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Sent: Monday, February 25, 2013 12:05 PM

To: SoftwareRoundtable2013

Subject: ABA-IPL Comments Relating to Enhancement of Quality of Software-Related Patents

Please find attached comments in response to the Request for Comments and Notice of Roundtable Events for Partnership for Enhancement of Quality of Software-Related Patents, submitted on behalf of ABA Section of Intellectual Property Law Chair Joseph Potenza.

Please feel free to contact us if there are any questions.

Thank you.

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Via Electronic Mail

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The Honorable Teresa Stanek Rea

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Re: Comments regarding: *Request for Comments and Notice of
Roundtable Events for Partnership for Enhancement of Quality of
Software-Related Patents*, 78 Fed. Reg. 292 (January 3, 2013)

Dear Acting Under Secretary Rea:

I am writing on behalf of the American Bar Association Section of Intellectual Property Law (the “Section”) to provide comments in response to the request the United States Patent and Trademark Office (the “Office” or the “USPTO”) published in the Federal Register (the “Federal Register Notice”) at 78 Fed. Reg. 292 (Jan. 3, 2013), entitled “Request for Comments and Notice of Roundtable Events for Partnership for Enhancement of Quality of Software-Related Patents.”

These comments have not been approved by the ABA House of Delegates or Board of Governors, and should not be considered to be the views of the American Bar Association.

The Section is generally supportive of the USPTO’s efforts to provide a greater degree of certainty to means-plus-function claiming as it applies to computer-implemented inventions. The Section is further supportive of the USPTO’s concerns over functional claim language and the effect that such claim language has on claim construction. However, the Section does not favor a discriminate application of the law for computer-implemented inventions in comparison to other technologies.

In particular, the Section supports an approach to patent examination that allows for the continued use of “configured to” (or “programmed to,” “adapted to,” and the like) as claim terms to positively claim a device that performs or implements one or more processing or method steps. This type of claim drafting is a long-standing practice that is used to claim software products embodied in memory, programmable logic chips, circuitry, and various other computing devices that implement some form of control logic and processing. This claim practice has produced issued patents with identifiable metes and bounds. Generally speaking, it is a straightforward analysis to determine whether or not a device performs a specified series of steps that are claimed in this format. In the unusual circumstance where such language does not identify the metes and bounds of the claim, then a 112(b) rejection would be appropriate.

The Section supports a lenient approach towards Section 112(b) rejections for lack of sufficient structure in support of “means-plus-function” claims for computer-implemented inventions. In particular, the Section proposes that “means for” limitations should be interpreted as the specially-programmed computer or other programmable device disclosed in the specification (i.e., the structure) that is programmed to perform the claimed function or step. The requirement that the sufficient structure include an “algorithm,” as advanced by some recent Federal Circuit decisions, should be interpreted broadly. Concerns over the sufficiency of disclosure should be addressed by Section 112(a), not Sections 112(b) and 112(f). Thus, if the mere mention of an algorithm, formula, or process, without further detail, satisfies Section 112(a), the claim limitation should not be found indefinite for lack of sufficient corresponding structure in the specification.

DISCUSSION OF SPECIFIC QUESTIONS

Topic 1: Establishing Clear Boundaries for Claims That Use Functional Language

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?

(a) Do supporting disclosures adequately define any structure corresponding to the claimed function?

Means-plus-function claim language arises in computer-implemented patent applications most often as module-based system claims, or as “programming instruction means” limitations in Beauregard-style claims. In many of these circumstances, the corresponding “structure” may be disclosed in the specification as steps in a process or method associated with each “means” or “module” and may not be explicitly associated with a detailed algorithm. In particular, applications that incorporate “means-for” claim language, especially those originating in foreign patent offices, often fail to include specific algorithms corresponding to each claim limitation. In these cases, the corresponding structure is generally understood to be a computer programmed to perform the described function or step or program instructions that cause a computer to perform

the described function or step. In many cases, the “algorithm” is a sequence of multiple steps that constitute a claim as a whole, meaning that each individual step does not correspond with a separate detailed algorithm.

