From: Timothy Molino
Sent: Monday, April 15, 2013 6:02 PM
To: SoftwareRoundtable2013
Cc: Colarulli, Dana; Guetlich, Mark; Emery Simon
Subject: BSA's Comments on Software Applications and the Preparation of Patent Applications

Dear Ms Rao,

Attached is BSA – The Software Alliance's comments to the Patent Office on improving software applications and the preparation of patent applications.

Please do not hesitate to contact me if you have any questions or need additional information.

Best regards,
Tim

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April 15, 2013

The Honorable Teresa Stanek Rea
Acting Under Secretary of Commerce for Intellectual Property
and Acting Director of the United States Patent and Trademark Office
United States Patent and Trademark Office
Mail Stop Patent Board
P.O. Box 1450
Alexandria, VA 22313-1450

Via email: SoftwareRoundtable2013@uspto.gov
Attn: Seema Rao, Director Technology Center 2100

Comments submitted by BSA | The Software Alliance in response to requests for comments on the following:

1) **Partnership for Enhancement of Quality of Software-Related Patents; and**
2) **Preparation of Patent Applications**

Dear Acting Under Secretary Rea:

BSA | The Software Alliance is pleased to have the opportunity to present its views with respect to the Request for Comments for Enhancement of Quality of Software-Related Patents and the Preparation of Patent Applications.

We are also grateful to the Office for allowing BSA to speak at the Software Partnership roundtable in Palo Alto on February 12, 2013. The roundtables not only gave BSA and several of its members a chance to express our views on the PTO's initiatives, but also allowed us to hear and better understand the views of other stakeholders.

BSA is the leading advocate for the global software industry. It is an association of world-class companies that invest billions of dollars annually to create software solutions that spark the economy and improve modern life. BSA members include software and computer companies[1] that rely on intellectual property protections to make their businesses viable. Collectively, they hold hundreds of thousands of patents around the world.

BSA member companies' software is ubiquitous in our society: it is used for everything from word processing and spreadsheet calculations to designing bridges, diagnosing diseases, and managing our energy infrastructure. Most of the technologies we encounter every day — from cellular phones and antilock brakes to airplane flight controls and pacemakers — depend on software.

[1] *BSA's members include: Adobe, Apple, Autodesk, Bentley Systems, CA Technologies, CNC/Mastercam, Dell, IBM, Intel, Intuit, McAfee, Microsoft, Minitab, Oracle, PTC, Rosetta Stone, Siemens PLM, Symantec, TechSmith, and The MathWorks.*

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Investment in innovative new software reflects the industry's critical importance to the American economy. In 2008, software companies invested approximately $46.9 billion in research and development for software and computer-related services — approximately 16 percent of *total* industrial R&D expenditures nationwide.[2] More than three-quarters of firms engaged in software development report introducing new products or services compared to a national average of 7 percent for all nonmanufacturing industries.[3] The software and related services industry also contribute to the US economy by employing approximately 2 million workers in jobs that are nearly twice the national average.[4]

BSA is mindful that the US patent system traditionally has not had different rules for different industries. Its unitary structure is a significant source of strength — and one reason why the US tech industry is the most innovative in the world. As a practical matter, it is also important to recognize that different rules for different technologies become unworkable when fields of technology merge. For example, bioinformatics is an interdisciplinary field that is the merger of biotechnology and software tools. Developing different rules for software-related inventions and biotechnology inventions would create confusion when examining the patentability of bioinformatics applications.

In addition, a patent system that attempts to treat different technologies in different ways is likely to be unworkable because new technologies will not have a reliable framework from which to assess legal protection for new inventions. It would also likely create a precedent in which the law is expected to morph to address new technologies and historically this commonly results in legal frameworks that cannot keep up with the technological advances to which the law pertains. Furthermore, specific rules for software patent applications are troubling because the concept of "software-related inventions" has no clear meaning. In other words, a very large swath of patent applications pending today have a software component. This is because software is found in almost every we device we use in our daily lives. As Director Kappos stated last winter, "Patents aren't issued merely for lines of code. Patents are issued for process and apparatus, which are determined to be novel and non-obvious."[5] It would be impractical to create a special set of rules for such a large number of applications.

