Are My Claims Definite Enough? Functional Claiming & Inconsistent Guidance from the Courts

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"If you have seized a lot, you have not seized; if you have seized a little, you have seized." (Ancient Talmudic axiom)

The issue of indefiniteness within a patent, e.g., claims that provide "unreasonable advantages to the patentee and disadvantages to others arising from uncertainty as to their respective rights"¹ is of concern to the United States Patent and Trademark Office (USTPO), the courts, and a number of interest groups, as indicated most recently in the attention given leading up to the Supreme Court case and it's recent decision in *Biosig Instruments, Inc. v. Nautilus, Inc.*²

Functional claiming is a distinct category of indefiniteness, in some examples, statutorily distinct. Many issues associated with functional claiming are of particular interest to the hi-tech and software fields, where functional claiming has become common if not rampant.³ Like concerns with indefiniteness in general, current efforts to constrain functional claiming aim to prevent patentees, and particularly bad acting patentees, from staking out too large a claim in light of their disclosure.

I. Patent Reform

On June 4th 2013 the United States Executive Branch released a fact sheet from the White House Task Force on High-Tech Patent Issues.⁴ This and other recent efforts in patent reform⁵ are ostensibly targeted at reducing the power of non-practicing or patent assertion entities (NPEs, PAEs, trolls etc.) to use aggressive litigation tactics in the extortion of licensing fees, among other unscrupulous acts.⁶ Of the 12 legislative recommendations and executive actions from the Task force, one included the tightening of functional claiming and improvement of claim clarity.⁷

In general, "patent applicants face powerful incentives to inject ambiguity into their claims."⁸ Many feel that NPEs often take advantage of this ambiguity and the "uncertainty about the scope …of patent claims, especially in software related patents because…it has been difficult to separate the function of the software from the means by which the function is accomplished."⁹

Cleaning up functional claiming however is not only an anti-troll policy. It's also good for the bottom line of many hi-tech firms. For example, the general lack of clarity in patents may force companies in the software and hi-tech sectors to mass large arsenals of otherwise irrelevant patents as a defensive strategy (e.g., for a mutually assured destruction defense¹⁰) against their competitors and the general unknown.¹¹ Removing some of the indefiniteness that is in inherent in many instances of functional claiming will also improve the ability of the relevant parties to better transact with theirs and others' patent portfolios.

Tightening up functional claiming may arguably also be important for the promotion of innovation through patenting: "[W]hen patents provide clear notice of their boundaries . . . parties [are able] to contract efficiently, with confidence as to the technology rights that are conveyed, facilitating both collaboration among firms with complementary expertise and competition among inventions in technology markets."¹²

"This clarity is essential to promote progress, because it enables efficient investment in innovation. A patent holder should know what he owns, and the public should know what he does not. For this reason, the patent laws require inventors to describe their work in "full, clear, concise, and exact terms."¹³

Whereas "a zone of uncertainty which enterprise and experimentation may enter only at the risk of infringement claims would discourage invention only a little less than unequivocal foreclosure of the field."¹⁴

However, arguments for exactness in claiming should be tempered by the reality that not only is such a goal likely nearly impossible, it's also impractical.¹⁵ And, the Supreme Court already allows and justifies

uncertainty in the scope of patent protection, for example in the application of the doctrine of equivalents,¹⁶ arguing that some uncertainty promotes innovation.

The language in the patent claims may not capture every nuance of the invention or describe with complete precision the range of its novelty. If patents were always interpreted by their literal terms, their value would be greatly diminished. ...For this reason, the clearest rule of patent interpretation, literalism, may conserve judicial resources but is not necessarily the most efficient rule. ...It is true that the doctrine of equivalents renders the scope of patents less certain. It may be difficult to determine what is, or is not, an equivalent to a particular element of an invention. If competitors cannot be certain about a patent's extent, they may be deterred from engaging in legitimate manufactures outside its limits, or they may invest by mistake in competing products that the patent secures. In addition the uncertainty may lead to wasteful litigation between competitors, suits that a rule of literalism might avoid. These concerns with the doctrine of equivalents, however, are not new. Each time the Court has considered the doctrine, it has affirmed the doctrine over dissents that urged a more certain rule. ¹⁷

Even the recent Supreme Court *Nautilus* decision, which attempts to clarify the standard for definiteness, still allows for some level of uncertainty in the claim language:

A patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, *with reasonable certainty*, those skilled in the art about the scope of the invention. . . . The standard we adopt accords with opinions of this Court stating that the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter. (Emphasis added)¹⁸

II. Indefiniteness

The quid pro quo of the patent bargain requires that the patent claim not be indefinite: "[t]he limits of a patent must be known for the protection of the patentee, the encouragement of the inventive genius of others and the assurance that the subject of the patent will be dedicated ultimately to the public."¹⁹ "[T]he public [cannot be] deprived of rights supposed to belong to it, without being clearly told what it is that limits these rights."²⁰

In other words: "Indefiniteness is objectionable because the patent does not disclose to the public how the discovery, if there is one, can be made useful and how its infringement may be avoided." ²¹

Indefiniteness typically results from instances where the scope of the claimed invention is unclear: "Because claims delineate the patentee's right to exclude, the patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, i.e., what subject matter is covered by the exclusive rights of the patent."²²

Indefiniteness may also be an outcome of increased costs of claiming.²³ In balancing between specificity and the possibility that a broadly written claim could be used in lieu of multiple narrow claims, many patentees may choose to claim broadly and save the excess claim fees.

