

**Before the
United States Patent and Trademark Office**

In re:)
Strategies for Improving Claim Clarity:)
Glossary Use in Defining Claim Terms)

COMMENTS OF GOOGLE INC.

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October 23, 2013

TABLE OF CONTENTS

I.	AMBIGUOUS CLAIMS DETER INNOVATION AND FUEL LITIGATION	3
II.	VIGOROUS ENFORCEMENT OF THE DEFINITENESS REQUIREMENT IS NEEDED TO CURB THE PROBLEM OF AMBIGUOUS SOFTWARE CLAIMS	6
III.	GLOSSARIES CAN MAKE EXAMINATION MORE EFFICIENT AND ASSIST THE PUBLIC IN UNDERSTANDING CLAIMS	7
IV.	THE PTO SHOULD EXERCISE ITS AUTHORITY TO REQUIRE THAT APPLICANTS INCLUDE A GLOSSARY	10
V.	INCENTIVIZING PARTICIPATION IN A VOLUNTARY PILOT PROGRAM	11
VI.	CONCLUSION	11

I. AMBIGUOUS CLAIMS DETER INNOVATION AND FUEL LITIGATION

Claim clarity is essential to the notice function of patents and to ensure that patents meet their Constitutionally-mandated goal of promoting progress and innovation. Google applauds the United States Patent and Trademark Office's efforts to improve the clarity of software patents and its work with the Software Partnership. We submit these comments in response to the PTO's request for comments on a proposed pilot program involving glossaries and recent White House direction that "[t]he PTO will . . . develop strategies to improve claim clarity, such as by use of glossaries in patent specifications to assist examiners in the software field."¹ Google strongly supports this initiative and urges the PTO to implement a voluntary pilot program exploring the use of glossaries in patent applications as a step toward a mandatory glossary requirement.

Clarity in claim scope is of the utmost importance to the proper functioning of the patent system because the claims set forth "all to which [the patentee] is entitled" while, at the same time, "apprising the public of what is still open to them."² Clear claim boundaries and notice of a patent's scope are "essential to promote progress" and "enable[] efficient investment in innovation."³ As the Supreme Court explained in *United Carbon*, ambiguous claims create a "zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement," effectively foreclosing the public's right to operate in the unpatented field and thereby impeding the "inventive genius of others."⁴ The White House,⁵ the Federal Trade Commission,⁶ and the Government Accountability Office⁷ have all recognized the importance of clear patent claims and how common failures of the patent system's notice function are harming innovation.

It has been widely acknowledged that software patents, in particular, are often of unclear and dubious scope.⁸ The problem that vague and ambiguous claims present for software innovators is magnified by the large number of patents, often

¹ White House, [FACT SHEET: White House Task Force on High-Tech Patent issues](#) (June 4, 2013).

² *McClain v. Ortmyer*, 141 U.S. 419, 424 (1891).

³ *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., Ltd.*, 535 U.S. 722, 730-31 (2002) (citation omitted).

⁴ *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 232 (1942).

⁵ Executive Office of the President, [Patent Assertion and U.S. Innovation](#), 7-8 (June 4, 2013) [*hereinafter* White House Report].

⁶ Federal Trade Commission, [The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition](#), 76-80 (March 2011) [*hereinafter* FTC 2011 Report].

⁷ Government Accountability Office, [Assessing Factors that Affect Patent Patent Infringement Could Help Improve Patent Quality](#), 30-31 (August 2013) [*hereinafter* GAO Report].

⁸ *See, e.g.*, White House Report at 8 (problems of very broad and vague claims "are especially acute for software patents"); FTC Report at 82-84 (discussing problem of poor notice provide by software claims); GAO Report at 28 ("claims in software-related patents are often overly broad, unclear or both").

numbering in the tens-of-thousands, that are relevant to most software and high-tech products.⁹