For most industries, especially the software industry, BSA believes that intellectual property rights are cornerstones of innovation — giving creators confidence that it is worth the risk to invest time and money in developing and commercializing new ideas. Software patents are an indispensable part of these protections. As a result, all BSA members support ongoing efforts to enhance the patent system and in particular improve the quality of software patents.

Functional Claiming in General

BSA believes it is important that patent claims are written so that they clearly define the metes and bounds of the invention. While we are supportive of the review, we are not in favor of creating rules that would limit how claims can be drafted, especially for only one industry. So long as the claims comply with the statutory requirements of 35 USC 112, an inventor should be free to draft claims in whatever manner she believes best describes her invention.

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[2] *Nat'l Sci. Bd., Science and Engineering Indicators, at 4-21 & 4-23 (2012), http://tinyurl.com/amb2uao.*
3 Nat'l Sci. Bd., supra, at 6-47.
[4] Robert W. Holleyman, BSA President and CEO, *Testimony before the United States House of Representatives Committee on Energy and Commerce, Subcommittee on Commerce, Manufacturing and Trade (Mar. 16, 2011), http://tiny.cc/p3nlow.*
[5] *"An Examination of Software Patents"*, Speech by Under Secretary of Commerce for IP & Director of the USPTO David Kappos, November 20, 2012 at The Center for American Progress.

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BSA also agrees that patentees and examiners should spend more resources analyzing applications under Section 112(f) seriously and that the statute should be applied more rigorously than it is today. With regard to the Office's questions on functional claiming, if the Office's intent is to address broad and ambiguous patents that simply claim a result instead of identifying a series of steps that produce a result, BSA supports this goal. This is because in most cases, this type of claiming would not satisfy at least one of 35 USC 102, 103, or 112. In other words, the historical reason pure functional claiming has been considered problematic is that, because pure functional claims aren't limited to a particular process or physical means, such claims will cover all ways to achieve a particular result (including those not yet invented). This leads to serious clarity and over-breadth issues and makes it impossible to design around the patent to achieve the same result. Such patents impose unwarranted business uncertainty and litigation costs on companies and innovators.

To the extent, however, that the Office is using the term "functional claiming" to encompass the use of functional claim language generally, instead of simply claiming a result, then BSA believes the Patent Office should focus on other ways to improve quality. Such rules would potentially limit an inventor from receiving complete protection for the full scope of her invention.

In our view, it is important to distinguish between these two possible meanings of functional claiming. Claims that employ functional language can be written so that they are clear, definite, and appropriately narrow. In fact, in some circumstances, functional limitations may enable a clearer, more precise and definite description of an invention. Thus, as has been recognized by the Federal Circuit, there is nothing inherently wrong with defining something by what it does rather than what it is.[6]

In contrast, BSA recognizes that simply claiming the result of a process or the function of a machine (sometimes referred to as "pure functional claiming") is clearly problematic. Allowing such a practice would grant the patent holder a monopoly over any and all ways of producing the claimed result regardless of whether the patentee ever conceived of them.

Furthermore, PTO efforts or rule changes would be troubling if they were focused on addressing functional claiming only in the context of computer-implemented methods. Although the use of functional limitations may be prevalent in technologies relating to software, similar claiming practices are also common in other fields of technology. Accordingly, we do not perceive any fundamental divergence in claims to computer-implemented inventions that would justify singling them out for special treatment, and believe that any effort to address functional claiming should apply equally to inventions in all fields of technology.

While it's clear we face challenges with respect to functional claiming in software-related patents, we do not believe that these challenges are unique to software. In our experience, the problem of functional claiming extends to hardware patents, which can often be implemented partially or entirely in software. And while it is outside the scope of BSA's experience, problems with functional claiming seem to extend well beyond software, computer, and Internet technologies to areas such as biotechnology.