(b) *If some structure is provided, what should constitute sufficient ‘structural’ support?*

The Section believes that the “sufficient structure” requirement should be satisfied by the presence of disclosure that would allow one having skill in the art to identify the structure and understand it. The requirement should be satisfied if the enablement and written description requirements of Section 112(a) have been met. For example, mentioning a step sequence, input parameters, and calculated output or results, without additional detail, should typically be enough for one having skill in the art to program a general purpose computer to perform the function or step.

Accordingly, disclosure of the hardware components or software environments used to implement the claimed function or step should constitute sufficient structure. For example, consider the limitation “parsing means for identifying key terms.” The “structural” elements would include any computer or device programmed to perform the claimed function or step. Any discussion related to general parsing algorithms should constitute sufficient structure, as one skilled in the art would be able to program a computer with a parsing algorithm to identify certain terms. Specific parsing algorithms should not be required to support the “parsing means” limitation, just like specific dimensions or variations of a bolt arrangement are not required to support a “fastening means” limitation.

To the extent that case law mandates *some* algorithm or comparable structure for each “means” claim limitation, reference to a known software product, known algorithm, known step sequence, or the like, capable of performing the function, should be sufficient. *See, e.g., Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003) (holding that a patent found indefinite for insufficient structure may have been upheld “if the specification contained a statement suggesting that digital-to-digital conversion can be performed by software programs known to those of skill in the art.”). Accordingly, since the described steps are necessarily functional in nature, the level of detail required must necessarily be proportional to: (1) how well known the function is and (2) how complex the function is. As in other applications of the “one having ordinary skill” standard, a readily ascertainable and predicable bright-line rule will be difficult to develop and apply.

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

As noted above with regard to section (b), the Section believes that the “sufficient structure” requirement is satisfied by enough disclosure that would allow one having skill in the art to identify and understand the boundaries of the claim. To the extent that *some* algorithm is required, the identification of an exemplary algorithm or step sequence should be sufficient

without detail beyond that required for meeting the enablement and written description requirements.

Improper emphasis is placed on the term “algorithm,” and a specifically-detailed algorithm should not be required unless for enablement or written description purposes under 35 U.S.C. § 112(a). If Section 112(f) is invoked, any algorithm, step sequence, or conditional logic sufficient for one skilled in the art to perform the claimed function should constitute sufficient structure. With regard to an algorithm or step sequence, a disclosure of the input parameters, results, and the relationship between the inputs and results should constitute sufficient “structure” for one skilled in the art to craft an appropriate computer-programmable algorithm. As the Federal Circuit correctly noted, “it is the disclosure in the specification itself, not the technical form of the disclosure that counts.” *Atmel Corp.*, 198 F. 3d at 1378.

The USPTO’s own guidelines suggest that an explicit algorithm is not required for sufficient structure, and that the requirement may be satisfied implicitly from the disclosure:

“The written description does not have to explicitly describe the structure (or material or acts) corresponding to a means(or step-) plus-function limitation to particularly point out and distinctly claim the invention as required by 35 U.S.C. 112 ¶ 2. Rather, disclosure of structure corresponding to a means-plus-function limitation may be implicit in the written description if it would have been clear to those skilled in the art what structure must perform the function recited in the means-plus-function limitation.”

PTO Supplemental Examiner Guidelines on Applying 35 U.S.C. § 112 ¶ 6, 58 Fed. Reg. 443, 444 & nn. 12 & 13 (1999) (footnotes omitted). This standard was approved and adopted by the Federal Circuit. *Atmel Corp.*, 198 F. 3d at 1380 (“These guidelines would thus seem to be consistent with our holding on this point”).

The standard for “sufficient structure” for computer-implemented inventions was correctly set forth by the Federal Circuit in *In re Dossel*, 115 F. 3d 942, 946 (Fed. Cir. 1997). In *Dossel*, the Federal Circuit found that, although the specification of the patent at issue “[did] not disclose exactly what mathematical algorithm will be used to compute the end result,” the fact that it did “state that ‘known algorithms’ can be used to solve standard equations” was sufficient structure to support the “reconstruction means” claim limitation. *Id.* Although *Dossel* has not been overruled, its reasoning has been largely lost in more recent case law.

