal Circuit cases show that unless a direct competitor is actively infringing the challenged patent, it will be difficult to establish Article III standing. As currently interpreted, for a noninfringing direct competitor to adequately establish its standing before the court, it must "allege[] current or nonspeculative activities of its own that arguably fall within the scope of the upheld claims."[186]

179. *Id.* at 1352.

180. *Id.* at 1353 (alteration in original).

181. *Id.*

182. *Id.*

183. *Id.* at 1352.

184. *Id.*

185. *Id.* at 1354 (quoting AVX Corp. v. Presidio Components, Inc., 923 F.3d 1357, 1363 (Fed. Cir. 2019)) (internal quotation marks omitted).

186. *AVX Corp.*, 923 F.3d at 1367. Patent challengers have also attempted to use the various statutory provisions to assert an injury in fact, though to no avail. The Federal Circuit concluded that 35 U.S.C. § 141(c) merely establishes that a party is "*permitted* to file its appeal," not that it has the definitive right to. Phigenix, Inc. v. Immunogen, Inc., 845 F.3d 1168, 1175 (Fed. Cir. 2017) (emphasis added) (citing Raines v. Byrd, 521 U.S. 811, 820 n.3 (1997)). Additionally, the Federal Circuit concluded that § 315(e), which bars a patent challenger from "assert[ing] either in a civil action . . . that the claim is invalid on any ground that the petitioner raised or reasonably could have raised during that inter partes review" also cannot serve as a basis for an injury in fact. *AVX Corp.*, 923 F.3d at 1362. The court went on to say that the court had not yet decided whether the estoppel provision would apply to cases when the IPR challenger lacked standing to appeal the decision. *Id.* at 1363.

However, as discussed in the next Part, this interpretation is overly limiting of the Supreme Court's interpretation and fails to recognize Congress's intent to alleviate the patent quality problem.

III. A PROPOSED TEST TO ALLOW DIRECT COMPETITORS TO ESTABLISH ARTICLE III STANDING IN IPR APPEALS

The Federal Circuit's current interpretation of what constitutes an injury in fact for non-infringing direct competitors appealing an adverse IPR decision is overly restrictive of what the Supreme Court detailed in *MedImmune* and *Cardinal Chemical*. While the Federal Circuit attempts to use Article III standing to deny non-infringing direct competitors the right to appeal an adverse IPR decision, it does so by failing to recognize that direct competitors are injured when they are precluded from utilizing technology that should otherwise be in the public domain. This injury should be recognized by the Federal Circuit. If the Patent Office improperly issued a patent in the first place, this can result in an undeserved monopoly, stifling innovation. While the Federal Circuit has thus far used standing to deny non-infringing direct competitors the chance to appeal an adverse IPR decision, as discussed below, direct competitors do suffer an injury in fact sufficient to meet the concrete and particularized requirements of Article III standing.

In establishing the Federal Circuit in 1982, Congress sought to increase the strength of the U.S. patent system for patent owners.[187] Many of the Federal Circuit's decisions succeeded in doing just this. However, like several of the Federal Circuit's other decisions later overturned by the Supreme Court for being overly restrictive on patent challengers and overly relaxed on patent applicants and owners,[188] the Federal Circuit's approach to direct competitor standing is overly narrow, keeping worthy patent challenges from reaching the

187. *See* Robert P. Merges, *One Hundred Years of Solicitude: Intellectual Property Law, 1900-2000*, 88 CALIF. L. REV. 2187, 2224 (2000) ("[T]he creation of the Federal Circuit had a clear substantive agenda: to strengthen patents.").

188. *See, e.g.*, Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc., 566 U.S. 66 (2012) (rejecting the Federal Circuit's narrow view of the patent eligibility exceptions dealing with laws of nature); Bilski v. Kappos, 561 U.S. 593 (2010) (rejecting the Federal Circuit's "machine-or-transformation" test in determining patent eligibility); KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398 (2007) (rejecting the Federal Circuit's "rigid approach" to the obviousness inquiry which limited obviousness rejections to instances when the prior art contained an explicit "teaching, suggestion, or motivation" to combine); *see also* H.R. REP. NO. 112-98, at 39 n.7 (2011) (discussing other Supreme Court decisions overturning the Federal Circuit to improve patent quality and make determining patent validity more efficient).

courts. A patent challenger should not have to "bet the farm, or . . . risk treble damages," to challenge the validity of a patent.[189] In contrast to the Federal Circuit's current holdings, truly direct competitors suffer an injury in fact and have the "incentive to seek to invalidate an allegedly defective patent" specifically because they are subject to the preclusive effect of such a patent.[190] To overcome the Federal Circuit's failure to recognize this injury, a new test, the Direct Competitor Standing Test (DCS Test) is proposed to allow direct competitors to establish an injury in fact in an IPR appeal.

A. TRULY DIRECT COMPETITORS SATISFY THE REQUIREMENTS OF ARTICLE III STANDING

The proposed DCS Test, discussed in detail in this Section, recognizes the Supreme Court's expansive approach to injuries in fact in patent cases while ensuring the patent challenger still meets the concrete and particularized requirements of an injury in fact. Following the outline of the DCS Test, several exemplary cases demonstrate how this test might be implemented. The DCS Test recognizes that direct competitors *do* suffer an injury in fact because the preclusive effect of a potentially invalid patent imposes "ongoing burdens" on their actions, limiting their use of the technology.[191] This expanded interpretation allows competitors that truly compete in the same technology and suffer a concrete and particularized injury to establish standing while excluding those "competitors" that only seek to invalidate another's patent. While both suffer a concrete injury, the proposed solution ensures that only true competitors, even if non-infringing, can establish standing by limiting standing to competitors that are particularly injured: those either actively using the patented technology or *directly* competing in the specific patented technology. The DCS Test also enables more competitors, specifically non-infringing competitors, suffering from the Patent Office's patent quality problem to meet the standing requirements to appeal an adverse IPR decision to the Federal Circuit and alleviate the negative effects of the invalid patent.

189. MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118, 134 (2007).

190. *See* H.R. REP. NO. 107-120, at 4 (2001).

191. *See* Cardinal Chem. Co. v. Morton Int'l, Inc., 508 U.S. 83, 101 (1993).

1. Competitors Suffer a Concrete Injury When Precluded from Using the Patented Technology

When a patent owner obtains an invalid patent, direct competitors suffer a concrete injury because they are precluded from utilizing technology that should otherwise remain in the public domain. Upon obtaining a patent, the patent owner has the right to exclude others from "making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States."[192] A patent does not confer on the patent holder the affirmative right to practice their invention.[193] Instead, it merely regulates the conduct of all others, prohibiting others from practicing the invention without being liable to the patent owner for treble damages and/or an injunction.[194] Thus, when a patent holder obtains a patent, it is not *the holder's personal* use which is regulated, but instead, *everyone else's* use of the patent that is regulated.

Additionally, during an IPR, the patent challenger can only assert that the patent is invalid under novelty and nonobviousness grounds.[195] In other words, the patent challenger is challenging the patent on the grounds that the technology is already in the public domain, free to be used by anyone. The public at large, including competitors of the challenged patent, have the right to use knowledge in the public domain, free of restrictions.[196] When the patent owner though

192. 35 U.S.C. § 154(a)(1).

193. *See* Robert P. Merges, *A Brief Note on Blocking Patents and Reverse Equivalents: Biotechnology as an Example*, 73 J. PAT. & TRADEMARK OFF. SOC'Y 878, 879 n.2 (1991). Some patents can "block" an earlier issued patent when it is an improvement on the device. To practice the earlier patent, the party may need to obtain a license to this "blocking patent." *See* Prima Tek II, LLC v. A-Roo Co., 222 F.3d 1372, 1379 n.2 (Fed. Cir. 2000).

194. *See* 35 U.S.C. § 281 ("A patentee shall have remedy by civil action for infringement of his patent."); *id.* § 284 ("Upon finding for the claiming the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention . . . ."); *id.* § 283 ("The several courts . . . may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent . . . .").

195. *See id.* § 311(b) (identifying that a patent may only be challenged in an IPR on grounds permissible under Sections 102 and 103).

196. *See, e.g.*, Pfaff v. Wells Elecs., Inc., 525 U.S. 55, 65 (1998) ("The patent laws therefore seek [] to protect the public's right to retain knowledge already in the public domain . . . ."); Sears, Roebuck & Co. v. Stiffel Co., 376 U.S. 225, 231 (1964) ("An unpatentable article . . . is in the public domain and may be made and sold by whoever chooses to do so."); *see also* Kimble v. Marvel Ent., LLC, 135 S. Ct. 2401, 2408 (2015) (noting that when an invention is in the public domain, "every person can make free use" of that invention).

is able to assert an invalid patent and preclude competitors from utilizing the patented technology, it destroys the competitor's right to use knowledge in the public domain.

As the Federal Circuit has thus far concluded that patent challengers appealing an IPR fail to assert an injury in fact,[197] the Federal Circuit ignores (1) that it is all others, including competitors, whose conduct is regulated, and (2) that competitors have a concrete interest in utilizing technology that was improperly taken out of the public domain through the invalid patent. In denying standing to patent challengers, the Federal Circuit allows the allegedly invalid patent to "serve[] as a head on a pike," and prevent any researcher, inventor, or manufacturer from using the technology.[198]

One important point should be addressed again here. While in district court any patent can be challenged, in an IPR there must be a "reasonable likelihood" that at least one of the claims in the challenged patent is invalid, otherwise the PTAB cannot institute review.[199] Thus, while the Federal Circuit must decide whether the challenged patent is injuring direct competitors, for an IPR to be instituted, the PTAB must have already concluded that there was a "reasonable likelihood" that the patent was invalid and therefore improperly injuring competitors.

Essentially, any direct competitor wishing to work in the same design area of the challenged patent has three options, all of which injure the competitor. First, the direct competitor could avoid practicing the invention by designing around[200] the claimed features of the patent. In this instance, the competitor's conduct is being directly regulated by the patent because it precludes the competitor from practicing the patented technology and forces them to expend resources to avoid the patent.[201] Second, the party could obtain a license from the

197. *See supra* Part II (analyzing the Federal Circuit's position on standing in IPR appeals).

198. Leslie, *supra* note 6, at 115.

199. 35 U.S.C. § 314(a).

200. Designing around the patent means that the competitor will avoid using all of the features covered by the technology to ensure it is not subject to infringement damages without compromising the usability or marketability of the product or service. *See* Brian Moran & Benjamin Jensen, *Designing Around a Patent as an Alternative to a License*, IP WATCHDOG (July 30, 2019), https://www.ipwatchdog.com/2019/07/30/designing-around-patent-alternative-license [https://perma.cc/2MN3-NMZJ].

201. *See id.* (discussing how a competitor may attempt to avoid infringing a patent, and noting that even attempting to design around the patent "will not necessarily guarantee a safe harbor").

patent owner for use of the patented features.[202] In this circumstance, the party's conduct is directly regulated by whatever rights the patent owner confers to the licensee, whether it is an exclusive license or merely a license to use.[203] Lastly, the party could ignore the patent owner's patent altogether and practice the invention for themselves anyway. Under this situation, the party may be liable to the patent owner for damages.[204] Damages can include up to treble damages if the court deems it reasonable[205] and/or an injunction.[206]

In all three of these situations, a competitor's conduct is regulated by the presence of a patent, establishing a concrete injury.[207] When the Patent Office issues an invalid patent, that concrete injury becomes more pronounced because a direct competitor would be able to practice the patented invention but for the Patent Office's error.[208] A competitor is concretely injured when it is unable to practice the (invalidly) patented invention, is (improperly) paying licensing fees to avoid a suit for damages, or is actually subject to an (unjustified) infringement lawsuit. The only way to know whether a patent is invalid is through fully litigating it.[209]

202. *See* Shapiro, *supra* note 22, at 127–28 (identifying the role of licensing in infringement dispute resolution).