As per the US Code, patents must include a "specification [that] shall contain a written description of the invention ... 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..."²⁴

To this end, a definiteness requirement has been read into 35 USC § 112: "that the patentee describe his invention with sufficient definiteness to enable others to discern the boundaries beyond which experimentation and invention are undertaken at the risk of infringement."²⁵ A claim that does not comply with this requirement of § 112, ¶ 2, (or post Leahy-Smith America Invents Act (AIA)²⁶, § 112(b)), is indefinite.²⁷

The United States Patent and Trademark Office (USPTO, PTO) arguably deals with the definiteness issue during patent prosecution differently than the courts might post issuance:²⁸ "[D]uring prosecution before the USPTO, a higher standard of clarity is required because Appellants still have the opportunity to amend the claims."²⁹

In discussing the difference between the USTPO standard of review for indefiniteness and the Federal Circuit's standard, a recent Federal Circuit Panel reiterated this distinction, noting that the basis for such a distinction lies in fact that "indefiniteness rejections by the USPTO arise in a different posture from that of indefiniteness challenges to an issued patent."³⁰

Whereas the standard at the PTO relates to whether a person skilled in the art would be reasonable certain of the scope³¹(The primary inquiry is whether the language leaves room for ambiguity or whether the boundaries are clear and precise.³²), post grant, when the patent already carries with it a presumption of validity,³³ the Federal Circuit has ruled that claims are indefinite —a question of law³⁴—"only if reasonable efforts at claim construction prove futile, [as] we accord respect to the statutory presumption of patent validity."³⁵

Note that the recent Nautilus decision may impact the perceived differences in the standard of indefiniteness: Justice Ginsburg in a note, opines: the "presumption of validity does not alter the degree of clarity that 12, 4 demands from patent applicants; to the contrary, it incorporates that definiteness requirement by reference.³⁶

Also in that ruling, the Supreme Court outlined their own view of definiteness. The *Nautilus* decision lays out a multi-prong approach in light of their precedential decisions:

It "cannot be sufficient that a court can ascribe some meaning to a patent's claims. To tolerate imprecision just short of that rendering a claim "insolubly ambiguous" would diminish the definiteness requirement's public-notice function and foster the innovation-discouraging "zone of uncertainty," against which this Court has warned."³⁷

- 1. "First, definiteness is to be evaluated from the perspective of someone skilled in the relevant art."³⁸
- 2. "Second, in assessing definiteness, claims are to be read in light of the patent's specification and prosecution history."³⁹
- 3. "Third, definiteness is measured from the viewpoint of a person skilled in [the] art *at the time the patent was filed*."⁴⁰
- 4. The standard we adopt accords with opinions of this Court stating that "the cer tainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter."⁴¹

Although claiming to be more stringent than the CAFC's standard for indefiniteness, it is telling that the Supreme Court did not attempt to apply this new standard to the case before it, but rather remanded the case to the CAFC to sort out the ruling and apply it to the case.⁴²

Moreover, the Supreme Court, in suggesting that it's purpose is not to 'micromanage' the Federal Circuit,⁴³ is likely looking to the lower courts to sift through this holding and come up with a viable and useful method for actually determining indefiniteness. Until such time, it is likely that the exact metes and bounds of this issue will remain unknown and a source of confusion for the courts and patentees.

As it now seems up to the CAFC to actually formulate a useful set of criteria to determine definiteness, it is useful to review how they have dealt with the issue till now.

"If a claim is insolubly ambiguous, and no narrowing construction can properly be adopted, we have held the claim indefinite. If the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds."⁴⁴

As described earlier, the Federal Circuit has arguably instituted a lower bar for definiteness than the USPTO: "The definiteness requirement, however, does not compel absolute clarity. Only claims "not amenable to construction" or "insolubly ambiguous" are indefinite."⁴⁵ However, the court has noted that pre-grant, claims must be, "[a]s the statutory language of "particular[ity]" and "distinct[ness]" indicates, ... cast in clear—as opposed to ambiguous, vague, indefinite— terms. It is the claims that notify the public of what is within the protections of the patent, and what is not."⁴⁶

This is necessary: whereas an examiner at the USPTO has the option to work with the patentee to remove indefiniteness, as suggested above, the court system is more of a zero sum game wherein once a claim is found indefinite, it is no longer valid.

Alternatively, in the words of Former Chief Judge Michel:

"This court has applied the definiteness requirement of 35 U.S.C. § 112, ¶ 2 in numerous circumstances... The common thread in all of these cases is that claims were held indefinite only where a person of ordinary skill in the art could not determine the bounds of the claims, i.e., [*as a short hand:*] the claims were insolubly ambiguous. Of course, claims are not indefinite merely because they present a difficult task of claim construction. Instead, if the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds."⁴⁷

This definition of definiteness is further in line with a long line of court rulings that see the audience of the patent application as a specialist, not as the lay public: "The specification of the patent is not addressed to lawyers, or even to the public generally, but to the manufacturers ... and any description which is sufficient to apprise them in the language of the art of the definite feature of the invention, and to serve as a warning to others of what the patent claims as a monopoly, is sufficiently definite to sustain the patent."⁴⁸

At least some, on the Federal Circuit have noted that the insolubly ambiguous standard has taken on a life of its own, and may now be far afield, particularly when applied by the lower courts, than what may have been the original intentions of the *Exxon* court that coined the term.⁴⁹ The Supreme Court is similarly concerned.⁵⁰

We will likely see a revised, albeit likely still problematically unclear definition of indefiniteness when the case, which was remanded to the Federal Circuit comes up again. This analysis will also necessarily incorporate a new definition the Person of Skill in the Art, i.e., someone who is also knowledgeable in the legal intricacies of claim drafting, might understand the claim to mean. Moreover, it will likely also need to take the issue out of purely a question of law⁵¹ to a question of law and fact, or just a question of fact.

Even with the growing concern of indefiniteness in patent claims, there remains nothing intrinsically wrong with defining something broadly ⁵²(albeit *somewhat* ambiguously) by what it does, e.g., functionally⁵³, rather than what it is in drafting patent claims.⁵⁴

III. Functional Claiming

In general, functional claiming is seeing a resurgence in popularity. ⁵⁵

This may be a problem: many commentators single out functional claiming as a key contributor to indefiniteness. How so? Claim structure allows for the incorporation of limitations in delimiting the scope of the claimed invention. These limitations can be either relate to the structure or the function of the claimed invention. Limitations on structure tend to be less problematic in terms of setting the metes and bounds of the invention. Functional claiming is more fuzzy. As such, claims with their scope limited by function run the risk of violating a notion of commensurability within patents: "the scope of the claim should remain proportional to the contribution..."⁵⁶

Alternatively, claim scope limited by function, in the language of the current 35 USC §101 debate, may also run the risk of "preempt[ing] any and every possible"⁵⁷ structures that could be described to have the functional limitation in the claim. Just like the Courts do not want to see a patented abstract idea that preempts every substantial practical application of the abstract idea, and therefore finds it statutorily ineligible under 35 USC § 101,⁵⁸so too the courts are not interested in granting the patentee every substantial practical application of the functional limitation, and therefore will find a functional limitation not properly circumscribed in the speciation as invalid for indefiniteness. The goals are the same. To some degree the analysis is also the same: in determining either 101 non-statutory subject matter or 112 indefiniteness the analysis centers on "the scope of preemption—how much of the field is "tied up" by the claim."⁵⁹

And perhaps the 112 path is a better path to solving some of the issues and concerns with software patents than the 101 avenue. Rather then trying to limit patents at the 101 stage, which may be relatively simple to construct a claim to avoid and nevertheless retain concerns of overbroad claiming, policy makers might do better to focus on the heart of the problem which is the imbalance between what falls within the claim and what was actually invented and/or disclosed by the patentee.

Thus, while in many situations a claim that includes the recitation of device followed by its function, may be allowable, "when claims merely recite a description of a problem to be solved or a function or result achieved by the invention, the boundaries of the claim scope may be unclear" and indefinite.⁶⁰

While functional claiming allows patentees, and perhaps software patentees in particular to broaden the scope of their patents, there are some prosecutorial downsides. Particularly when determining novelty and nonobviousness.⁶¹ For example, an examiner might find prior art that inheritably performs the function claimed by the patentee.⁶² Although at least one Federal Circuit panel has decided that some functional language, e.g., adapted to, read in light of the specification, implies a design intent, and prior art without such design intent, albeit nevertheless capable of the limitation, are not invalidating.⁶³

Further, courts and the USPTO may find that the functional language of the claims are unsupported by the specification,⁶⁴ resulting in, for example, a lack of enablement.⁶⁵ Additionally, a system claim that has all of its claim elements described in terms of functionality may be found indefinite by the patent office⁶⁶ and the courts.⁶⁷

In light of concerns that functional claiming results in broadness, ambiguity, and overhanging threat of the functional claim, the courts have historically worked to cabin their scope.⁶⁸

But, the Patent Act of 1952,⁶⁹as a direct response to the Courts limitations on their use, ⁷⁰expressly codified at least one particular use of functional claiming, means plus function: "All the elements of a combination now will be able to be claimed in terms of what they do as well as in terms of what they are." ⁷¹ Functional claiming was now sanctioned by Congress, even at the point of novelty of the invention.

"Congress added this language to the Patent Act of 1952 to change the doctrine enunciated in Halliburton Oil Well Cementing Co. v. Walker ... Congress decided to permit broad means-plus-function language, but provided a standard to make the broad claim language more definite. The 1952 Patent Act included a new section 112. This new language permits a patent applicant to express an element in a combination claim as a means for performing a function. The applicant need not recite structure, material, or acts in the claim's means-plus-function limitation. With this new section, the 1952 Act rendered Halliburton obsolete, albeit still good law."⁷²

IV. Means Plus Function

Like functional claiming in general, the judicial response to means plus functional claiming has also evolved, particularly over the last decade or so.

Section (f), formerly paragraph 6, of 35 USC § 112 sets out the statutory metes and bounds of "means plus function" claiming:

Element in Claim for a Combination.— An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.⁷³

Simplistically, means plus function claiming can be seen as a special type of functional claiming that includes a particular signal, e.g., means for, that signals the reader of the patent to look to the specification for the missing structure of the claim.

Importantly, whereas in Philips, the courts ruled that the USPTO is required to give claims their broadest possible interpretation,⁷⁴ with regard to means plus function claims, the courts have ruled that "the "broadest reasonable interpretation" that an examiner may give means-plus-function language is that [which is] statutorily mandated in paragraph six."⁷⁵ Thus, the court found that the USPTO must limit its interpretation of a means plus function claim to just the language "in light of the corresponding structure, material, or acts described therein, and equivalents thereof, to the extent that the specification provides such disclosure" ⁷⁶ And, "[f]ailure to disclose adequate structure to support a generic means expression amounts to impermissible functional claiming."⁷⁷ This is because the courts have found that the patentee has a "duty to link or associate structure to function is the *quid pro quo* for the convenience of employing § 112"⁷⁸

The Manual of Patent Examining Procedure (MPEP), in sections 2181 - 2186, provides the USTPO's views on the use of means plus function claims.