Under the “one skilled in the art” standard, the corresponding structure is sufficient if it has an “understood meaning in the art” such that one skilled in the art can identify and understand the boundaries of the claim. *See, e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359 (Fed. Cir. 2002); *In re Aoyama*, 656 F.3d 1293 (Fed. Cir. 2011) (“Sufficient structure must simply ‘permit one of ordinary skill in the art to know and understand what structure corresponds

to the means limitation' so that he may 'perceive the bounds of the invention.'") (citing *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340-41 (Fed.Cir.2008)). Just as an "attachment means" defined as including a "bolt" should include the universe of bolts known by one skilled in the art, an "encryption means" defined as an encryption algorithm should include all possible encryption algorithms known by one skilled in the art, including any suitable encryption algorithm useful in implementing the claimed function.

The objective "one skilled in the art" standard for determining when corresponding structure is "sufficient" has been improperly elevated to a higher standard for computer-implemented inventions. For example, in *Ex parte Raley, et al.*, 2011-005844 (PTAB, January 9, 2013), the Board upheld an Examiner's indefiniteness rejections due to lack of sufficient structure corresponding to "means-plus-function" limitations. However, in the claims at issue, each "function" recited appears to include sufficient structure itself. Consider, for example, the following step:

"means for generating a profile of said raw rights expression by removing, from said raw rights expression, said value for said variable field of said at least one rights expression language element, said profile including said raw rights expression including said variable field without said corresponding value,"

It is clear that the "means" in the above limitation is a specially-programmed computer or set of programming instructions capable of being executed by a general purpose computer. The Board decision in *Ex parte Raley* erred in holding that the specification of the application at issue did not recite sufficient structure. To the contrary, the limitations themselves define the algorithms (or steps) used, i.e., the profile of raw rights expression is generated by removing a value identified in a previous step from the raw rights expression such that the variable field does not have a corresponding value. See *Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427-28, (Fed.Cir.1997) (finding that the presumption of Section 112(b) is overcome "where a claim recites a function, but then goes on to elaborate sufficient structure, material or acts within the claim itself to perform entirely the recited function"). Further, the "loop" sequence depicted in Figure 4, identified to be relevant structure by the applicants, certainly appears to sufficiently describe the claimed method. It would be unreasonable to expect that every function described in a software-related application claim include a detailed algorithm in the specification for adequate "support."

The Federal Circuit's recent panel decision in *Function Media, LLC v. Google, Inc.*, (Fed. Cir. 2013) does not change this analysis. At issue in *Function Media* was the term "means for transmitting" used to perform the function of "transmitting said presentations to a selected media venue of the media venues." The court found that this limitation rendered the claim indefinite because there was insufficient structure in the specification for performing such a transmission. Although the court correctly identified that a software program was the corresponding structure, the court focused on the fact that there was no particular "transmitting" algorithm disclosed. No indication or examples were provided by the court on what "structure," i.e., methodology,

language, or algorithms, would be sufficient to provide sufficient structure. As is known, data transmission is generally based on a protocol selected for a particular network environment or system. Accordingly, this *Function Media* decision leaves open the question of whether the claim would still be indefinite if the specification merely described a well-known transmission protocol, such as HTTP, in connection with the program or web server. As discussed above, practitioners are left with little or no guidance on what level of detail should be placed in the specification for each functional step in order to satisfy the sufficient structure requirement, as applied in this particular practice area.

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?

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

It should not be necessary for the claim element to recite the structure for performing the function when Section 112(f) is not invoked, and the law should not be applied more rigorously to software-related inventions than inventions in the other arts. Just as is true in the electrical, mechanical, and chemical arts, there are numerous ways to perform various software functions. For example, a claim should be able to state “determining [a result] based on [a parameter] and [another parameter],” without claiming the specifics of the determination to comply with 112(b). This is no different than analogous limitations in other arts. For example, a claim limitation including: “producing [a result] by mixing [a compound] and [another compound]” would not be required to comply with 112(b) to include, in the claim, the specific ratios or mixing methods unless the ratios or methods are required to define over the art. Likewise, a claim specifying that a specific determination is made based on specified input parameters should not be indefinite under 112(b) and should not be required to include the specific algorithm used. *See In re Dossel*, 115 F. 3d at 946-47 (finding that, even with the enhanced standard of Section 112(f), the claim at issue was not indefinite because “a unit which receives digital data, performs complex mathematical computations and outputs the results to a display must be implemented by or on a general or special purpose computer”).