203. *See id.*

204. *See* 35 U.S.C. § 284.

205. A party may be liable for treble damages in cases when they willfully infringe the patent. *See* Yarway Corp. v. Eur-Control USA, Inc., 775 F.2d 268, 277 (Fed. Cir. 1985) ("It is well-settled [sic] that enhancement of damages must be premised on willful infringement or bad faith."). Such situations arise when the party (1) engaged in acts that infringed on the patent; and (2) the party knew the acts were in violation of the patent. *See* Knorr-Bremse Systeme Fuer Nutzfahrzeuge GmbH v. Dana Corp., 383 F.3d 1337, 1348–49 (Fed. Cir. 2004) (Dyk, J., concurring in part and dissenting in part) (detailing circumstances considered to be willful infringement and creating a predicate for an award of punitive damages).

206. *See* 35 U.S.C. § 283.

207. *See supra* Part II.A.1.

208. *See* Graham v. John Deere Co. of Kan. City, 383 U.S. 1, 6 (1966) ("Congress may not authorize the issuance of patents whose effects are to remove existent knowledge from the public domain, or to restrict free access to materials already available."); *see also supra* note 187 and accompanying text (discussing the right to use knowledge in the public domain).

209. *See* Microsoft Corp. v. i4i Ltd. P'ship, 564 U.S. 91, 96–97 (2011) ("'While the ultimate question of patent validity is one of law' . . . the same factual questions underlying the PTO's original examination of a patent application will also bear on an invalidity defense in an infringement action . . . ." (quoting *Graham*, 383 U.S. at 17)).

2. Competitors Suffer a Particularized Injury by Competing in the Same Technology

Although everyone except the patent owner is regulated through the issuance of a patent,[210] it would be far too broad to grant standing to every individual who is not the patent owner in a potential suit. Thus, under the proposed DCS Test, a patent challenger appealing an adverse IPR decision must show that it is truly a *direct* competitor to the patented technology, establishing that its injury is sufficiently particularized (and further establishing the concreteness of the injury). This proposed test better aligns with the Supreme Court's expansive approach of standing in patent cases, recognizing that a patent's validity "imposes ongoing burdens on competitors."[211] The DCS Test captures the injury that direct competitors, even non-infringing competitors, face by the preclusive effect of a patent.

Under the proposed interpretation of standing, a patent challenger may establish an injury in fact in one of two ways. In the first prong, a patent challenger may establish injury in fact by showing that it is actively infringing or will imminently infringe the patent it seeks to invalidate.[212] The second, alternative prong is the DCS Test. Under this test, if the patent challenger is unable to establish that it is actively infringing the challenged patent, it may show a particularized injury by establishing that it is a direct competitor to the specific patented technology.

a. Prong One: Active Infringement Establishes a Concrete & Particularized Injury

In the first prong, a patent challenger may establish a concrete and particularized injury by establishing that it is either (1) currently subject to an infringement suit, or (2) engaged in conduct that "would

210. *See supra* note 194 and accompanying text (identifying how competitors are regulated, rather than patent owners).

211. Cardinal Chem. Co. v. Morton Int'l, Inc., 508 U.S. 83, 100–01 (1993).

212. While "imminent" is a flexible term, the Federal Circuit uses the term to describe situations when it is essentially inevitable that the challenger will infringe the patent. *See supra* note 144 and accompanying text (discussing Federal Circuit jurisprudence interpreting imminence of infringement). For example, in the case of *DuPont*, despite nearly a three-year gap between the original filing of the IPR and the operation of the potentially infringing plant, the Court determined that infringement was "imminent." E.I. DuPont de Nemours & Co. v. Synvina C.V., 904 F.3d 996, 1004–05 (Fed. Cir. 2018).

give rise to a possible infringement suit."[213] This first prong is the Federal Circuit's current interpretation of what constitutes an injury in fact.[214]

However, to better recognize the injury of non-infringing direct competitors that are precluded from utilizing the invention by virtue of innovating in the same technology space, patent challengers may also establish an injury in fact under the alternative second prong by showing they directly compete in the specific technology of the challenged patent.

b. Prong Two: Competing in the Same Technology Establishes a Particularized Injury

Under the DCS Test, a patent challenger may assert an injury in fact by demonstrating that it is a direct competitor of the specific patented technology when it is unable to establish that it is actively infringing the challenged patent. By doing so, the DCS Test recognizes the injurious effects an invalid patent poses to competitors innovating in the same technology space.[215] Under the DCS Test, a patent challenger may establish a concrete and particularized injury sufficient to demonstrate an injury in fact by meeting two requirements.[216]

In the first step of the DCS Test, a patent challenger must show that it is a direct competitor to technology of the challenged patent—namely, that the patent challenger competes in the same field as the patented technology. Second, the patent challenger must establish that it is solving similar problems with similar solutions in an already existing design or product. These steps demonstrate that by nature of competing in the same technology area, the patent challenger necessarily expended resources to become aware of the patent and to actively avoid it.[217] The DCS Test also requires that the patent challenger

213. Consumer Watchdog v. Wis. Alumni Rsch. Found., 753 F.3d 1258, 1262 (Fed. Cir. 2014). Such conduct includes that which "creates a substantial risk of future infringement or [would] likely cause the patentee to assert a claim of infringement." JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1221 (Fed. Cir. 2018).

214. *See JTEKT Corp.*, 898 F.3d at 1221; *see also supra* note 196 and accompanying text (discussing the Federal Circuit's definition of injury in fact).

215. *See supra* text accompanying notes 192–209 (explaining how invalid patents injure direct competitors).

216. This test is similar to the analogous prior art test of an obviousness determination, but narrower because the patent challenger must meet both prongs: that the challenger operates in the same field of endeavor and that it solves similar problems using similar solutions. *Cf. In re* Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004) (applying the analogous art test to applicant's hairbrush product).

