

2013-1130

**UNITED STATES COURT OF APPEALS FOR THE  
FEDERAL CIRCUIT**

RICHARD A WILLIAMSON,  
Trustee for At Home Bondholders Liquidating Trust,

Plaintiff-Appellant,

v.

CITRIX ONLINE, LLC, CITRIX SYSTEMS, INC., MICROSOFT  
CORPORATION, and ADOBE SYSTEMS, INC.,

Defendants-Appellees,

and

WEBEX COMMUNICATIONS, INC., CISCO WEBEX, LLC, and CISCO  
SYSTEMS, INC.,

Defendants-Appellees,

and

INTERNATIONAL BUSINESS MACHINES CORPORATION,

Defendant-Appellee.

Appeal from the United States District Court for the Central District of California  
in Case No. 11-CV-2409, Judge A. Howard Matz.

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**APPELLEES' PETITION FOR REHEARING EN BANC**

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Frank E. Scherkenbach  
Kurt L. Glitzenstein  
FISH & RICHARDSON P.C.  
One Marina Park Drive  
Boston, MA 02210  
(617) 542-5070

Indranil Mukerji  
FISH & RICHARDSON P.C.  
1425 K Street, NW 11<sup>th</sup> Floor  
Washington, DC 20005  
(202) 783-5070

*Counsel for Defendants-Appellees Citrix Online, LLC, Citrix Systems, Inc.,  
Microsoft Corporation, and Adobe Systems, Inc.*

Douglas M. Kubehl  
Samara L. Kline  
Brian D. Johnston  
BAKER BOTTS LLP  
2001 Ross Avenue  
Dallas, TX 75201  
(214) 953-6500

*Counsel for Defendants-Appellees  
Webex Communications, Inc., Cisco  
Webex, LLC, and  
Cisco Systems, Inc.*

Mark J. Abate  
Calvin E. Wingfield, Jr.  
GOODWIN PROCTER LLP  
The New York Times Building  
620 Eighth Avenue  
New York, NY 10018  
(212) 813-8800

William F. Sheehan  
GOODWIN PROCTER LLP  
901 New York Avenue, N.W.  
Washington, DC 20001-4432  
(202) 346-4000

*Counsel for Defendant-Appellee  
International Business Machines  
Corporation*

## CERTIFICATES OF INTEREST

Counsel for Defendants-Appellees Citrix Online, LLC, Citrix Systems, Inc.,

Microsoft Corporation, and Adobe Systems Inc. certifies the following:

1. The full name of every party or amicus represented by me is:

Citrix Online, LLC, Citrix Systems, Inc., Microsoft Corporation, and Adobe Systems Inc.

2. The name of the real party in interested represented by me is:

Citrix Online, LLC, Citrix Systems, Inc., Microsoft Corporation, and Adobe Systems Inc.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

There is no such corporation

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

Fish & Richardson P.C.: Frank E. Scherkenbach; Indranil Mukerji; Jason W. Wolff; Jerry T. Yen (no longer with the firm); Jonathan Joseph Lamberson; Kurt L. Glitzenstein; Kyle Wagner Compton (no longer with the firm); Nancy L. Stagg (no longer with the firm); Tal Kedem; Travis W. Thomas (no longer with the firm); Karolina Jesien

Dated: December 5, 2014

/s/ Kurt L. Glitzenstein

Kurt L. Glitzenstein

*Counsel for Defendants-Appellees  
Citrix Online, LLC, Citrix Systems,  
Inc., Microsoft Corporation, and  
Adobe Systems Inc.*

Counsel for Defendants-Appellees Webex Communications, Inc., Cisco Webex, LLC, and Cisco Systems, Inc. certifies the following:

1. The full name of every party or amicus represented by me is:

Webex Communications, Inc., Cisco Webex, LLC, and Cisco Systems, Inc.

2. The name of the real party in interested represented by me is:

None

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

Douglas M. Kubehl, