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What Do We Do Now? How the Elimination of the Best Mode Requirement Minimizes Adequate Disclosure and Creates a Potentially Unenforceable Fact Pattern

Lucas V. Greder

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WHAT DO WE DO NOW? HOW THE ELIMINATION OF THE BEST
MODE REQUIREMENT MINIMIZES ADEQUATE DISCLOSURE
AND CREATES A POTENTIALLY UNENFORCEABLE FACT
PATTERN

LUCAS V. GREDER[†]

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I. INTRODUCTION

In 1977, the English expressed interest in assimilating into the European Patent Convention (“EPC”).¹ In order to facilitate entry into the EPC, England sought to bring its patent system in-line with the other countries in the EPC.² Unfortunately the English hurried in enacting a new law, and overlooked the fact that many of the provisions of the EPC were based on the German patent system, which was a central claim interpretation system.³ The English, with a peripheral claim interpretation system, lacked any recourse to limit patent claims that awarded patent rights broader than the accompanying disclosure.⁴ To this day, the English still have difficulty with these so-called “free beer” claims.⁵

The recent reform enacted on September 16, 2011 fundamentally changed how the U.S. patent system addresses the disclosure requirement.⁶ The United States no longer has a means of policing patents that hide the best mode but otherwise adequately enable one skilled in the art of how to make and use the disclosed invention. Twenty years from now, America’s equivalent to England’s “free beer” claim may involve hidden best mode fact patterns unless, as this article suggests, the U.S. either strengthens its enforcement of best mode through 35 U.S.C. § 112 or inherits a central claim interpretation regime.⁷

First, before analyzing how the new law got us into this mess, it is necessary to discuss the policy behind the patent system and have an adequate understanding of each disclosure requirement and their interrelatedness under the old law.⁸ This article follows with an examination of the effects of the Leahy-Smith America Invents Act (“AIA”)⁹ of 2011.¹⁰ Next, in search of solutions, the U.K. patent system is analyzed for its response after it eliminated the best mode requirement.¹¹ Drawing on the knowledge from the United Kingdom, this article

¹ Dale L. Carlson, et. al, *Patent Linchpin for the 21st Century? – Best Mode Revisited*, 45 IDEA 267, 285 (2005).

² See Terje Gudmestad, *Patent Law of the United States and the United Kingdom: A Comparison*, 5 LOY. L.A. INT’L & COMP. L. REV. 173, 176 (1982) (stating that “The purpose of the Act is threefold: (a) it codifies much of the prior British patent law; (b) it modernizes several areas of British patent law . . . ; and (c) it unifies patent law with that of other European countries.”) (footnotes omitted).

³ See 1 R. CARL MOY, MOY’S WALKER ON PATENTS § 4.4 n.1 (4th ed. 2010).

⁴ See *infra* Part IV.

⁵ See 1 MOY, *supra* note 3, § 4.4 n.1.

⁶ See *infra* Part III.

⁷ See *infra* Part V.

⁸ See *infra* Part II.

⁹ Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284 (2011).

¹⁰ See *infra* Part III.

¹¹ See *infra* Part IV.

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argues that a stronger enforcement of 35 U.S.C. § 112 or a switch to a central claim interpretation are two legitimate ways of dealing with hidden best mode fact patterns under the AIA.¹² Finally, this article concludes that some other mechanism must step in to take the place of best mode in order to avoid granting patents that offend the underlying principles of patent law.¹³

II. BACKGROUND: OVERVIEW OF THE PATENT SYSTEM AND DISCLOSURE REQUIREMENTS

A. *Purpose of the Patent System*

The rationale behind the intellectual property provision in the United States Constitution is based on the idea of promoting “the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”¹⁴ Ever since the first patent statute was enacted in 1790, Congress and the public have wrestled with the cost-benefit analysis associated with granting a patent.¹⁵ The social costs of issuing a patent involve negative effects on competition through single-source price control¹⁶ and decreased rate of future inventive activity.¹⁷ On the other hand, patent law seeks to promote progress by ensuring that the patent right issued to protect the inventor’s invention “is commensurate with what the inventor discloses to the public,” a quid pro quo exchange of patent rights for disclosure.¹⁸ Such “adequate disclosure” encourages invention because “the expectation that patent rights will be available causes inventions to be sought after more vigorously.”¹⁹ The other social benefit most often discussed is the increased incentive to innovate.²⁰

¹² See *infra* Part V.

¹³ See *infra* Part VI.

¹⁴ U.S. CONST. art. I, § 8, cl. 8.

¹⁵ See MOY, *supra* note 3, § 1:26–42.

¹⁶ See *id.* § 1:31–33 (stating that a supplier with single-source price control will drive up price by decreasing supply); see also Alan Devlin, *The Misunderstood Function of Disclosure in Patent Law*, 23 HARV. J.L. & TECH. 401, 407 (2010) (explaining that “[d]eadweight loss, allocative inefficiency, and wealth transfer from consumers to the [patentees]” are potential consequences of the current system where only a single supplier exists).

¹⁷ See MOY, *supra* note 3, § 1:31. The efforts to discover new technology are hindered by the newly patented technology, because after discovery the technology becomes “legally unusable” and “actually decreases the incentive to invent within the controlled field.” *Id.* § 1:34.

¹⁸ Krista Stone, *Written Description After Ariad v. Eli Lilly: 35 USC § 112’s Third Wheel*, 11 J. HIGH TECH. L. 191, 222 (2010); see MOY, *supra* note 3, § 1:37.

¹⁹ MOY, *supra* note 3, § 1:38. This is important because patenting leads to follow-on innovation, which “accounts for the vast majority of technological breakthroughs.” Devlin, *supra* note 16, at 408.

²⁰ MOY, *supra* note 3, § 1:40 (stating that incentive to “invent” is different from incentive to “innovate” where innovation involves commencement of commercialization).

In general, society has determined that the benefits of awarding patents exceed the costs and therefore encourage patenting of inventions. Although the quid pro quo idea is easy to grasp, there is incentive—for example, the clear and convincing proof standard for proving invalidity²¹—for patentees to do whatever it takes to get a patent.²² This attitude undermines the policy justifications of the patent system.

B. Elements and Mechanisms of Adequate Disclosure

The patent system uses 35 U.S.C. § 112 to lay out three disclosure requirements that require inventors to disclose certain information about the invention in order to be eligible for the quid pro quo exchange.²³

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.²⁴

The three disclosure requirements include an adequate written description, an enablement, and a best mode requirement.²⁵ These three requirements work in unison to ensure that the inventor fulfills his obligations during patent prosecution.²⁶ The required disclosure in the specification works in concert with the information contained in the claims to promote the ultimate disclosure: the scope of the claimed invention.²⁷ To identify the scope of the claimed invention, it is necessary to study each disclosure requirement individually, how the three requirements interrelate, and how these requirements interact with claim interpretation.

²¹ *E.g.*, *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1570 (Fed. Cir. 1997).

²² Sivaramjani Thambisetty, *Patents as Credence Goods*, 27 OXFORD J. LEGAL STUD. 707, 714–15 (2007) (finding that revoking the patent and challenging validity gives incentive to patentee to do whatever one needed to do to get a patent).

²³ *See* 2 MOY, *supra* note 3, § 7:1.

²⁴ 35 U.S.C. § 112 (2006).

²⁵ *See generally* *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1340 (Fed. Cir. 2010) (affirming the presence of a written description requirement separate from the enablement requirement); *Bayer AG v. Schein Pharm., Inc.*, 301 F.3d 1306, 1314 (Fed. Cir. 2002) (stating that “[t]he best mode requirement is ‘separate and distinct’ from enablement . . .”) (citing *In re Gay*, 309 F.2d 769, 772 (C.C.P.A. 1962)).

²⁶ *See* 2 MOY, *supra* note 23, § 7:1.

²⁷ *See* Devlin, *supra* note 16, at 409–10.

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1. Written Description Requirement

Paragraph 1 of 35 U.S.C. § 112 states “[t]he specification shall contain a written description of the invention”²⁸ The purpose of the written description requirement is to ensure that the inventor discloses enough details of the invention so that subsequent inventors can improve and build upon the patent’s teachings and to ensure that the inventor “was in full possession” of the claimed invention on the day of filing.²⁹

As the patent system evolved and new patent statutes were introduced, the rationale for applying the written description evolved.³⁰ The written description requirement inherited a much larger role in invalidating patents after its application in *Regents of the University of California v. Eli Lilly & Co.*³¹ where it invalidated a patent for failing to meet the written description requirement. One commentator claimed that this created a “super-enablement” requirement and feared that this would limit a patent “only to those embodiments disclosed” and create rights that are narrow and easily invented around.³²

Much debate has centered on whether or not this is a separate disclosure requirement. In 2010, the Court of Appeals for the Federal Circuit (“CAFC”) issued its latest ruling on the matter confirming the existence of a separate written description requirement.³³ The court has applied written description in two contexts since its en banc ruling in *Ariad*.³⁴

²⁸ 35 U.S.C. § 112 (2011).