For example, the USPTO explicitly does not allow single element claims to rely on the exception provided for in 112(f), only claims for a combination of elements. Under \$112(f) a functional single element claim may be indefinite or lacking enablement.⁷⁹

Generally, when construing a means plus function claim post issuance, the court typically follows a two step process. "First, the court must determine the claimed function. Second, the court must identify the corresponding structure in the written description of the patent that performs the function."⁸⁰

Why? "The price of using this form of claim ... is that the claim be tied to a structure defined with sufficient particularity in the specification."⁸¹ This structure requirement is in "[f]ulfillment of the § 112, ¶ 6 tradeoff,⁸²which is geared toward "[confining] the breadth of protection otherwise permitted by" purely functional claiming."⁸³ Further, that structure typically "has to be more than simply a general purpose computer or microprocessor;"⁸⁴ although computing unit⁸⁵ and control unit⁸⁶have both been found to be sufficiently structural.

There has been some inconsistency in the Federal Circuit in terms of what actually needs to be disclosed by the patentee in a means plus function scenario:

Some Federal Circuit panels have held that structures defined functionally, even if they are known in the prior art and are not the point of novelty for the claimed invention, nevertheless need to be adequately described or else the claim fails for indefiniteness.⁸⁷

A description of the algorithm corresponding to a software means plus function claim is often favored, but may not necessary.⁸⁸ Where the algorithm requirement has been seen to be necessary it is "because general purpose computers can be programmed to perform very different tasks in very different ways."⁸⁹ However, the courts have found that the construction of a means plus function claim may be limited to the disclosed algorithms in the specification.⁹⁰

While courts have been arguably lenient in finding structure,⁹¹in software claims written in a means plus function format, particularly "details of structures well known in the art, ... the specification must nonetheless disclose *some* structure."⁹² In other cases, the courts have found that the "patentee cannot avoid providing specificity as to structure simply because someone of ordinary skill in the art would be able to devise a means to perform the claimed function. To allow that form of claiming under section 112, paragraph 6, would allow the patentee to claim all possible means of achieving a function."⁹³

Thus, for "means-plus-function limitations where the disclosed structure is a computer programmed to implement an algorithm, the patent must disclose enough of an algorithm to provide the necessary structure under 35 U.S.C. § 112 ¶ 6."⁹⁴ This sufficient particularity needs to show "not simply … the function to be performed … rather *how* the function was to be performed"⁹⁵ And this "how" cannot be a black box.⁹⁶ "A computer-implemented means-plus-function term is limited to the corresponding structure disclosed in the specification and equivalents thereof, and the corresponding structure is the algorithm."⁹⁷

Additionally, "[i]n cases involving a computer-implemented invention in which the inventor has invoked means-plus-function claiming, this court has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor."⁹⁸

However, even though some courts have rejected the argument that pure functional claiming would not be allowable "as long as the function is performed by a general purpose computer."⁹⁹ Others, seemingly have not:

"By contrast, in the seven claims identified above, Katz has not claimed a specific function performed by a special purpose computer, but has simply recited the claimed functions of "processing," "receiving," and "storing." Absent a possible narrower construction of the terms "processing," "receiving," and "storing," discussed below, those functions can be achieved by any general purpose computer without special programming. As such, it was not necessary to disclose more structure than the general purpose processor that performs those functions. Those seven claims do not run afoul of the rule against purely functional claiming, because the functions of " processing," "receiving," and "storing" are coextensive with the structure disclosed, i.e., a general purpose processor."¹⁰⁰

Moreover, the use of means plus function has its price, and as such has of late come out of favor, particularly in software. Further, in attempting to apply the doctrine of equivalents to a means plus function claim, "an equivalent structure under § $112 \ \mbox{\ } 6$ must have been available at the time of the issuance of the claim, whereas the doctrine of equivalents can capture after-arising technology developed after the issuance of the patent."¹⁰¹

V. Avoiding Means Plus Function

The trend seems to be that patentees want to avoid means plus function type claims and all their inherent limitations. However, patentees should note that the "structural disclosure required in the specification when a party chooses to employ means-plus-function claiming is not the same structural disclosure required to avoid means-plus-function treatment.¹⁰² But once a means plus function type claim is no longer presumed the claims are more often than not treated as definite, given the presumption of validity.

Professor Mark Lemley suggests that the current method of software patents have brought back the functional patents of pre-1952.¹⁰³ Functional claiming unlimited by the constraints of means plus function claiming may be further preferred by patentees for the fact that functional claiming that does not rise to 112(f) may have a lower bar of definiteness under 112(b).

Arguably the USPTO's position, as directed to some degree by the courts,¹⁰⁴ helps patentees escape the limits of means plus function claim, potentially impeding Congress' intent by allowing much of the functional claiming currently engaged in by patentees to survive without the limitations of §112(f).

In discussing the Federal Circuits' majority opinion in the recently decided Apple v. Motorola, Judge Prost disagrees with her colleagues interpretation of a functional claim: "That one minor drafting decision greatly expands the scope of the claim limitation because the claim is not limited to the corresponding structure disclosed in the patent specification. Indeed, under the majority's view, this case provides a stark example of how patent applicants are able to claim broad functionality without being subject to the restraints imposed by § $112 \ 6.$ "

More so than the presumptions that 35 U.S.C. 112(f) does not apply unless one of the right words are used, the courts have allowed generic structures to pervade claims, particularly functional claiming, allowing the patentee to avoid falling into a means plust function claim.¹⁰⁶

We have found sufficient structure in claim terms to avoid invoking § 112, ¶ 6 in several similar cases. .. "computing unit . . . for . . . evaluating . . ." is not a means-plus-function limitation because the term connotes a computer or other data processing device... [the] term "circuit" itself in claim term "'circuit' for 'monitoring a signal from the output terminal to generate a first feedback signal" connotes structure...[the] term "digital detector" recited sufficient structure to avoid § 112, ¶ 6.¹⁰⁷

The claim limitation is presumed to invoke 35 U.S.C. 112(f) ... when it explicitly uses the term "means" or "step" and includes functional language. ... By contrast, a claim limitation that does not use the term "means" or "step" will trigger the rebuttable presumption that 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph does not apply.¹⁰⁸