If the PTO moves forward with practice changes relating to its application of Section 112(f), any new rules adopted should be technology neutral and not limited to software in their application. As discussed below, we believe these problems would be most effectively

[6] *See In re Schreiber*, 128 F.3d 1473 (Fed. Cir. 1997).

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addressed through enforcement of the enablement, written description, and definiteness requirements of Section 112.

Responses to the PTO's Request for Comments on the Partnership for Enhancement of Quality of Software-Related Patents

1. **In general, are the requirements of 35 U.S.C. 112(b) for providing corresponding structure to perform the claimed function typically being complied with by applicants and are such requirements being applied properly during examination?**

   BSA's members believe that in most instances, the requirements of 112(b) are complied with by applicants and examiners typically ensure the requirements are met during examination. There are, of course, exceptions to our typical observations. The exceptional cases are very problematic for BSA members when these patents are asserted against us.

   BSA believes that enhancing examiner training in the application of 112(b) will make for more consistent examination of pending claims.

   a. **Do supporting disclosures adequately define any structure corresponding to the claimed function?**

      We believe this occurs in most cases.

   b. **If some structure is provided, what should constitute sufficient `structural' support?**

      This can only be answered on a case-by-case basis. It depends on the invention being claimed and the level of ordinary skill needed to practice the invention. In most cases for today's software-related applications, we believe a reasonably detailed algorithm along with a general description of the type of hardware required would constitute structural support. There should be, however, no requirement for listing unique hardware unless, of course, a unique type of hardware is required to practice the invention at the time of filing.

   c. **What level of detail of algorithm should be required to meet the sufficient structure requirement?**

      Again, this depends on the invention being claimed. There should be enough detail to demonstrate that the claimed invention can be practically applied and to define the metes and bounds of the invention so that competitors can make an appropriate infringement analysis.

2. **In software-related claims that do not invoke 35 U.S.C. 112(f) but do recite functional language, what would constitute sufficient definiteness under 35 U.S.C. 112(b) in order for the claim boundaries to be clear? In particular:**

   a. **Is it necessary for the claim element to also recite structure sufficiently specific for performing the function?**

      We do not believe that a hard and fast rule requiring structure in the claim for performing the function is appropriate. For example, the function described in the

claim may be narrow in scope and the specification may be so detailed that one of ordinary skill would easily be able to determine the claim's scope.

b. If not, what structural disclosure is necessary in the specification to clearly link that structure to the recited function and to ensure that the bounds of the invention are sufficiently demarcated?

We believe that this can only be determined on a case-by-case basis. The requirement should be that there is enough structure described in the specification to fulfill Section 112, and it must be clearly linked to the recited function.

3. Should claims that recite a computer for performing certain functions or configured to perform certain functions be treated as invoking 35 U.S.C. 112(f) although the elements are not set forth in conventional means-plus-function format?

This, again, should be determined on an individual application basis. It may be that in cases of "pure" functional claiming, *i.e.*, where only the result is claimed, that this would be appropriate. However, the PTO should be very cautious about making this a rule because there is nothing limiting the rule's application.

Responses to the PTO's Request for Comments on Preparation of Patent Applications

Clarifying the Scope of Claims

1. Presenting claims in a multi-part format by way of a standardized template

While BSA believes the concept of identifying specific claim limitations seems promising, we question how this would work in practice. BSA would need additional information as to how the Office would propose handling more complicated claim limitations and sub-limitations.

2. Identifying corresponding support from the specification for each claim limitation

BSA believes such a requirement would be overly burdensome and would be ineffective. Diligent patentees would spend endless amounts of time identifying specific passages for support while patentees concerned with missing or not fully citing support would simply cite to large portions of the specification. Thus, the requirement to identify structure would not serve its purpose of helping the examiner make 112 determinations. In addition, this proposal does not take into account that originally filed claims can, by themselves, be the structure required.

Furthermore, a patentee assumes the risk of not providing corresponding support in the specification claim limitations. For example, when a patentee asserts a patent, courts are in a position to address this on a case-by-case basis.