Certain characteristics of software patents contribute to the problem of vague claims and unclear boundaries. In contrast to the chemical industry, for instance, there is relatively little standardized terminology available in the software industry. Moreover, software patents describe and claim the use of computer systems in a wide range of commercial and non-commercial activity, from banking to education, much of which also lacks standardized terminology. As a result, patentees often need not adhere to any particular vocabulary when describing and claiming their inventions, and the public cannot refer to a commonly understood technical meaning for many claim terms. In the absence of standardized terminology, patentees may create new terms for use in patent claims. Achieving clear claim scope in such circumstances requires that they define those terms in the specification, but inclusion of precise definitions uncommon.¹⁰ And in some cases, a patentee may use a created term in the specification in a manner that intentionally leaves the meaning vague. Worse, some patentees use terms in claims that are not used in the specification, much less defined.¹¹

It is not surprising that some patentees may not define terms or may use terms in claims that appear nowhere in the specification. Such practices increase the ambiguity of claims, and unfortunately, the patent system incentivizes ambiguity by allowing patentees to stretch the reach of ambiguous claims during litigation. “By seeking broad and vague functional claims (as well as specific claims), the patentee maximizes the likelihood that the patent can be stretched to reach unforeseen competing technologies during the patent life.”¹² As one Federal Circuit judge has recognized, patentees may insert ambiguity into their claims by design, drafting them “with a degree of indefiniteness so as to leave room to later argue for

⁹ Christina Mulligan & Timothy B. Lee, *Scaling the Patent System*, 68 N.Y.U. ANN. SURV. AM. L. 289, 304-05 (2012) (noting that in order to assess infringement across the software industry, “it would require roughly 2 million patent attorneys, working full-time, to compare every firm’s products with every patent issued in a given year. At a rate of \$100 per hour, that would cost \$400 billion. For comparison, the software industry was valued at \$225.5 billion in 2010.”).

¹⁰ A patentee may act “as his own lexicographer” by defining terms in the specification, but unless the specification “clearly expresses an intent to” define a term, a court may apply a more ambiguous “plain meaning” that makes it difficult for the public to discern scope. See *Thorner v. Sony Computer Entertainment Am. LLC*, 669 F.3d 1362, 1365-66 (Fed. Cir. 2012).

¹¹ See, e.g., U.S. Patent No. 6,327,579 claim 13, which vaguely claims “a *validator* that validates...,” “a *selector* that allows the customer to select...,” and “an *execution determiner* that determines...”. None of the terms have well-accepted meanings in the field, nor are they defined in the specification. Moreover “validator,” “selector” and “determiner” are never used in the patent other than in the claims.

¹² Peter S. Menell & Michael J. Meurer, *Notice Failure and Notice Externalities*, 5 J. LEGAL ANALYSIS, 1, 33 (2013). See also Thomas Chen, *Patent Claim Construction: An Appeal for Chevron Deference*, 94 VA. L. REV. 1165, 1177-78 (2008) (noting that “Patent claims are often intentionally drafted with vague and ambiguous language in order to preserve sufficient maneuverability for future litigation.”).

a broad interpretation designed to capture later-developed competition.”¹³ Indeed, “[b]road, to the point of inherently ambiguous, claim drafting” has become a “prized talent,” as inventors seek to expand their exclusive rights as far as possible.¹⁴ Thus, patent drafters are taught that defining “the invention” or the “present invention” in a patent specification amounts to “patent profanity.”¹⁵ A leading treatise advises that “[i]t is the claim drafter’s job to have written the claims in the application to . . . cover competitive products which neither the inventor nor the attorney thought of or *could even have imagined* at the time.”¹⁶ But allowing patentees to create a cloud of uncertainty around their rights in order to challenge later-arising technology only taxes and deters the innovation of others, perverting the very purpose of the patent system.

Vague and overbroad software patents issued over the past 15 years have driven a litigation boom that harms innovation. Lawsuits brought by patent assertions entities (PAEs) have quadrupled since 2005 and now account for a majority of patent litigation.¹⁷ Most of these cases—82% by one estimate—involve software and Internet patents, which are litigated eight times more often than other types of patents.¹⁸ The ambiguity of these patents is one reason for their high litigation rate. As the White House Report notes, the strategy of many PAEs is to acquire patents whose claim boundaries are unclear and then demand licensing fees based on the cost of litigation.¹⁹

This litigation boom places a huge burden on innovative companies. According to Professors Bessen and Meurer “[a]ggregate direct costs of NPE [non-practicing entity] patent assertions grew rapidly from about \$7 billion in 2005 to \$29 billion in 2011.”²⁰ The tax on innovation from the assertion of ambiguous patents is not limited to large companies, however. Most unique defendants to troll suits are small. Companies with less than \$100M in annual revenue represent at

¹³ 3M Innovative Props. Co. v. Tredegar Corp., 725 F.3d 1315, 1334 (Fed. Cir. 2013) (Plager, J., concurring).