In general, the Federal Circuit has made it clear "that the presumption flowing from the absence of the term "means" is a strong one that is not readily overcome.¹⁰⁹

The presumption that the use of the term means results in a means plus function claim is also rebuttable, "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.¹¹⁰

Further, the 112(f) will not be implemented if the term in question "is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function."¹¹¹

While the Supreme Court's decision in *Nautilus* may likely bring some changes to the exact workings of functional claiming, functional claiming, as a general construct, is likely here to stay for no other reason than, "[0]ften the invention is novel and words do not exist to describe it", in these cases, functional claiming is often a necessity.¹¹²

VI. The Future of Functional claiming

Patentees need to be cognizant that while "a patent applicant is free to recite features of an apparatus either structurally or functionally ... choosing to define an element functionally, i.e., by what it does carries with it a risk."¹¹³

These risks include lack of enablement, being found indefinite – of particular concern given the current dearth of post-*Nautilus* caselaw, and being construed as means plus function even though that was not the patentees intention.

For example:

- a) While many terms can be used to denote a functional claimed element, not all terminology has coextensive meaning.¹¹⁴ And, not all functional language necessarily makes the claim a means plus function claim. "Functional language may also be employed to limit the claims without using the means-plus-function format."¹¹⁵ As Professor Dennis Crouch has noted, "patentees have caught-on to using "configured to" language as a rough equivalent of a means-plus-function claim term but carefully drafted in order to avoid actually falling under the ambit of that provision."¹¹⁶
- b) The USPTO requires the disclosure of specific structure relating to the claimed functions.¹¹⁷
- c) Some functional terms may be construed as falling under the means plus function rubric, even without that being the patentee's intention, and may be found to be invalid under 112(f), for failing to provide the necessary disclosure.¹¹⁸

- d) The Federal Circuit may or may not¹¹⁹read claims intended to only be for hardware as mixed hardware and software claims, particularly when the functional limitations placed on the hardware necessitate enabling software as "the claimed apparatus must itself be capable of [not just programmable to] performing the claimed functions.¹²⁰
- e) A functional term in a system or apparatus claim may be construed as indefinite as it conflates the method with the device and it isn't clear how infringement would occur.¹²¹
- f) Purely functional claiming may continue to be problematic.¹²²

To avoid some of the risk associated with functional claiming, a patentee may consider including some disclaiming language as according to the Official Gazette of the United States Patent and Trademark Office: "The "means or step plus function" limitation should be interpreted in a manner consistent with the specification disclosure. If the specification defines what is meant by the limitation for the purposes of the claimed invention, the examiner should interpret the limitation as having that meaning. If no definition is provided, some judgment must be exercised in determining the scope of the limitation."¹²³

⁵ Note that it's unlikely that Congress will act to make any substantive changes in patent law this term. See, e.g., Kate Tummarello, "Patent reform bill dealt fatal blow in Senate" The Hill, May 21, 2014 available at thehill.com/policy/technology/206793-leahy-takes-patent-reform-off-committee-agenda

⁶ Gene Sperling, Taking on Patent Trolls to Protect American Innovation, The White House Blog, June 4, 2013 available at http://www.whitehouse.gov/blog/2013/06/04/taking-patent-trolls-protect-american-innovation

⁷ Hon. Timothy B. Dyk, Ten Prescriptions For What Ails Patent Law, 17 STAN. TECH. L. REV. 345 (2014)(Judge Dyk of the Federal Circuit questions whether these efforts alone will sufficiently increase claim clarity.⁷)

⁸ Nautilus, Inc. v. Biosig Instruments, Inc., 2014 U.S. LEXIS 3818 (U.S. June 2, 2014)Slip Op. pg. 10

⁹ National Economic Council and the Council of Economic Advisers, Patent Assertion and U.S. Innovation, June 2013, available at http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf

¹⁰Merges, Robert P. "Patents, entry and growth in the software industry." University of California at Berkeley School of Law Working Paper Series (2006). (In a mutually assured destruction scenario, the goal of acquiring patents is to have enough to never need to use them)

¹¹Rai, Arti K., Improving (Software) Patent Quality Through the Administrative Process (November 24, 2013). Houston Law Review, Vol. 51, No. 2, 2013.

¹² Federal Trade Commission (FTC), The Evolving IP Marketplace: Aligning Patent Notice and Remedies with Competition 74 (Mar. 2011), available athttp://www.ftc.gov/os/2011/03/110307patentreport.pdf.

¹³Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 US 722, 730-1 (2002)

¹⁴United Carbon Co. v. Binney& Smith Co., 317 US 228, 236 (1942)

¹⁵See,e.g., Georgia-Pacific Corp. v. U.S. Plywood Corp., 258 F.2d 124, 136 (2d Cir. 1958) ("[P]atentable inventions cannot always be described in terms of exact measurements, symbols and formulae, and the applicant necessarily must use the meager tools provided by language, tools which admittedly lack exactitude and precision. If the claims, read in the light of the specifications, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more.").

¹⁶ Warner-Jenkinson Company, Inc. v. Hilton Davis Chemical Co., 520 U.S. 17 (1997)

¹⁷Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 US 722, 731-2 (2002).

¹⁸Nautilus, Inc. 2014 U.S. LEXIS 3818 Slip Op. at 1

¹⁹Markman v. Westview Instruments, Inc, 517 U.S. 370, 390 (1996)

²⁰*Merrill v. Yeomans*, 94 U. S. 568, 573 (1877).

²¹Eibel Process Co. v. Minnesota & Ontario Paper Co., 261 U.S. 45, 65, 43 (1923).