217. Very few, if any, producers would design without any regard for pre-existing patents as infringing a patent could lead to treble damages and a risk of an injunction.

is actively practicing in the same technology area, and not merely asserting patent rights. By permitting a patent challenger to establish an injury in fact via the DCS Test, the Federal Circuit would better recognize the Supreme Court's holding that a patent challenger need not "bet the farm" and infringe the disputed patent to challenge its validity.[218]

***Requirement 1*:** First, for a patent challenger under the DCS Test to establish that it has suffered an injury in fact, it must show that it has either an existing patent portfolio or existing design portfolio in a similar technology area as the challenged patent. In other words, the patent challenger must show that its own patent portfolio or existing designs are in the same field of endeavor as the challenged patent.[219]

Like the "field of endeavor" test when assessing obviousness, the court would first examine the patent challenger's technology and determine whether the function and structure is generally similar to the patented subject matter.[220] To assess the field of endeavor of the challenged patent, the court may consider the "explanations of the invention's subject matter in the patent [], including the embodiments, function, and structure of the claimed invention."[221] To assess the patent challenger's field of endeavor, the court may examine both the patent challenger's existing designs and those under development.[222] Under the DCS Test, as with the obviousness test, the court must then use "common sense" to assess if the field of endeavor of the patent challenger's designs are the same as that of the patented technology.[223] A design is in the same field of endeavor if a person "of ordinary skill in the art" would look to that technology to solve similar problems in the field.[224] An example of how this field of endeavor inquiry may work

See supra notes 194–95 and accompanying text. Financially, this risk would outweigh any costs associated with investigating pre-existing patents. *See* Leslie, *supra* note 47, at 119–20 (noting that patents, even invalid ones, force others to "investigate the patent's scope and validity" and can deter new market entrants due to the high cost of litigation and risk).

218. MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118, 129 (2007).

219. This is similar to the obviousness "field of endeavor" inquiry, the first branch to determine prior art is analogous. *See In re* Clay, 966 F.2d 656, 658–59 (Fed. Cir. 1992) (applying the "field of endeavor" criteria to applicant's gelation solution).

220. *See In re* Bigio, 381 F.3d at 1325–26; *In re* Clay, 966 F.2d at 659.

221. *In re* Bigio, 381 F.3d at 1325 (first citing *In re* Wood, 599 F.2d 1032, 1036 (C.C.P.A. 1979); then citing *In re* Deminski, 796 F.2d 436, 442 (Fed. Cir. 1986)).

222. *See supra* note 220 and accompanying text.

223. *See In re Bigio*, 381 F.3d at 1326 ("[T]he Board must consider . . . and weigh [the] circumstances from the vantage point of the common sense likely to be exerted by one of ordinary skill in the art in assessing the scope of the endeavor.").

224. *See id.*

under the DCS Test is discussed in greater detail in the next Subsection.[225] This first requirement of the DCS Test ensures that the patent challenger is indeed innovating in the same space and therefore sustains a financial injury when being precluded from utilizing the patented technology.[226]

By inquiring into whether the patent challenger operates in the same field of endeavor, the Federal Circuit can understand whether "design incentives and other market forces" are motivating the patent challenger to solve similar problems as the challenged patent.[227] If the patent challenger is competing in the same space, then the court can determine that the challenger is concretely injured by the allegedly invalid patent.[228] As an example, if the challenged patent covers a gel used in the extraction of hydrocarbons from a well, while the patent challenger has an existing patent portfolio covering gels used in the storage of hydrocarbons in a tank, this would *not* be considered the same field of endeavor.[229] Even though the two use a similar means, a gel, storage is a different field of endeavor than extraction.[230]

While the "field of endeavor" test is helpful,[231] it is not enough to ensure that a patent challenger is *particularly* injured by the patented invention.[232] Thus, to ensure the patent challenger is not merely asserting a general grievance and is in fact injured by the challenged patent, under the DCS Test the non-infringing patent challenger must show that its existing patent portfolio or designs solve similar problems as the challenged patent.[233]

225. *See infra* Part III.B.

226. *See* 35 U.S.C. § 154.

227. KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 417 (2007); *see id.* ("[A] court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.").

228. *See supra* Part II.A.1 (discussing concrete injury).

229. *Cf. In re* Clay, 966 F.2d 656, 659 (Fed. Cir. 1992) (highlighting the differences in function between the two gels).

230. *See id.* at 660 (holding that the gel used in extraction is non-analogous).

231. The "field of endeavor" test does not require that the problem being solved by the two parties be the same; instead, it merely requires that the technologies be similar. *See In re* Bigio, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

232. *See* Consumer Watchdog v. Wis. Alumni Rsch. Found., 753 F.3d 1258, 1262–63 (Fed. Cir. 2014) (holding that a patent challenger cannot simply have a "general grievance" that a patent places a burden on taxpayer-funded research).

233. This is similar to the doctrine of equivalents which is used to assess whether an allegedly infringing product "performs substantially the same function in substantially the same way to obtain the same result." Graver Tank & Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 608 (1950) (citing Sanitary Refrigerator Co. v. Winters, 280 U.S. 30, 42 (1929)). However, this inquiry is too narrow because if a competitor does meet this criterion, then it would be infringing the challenged patent and therefore

***Requirement 2*:** To ensure a patent challenger meets the injury in fact requirements, under the DCS Test, a patent challenger may establish a particularized injury by establishing that its current designs solve similar problems with similar solutions.[234] The designs put forth by the patent challenger may be designs currently in production or ones that are concretely under development. Designs may be considered concretely under development if they are sufficiently far in the design process that they are suitable for future production.[235] By utilizing such an approach, the DCS Test captures injuries faced by innovators developing technology that is close to, but not necessarily the exact same as, the patented technology. Additionally, by requiring a patent challenger to show either pre-existing designs or designs concretely under development, the proposed interpretation ensures that a non-practicing entity[236] cannot simply acquire the rights to a patent within the scope of the challenged patent and then assert standing. Since a non-practicing entity by definition does not actually produce any product, the challenged patent it seeks to invalidate does not actually restrict its conduct.[237] Limiting the establishment of an injury in fact to only practicing entities ensures the injury is particularized and

meet the current interpretation of the Federal Circuit's standing requirements. *See supra* Parts II.A–B.