¹⁴ Enzo Biochem, Inc. v. Applera Corp., 605 F.3d 1347, 1348 n.2 (Fed. Cir. 2010) (Plager, J., dissenting from denial of rehearing).

¹⁵ David Pressman, PATENT IT YOURSELF 196 (15th ed. 2011); *see also id.* (“Never refer to ‘the invention.’”).

¹⁶ Robert C. Farber, FARBER ON MECHANICS OF PATENT CLAIM DRAFTING 10-3 (6th ed. 2010) (emphasis added). *See also* Robert D. Fish, STRATEGIC PATENTING 7-35 (2007) (“A natural tendency in drafting patent applications is to say, ‘the invention is...’ or ‘the gist of the invention is...’ or ‘the unique factor is...’ Avoid that language like the plague.”).

¹⁷ *See Tracking PAE Activity: A Post-script to the DOJ Review*, RPX BLOG, (January 23, 2013).

¹⁸ *See* John R. Allison et al., *Patent Litigation and the Internet*, 2012 STAN. TECH. L. REV. 3, (2012); Colleen Chien & Aashish Karkhanis, *Presentation to the Feb. 12, 2013 Software PTO Roundtable at SLS, Software Patents & Functional Claiming (Feb. 12, 2013)*.

¹⁹ White House Report at 4; GAO Report at 29 (“Unclear and overly broad patents do not provide notice about their boundaries and the uncertainty of a patent’s scope then usually needs to be resolved in court . . .”).

²⁰ James Bessen & Michael Meurer, *The Direct Costs from NPE Disputes*, 99 CORNELL L. REV. (forthcoming 2014); Boston Univ. School of Law, Law and Economics [Research Paper No. 12-34](#).

least 66% of unique defendants, and the majority of them make much less than that. At least 55% of unique defendants in PAE suits make under \$10M per year.²¹

Ambiguous-by-design claims undermine the critical notice function of claims. As a practical matter, the only notice such claims provide is that the patentee may assert exclusive rights to anything that a court might later find to fall within the broad sweep of ambiguous claim terms. In this regime, the “walls surrounding the claimed invention” are made of “quicksand,”²² and some patent holders exploit the patent system to extract payments from innovators based on the cost of litigation. The resulting litigation costs and unwarranted licensing fees paid by productive companies are then unavailable for the research and development that drive real innovation. Moreover, the risk and unpredictability of attacks based on vague patents can deter investment in innovative activities in the first instance.²³ The best defense against this perversion of the patent system is vigorous enforcement by the PTO of the patentability requirements that result in issued patents having clear claim boundaries.²⁴

II. VIGOROUS ENFORCEMENT OF THE DEFINITENESS REQUIREMENT IS NEEDED TO CURB THE PROBLEM OF AMBIGUOUS SOFTWARE CLAIMS

Section 112(b) of the Patent Act requires applicants to present a specification that concludes with “claims particularly pointing out and distinctly claiming the subject matter” which they regard as their invention.²⁵ As the Supreme Court has explained, “[t]he statutory requirement of particularity and distinctness in claims is met only when they clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise.”²⁶ The definiteness requirement ensures that claims “inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not.”²⁷

Vigorous enforcement of the definiteness requirement of Section 112 by the PTO during examination is an essential antidote to the strong incentives that applicants face to pursue ambiguous claims. It can also ensure that the lack of standard terminology affecting many software inventions cannot be exploited as an additional source of ambiguity. The definiteness requirement is the primary

²¹ Colleen V. Chien, *Startups and Patent Trolls* (2012).

²² *Enzo Biochem, Inc. v. Applera Corp.*, 605 F.3d 1347, 1349 (Plager, J., dissenting).

²³ *See, e.g.*, FTC 2001 Report at 76-80.