²⁹ See 1 DONALD S. CHISUM, CHISUM ON PATENTS § 7.04 (2011).

³⁰ See *In re Baker* 559 F.2d 588 (C.C.P.A. 1977). The written description requirement can be traced back to early Supreme Court cases where its primary purpose was public notice. See *Evans v. Eaton*, 20 U.S. (7 Wheat.) 356 (1822).

³¹ 119 F.3d 1559, 1562. Because Eli Lilly disclosed only the chemical’s function rather than its structure, the court invalidated the patent for failing to meet the written description requirement. *Id.* at 1568.

³² See Stone, *supra* note 18, at 201. Limiting patent rights “only to those embodiments disclosed” rather than to what is stated in the claims necessitates a mention of the central claim interpretation upon which this rationale is based.

³³ *Ariad Pharm., Inc. v. Eli Lilly & Co., Inc.*, 598 F.3d 1336 (Fed. Cir. 2010) (en banc). The *Ariad* case pitted Judge Lourie—defender of written description—against Judge Rader, a fierce opponent of the written description. *Id.* Ultimately, Judge Lourie’s camp won out, deciding in favor of a separate written description requirement. See also Jacob Adam Schroeder, *Written Description: Protecting the Quid Pro Quo Since 1793*, 21 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 63, 84–88 (2010).

³⁴ *Centocor Ortho Biotech, Inc. v. Abbott Labs.*, 636 F.3d 1341 (Fed. Cir. 2011) (deciding the first case since the court’s decision in *Ariad*). Despite choosing not to strictly adhere to Judge Newman’s reasoning in *Ariad*, the court still found invalidity on grounds of failure to meet the written description. The court relied primarily on the disclosure-for-monopoly rationale.

2. Enablement Requirement

Paragraph 1 of 35 U.S.C. § 112 states that the written description of the invention must be “in such full, clear, concise and exact terms as to enable any person skill in the art to which it pertains, or with which it is most nearly connected, to make and use the same”³⁵ An assessment of enablement requires an examination into whether “everything within the scope of the claim is enabled.”³⁶ This examination is required because the “level of disclosure necessary to satisfy section 112 of title 35 varies according to the scope of the claimed invention.”³⁷

The rationale behind the enablement requirement involves ensuring a disclosure of the invention sufficient to give interested persons possession of the invention.³⁸ Courts enforce the requirement that a specification “must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation.’”³⁹ In *In re Wands*, the CAFC established factors to be considered in determining whether undue experimentation is needed to practice the invention.⁴⁰

³⁵ 35 U.S.C. § 112 (2006).

³⁶ U.S. PATENT & TRADEMARK OFFICE, U.S. DEP’T COMMERCE, MPEP § 2164.08 (8th ed., rev. 8, July 2010) [hereinafter MPEP] (“The focus of the examination inquiry is whether everything within the scope of the claim is enabled. Accordingly, the first analytical step requires that the examiner determine exactly what subject matter is encompassed by the claims.”).

³⁷ *CFMT, Inc. v. Yieldup Int’l Corp.*, 349 F.3d 1333, 1338 (Fed. Cir. 2003) (“Title 35 requires only that the inventor enable one of skill in the art to make and use the full scope of the claimed invention.” (citing *Durel Corp v. Osram Sylvania Inc*, 256 F.3d 1298, 1306–07 (Fed. Cir. 2001); *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993); *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988))).

³⁸ 2 MOY, *supra* note 23, § 7.2. See also *Grant v. Raymond*, 31 U.S. 218, 219 (1832) (explaining that a patent specification and description “is necessary in order to give the public, after the privilege shall expire, the advantage for which the privilege is allowed”).

³⁹ *In re Wright*, 999 F.2d at 1561 (citing *In re Vaeck*, 947 F.2d 488, 495 (Fed. Cir. 1991); *In re Wands*, 858 F.2d 731, 736–37 (Fed. Cir. 1988); *In re Fisher*, 427 F.2d 833, 839 (C.C.P.A. 1970)). The court in *In re Wright* went on to say that “[n]othing more than objective enablement is required, and therefore it is irrelevant whether this teaching is provided through broad terminology or illustrative examples.” *Id.* (citing *In re Marzocchi*, 439 F.2d 220, 223 (C.C.P.A. 1971)).

⁴⁰ See *In re Wands*, 858 F.2d at 737. The factors include:

- (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

Id. (citing *In re Forman* 230 U.S.P.Q. 546, 547 (1986)).

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3. Best Mode Requirement

Paragraph 1 of 35 U.S.C. § 112 states that the disclosure “shall set forth the best mode contemplated by the inventor of carrying out his invention.”⁴¹ The primary purpose of this requirement is to prevent inventors from withholding trade secrets that give them a competitive advantage while simultaneously securing patent rights on a different embodiment of the invention.⁴²

In order to conduct a best mode inquiry, the definition of the invention must be derived from the scope of the claims.⁴³ Consequently, the CAFC applies a two prong test to determine whether the inventor complied with the best mode requirement.⁴⁴ The first prong is a subjective inquiry into the inventor’s state of mind at the time of filing to determine whether the inventor possessed a best mode for practicing the invention.⁴⁵ Second, an objective inquiry focused on the scope of the claimed invention and the skill level in the art is used to determine whether the written description discloses the best mode such that one reasonably skilled in the art could practice the invention.⁴⁶

In *Bayer AG v. Schein Pharmaceuticals*, the CAFC applied the modern best mode requirement.⁴⁷ The court identifies three scenarios where the scope of the disclosure fails to meet the best mode requirement: the best mode disclosure requirement only refers to the invention defined by the claims,⁴⁸ the failure to

⁴¹ 35 U.S.C. § 112 (2006).

⁴² See *In re Gay*, 309 F.2d 769, 772 (1962) (reversing the USPTO decision and siding with the inventor because there was no reason for holding that appellant withheld best mode).

⁴³ *N. Telecom Ltd. v. Samsung Elecs. Co.*, 215 F.3d 1281, 1286–87 (Fed. Cir. 2000) (citing *Engel Indus., Inc. v. Lockformer Co.*, 946 F.2d 1528, 1531 (Fed. Cir. 1991)). This is an important point because claim interpretation strategy will decide the definition of the invention upon which the best mode inquiry will take place. See *id* at 1286–87. “Once the invention has been defined by examining the claim, the finder of fact . . . can proceed to determine whether the inventor subjectively possessed a best mode of practicing the claimed invention.” *Accord Bayer AG v. Schein Pharm., Inc.*, 301 F.3d 1306, 1320 (Fed. Cir. 2002).

⁴⁴ See *N. Telecom*, 215 F.3d at 1286 (“The first inquiry is whether, at the time of filing the patent application, the inventor considered a particular mode of practicing his invention superior to all other modes. This inquiry is wholly subjective; that is, it focuses on the inventor’s state of mind at the time he filed his patent application. The second inquiry is whether the inventor’s disclosure is adequate to enable one of ordinary skill in the art to practice the best mode of the invention. This inquiry is objective and depends upon the scope of the claimed invention and the level of skill in the relevant art.”) (citation omitted); see also MPEP, *supra* note 36, § 2165.03.

⁴⁵ *N. Telecom*, 215 F.3d at 1286; see also MPEP, *supra* note 36, § 2165.03.

⁴⁶ *N. Telecom*, 215 F.3d at 1286.

⁴⁷ *Bayer AG v. Schein Pharm., Inc.*, 301 F.3d 1306, 1315 (Fed. Cir. 2002) (“Section 112 only demands disclosure of ‘the best mode contemplated by the inventor of *carrying out his invention*.’” (citing 35 U.S.C. § 112)).

⁴⁸ See *Bayer AG*, 301 F.3d at 1315; see also *In re Brebner*, 455 F.2d 1402 (C.C.P.A. 1972) (stating that best mode is limited to the invention as defined in the claims).

disclose a preferred embodiment,⁴⁹ and the failure to disclose a preference that materially affects making⁵⁰ or using⁵¹ the invention. Commentary highlights two important problems with the current enforcement of best mode.⁵² First, as stated by the Board of Patent Appeals and Interference, there is no requirement that the applicant point out which mode is the “best.”⁵³ Further, the applicant is not required to update the best mode during prosecution⁵⁴ even though the applicant is required to amend claims. Because the best mode inquiry is of the inventor’s mind at the time of filing, any best mode at the time of filing may no longer be the best mode at the time the patent issues. With no requirement to update during prosecution, enforcement of best mode is limited. This is a point often restated by opponents of the best mode requirement. Despite its limitations, the best mode requirement is an integral part of the overall disclosure requirement.