In software-related claims, many limitations use functional language to describe steps in a process. Definiteness can be achieved in these circumstances if the claim language is limiting, i.e., if the claim simply requires the recited step or steps to be performed. If the claim language is limiting, the performance of the step or a determination made with specified inputs and outputs should define the metes and bounds of the claim. In these circumstances, as will be explained below in regard to Topic 1, Issue 3, there is no concern that the claim will be construed broader than it appears on its face.

The purpose of the Section 112(b) definiteness requirement should be constrained to whether or not a person of ordinary skill in the art would understand the boundaries of what is claimed. For purposes of Section 112(b) definiteness, the claim element and specification need

only include structure to the extent that it is required for a person of ordinary skill in the art to understand the metes and bounds of the claim. Such inquiry is assisted by the broadest reasonable interpretation standard—if there is any doubt as to the scope or bounds of the invention as claimed, then the broadest reasonable interpretation should be adopted. The broadest reasonable interpretation of the claim then can be used during examination (*e.g.*, with respect to 35 U.S.C. §§ 112(a), 102, 103) to ensure that the scope of the claims is proper in light of the written description and the prior art.

(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?

Again, the requirements for a software-related claim should be no different than the requirements for a claim in an application in any of the patentable arts. Accordingly, what should be required is the level of structure necessary to meet the requirements of Section 112(a), *i.e.*, to provide a written description for, and to enable the full scope of, the invention. As noted above in subsection (a), many so-called “functional” limitations of computer-implemented claims merely describe steps in a process. As will be discussed in more detail below with regard to Topic 1, Issue 3, the fact that these functions or steps are limiting means that the claim can only be infringed if the computer or device is specially programmed or configured to perform that 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?

A computer configured to perform certain functions should not invoke Section 112(f), and a “computer for” some stated function should only invoke Section 112(f) in circumstances where analogous claims would invoke the provision in other arts. The law is clear that the rules of claim construction associated with Section 112(f) presumptively do not apply to claim limitations that do not include the terms “means for” or “step for.” *See, e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359 (Fed. Cir. 2002); *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1373 (Fed. Cir. 2003) (holding that the term “interface circuit” recites sufficient structure to maintain the presumption that Section 112(f) does not apply unless the term “means” is utilized); *Massachusetts Inst. of Tech. & Electronics For Imaging, Inc. v. Abacus Software*, 462 F.3d 1344, 1353 (Fed. Cir. 2006); *Inventio AG v. ThyssenKrupp Elevator Americas Corp.*, 649 F.3d 1350, 1360 (Fed. Cir. 2011) (declining to invoke Section 112(f) for a functional claim element performed by a “computing unit,” holding that claim drafter’s “decision to avoid the term ‘means’ raises a strong presumption” that the claim term “connotes sufficiently definite structure”). This presumption should not be disregarded solely based on the type of subject matter claimed, as this proposal appears to suggest, because the presumption is only overcome in instances where the claim “fails to recite sufficiently definite structure.” *See CCS Fitness*, 288 F.3d at 1369 (citing *Watts v. XL Systems, Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)).

The concerns regarding means-plus-function limitations do not apply outside of the scope of Section 112(f). The primary concern that influences courts' interpretations of the means-plus-function doctrine in the software context is that *any* computer merely *capable* of performing a recited function could meet a claim limitation. For example, in *Aristocrat Technologies Australia Pty. Ltd.*, the Federal Circuit noted that:

“Because general purpose computers can be programmed to perform very different tasks in very different ways, simply disclosing a computer as the structure designated to perform a particular function does not limit the scope of the claim to ‘the corresponding structure, material, or acts’ that perform the function, as required by section 112 paragraph 6.”

521 F.3d at 1333. Thus, the primary concern with functional language is that the claims will not be specifically limited to the recited functions. However, outside of the application of Section 112(f), there is no concern that a recited function does not specifically limit the claim. During prosecution, practitioners often insert “configured to” (or “programmed to,” “adapted to,” and the like) before a functional claim element to specifically denote that the function or step is indeed limiting.