234. This is similar to the second method of establishing analogous art in an obviousness assessment. Alternative to the field of endeavor test, a patent under an obviousness inquiry is considered analogous art when the reference is "reasonably pertinent to the particular problem with which the inventor was involved," i.e., solving similar problems using similar solutions. *In re* Wood, 599 F.2d 1032, 1036 (C.C.P.A. 1979); *see also* Airbus S.A.S. v. Firepass Corp., 941 F.3d 1374, 1379 (Fed. Cir. 2019) (analyzing the application of the "reasonably pertinent" test). But under the DCS Test, because the patent challenger must also be operating in the same field of endeavor, the patent challenger essentially has to meet both requirements of the analogous art inquiry for obviousness.

235. *Contra* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1221 (Fed. Cir. 2018) (denying standing because "no product [was] yet finalized" which utilized the patented design).

236. A non-practicing entity is typically a party that only holds patents and asserts patent rights by seeking royalties from potentially infringing parties. *See* Kailash Choudhary & Priyanka Rastogi, *Non Practicing Entities (NPEs) and Their Impacts*, LEXOLOGY (Sept. 29, 2012), https://www.lexology.com/library/detail.aspx?g=2bc351e0-c393-4637-9c38-306ff7713557 [https://perma.cc/7BC3-5T4M]. Many of these non-practicing entities will seek royalties from companies actually creating products and set the royalty price low enough that the practicing company will pay off the non-practicing entity rather than undergo costly litigation. *See id.*

237. *See id.* (noting that non-practicing entities' "primary purpose is to enforce their patents through licenses or litigation," and they simply "hold[] the patent[] but do not manufacture products based on patents").

that the patent is actually precluding the patent challenger from utilizing the technology.[238]

What constitutes a similar problem and similar solution would have to be left to the court, as it would likely be specific to the technology type and the scope of the patent.[239] But it should approximately match the scope of what the challenged patent itself covers.[240] In other words, if the challenged patent is a broad patent, then the "solving similar problems with similar solutions" test should be correspondingly broad. A court may consider a solution similar if a person of ordinary skill in the art would look to the challenger's design and would have reasonably consulted the challenged patent in developing the solution.[241] An example of how a court may evaluate whether a patent challenger solves similar problems with similar solutions under the DCS Test is discussed in further detail in the next Subsection.[242] As the Supreme Court has recognized, there is a competitive interest in ensuring a patent does not preempt use to which it is not entitled.[243] The

238. *Cf.* Paul Gugliuzza, *IP Injury and the Institutions of Patent Law*, 98 IOWA L. REV. 747, 752 (2013) (discussing a proposal that the injury in fact inquiry should focus on intellectual property law's "fundamental purpose of promoting innovation, rather than protecting only individual property rights").

239. *See In re* Bigio, 381 F.3d 1320, 1326 (Fed. Cir. 2004) (describing that in the context of determining the field of endeavor, one must use "common sense likely to be exerted by one of ordinary skill"); *see also* Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17, 24 (1997) (describing in the context of the doctrine of equivalents, determining what constitutes an equivalence to the invention requires examining the "context of the patent, the prior art, and the particular circumstances of the case" (citing Graver Tank Mfg. Co. v. Linde Air Prods. Co., 339 U.S. 605, 609 (1950))).

240. *Cf.* David Kwok, *Determining Standing and Damages for Competitive Injury from False Patent Marks*, 17 VA. J.L. & TECH. 171, 179–81 (2012) (noting that in the context of patent marking, courts should determine which challengers have standing based on the size of the market and scope of the patent).

241. *See* Airbus S.A.S. v. Firepass Corp., 941 F.3d 1374, 1382 (Fed. Cir. 2019) (citing *In re* GPAC, Inc., 57 F.3d 1573, 1578 (Fed. Cir. 1995)). For example, a challenged patent disclosing an equilibrium air door and a patent challenger designing a door for asbestos removal may be considered to be solving similar problems using similar solutions, specifically "maintaining a pressurized environment while allowing for human ingress and egress." *See In re* GPAC Inc., 57 F.3d at 1578–79. However, one should note that this specific example may not pass the DCS Test because in the first step, the patent challenger must operate in the same field of endeavor. These two designs may not be in the same field of endeavor.

242. *See infra* Part III.B.

243. *See, e.g.*, Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 573 U.S. 208, 216 (2014) ("[T]he basic tools of scientific and technological work" are excluded from patentability because "[m]onopolization of those tools through the grant of a patent might tend to impede innovation more than it would tend to promote it." (first quoting Ass'n for Molecular Pathology v. Myriad Genetics, 569 U.S. 576, 589 (2013); then quoting Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc., 566 U.S. 66, 71 (2011))); Parker v.

DCS Test ensures that a patent challenger directly competes within the scope of the challenged patent—even if not practicing the invention exactly—to establish that through its competition, it suffers a concrete and particularized injury by being precluded from utilizing the technology of the invalid patent.[244]

The Federal Circuit's current interpretation fails to recognize that a patent forces even non-infringing patent challengers, at a minimum, to expend resources to investigate the scope of the patent and makes them more likely to expend substantial resources to design around the patent.[245] By limiting standing to only those challengers that can show that their pre-existing patent portfolio or designs are in the same field of endeavor and solving similar problems using similar solutions, the DCS Test ensures that the patent challenger is indeed suffering a real and recognizable harm. With over 300,000 patents issued every year,[246] competitors working in the same field of endeavor and solving similar problems with similar solutions will have to expend some amount of money and resources to navigate the "patent thicket" or risk being on the hook for infringement damages.[247] The DCS Test captures exactly this injury. It ensures that a patent challenger appealing an adverse IPR decision suffers a concrete and particularized injury and is "affect[ed] . . . in a personal and individual way."[248]

3. Competing in the Same Technology Area Satisfies the Actual or Imminence Requirements of Establishing an Injury in Fact

To ensure that this proposed test adequately ensures that any patent challenger in an IPR meets the Supreme Court's requirements of establishing an injury in fact, the DCS Test must also satisfy the actual

Flook, 437 U.S. 584, 589–90 (1978) (concluding that patentable subject matter should not include ideas that preempt all use of an idea).