4. *Application and Interrelatedness of Disclosure Requirements and Importance of Claim Interpretation*

a. *Disclosure Requirements*

With the enactment of the AIA the best mode requirement was eliminated as a means of defense in patent infringement cases.⁵⁵ It is critical to understand the context in which a patent is invalidated under 35 U.S.C. § 282(3),⁵⁶ because invalidity is possible when only one of the § 112 requirements is missing.⁵⁷

⁴⁹ See *Bayer AG*, 301 F.3d at 1316–17; *U.S. Gypsum Co. v. Nat’l Gypsum Co.*, 74 F.3d 1209 (Fed. Cir. 1996); *Chemcast Corp. v. Arco Indus. Corp.*, 913 F.2d 923 (Fed. Cir. 1990); *N. Telecom, Inc., v. Datapoint Corp.*, 908 F.2d 931 (Fed. Cir. 1990).

⁵⁰ See *Spectra-Physics, Inc., v. Coherent, Inc.*, 827 F.2d 1524, 1537 (Fed. Cir. 1987) (stating that the failure to disclose the actual method of brazing preferred by the inventor rendered the patent claims invalid for failure to meet the best mode).

⁵¹ See *Dana Corp. v. IPC Ltd. P’ship*, 860 F.2d 415, 419–420 (Fed. Cir. 1988) (stating that the failure to disclose the fluoride treatment of valve seals had a material effect on the properties of the claimed invention and was grounds for invalidity of the patent claim for failure to disclose the best mode of carrying out the invention).

⁵² See generally Wesley D. Markham, *Is Best Mode the Worst? Dueling Arguments, Empirical Analysis, and Recommendations for Reform*, 51 IDEA 129 (2011).

⁵³ *E.g. Randomex, Inc. v. Scopus Corp.*, 849 F.2d 585, 589 (Fed. Cir. 1988) (stating that “there is no requirement in 35 U.S.C. 112 that an applicant point out which of his embodiments he considers his best mode; that the disclosure includes the best mode contemplated by the applicant is enough to satisfy the statute.”). The court used the reasoning of the Board of Patent Appeals and Interferences to decide that the statutory requirement for best mode was satisfied. *Id.*

⁵⁴ See Markham, *supra* note 52, at 138–39 (citing KIMBERLY A. MOORE ET. AL, PATENT LITIGATION AND STRATEGY 570 (West 3rd ed. 2008)).

⁵⁵ See discussion *infra* Part III.B.1.

⁵⁶ 35 U.S.C. § 282 (2011). The language of the statute, pre-AIA, states that: “The following shall be defenses in any action involving the validity of infringement of a patent and shall be

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As identified in *Bayer*, there are only three scenarios susceptible to best mode invalidity.⁵⁸ In each situation, each disclosure requirement plays a unique role. After studying these roles, it is apparent that although the disclosure requirements are interchangeable, in some instances best mode acts as the only means for invalidation in certain situations. Therefore, in order to develop a plan on how to adjudicate hidden best mode fact patterns in the future, it is important to understand how the requirements relate to each other and under what circumstances the requirements are interchangeable when used as affirmative defenses.

The establishment of a separate written description requirement allows courts to tackle a specific type of specification where there is enablement but not a written description.⁵⁹ A separate best mode requirement allows courts to address situations where a patent is valid under both written description and enablement but invalid under best mode.⁶⁰ The importance of a separate best mode requirement is explained as follows:

Although some have suggested that disclosure solely sufficient to provide “enablement” of the invention should be adequate to protect society's interests, from a practical standpoint this is not, and cannot be, the case. Best mode and enablement requirements are predicated on different policies and are designed to achieve different, albeit complementary, goals. While the enablement

pleaded: . . . (3) Invalidity of the patent or any claim in suit for failure to comply with any requirement of section 112” *Id.*

⁵⁷ “[F]or failure to comply with *any* requirement of section 112” signifies that absence of any one of the disclosure requirements may result in invalidation. *See id.* (emphasis added).

⁵⁸ *See supra* notes 47–51 and accompanying text.

⁵⁹ Mark D. Janis, *On Courts Herding Cats: Contending with the “Written Description” Requirement (And Other Unruly Patent Disclosure Doctrines)*, 2 WASH. U. J.L. & POLY 55, 66–67 (2000). Janis uses Judge’s Rich analysis from a non-precedential opinion to outline why it is important to have a separate written description requirement:

Although a specification that meets the written description requirement always satisfies the enablement requirement, the converse is not always true. The written description must “enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use” the claimed invention. A patent specification, however, may fortuitously enable those of skill in the art to make and use an invention that an applicant did not make before filing the patent application. This latter application would satisfy the enablement requirement, but would not provide a section 112, first paragraph, “written description” adequate to support claims directed toward the later-made invention.

Id. (citing *In re Hunter*, 1995 WL 36475 at *5 (citations omitted)).

⁶⁰ *See Bayer AG v. Schein Pharm., Inc.*, 301 F.3d 1306, 1320 (Fed. Cir. 2002); Janis, *supra* note 59, at 66–67.

requirement circumscribes a modicum of disclosure, that disclosure need only be sufficiently detailed to allow those skilled in the relevant art, without undue experimentation, to make and use the invention. Indeed, no working example is required, and an example based merely on hypothesized results may suffice.⁶¹

Best mode is additionally important in its capacity as a means of showing invalidity, because, as the USPTO has admitted in the MPEP, the patent examiners cannot know the best mode unless the inventors disclose it.⁶² Thus, most often the only way to discover a hidden best mode is during discovery in a litigation setting.⁶³ As such, patent applications that would be invalid based only on a failure to disclose best mode raise the possibility that invalid patents will issue and remain free from a finding of invalidity:

[E]nablement is a less-than-stringent requirement. Disclosing any mode of carrying out the invention evidences compliance with enablement, even a mode that the inventor knows to be inadequate in the marketplace. This puts any competitor seeking to enter the market upon expiration of the patent at a huge competitive disadvantage, and undermines the quid-pro-quo for the patent grant.⁶⁴

b. Claim Interpretation

Claim interpretation is a necessary part of evaluating disclosure requirements because the scope of a patent right depends upon the scope of the technological description.⁶⁵ The best mode inquiry is dependent upon the definition of the invention as outlined by the claims:⁶⁶

⁶¹ Carlson, *supra* note 1, at 272 (footnote omitted). A separate best mode requirement is essential because it requires a subjective inquiry where the other inquiries are objective. *See* Spectra-Physics v. Coherent, Inc., 827 F.2d 1524 (Fed. Cir. 1987). This demands that the specification meet two separate and different inquiries thereby creating a whole other level of scrutiny. This “other level of scrutiny” is often cited by anti-best mode proponents as a reason for getting rid of the requirement.

⁶² MPEP, *supra* note 36, § 2165.03; *see also* Markham, *supra* note 52, at 148.

⁶³ *See generally* Chemcast Corp. v. Arco Indus. Corp., 913 F.2d 923, 926–928 (Fed. Cir. 1990) (stating that the appropriate inquiry is whether the inventor disclosed the best mode contemplated by him, a determination that cannot be made solely on the basis of the prior art).

⁶⁴ Carlson, *supra* note 1, at 272.

⁶⁵ *See* 35 U.S.C. § 112 (2011) (Paragraph two states that “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”); *see also* Omega Eng’g, Inc., v. Raytek Corp., 334 F.3d 1314, 1320 (Fed. Cir. 2003) (stating that “the definiteness requirement of the Patent Act” requires

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Definition of the invention “is a legal exercise, wherein the ordinary principles of claim construction apply.” Defining the invention by analyzing the claim language is a crucial predicate to the factual portions of the best mode inquiry because it ensures that the finder of fact looks only for preferences pertaining to carrying out the claimed invention.⁶⁷

In other words, the method of claim interpretation necessarily influences the outcome of a best mode analysis.

Two competing theories are employed in the claim interpretation process: peripheral and central.⁶⁸ Each strategy utilizes different tools and resources to determine the scope of the claim with each strategy typically producing a different result.

i. Peripheral Claim Interpretation

The United States uses a peripheral claim interpretation strategy.⁶⁹ This strategy assigns a patent right based on the technological scope of the inherent, lingual definition of the language contained within the claim.⁷⁰ Essentially, each term is given its “ordinary meaning” as understood by one of ordinary skill in the art.⁷¹ The potential problem is that the final interpretation could cover all the variations that are included in “the lingual definition of the generic term, including those beyond the embodiment illustrated.”⁷² Thus, generic claim language and purposely overbroad patent claims threaten to disrupt the quid pro quo policy justification of the patent system.

The disclosure requirements of 35 U.S.C. § 112 have evolved to specifically enforce the quid pro quo exchange.⁷³ The U.S. patent system utilizes other

a specification that distinctly claims the subject matter regarded as the invention). *See generally* 1 MOY, *supra* note 3, § 4:1.

⁶⁶ *See supra* note 43 and accompanying text.

⁶⁷ *Bayer AG v. Schein Pharm., Inc.*, 301 F.3d 1306, 1320 (Fed. Cir. 2002) (citation omitted) (citing *N. Telecom Ltd. v. Samsung Elecs. Co., Ltd.*, 215 F.3d 1281, 1286–87 (Fed. Cir. 2000)).

⁶⁸ *See* 1 MOY, *supra* note 3, § 4:8.

⁶⁹ *Id.*

⁷⁰ *Id.* This strategy depends on treating each word as a linguistic unit and assigning to each a correct definition. *Id.*

⁷¹ *See id.*; Joseph Scott Miller & James A. Hilsenteger, *The Proven Key: Roles and Rules for Dictionaries at the Patent Office and the Courts*, 54 AM. U. L. REV. 829, 841 (2005) (“The default rule is, according to the Federal Circuit, a word’s ‘ordinary meaning’: ‘As a starting point, we give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art.’”).

⁷² *See* 1 MOY, *supra* note 3, § 4.8

⁷³ *Id.* § 4.1 n.8 (citing *In re Fischer*, 427 F.2d 833 (C.C.P.A. 1970)).

doctrines to lessen the effects of interpreting claims peripherally, none of which will be discussed in this article.⁷⁴

ii. *Central Claim Interpretation*

The other predominant claim interpretation strategy, central claiming, focuses on the disclosed embodiments when determining the scope of the patent right.⁷⁵ The analysis begins by separating out the technological disclosure from the background information.⁷⁶ The technological disclosure is then parsed for disclosure of specific forms of inventive embodiments and the patent right assigned covers those embodiments.⁷⁷ Thus, patent rights are limited to what is actually disclosed. This reduces the likelihood of awarding patent rights that are not in concert with the quid pro quo exchange. This system is primarily in use internationally.⁷⁸

The fundamental differences between a central claim interpretation system versus a peripheral claim interpretation system allow the former to adopt or abandon certain rules and regulations that are essential to the latter system.⁷⁹ That is, the AIA “abandoned” the best mode requirement as an infringement defense,⁸⁰ which present problems with post-grant enforcement. Without such a mechanism to keep the patentee honest, there is no way of policing post-grant enforcement of best mode: an essential element of the quid pro quo exchange. Unfortunately, this scenario is now a reality.

⁷⁴ 1 MOY, *supra* note 3, § 4.1 n.8 (citing the doctrine of equivalents and the adequate scope of disclosure as two methods normally associated with reigning in overly broad patent rights resulting from peripheral claiming). In *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17, 40–41 (1997), the Supreme Court used the doctrine of equivalents—an inquiry into how substitute elements match the function, way and result of the claim element or whether substitute elements play a role substantially different from claimed element—to decide that the infringing invention did not fall within the literal scope of the patent claim but its equivalency still implied infringement. *See also* *Royal Typewriter Co. v. Remington Rand Inc.*, 168 F.2d 691, 692 (2d Cir. 1948).

⁷⁵ *See* 1 MOY, *supra* note 3, § 4:8.

⁷⁶ *Id.*

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ *See* Thomas K. McBride, Jr., *Patent Practice in London – Local Internationalism: How Patent Law Magnifies the Relationship of the United Kingdom with Europe, the United States and the Rest of the World*, 2 LOY. U. CHI. INT’L L. REV. 31, 41–42 (2004–2005) (discussing the Epilady cases where an infringement suit was brought in several European countries including England, a peripheral claim interpretation system, and Germany, a central claiming interpretation system, had decidedly different outcomes that were based in part on the different claim interpretation systems and partly on the absence of rules and regulations in the U.K.).

⁸⁰ Leahy-Smith America Invents Act of 2011, Pub L. No. 112–29, § 15, 125 Stat. 284 (2011).

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III. PRA 2011: WHAT CHANGED? HOW WILL IT INFLUENCE THE PATENT SYSTEM GOING FORWARD?

Now that the pressure to reform the patent act has given way to the AIA,⁸¹ it is important to consider what actually changed. Furthermore, it is important to analyze how the desire to harmonize the U.S. patent system with the international patent systems will affect the public policy underpinnings of the U.S. patent system. The AIA institutes a variety of changes; this paper will focus on the AIA's elimination of the best mode requirement as an infringement defense mechanism.⁸² Before diving into an analysis of the change, it is important to consider the current state of best mode application⁸³ and the debate regarding the removal of the best mode.

It is almost impossible to describe best mode's economic impact when comparing deterrence with increased litigation costs.⁸⁴ However, contingents on both sides have arguments in their favor.

A. *Arguments For and Against the Elimination of Best Mode*

The argument in favor of keeping best mode is based on enhancing disclosure and innovation and minimizing strategic behavior by patentees.⁸⁵ Essentially, both aspects of the argument focus on keeping the patent system in line with its founding principles. The best mode prevents companies from obtaining a patent right while simultaneously failing to disclose the best mode in order to retain a trade secret.⁸⁶ Prior to the AIA, inventors who failed to disclose best mode could face a losing battle in an infringement case where the infringer used best mode as a defense to infringement.⁸⁷ In general, the current best mode doctrine encourages disclosure—a founding principle of U.S. patent law—and discourages strategic behavior by patentees by posing a continuous threat of invalidation.

⁸¹ *Id.*

⁸² *Id.*

⁸³ *See supra* notes 41–54 and accompanying text.

⁸⁴ Best mode's economic and societal impact is best explained by:

[T]he existence of the requirement has a prophylactic effect. That effect insures that most inventors will comply with the requirement; at least most of those who are properly informed of the downside risk associated with noncompliance. A focus on the limited number of times that patents have been invalidated by the CAFC for a best mode violation risks underestimating the value of this prophylactic impact.

Carlson, *supra* note 1, at 280.

⁸⁵ *See* Markham, *supra* note 52, at 145.

⁸⁶ *See supra* note 42 and accompanying text.

⁸⁷ *See* 35 U.S.C. § 282(3) (2006).

The entities arguing against best mode are made up of mainly those interested in protecting corporate interests.⁸⁸ Their argument is based on three parts. First, the best mode defense involves the state of the inventor's mind, whose proof depends on circumstantial evidence.⁸⁹ Thus, the parties contend, litigating best mode can be expensive and time consuming because it is based off the subjective state of the inventors mind at the time of filing.⁹⁰ Second, the "best mode is useless" because there is no obligation to update the best mode.⁹¹ Thus, adequate disclosure is just as likely without best mode because current doctrine provides so little incentive to disclose.⁹² Third, because best mode has no counterpart in other major patent systems, "a special hardship" is placed on foreign inventors seeking U.S. patent protection.⁹³ The authors of AIA essentially accepted these arguments and removed best mode from § 282(3).

B. *The Changes Adopted by PRA 2011*

Patent reform has been introduced in each of the past two sessions of congress—110th and 111th session—with no luck. Oddly, AIA 2011, as championed by Senators Leahy and Smith, navigated its way through political gridlock and found its way to President Obama's desk. The language within the bill makes substantial changes to several areas of the patent statute including but not limited to⁹⁴: first-to-file,⁹⁵ post-grant review proceedings,⁹⁶ preissuance submission by third parties,⁹⁷ supplemental examination,⁹⁸ and best mode.⁹⁹

⁸⁸ See Markham, *supra* note 52, at 139–41.

⁸⁹ *Id.* at 142.

⁹⁰ See *id.* See generally Donald S. Chisum, *Best Mode Concealment and Inequitable Conduct in Patent Procurement: A Nutshell, A Review of Recent Federal Circuit Cases and a Plea for Modest Reform*, 13 SANTA CLARA COMPUTER & HIGH TECH. L.J. 277, 279–80 (1997).

⁹¹ See Markham, *supra* note 52, at 143; *Transco Prods. Inc., v. Performance Contracting, Inc.*, 38 F.3d 551, 558 (Fed. Cir. 1994), (finding that the district court erred in holding that the applicant must update the best mode disclosure).

⁹² Elimination of best mode will not enhance disclosure; it may have little to no effect. See Markham, *supra* note 52, at 143. If full disclosure is the primary objective, Congress should strengthen the best mode requirement so that it improves the quality of disclosure, not eliminate it. See *id.* at 156–60.

⁹³ See *id.* at 143–44; Chisum, *supra* note 90, at 279. *But see* Markham, *supra* note 52, at 144 (stating that at least 24 countries including Japan have some form of best mode built into their patent systems).

⁹⁴ See generally Leahy-Smith America Invents Act of 2011, Pub. L. No. 112-29, 125 Stat 284 (2011); Eric E. Bensen, *Emerging Issues Analysis: Eric E. Bensen on the Patent Reform Act of 2011*, 2011 EMERGING ISSUES 5673 (2011).

⁹⁵ Leahy-Smith America Invents Act of 2011, Pub. L. No. 112-29, § 3, 125 Stat 284 (2011).

⁹⁶ *Id.* § 6.

⁹⁷ *Id.* § 8.

⁹⁸ *Id.* § 12.

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1. *Changes to 35 U.S.C. Section 282*

This article focuses on the elimination of the best mode requirement.¹⁰⁰ For a more thorough accounting of changes to 35 U.S.C. § 282, consult the bill in its entirety.¹⁰¹ As it relates to the best mode requirement, the language of § 15 of AIA states the following:

(a) In General.—Section 282 of title 35, United States Code, is amended in the second undesignated paragraph by striking paragraph (3) and inserting the following:

“(3) Invalidity of the patent or any claim in suit for failure to comply with—

“(A) any requirement of section 112, except that the failure to disclose the best mode shall not be a basis on which any claim of a patent may be canceled or held invalid or otherwise unenforceable; or

(B) any requirement of section 251.”

(b) Conforming Amendment.—Sections 119(e)(1) and 120 of title 35 United States Code, are each amended by striking “the first paragraph of section 112 of this title” and inserting “section 112(a) (other than the requirement to disclose best mode)”.

(c) Effective Date.—The amendments made by this section shall take effect upon the date of the enactment of this Act and shall apply to proceedings commenced on or after that date.¹⁰²

As stated, this provision removes best mode as an invalidity defense from § 282(3) while retaining it in § 112, paragraph 1.¹⁰³

2. *AIA Section 15’s Impact*

Because of the new law, a predictable series of events is likely to occur. First, the inventor has little incentive to disclose a best mode and will not do so, because

⁹⁹ *Id.* § 15.

¹⁰⁰ *Id.*

¹⁰¹ See Leahy-Smith America Invents Act of 2011, Pub. L. No. 112-29, 125 Stat 284 (2011).

¹⁰² See *id.* § 15.

¹⁰³ See *supra* note 102 and accompanying text.

there is no threat of invalidity for failing to do so.¹⁰⁴ Second, without best mode as a form of invalidity in litigation, it appears that there is little basis for requesting discovery directed thereto.¹⁰⁵ Therefore, there is “no practical way of ever determining whether the best mode requirement had been satisfied with respect to a particular patent.”¹⁰⁶ Problematically, this leads to patents that no longer face the threat of invalidation because they meet the written description requirement and enablement requirement but fail to disclose the best mode.¹⁰⁷ Furthermore, empirical studies have shown that best mode is typically used as an invalidity mechanism rather than a statutory bar to patentability.¹⁰⁸ Thus, retaining its use as a statutory bar appears futile.

3. *Impact of Other Provisions in the AIA*

To exacerbate the problem, the AIA contains other provisions that also relax the disclosure requirement.¹⁰⁹ With a switch to a first-to-file system it is widely believed a rush to secure priority will compromise the quality of disclosure.¹¹⁰ In the context of such a switch, it is in the best interest of the patent system to work to maintain adequate disclosure requirements so that society is not shortchanged on its part of the quid pro quo exchange. Furthermore, § 5 of the AIA creates a prior use defense that encourages companies to second guess their commercialization strategies.¹¹¹ This will likely drive the companies toward secrecy as a means to avoid commercial use as a possible infringement defense.¹¹²

¹⁰⁴ Eric E. Bensen, *Emerging Issues Analysis: Eric E. Bensen on the America Invents Act*, 2011 EMERGING ISSUES 5900 (2011).

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ See Carlson, *supra* note 1 at 272. See also *supra* note 61 and accompanying text.

¹⁰⁸ See Markham, *supra* note 52, at 150–51.

¹⁰⁹ See *supra* note 95 and accompanying text; FED. TRADE COMM’N, THE EVOLVING IP MARKETPLACE: ALIGNING PATENT NOTICE AND REMEDIES WITH COMPETITION 1 (2011) [hereinafter FTP IP MARKETPLACE] (“Invalid or overbroad patents disrupt that balance by discouraging follow-on innovation, preventing competition, and raising prices through unnecessary licensing and litigation.”).

¹¹⁰ See Jason Rantanen, *The Effects of the America Invents Act on Technological Disclosure*, PATENTLY-O (Sept. 8, 2011, 3:01 PM), <http://www.patentlyo.com/patent/2011/09/the-effects-of-the-america-invents-act-on-technological-disclosure.html>.

¹¹¹ How the creation of a prior user defense pushes toward less disclosure can be explained by the following:

The types of inventions that the prior user defense most applies to are those with the capability of being protected through secrecy. A prior user defense is less important for inventions whose workings are readily understandable once they are placed on the market because these products already represent potentially invalidating prior art; thus, this type of defense has most relevance for non-self disclosing inventions, a category that includes many processes.

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To better grasp the problem, picture the Patent Act as a filter that removes all patents unworthy of patenting. A single breach in the filter will reduce the filter's effectiveness but will not undermine the entire filtering process if the breach can be repaired.¹¹³ The AIA introduces a breach into the patent act filter via the removal of best mode from § 282. Patents that hide best mode while simultaneously securing patent rights on a separate embodiment are normally unpatentable and are collected by the filter.¹¹⁴ However, as a result of the breach in the filter, those patents are now able to pass through the filter and are patentable. Unfortunately, the filter appears unfixable under new AIA disclosure doctrine. In search of a solution, this article explores the U.K. patent system, which just so happened to abolish its best mode requirement in a similar context.¹¹⁵

IV. U.K. DISCLOSURE IN THE ABSENCE OF BEST MODE

In order to find what insights the English system might have, it is necessary to engage in a quick but detailed discussion on the background of the U.K. system, the 1977 reform, and current enforcement of disclosure requirements.

A. Background of U.K. Patent System Pre-Reform

The underlying theory of the U.K. patent system is similar to the U.S. patent system in that the state “grants the inventor an exclusive monopoly for a limited time in his new invention in return for his disclosure of the invention so that the public at large will be able to practise the invention once the patent expires.”¹¹⁶

Under the current law, inventors who develop non-self disclosing inventions are faced with a difficult choice: maintain the process as a trade secret, and run the risk of being blocked later by an inventor who obtains a patent, or file for a patent and disclose the process to the public. Both options have significant costs associated with their selection but the patent and disclose option is hardly foreclosed.

A prior user defense reweights this decision in favor of maintaining secrecy because it reduces the risk of being blocked by a later inventor. The directional effect of this change is to reduce the number of patents that are filed on secret inventions, and thus reduce the number of mandatory disclosures that accompany those patents.

Id.

¹¹² *See id.* The entry goes on to discuss how the changes to new novelty rules that change what counts as prior art may result in a rush to early disclosure in an effort to “stymie their competitors.” *Id.*

¹¹³ Repair in this context deals with finding another mechanism to act in best mode's place to filter out un-patentable inventions.

¹¹⁴ *See In Re Gay*, 309 F.2d 769, 772 (C.C.P.A. 1962).

¹¹⁵ *See infra* part IV.

¹¹⁶ BRIAN C. REID, A PRACTICAL GUIDE TO PATENT LAW 2 (2d ed. 1993).

Prior to 1977, the U.K. system was predominately concerned with addressing two fundamental issues. Is the patentee bound by good faith to disclose the best mode?¹¹⁷ How does the relationship between the breadth of the claims and the disclosure in the specification determine the scope of the patent grant?¹¹⁸ The Patents Act of 1949 required the specification to contain sufficient and fair disclosure, utility, and disclosure of the best mode.¹¹⁹ “The requirement of sufficiency under U.K. patent law essentially parallels the U.S. requirements of enablement, written description, and best mode.”¹²⁰ A “sufficient” disclosure containing all three elements in the specification would then serve as the basis for drafting and interpreting the claims.¹²¹ Because the U.K. is a peripheral claim interpretation regime,¹²² the claims serve as the “principal determinant of the scope of the monopoly.”¹²³ Claim breadth was kept in check by the U.K.’s “fair basis” doctrine, which reigned in claims by invalidating those that were not “fairly based” on the specification.¹²⁴

Patent applications arising under the 1949 U.K. Patents Act were governed by section 4(3)(b) of the Act which states: “Every complete specification . . . shall disclose the best method of performing the invention which is known to the applicant and for which he is entitled to claim protection”¹²⁵ Section 4(3)(b) is analogous to the first paragraph of 35 U.S.C. § 112 and serves a similar role in statutory patentability.¹²⁶ The U.K. implemented the best mode in

¹¹⁷ See *id.* at 52–59.

¹¹⁸ See *id.*

¹¹⁹ Patents Act, 1949, 12, 13 & 14 Geo. 6, c. 87, § 32 (U.K.).

¹²⁰ Irah H. Donner, Book Review, 27 GEO. WASH. J. INT’L L. & ECON. 565 (1993-94) (reviewing BRIAN C. REID, A PRACTICAL GUIDE TO PATENT LAW (1993)).

¹²¹ See WILLIAM CORNISH & DAVID LEWELYN, INTELLECTUAL PROPERTY: PATENTS, COPYRIGHT, TRADE MARKS AND ALLIED RIGHTS 229–30 (5th ed. 2003).

¹²² See *id.* at 167 (“What British Courts have insisted on is that the claims are there to mark out the monopolised territory If they clearly do mean one thing, arguments that they nevertheless mean something else will be rejected.”). The authors quote Lord Russell as saying that “no canon or principle which will justify one in departing from the unambiguous and grammatical meaning of a claim” *Id.* (quoting *EMI v. Lissen* (1939) 56 R.P.C. 23 at 40–41).

¹²³ *Id.*

¹²⁴ See Patents Act, 1949, § 32(1)(i).

¹²⁵ Patents Act, 1949, 12, 13 & 14 Geo. 6, c. 87, § 4(3)(b) (U.K.). The full text of section 4(3) is:

- (3) Every Complete Specification—
 - (a) shall particularly describe the invention and the method by which it is to be performed;
 - b) shall disclose the best method of performing the invention which is known to the applicant and for which he is entitled to claim protection; and
 - c) shall end with a claim or claims defining the scope of the invention claimed.

Id.

¹²⁶ See 35 U.S.C. § 112 (2011).

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infringement suits via section 32(1)(h), which was analogous to 35 U.S.C. § 282(3). Section 32(1)(h) allowed best mode to be asserted as an affirmative defense by stating that:

Subject to the provisions of this Act, a patent may, on the petition of any person interested, be revoked by the court on any of the following grounds, that is to say, . . . that the complete specification does not *sufficiently* and *fairly* describe the invention and the method by which it is to be performed, or does not disclose the *best method* of performing it which was known to the applicant for the patent and for which he was entitled to claim protection . . .

¹²⁷

This section lays out not only best mode's role as an affirmative defense and revocation tool but also highlights the "sufficiency" and "fair basis" disclosure requirements that U.K. courts often rely on to invalidate patents. The sufficient disclosure—containing utility and best mode—along with the fair basis doctrine worked together to help keep the U.K. patent system running like a well-oiled machine. Unfortunately, the wheels came off in 1977, along with the best mode and fair basis doctrines.

B. Patent Reform Act of 1977

In an effort to harmonize with other European nations, the British drastically altered the regulations governing their patent system. The 1949 Patents Act awarded patent rights when patents contained three fundamentals: a claim in the specification that defined the subject matter scope of property in the invention, a description in the specification that provided *sufficient* disclosure of that invention, and a claim that was *fairly based* on the invention.¹²⁸ In replacing the 1949 Act with the 1977 Act, the British removed best mode from the sufficiency requirement and eliminated fair basis as a U.K. disclosure requirement.¹²⁹

The 1977 Patents Act replaces the language of 32(1)(h) with a new provision, section 72(1)(c), eliminating best mode's and fair basis doctrine's use as revocation tools:

¹²⁷ Patents Act, 1949 § 32 (emphasis added). The case most often cited as an example of section 32(1)(h) is *American Cyanamid Co. v. Berk Pharmaceuticals*, in which a patent was revoked for failure to state the "best method" (used interchangeably with "best mode" in the U.K.) because the applicant disclosed the option known not to produce the best results. *Am. Cyanid Co. v. Berk Pharm.*, [1976] R.P.C. 231.

¹²⁸ David J Brennan, *Biogen Sufficiency Reconsidered*, 4 INTELL. PROP. Q. 476, 479 (2009).

¹²⁹ Patents Act, 1977, c. 37 (U.K.). The 1977 Act was based on the EPC, so removal of the best mode requirement was essentially a direct result of the desire to harmonize with other European countries.

Subject to the following provisions of this Act, the court or the comptroller may on application of any person by order revoke a patent for an invention on (but only on) any of the following grounds, that is to say . . . the specification of the patent does not disclose the invention *clearly enough and completely enough* for it to be performed by a person skilled in the art¹³⁰

This section codified a new “sufficiency” requirement which relies on a specification that discloses the invention “clearly and completely enough for it to be performed by a person skilled in the art.”¹³¹ This new “enabling disclosure” fulfills the “consideration” for the patent grant.¹³²

Also, the 1977 Patents Act chose to eliminate rather than amend section 32(i), which contained the “fair basis” doctrine, of the 1949 Act.¹³³ This eliminated any role for the “fair basis” doctrine in the U.K. patent system. Fair basis is absent from the EPC, which is why the U.K. eliminated the doctrine.

C. Post-Reform Adjudication

It turns out that the U.K. courts are dealing with a separate albeit similar problem that the U.S. courts will soon face. The U.K. courts are having trouble reconciling the loss of multiple disclosure requirements as a means of revocation in the context of their peripheral claim interpretation regime. Essentially, the 1977 act required that patent rights be “supported by” the disclosure, but the

¹³⁰ *Id.* § 72 (emphasis added). Termed the “sufficiency” clause, which had the power to serve as grounds for revocation. *See id.*

¹³¹ *Id.* §§ 14(3), 72(1)(c); *Helitune Ltd. v. Stewart Hughes Ltd.*, [1991] F.S.R. 171, 201 (Eng.) (noting that section 72(1)(c) of the 1977 Act promulgates the sufficiency doctrine from 32(1)(h) of the 1949 Act); CORNISH & LLEWELYN, *supra* note 121, at 225. The test to determine whether or not the disclosure was sufficient was: “[W]hether a man skilled in the art can . . . rectify the mistakes and supply the omissions with[out] the exercise of any inventive faculty? If he can, then the description of the specification is sufficient.” *Mentor Corp. v. Hollister Inc.* [1993] R.P.C. 7, 14 (quoting *Valensi v. British Radio Corp.* [1973] R.P.C. 337) (stating that it depends on the nature of the invention)).

¹³² CORNISH & LLEWELYN, *supra* note 121, at 225.

¹³³ Whether or not these disclosure requirements were truly disposed of is a question that one commentator thinks is worth asking. Leung argues that the Patents Act of 1977 codified the sufficiency doctrine by stating that “[t]he court . . . may . . . revoke a patent [on the ground that] the specification of the patent does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art.” Tim Leung, *Generics (UK) Ltd v. H Lundbeck A/S: In Search of Optimal Patent Protection: Biogen Insufficiency and the Chequered History of Product Claims*, 32(4) E.I.P.R. 165, 169 (2010) (footnote omitted).

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British had no mechanism with which to enforce it since fair basis and best mode were removed as grounds for invalidity.¹³⁴

As expected, in the absence of a best mode requirement, the definition of an “enabling disclosure” requirement changed. In *Molnlycke AB v. Proctor & Gamble Ltd.*, the enabling disclosure (and its satisfaction of the sufficiency requirement) was interpreted to mean that 72(1)(c) “does not set a standard whereby the man skilled in the art must be able to make all possible embodiments. But he must be able to make *an embodiment* using the information disclosed in the specification”¹³⁵ Thus, when a patentee need only disclose “his ‘next but one’ best method, whilst keeping the best method itself as a trade secret,” the patent grant (scope of the monopoly) is not at all commensurate with the disclosure.¹³⁶ As a result of the 1977 Patents Act, the U.K. had no way of policing hidden best mode fact patterns that awarded overly broad patent rights (although best mode can be argued under a fair basis / Biogen Sufficiency apparatus).

Another case that highlighted the U.K. courts struggle with the new disclosure requirement also flew in the face of U.K. patent law principles. *Genentech v. Wellcome Foundation*,¹³⁷ involved one of the first cases to address overly broad patent rights without the “fair basis” doctrine. The court held that the proper scope of claims was not a matter that could be raised after issue of the patent.¹³⁸ Without use of the “fair basis” mechanism’s ability to object to claim scope post-issuance of patent rights, there was no way to check to see if the overly broad patents rights were commensurate with the scope of the monopoly. This resulted

¹³⁴ David Brennan used a speech by Robin Jacob, from his 1993 Herchel Smith Lecture, where he said:

[T]he law of insufficiency is now being called on to cover more. The trouble is that the framers of the EPC behaved very oddly: they required the EPO and consequently via the 1977 Act, the UK Office, to refuse grant of a patent for an invention which was not, in the metaphorical language of the Treaty and Act, ‘supported by’ the disclosure. But such lack of support -- which we used to call lack of fair basis -- is not a ground of invalidity. Why it should be all right if one could get the claim past the Patent Office when it was looking other way, but not otherwise, beats me.

Brennan, *supra* note 128, at 480 (quoting Robin Jacob, The Herchel Smith Lecture 1993, [1993] E.I.P.R. 312, 314–315). This summarizes the idea of a free beer claim—no mechanism with which to regulate over broad claiming.

¹³⁵ [1992] F.S.R. 549, [1994] R.P.C. 94 (emphasis added). *See also* Genentech Inc’s (Human Growth Hormone) Patent, [1989] R.P.C. 613; *Quantel v. Spaceward Microsystems Ltd.*, [1990] R.P.C. 147.