²²*Halliburton Energy Services v. M-I LLC*, 514 F. 3d 1244 (Fed. Cir. 2008):

²³ 35 U.S. Code § 41(2) Excess claims fees.

²⁴ 35 USC 112(a)

²⁵Norton Company v. Bendix Corporation, 449 F. 2d 553, 555 (2nd Cir. 1971)

²⁶ Public Law 112 – 29 September 16, 2011

²⁷ Supplementary Examination Guidelines for Determining Compliance With 35 U.S.C. 112 and for

Treatment of Related Issues in Patent Applications. 76 FR 7162 (2011) 7162 -7175

²⁸*Ex parte Miyazaki*, No. 2007-3300, 2008 WL 5105055, at *10 (B.P.A.I. Nov. 19, 2008)

²⁹Ex parte Paul J. Doczy, Charles A. Sellers, Dustin L. Hoffman, and Walter J. Rankin 2014 Pat. App. LEXIS

3182, 7 (Pat. App. 2014).

³⁰In re Packard (Fed. Cir. 2014).

³¹Manual of Patent Examining Procedure § 2173.02(I)

¹Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F. 3d 1573, 1581 (Fed. Cir. 1996)

²Nautilus, Inc. v. Biosig Instruments, Inc., 715 F.3d 891 (Fed. Cir. 2013), cert. granted, 82 U.S.L.W. 3195 (U.S. Jan. 10, 2014) (No. 13-369). Argued April 28, 2014, Decided June 2, 2014.

³ http://patentlyo.com/patent/2014/01/functional-language-patents.html

⁴ http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-hightechpatent-issues

³² https://www.federalregister.gov/articles/2011/02/09/2011-2841/supplementary-examination-guidelines-for-determining-compliance-with-35-usc-112-and-for-treatment-of.

³³35 U.S.C. § 282(a) and §282(b)(3)(A)(indefiniteness is a defense against validity)

³⁴ But, see, *Ibormeith IP, LLC v. Mercedes-Benz USA*, LLC 732 F.3d 1376, 1379 (Fed. Cir. 2013)

("whether there is adequate disclosure is a question of law that we decide *de novo*.)

³⁵*Exxon Research and Engineering Co. v. US*, 265 F. 3d 1371, 1376 (Fed. Cir. 2001); See, also, *Energizer Holdings v. International Trade Com'n*, 435 F. 3d 1366, 1369 (Fed. Cir 2006)("we accord respect to the statutory presumption of validity and we protect the inventive contribution of patentees, even when the drafting of their patents has been less than ideal.")

³⁶ Nautilus, Inc. 2014 U.S. LEXIS 3818, Slip Op. Note 9

³⁷ Id. at 12.(citations omitted)

³⁸ Id. at 8 citing *General Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364, 371 (1938)

³⁹ Id. citing United States v. Adams, 383 U.S. 39, 48-49 (1966) (for specification) and Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U. S. 722, 741 (2002) (for prosecution history).
 ⁴⁰ Id. at 9.

⁴¹ Id. at 9 citing Minerals Separation, Ltd.v. Hyde, 242 U. S. 261, 270 (1916); United Carbon, 317 U. S., at 236

⁴² "[M]indful that we are a court of review, not of first view, we decline to apply the standard we have announced to the controversy between Nautilus and Biosig. As we have explained, the Federal Circuit invoked a standard more amorphous than the statutory definiteness requirement allows. We therefore follow our ordinary practice of remanding so that the Court of Appeals can reconsider, under the proper standard, whether the relevant claims in the '753 patent are sufficiently definite." Id. At 14.
⁴³ *Id.* at 12.

⁴⁴Exxon Research and Engineering Co. v. US, 265 F. 3d 1371, 1375 (Fed. Cir. 2001).

⁴⁵Datamize, LLC v. Plumtree Software, Inc., 417 F. 3d 1342,1347 (Fed. Cir. 2005).

⁴⁶ In re Packard, 2014 U.S. App. LEXIS 8448, 12 (Fed. Cir. May 6, 2014)

⁴⁷*Halliburton Energy Services, Inc. v. MI LLC*, 514 F. 3d 1244, 1249 (Fed. Cir. 2008)(implying that the insoluble standard is also for means plus functions claiming, but see, Laser, Christa J. "Definite Claim on Claim Indefiniteness: An Empirical Study of Definiteness Cases of the Past Decade with a Focus on the Federal Circuit and the Insolubly Ambiguous Standard, A." J. Intell. Prop. 10 (2010): 2, 39 (arguing that the Federal Circuit does not apply the insolubly ambiguous standard to means plus function claims).

⁴⁸*Carnegie Steel Co. v. Cambria Iron Co.*, 185 U.S. 403, 437 (1902); See, also Universal Oil Co. v. Globe Co., 322 US 471, 484 ("the *quid pro quo* is disclosure of a process or device in sufficient detail to enable one skilled in the art to practice the invention once the period of the monopoly has expired; and the same precision of disclosure is likewise essential to warn the industry concerned of the precise scope of the monopoly asserted").

⁴⁹ In Re Packard (PLAGER, *Circuit Judge*, concurring).

⁵⁰ Nautilus, Inc. 2014 U.S. LEXIS 3818, Slip Op. Note 8

⁵¹Exxon Research and Engineering Co. 265 F. 3d 1371, 1376 ("We adhere to the principle that "determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims.")

⁵²UltimaxCement Mfg. Corp. v. CTS Cement Mfg. Corp., 587 F.3d 1339, 1352 (Fed. Cir. 2009)

⁵³General Electric Co. v. Wabash Appliance Corp., 304 U.S. 364, 371 (1938).

