

Drafting Software Patents After Recent Federal Circuit Decisions

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The Federal Circuit recently issued two opinions directly impacting software patent practitioners. Grounded in 35 U.S.C. §112(f) (or pre-American Invents Act §112, para. 6), the cases deal with claims containing “functional language,” and hold that there must be detailed support in the patent’s specification that describes the “means” by which a claimed function is carried out.

In *Williamson v. Citrix*, the en banc Court of Appeals for the Federal Circuit (CAFC) addressed the “means-plus-function” language of the asserted patent and held that the claim terms were invalid under §112(f) because there was no supporting structure (the “means”) disclosed in the patent’s specification for performing the claimed functions. *Williamson v. Citrix Online*, 792 F.3d 1339 (Fed. Cir. June 16, 2015).

In *Media Rights Technologies v. Capital One Financial Corp.*, the CAFC held that the claims recited terms that invoked means-plus-function treatment and the specification, as in *Williamson*, likewise did not disclose sufficient structure to support the claims under §112(f). *Media Rights Technologies v. Capital One Financial Corp.*, 800 F.3d 1366 (Fed. Cir. Sept. 4, 2015).

The current landscape surrounding software patents, as evidenced by these recent holdings (as well as the seemingly ubiquitous *Alice Corp. Pty v. CLS Bank Int’l* decision), requires patentees to satisfy an increasingly heightened standard of review by properly disclosing the functional basis for software and the technical algorithms and components that execute such software. Patentees seeking to protect software based inventions must disclose not only the functions one intends to claim, but also the means by which these functions will be carried out. This generally requires a disclosure of a specific algorithm



or art-recognized structure capable of performing the claimed function in order for the claims to be fully supported.

35 U.S.C. §112(f) states:

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.* (Emphasis added).

Under §112(f) (and pre-AIA §112 para. 6, used interchangeably herein), means-plus-function treatment is *presumed* to be invoked when claims specifically use the terms “means” or “step.” The CAFC has stated

that the presumption was overcome when the claim limitation in question further included the structure necessary to perform the recited function. *TriMed v. Stryker Corp.*, 514 F.3d 1256, 1259-60 (Fed. Cir. 2008) (“[s]ufficient structure exists when the claim language specifies the exact structure that performs the function in question without need to resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure.”)

However, the CAFC has also stated that a claim that does not use such terms, and does not simply substitute “means” or “step” terms with “nonce” words or equivalent language, would have a *rebuttable presumption* that §112(f) does not apply. See, e.g., *Phillips v. AWH Corp.*, 415 F.3d 1303, 1310 (Fed. Cir. 2005) (en banc); *CCS Fitness v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed. Cir. 2002); *Personalized Media Commc’ns v. ITC*, 161 F.3d 696, 703-04 (Fed. Cir. 1998). Examples

of nonce words or equivalent language found by the CAFC to trigger means-plus-function treatment include, but are not limited to, “mechanism,” “module,” “device,” “unit,” “component,” “element,” “member,” “apparatus,” “machine” or “system.” See, e.g., *Welker Bearing Co., v. PHD*, 550 F.3d 1090, 1096 (Fed. Cir. 2008); *Massachusetts Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006); *Personalized Media*, 161 F.3d at 704; *Mas-Hamilton Group v. LaGard*, 156 F.3d 1206, 1214-1215 (Fed. Cir. 1998).

The Williamson Decision

The CAFC in *Williamson* invalidated the claims in U.S. Pat. No. 6,155,840. At issue was whether a challenged claim element implicated §112(f) and, if so, whether the specification recited sufficient structure to support such a claim form.