¹³⁶ *See* REID, *supra* note 116, at 55.

¹³⁷ [1989] R.P.C. 147.

¹³⁸ CORNISH & LLEWELYN, *supra* note 121, at 230.

in a windfall for the patentee and violated a core principle of the patent system. Again, the U.K. patent system watched helplessly.

D. Resurrection of 1949 Sufficiency

At least one Judge in the House of Lords did not like how the recent line of cases did not align with U.K. patent law principles. In *Biogen Inc v. Medeva Plc*, the courts laid out how to deal with cases where the lack of support from the specification leads to overly broad patent rights.¹³⁹ The court sought to address the issue of overly broad claims not being supported by the specification, but ended up arguing for a “sufficiency” disclosure requirement to combat overly broad claiming.

Lord Hoffman stated that in his view section 72(1)(c) of the 1977 Patents Act intended to ensure that grounds for invalidity included cases where “the extent of the monopoly claimed exceeds the technical contribution to the art made by the invention as described in the specification.”¹⁴⁰ Lord Hoffman noted that under the 1949 Act, “fair basis” doctrine provided a means to invalidate these types of claims. He argued that the “fair basis” doctrine never went away and was readily applicable in *Biogen* and therefore invalidated the claims that were not supported by the specification.¹⁴¹ Lord Hoffman argued that the fair basis doctrine existed within EPC 83 and 84—which had equivalents in the Patents Act of 1977 in 14(3) and (5).¹⁴² Section 72 of the Act included the language of 14(3), but not 14(5).¹⁴³

¹³⁹ 38 B.M.L.R. 149, [1997] R.P.C. 1. *Biogen* does not address best mode, but rather it signifies the struggle that U.K. courts had with the Patents Act of 1977. *Biogen* sought a patent on an artificially created molecule of DNA that when introduced into a host cell will make antigens of the virus hepatitis B. *Id.* ¶ 9. Because *Biogen* was one of the first biotechnology patent cases adjudicated in the U.K. courts, a line of reasoning existed that the scope should be limited in order to avoid stifling innovation in an infant industry. *Id.* ¶ 75.

¹⁴⁰ *Id.* ¶ 80.

¹⁴¹ *Id.*

¹⁴² Lord Hoffman stated:

But the disappearance of "lack of fair basis" as an express ground for revocation does not in my view mean that general principle which it expressed has been abandoned. The jurisprudence of the EPO shows that it is still in full vigour and embodied in articles 83 and 84 of the EPC, of which the equivalents in the 1977 Act are section 14(3) and (5) and section 72(1)(c).

Id. ¶ 80. The 1977 Act rearranged the statute’s specification requirements—previously under their own separate heading in the 1949 Act—which are now grouped in with the section “Making of Application.” Patents Act, 1977, c. 37, § 14 (U.K.). Section 14(3) states “[t]he specification of an application shall disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art.” *Id.* Section 14(5) states “[t]he claim or claims shall—(a) define the matter for which the applicant seeks protection; (b) be clear and concise; (c) be supported by the description; and (d) relate to one invention or to a group of inventions which are so linked as to form a single inventive concept.” *Id.*

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Thus, *Biogen* held that the sufficiency doctrine of section 72(1)(c) (clearly enough and completely enough) included a “fair basis” claim analysis, and that specification sufficiency should be evaluated using both doctrines (called Biogen Sufficiency).

This case ended up being quite controversial, because the “fair basis” doctrine was itself controversial,¹⁴⁴ and critics believed that this brought U.K. law on sufficiency (disclosure) and scope of claim out of step with the European Patent Office (“EPO”).¹⁴⁵ This view is short sighted; all Lord Hoffman advocated for was the application of pseudo-central claim interpretation, but unfortunately chose to frame the argument in terms of fair basis doctrine. An analysis based on central claim interpretation would have put the United Kingdom in line with the central claim interpretation regime of the EPO. Further, Lord Hoffman was progressive in the sense that he created a mechanism for adjudicating hidden best mode fact patterns. When a hidden best mode fact pattern arises and there is no mechanism with which to strike it down, the sufficiency doctrine, which includes the fair basis doctrine, gives the United Kingdom the best chance of doing so.¹⁴⁶

In *H Lundbeck A/S v. Generics (UK) Ltd*,¹⁴⁷ the court reacted to the Biogen Sufficiency doctrine and sought to bring U.K. patent law back in line with the European patent office. The court argued that Lord Hoffman’s reasoning that a patentee’s monopoly should always be restricted to the patentee’s contribution to the art was not based on any principle in U.K. patent law.¹⁴⁸ Essentially, the court argues that sufficiency should not be used to “correct” a patent that claims a

¹⁴³ See *H Lundbeck A/S v. Generics (UK) Ltd*, [2009] UKHL 12, 15.

¹⁴⁴ Tim Leung notes:

These issues were compounded by the apparent conflation of the two quite different reasons why the fair basing test was introduced in the 1949 Act: the problem of undue claim width in a complete specification, and the issue of disconformity between a provisional and complete specification in the context of priority dates. As such, it has been argued that the introduction of fair basing, was the vehicle by which the clarity of earlier law was lost.

Leung, *supra* note 133, at 169.

¹⁴⁵ Rowan Freeland & Galya Blachman, *The Law of Sufficiency: Is Biogen Still Good Law?*, 31(9) E.I.P.R. 478, 478–483 (2009). The EPO did not allow invalidation based on the fair basis doctrine.

¹⁴⁶ Fair basis awards patent rights only to those claims that are supported in the specification; thus, no best mode, no patent right, and no protection in an infringement case. See *Biogen Inc v. Medeva Plc*, 38 B.M.L.R. 149, [1997] R.P.C. 1, ¶ 80.

¹⁴⁷ [2009] UKHL 12. The court addressed the validity of a patent awarded to Lundbeck relating to escitalopram (an anti-depressant).

¹⁴⁸ Remco E.P. De Ranitz & Otto P. Swens, *UK Patent Law Crosses the Channel*, 30 E.I.P.R. 389, 391 (2008) (noting that the Patents Act of 1977 got rid of the “fair basis” doctrine).

product and a way of making the product.¹⁴⁹ Rather, the court argues that an invention is “sufficiently enabled if the specification and common general knowledge enable the skilled person to make it.”¹⁵⁰

Lundbeck does bring the U.K. patent system more in line with the EPO in regard to sufficiency because the EPO does not recognize the fair basis doctrine.¹⁵¹ However, it is important to note that in post reform adjudication, best mode invalidation is likely to find a home in sufficiency doctrine whatever its current form.¹⁵² This is the case because pre-reform best mode was adjudicated as an element of the sufficiency doctrine.

V. ANALYSIS: HANDLING OF FUTURE “HIDDEN BEST MODE” CASES

There are fundamental differences between the U.K. and the U.S. situations. First, in the U.K., the 1977 Act eliminated the best mode disclosure requirement but left the patent system with a sufficiency doctrine that could serve much the same purpose.¹⁵³ Furthermore, although a subsequent U.K. court has distinguished *Biogen*, the Biogen Sufficiency doctrine provides an umbrella for which to argue best mode violations.¹⁵⁴ The AIA does not put in place an invalidity mechanism that is similar to the one it takes away. It could be some time before a court hears a case involving a hidden best mode fact pattern under the new law. What options do courts have when a hidden best mode fact pattern finally makes it in front of the court?¹⁵⁵

¹⁴⁹ *Id.*

¹⁵⁰ See Freeland & Blachman, *supra* note 145, at 482.

¹⁵¹ *Id.* The EPO does not have to recognize the fair basis doctrine because of its central claim interpretation regime works in place of the doctrine.

¹⁵² CORNISH & LLEWELYN, *supra* note 121, at 229. Pre-reform best mode was adjudicated as an element of the sufficiency doctrine. Thus, when a hidden best mode fact pattern arises and there is no mechanism with which to strike it down, the sufficiency doctrine that includes the fair basis doctrine gives the United Kingdom the best chance of doing so.

¹⁵³ The Patents Act of 1977 did not remove all of the tools under which a best mode case may be adjudicated as evidenced by the *Biogen* decision. See *infra* Part V.C.

¹⁵⁴ See *supra* note 152 and accompanying text.

¹⁵⁵ One solution in particular would have allowed an infringer to challenge the priority of the initial application by claiming that a missing best mode meant that the disclosure was not complete and therefore there was no priority date. Unfortunately for future infringers, the drafters of AIA thought of that first and included in the amended statute: “CONFORMING AMENDMENT.— Sections 119(e)(1) and 120 of title 35, United States Code, are each amended by striking ‘the first paragraph of section 112 of this title’ and inserting ‘section 112(a) (other than the requirement to disclose the best mode)’.” Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284, 328 (2011).