²⁴ *See* *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966) (“[I]t must be remembered that the primary responsibility for sifting out unpatentable material lies in the Patent Office. To await litigation is—for all practical purposes—to debilitate the patent system.”).

²⁵ 35 U.S.C. § 112(b) (2012).

²⁶ *United Carbon Co.*, 317 U.S. at 236.

²⁷ *Gen. Elec. Co.*, 304 U.S. at 369 (internal quotation marks omitted).

mechanism of the patent system for ensuring that claims have clear boundaries that provide the public with fair notice of what is protected and what is not.

A claim that can reasonably have two different meanings fails the definiteness requirement of Section 112(b) during examination because it neither “particularly” nor “distinctly” identifies the invention. Indeed, the PTO rightly requires that such claims be rejected.²⁸ During examination, the Office should reject a claim as indefinite “if the language of a claim, given its broadest reasonable interpretation, is such that a person of ordinary skill in the relevant art would read it with more than one reasonable interpretation.”²⁹ The same rule applies before the Patent Trial and Appeal Board: “[I]f a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim unpatentable under 35 U.S.C. § 112, second paragraph, as indefinite.”³⁰

Yet, in our experience, Section 112(b) is rarely enforced,³¹ and patented software claims too often fail this simple test. We urge the PTO to more actively use the important tool of the definiteness requirement to reduce ambiguity in software patent claims.

III. GLOSSARIES CAN MAKE EXAMINATION MORE EFFICIENT AND ASSIST THE PUBLIC IN UNDERSTANDING CLAIMS

In urging more vigorous enforcement of the definiteness requirement, we are cognizant of the limited time available to examiners to examine each patent application and the difficulty of fully evaluating whether all key claim terms can have more than one reasonable interpretation. Therefore, we support efforts by the PTO to identify ways in which the efficiency of examination for this issue can be improved. For those arts, like software, in which claim ambiguity is an acknowledged problem, requiring glossaries that bring together definitions of key claim terms would make examination more efficient, create a common understanding between examiners and applicants, and assist the public in understanding claims after they issue.

Glossaries would simplify and speed examination while providing clearer and more certain public notice of claim scope. During examination, a glossary of claim terms in each patent application would allow examiners to quickly see whether and how the applicant defines key claim terms, assess whether those terms are ambiguous, and determine whether a Section 112 rejection is appropriate.

²⁸ MPEP § 2173.03(I) (8th ed. Rev. 8, July 2010).

²⁹ MPEP § 2173.02(I); *see also* USPTO, Training Examples: [Supplementary Examination Guidelines for Determining Compliance with 35 U.S.C. 112 and for Treatment of Related Issues in Patent Applications, \(posted May 20, 2011\)](#).

³⁰ *Ex Parte Miyazaki*, No. 2007-3300, 2008 WL 5105055 at *5 (B.P.A.I. Nov. 19, 2008).

³¹ *See* Arti Rai, [Let's Tame Software Patent Claims: Lessons From Bioinformatics](#), WIRED, (Opinion, Nov. 20, 2012).

Referring to a glossary would also quickly alert an examiner when an applicant attempts to use terms in claims that do not appear in the specification. Glossaries would further assist examiners in prior art searching and determining whether a Section 102 or 103 rejection is required. By giving the applicant and examiner a shared understanding of the claims, patent examination would be made more efficient and compact.

Glossaries would likewise give the public access to that shared understanding of the meaning of claim terms. The resulting enhancement in claim clarity would improve public notice of the scope of the claimed invention. The public could more easily and accurately assess potential infringement and invalidity. Thus, a glossary requirement would support the Supreme Court's mandate that claims "inform the public during the life of the patent of the limits of the monopoly asserted, so that it may be known which features may be safely used or manufactured without a license and which may not."³² And the public could know that claim scope without enduring years of litigation.

The PTO should require that glossaries be included in the specification and prescribe a format that presents definitions in a way that is convenient for the examiner to review and easy for the public to understand. Preparing a glossary for a well-written application should present a minimal burden for an applicant but a significant benefit for the examiner and public. A thorough application will already set forth the meaning of key terms, or the applicant will have in mind a commonly understood meaning so that gathering those in a glossary is not burdensome. Indeed, it is uniquely within the applicant's ability to provide those definitions.