The court first analyzed the claims and found that the claim limitation beginning with “distributed learning control module” was “in a format consistent with traditional means-plus-function claim limitations.” *Williamson* at 1350. The court reasoned that the term “module” was “a well-known nonce word” in that it “is simply a generic description for software or hardware that performs a specified function.” *Id.* The court stated that “[g]eneric terms such as ‘mechanism,’ ‘element,’ ‘device,’ and other nonce words that reflect nothing more than verbal constructs may be used in a claim in a manner that is tantamount to using the word ‘means’ because they ‘simply do not connote sufficiently definite structure’ and therefore may invoke §112, para. 6.” *Id.* The court reasoned that the claimed “distributed learning control module” did not provide or impart any structure to the claimed functions being performed by the “distributed learning control module.” *Id.*

Finding that the claims invoked §112(f) treatment then triggered the test of whether there was sufficient structure in the patent’s specification to support the “distributed learning control module.” The Court held it did not, stating:

We require that the specification disclose an algorithm for performing the claimed function. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008). The algorithm may be expressed as a mathematical formula, in prose, or as a flow chart,

or in any other manner that provides sufficient structure. *Noah*, 675 F.3d at 1312 (citing *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008)).

Williamson points to certain disclosures in the specification ... [and] argues that the “distributed learning control module” controls communications among the various computer systems and that the “coordinating” function provides a presenter with streaming media selection functionality. These disclosures, however, are merely functions of the “distributed learning control module.” The specification does not set forth an algorithm for performing the claimed functions.

Williamson argues that figures 4 and 5 disclose the required algorithm. This is not the case. *Id.* at 1352.

The CAFC found that there was no corresponding structure for the “distributed learning control module” because “[t]he specification does not set forth an algorithm for performing the claimed functions.” *Id.*

The Media Rights Technologies Decision

Following *Williamson*, the CAFC invalidated the claims in U.S. Pat. No. 7,316,033 for claiming an undefined “compliance mechanism.” *Media Rights* at 15, reasoning that the “claims are construed to cover only ‘the structure, materials, or acts described in the specification as corresponding to the claimed function and equivalents thereof.’” *Id.* at 8, citing *Williamson*.

The CAFC reinforced its holding in *Williamson* by providing an in-depth analysis of the term “compliance mechanism.” The court first identified the term “compliance mechanism” as invoking §112(f) because “the claims simply state that the ‘compliance mechanism’ can perform various functions” rather than being “a substitute for an electrical circuit, or anything else that might connote a definite structure.” *Id.* at 10.

The court then searched the specification and held that it failed to disclose “sufficient structure for the ‘compliance mechanism term’” (e.g., a definable structure that performs all the functions of “compliance”). *Id.* The court held that “[n]othing in the

written description of the ‘033 Patent adds sufficiently to the meaning of the term’s structure; it only describes the term’s function and interaction with other parts in the system” which is not enough to satisfy the requirements under §112(f) in view of *Williamson*. *Id.* at 11.

Takeaways for Drafting Software Patent Applications

The above holdings provide a practitioner’s road map for surviving or circumventing §112(f). As an initial matter, merely avoiding the terms “means” or “step” will not suffice to escape §112(f)—a full recitation of structure in the claim is needed. Also, common terms like “module” or “element” are merely considered nonce words and will not carry the day.

The safest path is to draft the specification under the assumption that §112(f) might be invoked, and ensure that a robust disclosure of how the claimed functions can be carried is included in the form of a specific algorithm, pseudo-code and/or flowchart.

With regard to the disclosure of an algorithm, the patentee should detail how each step of the algorithm is executed by the components of the disclosed hardware, and all variables in the algorithm should be well defined.

In terms of pseudo-code, it should be of sufficient detail that a skilled programmer could read that pseudo-code and write a piece of working software that, when executed, carries out the claimed functions.

With regard to flowcharts, it is advisable to describe in detail how each step in the flowchart is performed. Merely reciting the claim language in the flowchart should be avoided.

Conclusion

Software patent claims, frequently drafted in functional form, are under strict scrutiny. Practitioners are urged to study the holdings of *Williamson* and its progeny in order to avoid the pitfalls highlighted in that line of cases and to put their software applications on solid footing. •

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