244. As discussed previously, this is similar to the analogous art test of the obviousness inquiry, yet it is narrower because it requires the patent challenger to meet both prongs, thus establishing that the challenger truly is a direct competitor to the challenged patent. *See supra* note 213.

245. *See, e.g.*, Monsanto Co. v. Geertson Seed Farms, 561 U.S. 139, 154–55 (2010) (finding increased testing and administrative costs sufficient for standing).

246. *USPTO Grant Rates*, PAT. BOTS, https://www.patentbots.com/stats/uspto-grant-rates [https://perma.cc/7JQR-LWDL].

247. *See* Shapiro, *supra* note 22, at 120 (noting that a company must "hack its way through" a "patent thicket, [i.e.,] a dense web of overlapping intellectual property rights" to commercialize any sort of new technology).

248. *See* Spokeo, Inc. v. Robins, 136 S. Ct. 1540, 1548 (2016) (quoting Lujan v. Defs. of Wildlife, 504 U.S. 555, 560 n.1 (1992)).

or imminence requirements.[249] It does exactly that. As long as the patent has not been invalidated, it is presumed valid and therefore actively precludes the patent challenger from practicing the invention.[250] Under the DCS Test, when a competitor produces something in the same field of endeavor as the challenged patent and solves a similar problem using a similar solution, the competitor sustains an ongoing injury by being precluded from utilizing the patent technology.[251] This injury is actual. By upholding an allegedly invalid patent in an IPR, the competitor is further subject to the preclusive effect of the patent. As such, under the DCS Test, a patent challenger additionally satisfies the actual or imminence requirements necessary to establish an injury in fact.

4. Competing in the Same Technology Area Satisfies the Causal Connection and Redressability Requirements to Satisfy Article III Standing

To meet the requirements of Article III standing, in addition to satisfying the injury in fact requirement, the DCS Test must also meet the causal connection and redressability requirements.[252] Again, the DCS Test does exactly that. First, there is a causal connection between the preclusive injury the patent challenger suffers and the patent owner's conduct. Even if the patent owner never asserts the patent against a third party, the enforceability of the patent still poses a continual threat of litigation.[253] This means that just the mere possession of an invalid patent can deter others from practicing the invention.[254] Thus, this injury is directly attributable to the patent owner.[255] Second, a favorable decision for the patent challenger would redress the plaintiff's asserted injury in fact. Upon appeal, if the Federal Circuit were to invalidate the challenged patent, it would allow the patent

249. *See supra* notes 211–15 and accompanying text (discussing imminence as it relates to establishing injury in fact).

250. *See* 35 U.S.C. § 282(a) ("A patent shall be presumed valid. Each claim of a patent . . . shall be presumed valid independently of the validity of other claims . . . .").

251. *See supra* Parts III.A.1–2.

252. *See supra* Part II.A.

253. *See* Leslie, *supra* note 47, at 113–29 (noting that the "mere presence of a patent distorts markets even if the patent-holder takes no affirmative steps to enforce the patent" by creating fear of litigation, increased costs of market entry, delay of market entry, and more).

254. *See id.*

255. *See id.* at 115, 139 (finding that "[t]he monopolist's possession of a patent—even an invalid one—serves as a head on a pike," and "the market-blocking, cost-raising effects of invalid patents exist regardless of a new competitor's beliefs about the patent's validity").

challenger to utilize the technology without fear of a future infringement suit.[256] Thus, a favorable decision by the court would remedy the patent challenger's injury. Accordingly, the DCS Test meets all three requirements of establishing an injury in fact and all three requirements sufficient to establish Article III standing. This test fits within the Supreme Court's precedent of what is necessary to establish Article III standing[257] while also carrying out Congress's intent to make it easier to invalidate patents which likely should not have been granted in the first place.[258]

B. APPLYING THE PROPOSED SOLUTION TO EXEMPLARY CASES

To better explain how the DCS Test might be applied, this Section applies the proposed test to two examples. The first is a hypothetical example based on a real patent. The second is from a case decided by the Federal Circuit denying standing to the patent challenger. These cases demonstrate the exact type of circumstances in which the Federal Circuit has failed to recognize the preclusive injury imposed by an invalid patent that the Supreme Court has recognized impose ongoing burdens on competitors.[259] However, as detailed in the previous Section, these sorts of patent challengers meet the Article III standing requirements, and the Federal Circuit should have decided the merits of their invalidity challenge in their IPR appeal.[260]

1. Example of the DCS Test Applied to a Hypothetical Challenge to a Real Patent

To help clarify how the proposed interpretation of standing under the DCS Test might work, this Subsection discusses a fairly simple hypothetical example. In this example, assume that the Federal Circuit is deciding whether to grant standing to Company *H* appealing an adverse decision in its IPR challenging one of Company *G*'s modern "smart" thermostat patents.[261] Assume that *H* itself also produces

256. *See* Blonder-Tongue Lab'ys, Inc. v. Univ. of Ill. Found., 402 U.S. 313, 350 (1971) (holding that a patent holder is estopped from asserting validity of a patent that has been previously declared invalid).

257. *See supra* Part II.A.

258. *See supra* notes 2–6 and accompanying text.

259. *See supra* note 162 and accompanying text (discussing *MedImmune* and *Cardinal Chemical* in which the Supreme Court acknowledged the Federal Circuit's failure to recognize the injurious effect of invalid patents).

260. *See supra* Part II.A.