Further disclosure beyond that required by Section 112(a) to describe and enable the claimed invention across the full scope of the claim should not be required for steps or functions that could be programmed by one having ordinary skill in the art. A claim including a “computer configured to” perform a function can be infringed only if a computer is specifically programmed or otherwise configured to perform that function. This can be contrasted with means-plus-function claiming where reciting a “means” limits the claim to the corresponding structure, material, or acts that *can* perform the function.

Claims directed to a computer configured to perform certain functions are computer-implemented method claims with a centralized perspective for the method steps. These functions should be analyzed as though they were method claims, just as the Patent Office does for subject matter questions. As such, the only requirement is that the specification describes the function in sufficient detail to enable one of ordinary skill to implement the process.

Recent commentators have argued that, by automatically applying Section 112(f) to software-related claims, many of the ills related to software-related patents will be solved. Lemley, Mark A., *Software Patents and the Return of Functional Claiming*, Stanford Public Law Working Paper, No. 2117302 (July 25, 2012), *available at SSRN*: <http://ssrn.com/abstract=2117302>. Such an approach is not supported by current precedent and would introduce differing standards for the invocation of Section 112(f) based upon an arbitrary class of devices (e.g., “computers”). Furthermore, it is not possible to clearly define the scope of such an arbitrary class of devices. For example, it is unclear whether the terms “computer” or “software” would encompass programmable logic chips, circuitry, or other devices having functions defined or designed using some sort of programming language (e.g., C, assembly,

VHDL) but that are, by their nature, specifically programmed and incapable of being re-programmed.

Further, this proposal places too much emphasis on the format of the claim and would therefore spawn creative claim drafting techniques that would have to be individually tested by the courts and the Board. *See, e.g., CyberSource Corp. v. Retail Decisions, Inc.*, 654 F. 3d 1366, 1374 (Fed. Cir. 2011) (suggesting, in the context of a subject matter eligibility determination, that it is important to “look to the underlying invention” rather than the preamble); MPEP § 2106.1 (warning against results that “exalt form over substance” in the Section 101 context). From a policy perspective, calling into question a long-standing method of claim drafting is likely to result in a higher degree of uncertainty for patent applicants and litigants alike.

* * * * *

The Section disfavors any requirement that a detailed algorithm must be included in the specification to constitute “sufficient structure” for support of a step or function in a claim in a software-related application.

The Section believes that a claim meets the definiteness requirement under 35 U.S.C. § 112(b) so long as a person of ordinary skill in the art would understand the boundaries of what is claimed.

The Section disfavors the imposition of differing standards for defining sufficient definiteness under 35 U.S.C. § 112(b) based solely on whether or not a claim is directed towards any specific type of claim (e.g., “software-related claims”).

The Section favors that, during examination of a patent application, Examiners interpret the claims so as to give them their broadest reasonable interpretation in light of the specification in which they appear.

The Section disfavors either automatically or presumptively treating claims that recite a computer for performing certain functions or configured to perform certain functions as invoking Section 112(f) unless those claims include “means for” or “step for” terminology.

The Section disfavors the imposition of differing standards for the invocation of Section 112(f) based solely on whether or not a claim is directed towards an arbitrary device or ill-defined class of devices (e.g., a “computer”).

Topic 2: Future Discussion Topics for the Software Partnership

The Section favors adopting one or more of the following proposed topics for upcoming Software Partnership meetings:

1. Improvement of determinations of non-obviousness of software inventions, as the nature of software provides Examiners with the ability to assert broadly stated motivations for combining references.
2. Improvement of software-related prior art resources for Examiners beyond patents and published patent applications.
3. Improvement of examinations of conditional claim language, i.e., when “if ... then” logic is used, does the claim require testing that condition without regard to the result?
4. Improvement and clarity of subject matter eligibility of software and computer-implemented inventions under Section 101.
5. Improvement of the determination of the broadest reasonable construction of software inventions (which is possibly related to topic 3, listed above).

If you have any questions on our comments or would wish for us to further explain any of our comments, please feel free to contact me. Either I or another member of the leadership of the Section will respond to any inquiry.

Very truly yours,



Joseph M. Potenza
Section Chair
American Bar Association
Section of Intellectual Property Law