⁵⁴In re Schreiber, 128 F. 3d 1473, 1478 (Fed. Cir. 1997)

⁵⁵ Dennis Crouch, Functional Claim Language in Issued Patents, Patently-O January 23, available at http://patentlyo.com/patent/2014/01/functional-language-patents.html

⁵⁶ Collins, Kevin Emerson. "Patent Law's Functionality Malfunction and the Problem of Overbroad, Functional Software Patents." Wash. UL Rev. 90 (2013): 1399-1819.

⁵⁷*In re Bilski*, 545 F. 3d 943, 950 (Fed. Cir. 2008)

⁵⁸*CLS Bank Intern.v. Alice Corp. Pty. Ltd.*, 717 F. 3d 1269, 1277 (Fed. Cir. 2013)(En Banc)(The Supreme Court's foundational §101 jurisprudence ... turns primarily on the practical likelihood of a claim preempting a fundamental concept.)

⁵⁹Ultramercial, Inc. v. HULU, LLC, 722 F. 3d 1335, 1339 (Fed. Cir. 2013).

⁶⁰ 76 FR 7162 (2011)(citing*Halliburton Energy Servs.*, 514 F.3d 1244, 1255 (Fed. Cir. 2008))

⁶¹Markem-Imaje Corporation v. Zipher Ltd., (D.D. NH 2012)(citing Donald S. Chisum, Chisum on Patents § 8.04 [3] (2010))

⁶²In re Best, 562 F.2d 1252, 1254, (CCPA 1977).

63 In Re Giannelli, No. 2013-1167.(Fed. Cir. January 13, 2014)

⁶⁴In re Swinehart, 439 F.2d 210, 213(CCPA 1971).

⁶⁵Ex Parte Miyazaki, 89 USPQ2d 1207 (BPAI 2008)

⁶⁶*Ex parte Lyell*, 17 USPQ2d 1548 (1990)

67 IPXL Holdings, LLC v. Amazon.com, Inc., 430 F. 3d 1377, 1379 (Fed. Cir. 2005); Rembrandt Data

Techs., LP v. AOL, LLC, 641 F.3d 1331, 1339 (Fed. Cir. 2011)

⁶⁸Halliburton Oil Well Cementing Co. v. Walker, 329 US 1, 12 (1946).

69 U.S. Patent Law, 35 U.S.C. §§ 1 et seq. July 19, 1952

⁷⁰ Halliburton Oil Well Cementing Co. v. Walker, 329 US 1, 9 (1946).

⁷¹ Application of Fuetterer, 319 F. 2d 259, N11 (1963)(Citing US Representative Joseph Bryson).

⁷²Valmont Industries Inc. v. Reinke Mfg. Co., Inc., 983 F. 2d 1039, 1042 (Fed. Cir. 1993)

⁷³ 35 USC 112(f)

⁷⁴*Phillips v. AWH Corp.*, 75 USPQ2d 1321 (Fed. Cir. 2005)

⁷⁵In re Donaldson Co., Inc., 16 F. 3d 1189, 1194-5 (Fed. Cir., 1994)

⁷⁶16 F. 3d at 1193-4.

⁷⁷Lighting Ballast Control LLC v. Philips Elecs. N. Am. Corp., 498 Fed. Appx. 986, 992 (Fed. Cir. 2013)

⁷⁸ B. Braun Medical, Inc. v. Abbott Laboratories, 124 F. 3d 1419, 1424 (Fed. Cir. 1997).

⁷⁹ United States Patent and Trademark Office, 35 USC 112(f): Broadest Reasonable Interpretation and Definiteness of § 112(f) Limitations, May 5, 2014 available at

http://www.uspto.gov/patents/law/exam/examguide.jsp

³⁰ Applied Med. Res. Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1332 (Fed.Cir.2006)

⁸¹Ibormeith IP, LLC v. Mercedes-Benz USA, LLC, 732 F. 3d 1376, 1379 (Fed. Cir. 2013)

⁸²Atmel Corp. v. Information Storage Devices, Inc., 198 F. 3d 1374, 1382 (Fed. Cir. 1999)

⁸³Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1042 (Fed.Cir.1993))

⁸⁴Net MoneyIN, Inc. v. VeriSign, Inc., 545 F. 3d 1359, 1367 (Fed. Cir 2008)

⁸⁵Inventio AG v. Thyssenkrupp Elevator Americas, 649 F. 3d 1350 (Fed. Cir. 2011)

⁸⁶LG Electronics, Inc. v. Bizcom Electronics, Inc., 453 F. 3d 1364 (Fed. Cir. 2006)

⁸⁷Ergo Licensing, LLC v. CareFusion 303, Inc., 673 F. 3d 1361 (Fed. Cir. 2012)(NEWMAN, Circuit Judge, dissenting.)

⁸⁸ In re Dossel, 115 F3d 942, 946 (Fed. Cir. 1997)(The necessity of a description of an algorithm may be dependent on the relevant knowledge of a person of skill in the art): AllVoice Computing PLC v. Nuance Communs. Inc., 540 f3d 1236 (Fed. Cir. 2007); But see, Biomedino LLC v. Waters Techs Corp. 490 F3d 946 (Fed Cir. 2007)(no consideration given to the knowledge of PHOSITA) and ePlus Inc. v. Lawson Software Inc 700 F3d 509 (Fed. Cir. 2012)(PHOSITA knowledge cannot establish a link between the claim and the specification).

⁸⁹Noah Systems, Inc. v. Intuit Inc., 675 F. 3d 1302, 1319 (Fed. Cir. 1012)

⁹⁰ Harris Corp. v. Ericsson, 417 F3d 1241 (Fed. Cir. 2005).