261. *See* HVAC Controller with User-Friendly Installation Features Facilitating Both Do-It-Yourself and Professional Installation Scenarios, U.S. Patent No. 9,541,300 [hereinafter '300 Patent].

smart thermostats. Because *H* has existing designs in the smart thermostat space, it satisfies the first step of establishing that it operates in the same field of endeavor as *G*.[262]

Additionally, assume that *G*'s challenged patent covers a thermostat that incorporates a processor configured to electrically detect which terminals of the thermostat are connected to the wiring system of the heating and cooling system within a building.[263] With *G*'s patent, when a user first connects the thermostat to a given system, the thermostat electrically detects which terminals have been connected to determine how to operate the building heating and cooling system. Similar to *G*'s patent, *H*'s existing smart thermostat designs detect which wires are connected to it. However, instead of electrically detecting each wire, *H*'s thermostat mechanically detects each wire.[264]

Under step two, *H* is solving similar problems with similar solutions as *G*'s patent. *H*'s design is aimed at detecting which wires are connected to the thermostat, using a mechanical detection technique instead of an electrical one.[265] Thus, *H* satisfies both steps one and two of the DCS Test. If *H* seeks to use the technology of *G*'s patent, but believes the patent is invalid, then *H* will likely file an IPR because it is injured by being precluded from utilizing *G*'s patented technology. Since *H* meets both steps one and two of the DCS Test, it has established that it suffered an injury in fact sufficient to satisfy the requirements of Article III standing, even without directly infringing *G*'s patent.[266]

262. *See supra* notes 245–52 and accompanying text (discussing how a patent challenger can satisfy the field of endeavor requirements).

263. *See* '300 Patent, *supra* note 261. The purpose of this patent is to make installing a new thermostat in a home easier. *Id.* col. 2 ll. 5–24. A thermostat usually has more wiring terminals than wires connected to it because it can be used to operate several different heating and cooling systems, such as a heat pump and air conditioner, or a furnace, air-conditioner, and humidifier system. *See id.* col. 15 ll. 16–31. By sensing which wires are connected, the thermostat can configure itself to operate the components of the heating and cooling system of that home specifically. *See id.* col. 15 ll. 32–40.

264. A thermostat might do this by using a spring-loaded wiring terminal whereby the thermostat detects the force exerted by the spring. *See id.* col. 16 ll. 28–34. If the thermostat detects a high force, then a wire is connected, but if it detects a low force, then no wire was connected.

265. Accordingly, this design solves similar problems using similar solutions based on common sense. *See supra* notes 223–26 and accompanying text (discussing the use of common sense to determine when two designs address similar problems with similar solutions).

266. *See supra* Part II.A.

2. Example of the DCS Test Applied to a Decided Federal Circuit Case

Another example of how the DCS Test might operate if implemented by the Federal Circuit can be demonstrated using *JTEKT Corp. v. GKN Automotive Ltd*.[267] In the actual decision, the Federal Circuit denied JTEKT standing because it could not establish that it was actively utilizing the patented invention or that it was concretely going to utilize the patent—JTEKT was still "validating its design."[268] But under the DCS Test, JTEKT would likely be able to establish that it suffered an injury in fact sufficient to meet the Article III standing requirements.

JTEKT and GKN both manufacture drivetrain systems for the automotive industry.[269] As such, both companies directly compete for many of the same customers.[270] GKN's challenged patent (the '440 patent) disclosed a drivetrain for a four-wheel drive vehicle that was designed to reduce the number of rotating components when switched into two-wheel drive mode to minimize power loss.[271] When JTEKT petitioned for IPR of the '440 patent, it was developing a similar drivetrain for switching a vehicle from four-wheel drive mode to two-wheel drive mode.[272] Additionally, JTEKT had a patent (the '492 patent) covering a similar four-wheel drive drivetrain for switching to a two-wheel drive system.[273] While GKN's '440 patent used side shaft couplings, JTEKT's '492 patent used twin clutches.[274]

While JTEKT was unable to establish that it was actively using the claims of GKN's '440 patent, under the proposed DCS Test, JTEKT would likely establish an injury in fact and therefore have the Federal Circuit decide the merits of its appeal. Under step one of the DCS Test, JTEKT would have to establish that it operated in the same field of endeavor.[275] JTEKT likely satisfies this step. JTEKT operates in the same

267. JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217 (Fed. Cir. 2018).

268. *Id.* at 1221.

269. *See Products*, JTEKT N.A. CORP., https://jtekt-na.com/products [https://perma.cc/GPM9-55VY]; *GKN Automotive*, GKN AUTO., https://www.gknautomotive.com [https://perma.cc/PF7W-AZ6Q].

270. *See JTEKT Corp.*, 898 F.3d at 1221.

271. *See* Drive Train for a Vehicle with Connectable Secondary Axle, U.S. Patent No. 8,215,440 col. 1 ll. 19–29.

272. Brief of Appellant JTEKT Corp. at 23, JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217 (Fed. Cir. 2018) (No. 2017-1828), 2017 WL 4182728, at *15.

273. *See* Four-Wheel Drive Vehicle and Method for Controlling Four-Wheel Drive Vehicle, U.S. Patent No. 9,630,492 [hereinafter '492 Patent].

274. *See* Brief of Appellant JTEKT Corp., *supra* note 272, at 26.

275. *See supra* Part III.A.2.

field of endeavor as GKN's challenged '440 patent, specifically producing automotive drivetrain systems.[276] Next, in step two of the DCS Test, JTEKT must also establish that it has existing designs which solve similar problems with similar solutions.[277]

Under step two, JTEKT has at least one patent, the '492 patent, which solves a similar problem with a similar solution as GKN's '440 patent.[278] Specifically, the '492 patent uses twin clutches to efficiently shift between a two-wheel drive state and a four-wheel drive state.[279] However, under the DCS Test, since this is merely a patent, JTEKT must additionally establish that it has a pre-existing design or one concretely under development which incorporates the technology of the '492 patent. JTEKT likely satisfies this requirement based on testimony by one of its patent engineers, though the exact design plans were under seal to protect JTEKT's intellectual property interests.[280] Specifically, JTEKT's designs sought to efficiently shift the automotive drivetrain between a two-wheel drive state and a four-wheel drive state without the use of a differential.[281] However, instead of using side-shaft couplings like GKN's challenged '440 patent, JTEKT sought to use twin clutches.[282] Thus, JTEKT was likely solving similar problems using similar solutions with its pre-existing designs or at the least concretely developing designs. As a result, JTEKT likely meets both steps one and two of the DCS Test and sufficiently demonstrates an injury in fact to establish Article III standing before the Federal Circuit.