3. Indicating whether examples in the specification are meant to be limiting

BSA does not believe this requirement would provide much benefit, because most patentees would assert that examples in the specification are not limiting. Furthermore, such a practice would be confusing for patent applicants. A patentee may determine that the examples are limiting for some claims and not for others within the same application. This is addressed by the law's requirement that an application be presented in enough

detail that one of ordinary skill in the art can understand the metes and bounds of the claims.

4. **Indicating whether the preamble is intended to be a limitation**

   This proposal could be effective if implemented in a practical way. Identifying whether the preamble is meant to be limiting would be very helpful for potential infringers, and patentees should not be allowed to wait until litigation is filed to notify the public of their intentions. With regard to the practical implementations, patentees should have the ability to change their designations throughout prosecution based on prior art.

5. **Requiring the inventor to expressly identify limitations invoking 35 USC 112 (f)**

   BSA does not believe this proposal would be effective, as it is likely most patentees would choose not to identify limitations unless the limitation specific "means plus function" language.

6. **Using textual or graphical notation systems to identify algorithms**

   BSA believes that requiring this type of nomenclature can only be applied on a case-by-case basis. In many instances, this type of information may be necessary to comply with 35 USC 112, but in other circumstances the metes and bounds of the claim may be clearly defined without such a requirement. In order to comply with section 112, a person of ordinary skill in the art must be able to determine whether something is an algorithm regardless of the words or symbols used to identify it.

Clarifying the Meaning of Claim Terms in the Specification

1. **Indicating whether terms of degree have lay or technical meaning**

   This proposal could be effective in helping to clearly identify the scope of the claims. BSA recognizes that in some instances using terms of degree is appropriate, but in many cases, using such language can only lead to further confusion.

2. **Including in the specification a glossary of potentially ambiguous terms**

   BSA believes it would be prudent for applicants to adopt this practice when appropriate.

3. **Designating, at the time of filing the application, a default dictionary**

   BSA believes this is not a practical solution. First, most technical dictionaries have multiple meanings for the same term. Thus, this would not produce the desired clarity. BSA is also concerned that patentees would list multiple dictionaries that may have different definitions for the same term. In the end, this would not aid potential infringers and courts that are, today, faced with situations of "dueling definitions."

   There are two keys to better clarity:

   I. Requiring applicants to define a term if those skilled in the art do not have a common, consistent understanding of the term's meaning; and/or

   II. Requiring applicants to use better (clearer, more specific, narrower) terms.

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BSA's Proposed Solutions

In addition to examining the issues discussed above, we believe there are some other initiatives that the Office can undertake to improve the clarity of all patents in general and specifically software-related patents.

First, the PTO should hold future discussions with industry, small inventors, and the patent bar to discuss the best ways to provide patent examiners, especially those in software units, with additional training, resources, and guidance with respect to examining applications under Section 112. We understand that this is not a simple task, which is why the topic should be explored further. There is no doubt, however, that better-trained and -equipped examiners will improve the system.

Second, future discussions should also include developing a strategy for effectively encouraging examiners to more vigorously scrutinize claims under Section 112. The patent system would benefit greatly if examiners were more rigorous in their enablement and written description analysis. This would help ensure that only claims supported by the specification are allowed, and we need to explore ways to encourage examiners to do this. While this is related to giving examiners better training and resources, it deserves its own focus. In other words, examiners have the legal tools and should be given the proper training, but they also need to feel comfortable making Section 112 challenges.

Finally, the Software Partnership should engage in a robust discussion on the best ways to aid the tech industry in developing common descriptions for software-related technologies. Common nomenclature will only help examiners, courts, and competitors do a better job of determining the full scope of the claimed invention.

And when applicants choose to use potentially ambiguous or non-standard terms in their claims, they should not only have the option, but the obligation, to act as their own lexicographers by defining such terms in the specification.

Conclusion

The issues addressed in the Requests for Comments are very important to BSA members, and BSA greatly appreciates the Office's outreach. Any questions or further communications should be directed to Tim Molino, Director, Government Relations, BSA (timothym@bsa.org).

Sincerely,

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