⁹¹*Finisar Corp. v. DirecTV Group, Inc.*, 523 F. 3d 1323, 1340 (Fed. Cir. 2008)

⁹²Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A., Inc., 412 F.3d 1291, 1302 (Fed.Cir.2005)

93 Blackboard, Inc. v. Desire2Learn, Inc., 574 F. 3d 1371, 1385 (Fed. Cir 2009)

⁹⁴In re Aoyama, 656 F. 3d 1293, 1297 (Fed. Cir. 2011)

⁹⁵Function Media, LLC v. Google, Inc., 708 F. 3d 1310, 1318 (Fed. Cir. 2013) (emphasis in original).

⁹⁶ United States Patent and Trademark Office, 35 USC 112(f): Broadest Reasonable Interpretation and Definiteness of § 112(f) Limitations, May 5, 2014 available at

http://www.uspto.gov/patents/law/exam/examguide.jsp

⁹⁷Harris Corp. v. Ericsson Inc., 417 F. 3d 1241, 1253 (Fed. Cir. 2005)

⁹⁸Aristocrat Techs. Austl. PTY Ltd. v. Int'l Game Tech., 521 F.3d 1328, 1333 (Fed. Cir. 2008) ⁹⁹Aristocrat Techs., 521 F. 3d at 1336.

¹⁰⁰In re Katz Interactive Call Processing Patent, 639 F. 3d 1303, 1316 (Fed. Cir. 2011)

¹⁰¹Welker Bearing Co. v. PHD, Inc., 550 F.3d 1090, 1099-1100 (Fed. Cir. 2008).

¹⁰²Markem-Imaje Corp. v. Zipher Ltd. & Videojet Technologies, Inc., Civil No. 10-cv-112-PB, Opinion No. 2011 DNH 194. N7 (D.D. NH 2011)citing (Mass. Inst. of Tech. v. Abacus Software, 462 F.3d 1344, 1353 (Fed. Cir. 2006))

¹⁰³Lemley, Mark A., Software Patents and the Return of Functional Claiming (October 12, 2012). Stanford Public Law Working Paper No. 2117302.

¹⁰⁴Inventio AG v. Thyssenkrupp Elevator Ams. Corp., 649 F.3d 1350, 1356 (Fed. Cir. 2011)

¹⁰⁵ Apple Inc. v. Motorola, Inc. Nos. 2012-1548, 2012-1549 (Fed. Cir. April 25, 2014)

¹⁰⁶Lemley, Mark A. "Robert W. Kastenmeier Lecture Software Patents and The Return of Functional Claiming." Wis. L. Rev. 2013 (2013): 905-1067.

¹⁰⁷EnOcean GmbH v. Face Int'l Corp., 742 F.3d 955, 960 (Fed. Cir. 2014)

¹⁰⁸ MPEP 2181 Identifying and Interpreting a 35 U.S.C. 112(f) or Pre-AIA 35 U.S.C. 112, Sixth

Paragraph Limitation [R-11.2013] But see, Ex parte Erol, Appeal No. 2011-001143, Appl. No. 11/461,109

(Pat. Trial & App. Bd. 2013). *Ex parte Lakkala* Appeal No. 2011-001526, Appl. No. 10/949,568 (Pat. Trial & App. Bd. 2013) and 2 and *Ex parte Smith* Appeal No. 2012-007631, Appl. No. 12/579,383 (Pat. Trial &

App. Bd. 2013) (construed as means plus function type claim, against the presumption)

¹⁰⁹Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F. 3d 1354, 1358 (Fed. Cir. 2004)

¹¹⁰Sage Prods. v. Devon Indus., Inc., 126 F.3d 1420, 1427-28, (Fed.Cir.1997)

¹¹¹Lighting World, Inc. v. Birchwood Lighting, Inc., 382 F. 3d 1354, 1359-60 (Fed. Cir. 2004)

¹¹²Autogiro Company of America v. United States, 384 F. 2d 391, 397 (Court of Claims 1967)

¹¹³In re Schreiber 128 F.3d 1473, 1478 (Fed. Cir. 1997)

¹¹⁴Aspex Eyewear, Inc. v. Marchon Eyewear, Inc. ,672 F.3d 1335, 1349(Fed. Cir. 2012)

¹¹⁵Microprocessor Enhancement v. Texas Instruments, 520 F. 3d 1367, 1375 (Fed. Cir. 2008)

¹¹⁶ Dennis Crouch, What does it mean for a device to be "configured to" perform a particular function? Patently-O January 22, 2014 available at http://patentlyo.com/patent/2014/01/what-does-it-mean-for-a-device-to-be-configured-to-perform-a-particular-function.html

¹¹⁷*Ex Parte Rodriguez*, 92 USPQ2d 1395 (BPAI 2009)

¹¹⁸Massachusetts Instit.of Tech. v. Abacus Software, 462 F. 3d 1344 (Fed. Cir. 2006).

¹¹⁹Superior Industries, Inc. v. Masaba, Inc. No. 2013-1302.(Fed.Cir., Jan 16, 2014) (Nonprecedential). ¹²⁰Nazomi Communications, Inc. v. Nokia Corporation, Nos. 2013-1165, 2013-1165 (Fed.Cir. Jan 10, 2014).

¹²¹*IPXL Holdings, LLC v. Amazon.com, Inc.*, 430 F. 3d 1377 (Fed. Cir. 2005); But see, *Microprocessor Enhancement v. Texas Instruments*, 520 F. 3d 1367 (Fed. Cir. 2008).

¹²²*Ex parte Miyazaki*, No. 2007-3300 (B.P.A.I. Nov. 19, 2008)(noting that Halliburton has not be overruled)

¹²³Official Gazette of the United States Patent and Trademark Office, Vol. 1162, Number 3, Pages TMOG 59-61, May 17, 1994. Available at

https://ia600501.us.archive.org/17/items/officialgazette1162cunit/officialgazette1162cunit.pdf