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A. *English Influence*

An analysis of the U.K. best mode enforcement landscape revealed two disparate alternatives: strict adherence to the new disclosure requirements,¹⁵⁶ or a loose statutory construction of the disclosure requirements in favor of invalidation.¹⁵⁷ It is apparent that following the former alternative, essentially following AIA as is, is not a viable option because it violates the principles upon which the U.S. patent system was founded. The latter alternative, as explained earlier, is a viable option because Lord Hoffman was really advocating for a central claim interpretation regime under the guise of a “fair basis” rationale.

B. *Move Towards a Central Claim Interpretation Regime*

Elimination of the best mode requirement as an affirmative defense creates a situation where there may be no means to invalidate a patent that generally enables but does not disclose the best mode. This problem is created, in part, by the fact that the U.S. patent system is a peripheral claim interpretation system.¹⁵⁸ By switching to a central claim interpretation system, the U.S. patent system would establish a mechanism with which to go after hidden best mode claims. Patent rights would be granted only to what is disclosed in the specification.¹⁵⁹ Thus, no disclosure of best mode means protection against infringers who practice it.

Lord Hoffman viewed central claiming as a means to make up for a weakened disclosure requirement post-1977 reform.¹⁶⁰ The adoption of the 1977 Act introduced language in section 14(5) that required the claim to be supported by the description, which drawn from the EPC was meant to resemble a central claim interpretation.¹⁶¹ Lord Hoffman articulated this stance in *Biogen* stating “that the specification must enable the invention to be performed to the full extent of the monopoly claimed.”¹⁶² If the invention discloses a principle capable of general application, the claims may be in correspondingly general terms.¹⁶³

¹⁵⁶ *H Lundbeck A/S v. Generics (UK) Ltd*, [2009] UKHL 12 (producing a result inconsistent with principles of patent system).

¹⁵⁷ *Biogen, Inc v. Medeva, Plc*, 38 B.M.L.R. 149, [1997] R.P.C. 1.

¹⁵⁸ See 1 MOY, *supra* note 3, § 4.1.

¹⁵⁹ See *Biogen*, [1997] RPC 1, ¶ 80; *Lundbeck*, [2009] UKHL 12, ¶ 47. Lord Hoffman incorporated reasoning into his *Biogen* opinion that is indicative of a central claim interpretation regime. *Id.* ¶ 80. In not particularly good form, Lord Hoffman addressed the revival of the fair basis doctrine. *Id.* This ignited a flurry of criticism and is one of the reasons that *Biogen* is so famous. See Freeland & Blachman, *supra* note 145, at 478–83.

¹⁶⁰ See *Biogen*, [1997] RPC 1, ¶ 80.

¹⁶¹ See Patents Act, 1977, c. 37, § 14(5) (U.K.).

¹⁶² See *Biogen*, [1997] RPC 1, ¶ 63.

¹⁶³ *Id.*

The CAFC instituted a similar push towards central claim interpretation in the late 1990's.¹⁶⁴ The decisions set out to encourage explicit disclosure in the specification of all embodiments so that claims would be supported and not risk invalidation.¹⁶⁵ When deciding future hidden best mode fact patterns, future courts can rely on this string of cases to provide a foundation upon which to establish a central claim interpretation regime. This will provide both a mechanism to police patents that slip through the patent act filter, as well as acting as a deterrent to future patentees to disclose the best mode or face a narrow reading of their claim.

C. Strengthen Enforcement of Section 112 Paragraph 1: Require Updating

The best mode requirement neither requires that the best mode be designated nor updated.¹⁶⁶ As the USPTO solicits comments on the new law, there is sure to be clamoring for an amendment that requires a patentee to declare the best mode and to update the best mode during prosecution.¹⁶⁷ A downside to this approach is that any update to the best mode that is “adding a specific mode of practicing the invention not described in the application as filed” is considered a new matter and is barred by § 132 of the Patent Act.¹⁶⁸ However, strengthening the role of § 112 in patentability will encourage innovation by increasing the likelihood of follow-on inventions.¹⁶⁹ The best use of a stronger § 112 would be in conjunction with the inequitable conduct doctrine.

D. Inequitable Conduct Invalidity in Place of Best Mode

The inequitable conduct doctrine alone is not enough to enforce patents that fail to disclose best mode.¹⁷⁰ *Consolidated Aluminum Corp. v. Foseco*

¹⁶⁴ David C. Radulescu, *The Federal Circuit's Narrowing of the Literal Scope of Patent Claims by Focussing on Embodiments Disclosed in the Specification*, 82 J. PAT. & TRADEMARK OFF. SOC'Y 539 (2000). Radulescu uses the discussion of four “broad claim construction” opinions to highlight what appeared to be a push by the Federal Circuit requiring patentees to broadly describe the invention in the body of the patent as well as in the claims.

¹⁶⁵ *See id.*

¹⁶⁶ *See supra* notes 53, 54, and accompanying text.

¹⁶⁷ *See* Markham, *supra* note 52, at 156. Anti-best mode proponents argue that requiring both declaration and updating would go a long way to strengthening the best mode requirement.

¹⁶⁸ *See* MPEP, *supra* note 36, § 2165.01(V).

¹⁶⁹ *See* FTC IP MARKETPLACE, *supra* note 109, at 1 (stating that adequate public notice via disclosure requirements provide future inventors with all tools necessary to “follow on.”).

¹⁷⁰ *See* Field Hybrids v. Toyota Motor Corp., No. 03-4121 ADM/JSM, 2005 U.S. Dist. LEXIS 1159, at *36 (D. Minn. Jan. 37, 2005) (finding plaintiff's patents invalid for a best mode violation even though defendant offered no evidence of specific intent to deceive).

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*International Inc.*¹⁷¹ lays out the relationship between best mode and inequitable conduct:

Because disclosure of the best mode is statutorily required, see 35 U.S.C. § 112, failure to disclose that best mode is inherently material and, we believe, reaches the minimum level of materiality necessary for a finding of inequitable conduct. On the other hand, since the failure to disclose the best mode is not excused even if unintentional, but inequitable conduct requires a ‘threshold’ level of intent, the failure to disclose the best mode will not constitute inequitable conduct in every case.¹⁷²

However, the Federal Circuit recently tightened the standard for finding inequitable conduct in *Therasense, Inc. v. Becton-Dickinson & Co.*¹⁷³ An applicant must now meet the clear and convincing evidence standard by specifically intending to deceive the USPTO.¹⁷⁴ Under the AIA, where there is no intent to deceive and no best mode requirement, the patent is likely to slip through the patent act filter. This is where a stronger § 112 comes into play. Failure to *declare or update* the best mode¹⁷⁵ would satisfy, upon proof by clear and convincing evidence, that the applicant intended to deceive the USPTO thereby establishing grounds for a finding of inequitable conduct making the patent unenforceable.

VI. CONCLUSION

Elimination of the best mode requirement sends a message that adequate disclosure really is only an ancillary purpose of the patent system; incentive to invent and commercialization are the sole purposes and adequate disclosure is

¹⁷¹ 910 F.2d 804, 808 (Fed. Cir. 1990). In order to show inequitable conduct the moving party must meet a clear and convincing evidence of a threshold degree of materiality of the nondisclosed information. *J.P. Stevens & Co. v. Lex Tex Ltd.*, 747 F.2d 1553, 1559 (Fed. Cir. 1984). The high standard reduces the doctrine’s usefulness as an alternative to best mode.

¹⁷² *Consolidated*, 910 F.2d at 808 (citations omitted). *See also* *Glaxo, Inc. v. Novopharm, Ltd.*, 52 F.3d 1043, 1049 (Fed. Cir. 1995). The court held that Novopharm did not have a case of inequitable conduct because it failed to carry its burden of proving an intent to deceive by clear and convincing evidence.

¹⁷³ 649 F.3d 1276, 1290 (2011) (en banc) (“This court now tightens the standards for finding both intent and materiality in order to redirect a doctrine that has been overused to the detriment of the public.”).

¹⁷⁴ *See id.* *See* Zhe Peng et al., *A Panacea for Inequitable Conduct Problems or Kingsdown Version 2.0? The Therasense Decision and a Look Into the Future of U.S. Patent Law Reform*, 16 VA. J.L. & TECH. 373 (2011), for a discussion on inequitable conduct before and after *Therasense*.

¹⁷⁵ *See supra* note 167 and accompanying text.

only an impediment towards achieving these goals.¹⁷⁶ Simple steps are all that is needed to bring disclosure back to the forefront of the quid pro quo exchange. Short of re-instituting best mode as an affirmative defense, the most appropriate solutions are to either shift towards a central claim interpretation regime or couple a strengthened § 112-best mode with the inequitable conduct doctrine.

¹⁷⁶ See Devlin, *supra* note 16, at 406 (arguing that society is better off with a patent system where incentive to invent and commercialization are the primary rationales and where adequate disclosure can be a hindrance in pursuit of invention and commercialization).