An effective glossary satisfying these criteria would:

- Contain a separate glossary section in the specification set out as a table or list.
- Define key claim terms, terms lacking a customary meaning to a person of ordinary skill in the art, and evolving nomenclature.
- Provide definitions that stand alone rather than refer to other portions of the specification or another document, although the applicant could reference the source of the definition if desired.
- Provide definitions that are clear and unambiguous. A list of synonyms,³³ a list of alternative conflicting definitions,³⁴ or a simple reordering of words (e.g., a "linking module" defined tautologically as a "module that links") should not be sufficient.

³² Gen. Elec. Co., 304 U.S. at 369 (internal quotation marks omitted).

³³ See [Discussion Regarding Strategies for Improving Claim Clarity: Glossary Use in Defining Claim Terms](#), § II.D.2.f.

³⁴ *Id.* at § II.D.2.d.

- In the case of functional claim language, provide definitions for functional terms and identify the structure associated with the recited function by reference to the specification.³⁵

Two scenarios may arise during examination of a patent application in which an applicant might seek to update the glossary section as originally filed, raising concerns about the addition of new matter to the specification. Rather than supporting an objection to a glossary requirement, both scenarios show the ability of a glossary to promote efficient examination of all Section 112 requirements to ensure that issued claims are clear and of appropriate scope.

In the first scenario, an examiner may issue an indefiniteness rejection on the basis that a claim term is ambiguous and susceptible to more than one meaning. The most appropriate response to such a rejection, if well grounded, will likely be for the applicant to amend the claims to remove the ambiguity. In order to overcome the rejection, the applicant might attempt, instead, to modify the glossary to clarify the meaning of the objectionable term. This response would be appropriate if the clarified meaning does not violate the statutory prohibition against the introduction of new matter. This might be the case if, for instance, the clarified meaning would have been understood as the intended meaning by a person of skill in the art reading the original specification. In this case, the clarification would be allowed and not considered new matter.³⁶ If the applicant cannot amend the glossary without adding new matter, a claim amendment is the better response. But in either outcome, the result of the exchange is clearer claims that give the public notice of the scope of the invention.

In the second scenario, the applicant may choose to amend pending claims to include new key terms that are not defined in the glossary. The PTO should require that the applicant update the glossary to define the new term if the definition is not new matter, perhaps because it appears elsewhere in the specification. If the addition would constitute new matter, enforcement of the glossary requirement has efficiently demonstrated that a claim incorporating the new term is likely unsupported by the specification and ambiguous.³⁷ A glossary in this scenario provides a powerful tool for supporting efficient examination that enforces the Section 112 requirements to prevent applicants from manipulating claim language to cover products that the inventor never imagined at the time of invention.

³⁵ *Id.* at § II.D.2.e (suggesting glossary requirements).

³⁶ MPEP § 2163.06 (“[A]n issue of new matter will arise if the content of the amendment is not described in the application as filed. Stated another way, information contained in any one of the specification, claims or drawings of the application as filed may be added to any other part of the application without introducing new matter.”).

³⁷ See Guidelines for Examination of Patent Applications Under the 35 U.S.C. 112, ¶ 1, “Written Description” Requirement, 66 Fed. Reg. 1099, 1105 (Jan. 5, 2001) (“New or amended claims which introduce elements or limitations which are not supported by the as-filed disclosure violate the written description requirement. While there is no *in haec verba* requirement, newly added claim limitations must be supported in the specification through express, implicit, or inherent disclosure.”) (citations omitted); see also MPEP § 2163 (I.B.) (same).

IV. THE PTO SHOULD EXERCISE ITS AUTHORITY TO REQUIRE THAT APPLICANTS INCLUDE A GLOSSARY

Google supports the PTO's initiative to launch a voluntary pilot program to explore the best mechanisms and formats for requiring that applications include glossaries. But to effectively prevent ambiguous claims and the corresponding lack of notice, the glossary requirement must be mandatory, not voluntary. The agency has encouraged applicants to "use glossaries as a best practice in patent application preparation,"³⁸ but applicants have done so in only a small fraction of applications. As long as glossaries are voluntary, their use will be limited due to the incentives to obtain ambiguous claims.