C. THE DCS TEST MITIGATES NEGATIVE EFFECTS OF THE PATENT QUALITY PROBLEM, BOOSTING INNOVATION FOR THE FUTURE

In addition to meeting the Article III constitutional requirements and better aligning with the Supreme Court's interpretation of standing in patent cases, the proposed DCS Test also fits in with Congress's

276. *See* Lindsay Chappell, *Despite Steady Numbers, Sector Churns*, AUTO. NEWS, June 2018, at 4, 4–5 (detailing that GKN produces "driveline halfshafts, driveshafts & AWD" and JTEKT produces "driveline systems").

277. *See supra* notes 230–36 and accompanying text.

278. *See* '492 Patent, *supra* note 276.

279. *See id.* col. 2 ll. 63–67.

280. *See* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1221 (Fed. Cir. 2018) ("'[T]he general features of JTEKT's current concepts [are] similar enough to the features of the '440 patent,' to justify filing the IPR to 'negat[e] any potential risk for JTEKT' . . . ." (second and third alterations in original)).

281. *See* '492 Patent, *supra* note 273, at col. 2 ll. 63–67.

282. *See* Drive Train for a Vehicle with Connectable Secondary Axle, U.S. Patent No. 8,215,440; '492 Patent, *supra* note 273, at col. 2 ll. 63–67.

goal of mitigating the negative effects of invalid patents.[283] The DCS Test overcomes the deficiencies of the Federal Circuit's current interpretation of what constitutes an injury in fact for patent challengers by recognizing the preclusive and injurious effect invalid patents pose to direct competitors.[284]

The Federal Circuit's current interpretation prohibits direct competitors from asserting an injury in fact unless they show they are currently engaging in an infringing activity or establish that there is a risk of infringement in a future design that is not subject to change during the design process.[285] However, if the design is even somewhat subject to change, as currently interpreted, the Federal Circuit will deny standing.[286]

The Federal Circuit's current interpretation ignores that non-infringing companies working in the same technology space and solving similar problems will inevitably face expenditures to design around an invalid patent to ensure they do not face potential treble damages and an injunction.[287] Thus, the DCS Test addresses this concern and allows a non-infringing direct competitor to assert standing when it faces direct effects of the regulation of the potentially invalid patent.

The DCS Test, while expansive, ensures that the patent challenger's injury is sufficiently particularized and concrete such that it is not simply asserting a general grievance. As Congress has recognized, competitors often have "the most relevant prior art available and incentive to seek to invalidate an allegedly defective patent."[288] By allowing competitors to challenge the validity of patents on appeal of an IPR, the Federal Circuit would help mitigate the Patent Office's quality problem that even the Patent Office itself has recognized.[289] Allowing more IPR appeals to reach the courts would help not only direct competitors but also the public at large by encouraging innovation and helping to push technology forward at an even faster pace.

283. *See supra* notes 2–6 and accompanying text (discussing Congress's intent to make it easier to invalidate illegitimate patents).

284. *See* Gen. Elec. Co. v. United Techs. Corp., 928 F.3d 1349 (Fed. Cir. 2019) (denying standing even though the patent challenger competed in the same turbofan business as the patent holder and sought to utilize a variation of its previous geared-fan engine design precluded by the challenged patent).

285. *See* JTEKT Corp. v. GKN Auto. Ltd., 898 F.3d 1217, 1221 (Fed. Cir. 2018).

286. *See id.* (denying standing because "no product [was] yet finalized" that utilized the patented design).

287. *See supra* Part III.A.1.

288. H.R. REP. NO. 107-120, at 4 (2001).

289. *See supra* notes 19–21 and accompanying text (acknowledging the Patent Office's quality problem).

CONCLUSION

The Patent Office inevitably issues invalid patents due to its limited amount of time to review applications.[290] In establishing inter partes review, Congress sought to help alleviate the negative effects of any potential invalid patents.[291] Congress recognized the injurious effect that these patents impose on direct competitors, removing knowledge that should otherwise be in the public domain, and sought to create a more efficient system to challenge these patents.[292] However, the Federal Circuit thwarts that mission by denying direct competitors standing when appealing adverse IPR decisions. What the Federal Circuit fails to recognize is that even non-infringing direct competitors suffer a concrete and particularized injury from the preclusive effect of a patent.

Under the proposed DCS Test, a patent challenger appealing an adverse IPR decision may establish an injury in fact if it both (1) operates in the same field of endeavor as the subject matter of the challenged patent, and (2) has pre-existing designs which solve similar problems with similar solutions. These two requirements recognize that a patent challenger faces a concrete and particularized injury by expending resources to avoid the patent and is the one subject to the preclusive effect of a patent despite not actively infringing the patent. Such injuries should be sufficient to establish an injury in fact and confer Article III standing on patent challengers directly competing in the technology of the challenged patent.[293] By utilizing the DCS Test, the Federal Circuit will properly adhere to Congress's desire to better allow competitors to challenge invalid patents,[294] opening up technology that should otherwise remain available for public use. Only then will the patent system truly ensure that only those who innovate and push forward science and the useful arts may obtain and keep their patents.

290. *See supra* notes 19–21 and accompanying text (noting the Patent Office's difficulties in always issuing quality, valid patents).

291. *See supra* notes 2–6 and accompanying text (identifying Congress's purpose in establishing IPR).

292. *See supra* Part I.C (discussing in greater depth Congress's motivations in establishing IPR).

293. *See supra* Part II.A (noting current Article III standing requirements and their application by the Federal Circuit in IPR appeals).

294. *See supra* Part I.C.