The PTO has the authority to require applicants to include glossaries or otherwise define terms used in the claims as part of the disclosure required to receive a patent. The PTO may promulgate rules that "govern the conduct of the proceedings in the Office."³⁹ Under *Star Fruits*, the Office may use that authority to require patent applicants to provide information pertinent to those proceedings—even when the information sought goes beyond that information material to patentability.⁴⁰ Claim term definitions surely fall within that power, and the agency may specify that definitions be provided in a glossary or any other form that serves the functions of efficient examination and public notice.

The unquestioned legitimacy of current Rules 1.75 and 1.105 further support the PTO's authority to promulgate a glossary requirement.⁴¹ Rule 1.75 has long required that "terms and phrases used in the claims must find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description."⁴² Rule 1.75 is grounded in the agency's duty to examine claims under Section 112. Extending the rule to require definition of the claim terms in a glossary would tread on no substantive rights and would serve the PTO and the public by organizing the claim supporting information into a format convenient for both the Office and the public.

Furthermore, under Rule 1.105, the Office need not reject a claim under Section 112 to require that claim terms be defined in this manner. Rule 1.105 allows the Office to "require" the submission "of such information as may be reasonably necessary to properly examine or treat the matter" and was found valid by the Federal Circuit when used on that basis.⁴³ A glossary requirement that

³⁸ MPEP § 2173.03; *see also id.* at § 2173.01(I) ("the greatest clarity is obtained when the specification serves as a glossary for the claim terms").

³⁹ 35 U.S.C. § 2(b)(2)(A) (2012).

⁴⁰ *Star Fruits S.N.C. v. United States*, 393 F.3d 1277, 1282, 1284 (Fed. Cir. 2005).

⁴¹ *See* 37 C.F.R. § 1.75 (2012); *id.* at § 1.105.

⁴² *Compare* 37 C.F.R. § 1.75(d)(1) (1989), *with* 37 C.F.R. § 1.75(d)(1) (2012) (same).

⁴³ 37 C.F.R. § 1.105; *Star Fruits*, 393 F.3d at 1282-83.

assists in understanding the claim terms falls well within the strictures of Rule 1.105—it is information that may reasonably be necessary for examination.

V. INCENTIVIZING PARTICIPATION IN A VOLUNTARY PILOT PROGRAM

The PTO has requested comments on how to structure a voluntary pilot program that would explore how glossaries can be used effectively. A pilot program is a good initial step toward a mandatory glossary requirement, but because it necessarily will be voluntary, incentives are needed to encourage participation.

Because glossaries will make examination more efficient, access to expedited prosecution is an appropriate incentive for the PTO to offer. There are a number of ways that the USPTO could structure this incentive, outlined below:

- First, applications that meet the requirements of the glossary pilot program could be examined in line directly after Track One applications without payment of an additional fee.
- Second, applications that meet the requirements of Track One and the glossary pilot program could be put in line with Track One applications without the payment of the usual Track One fee.
- Third, applications that meet the requirements of Track One and the glossary pilot program, including the payment of the fee, could be put in line *before* Track One.
- Fourth, the Office could make the inclusion of glossaries a requirement going forward for participation in the Track One program.

We believe that any of the above opportunities for expedited prosecution would provide incentives for applicants to engage in the PTO's glossary pilot program. In addition, the incentives above could be used alone or in conjunction with one or more of the other incentives listed.

VI. CONCLUSION

The PTO, as the gatekeeper for patent claims that, once issued, can only be invalidated based on clear and convincing evidence or if “insolubly ambiguous,”⁴⁴ must vigilantly enforce the definiteness requirement of Section 112 to ensure that patents fulfill their goal of promoting rather than deterring innovation. Requiring that applicants include glossaries in their specifications will assist the PTO in this role by making prosecution more efficient. The result will be increased claim clarity that provides better notice to the public of the metes and bounds of patent claims and decrease the likelihood that the patent can be stretched to reach unforeseen competing technologies. Google applauds the PTO for its initiatives to improve the clarity of software claims and urges the office to launch a pilot program to explore

⁴⁴ *Exxon Res. & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001).

how a glossary requirement could be implemented, with the goal of making glossaries mandatory.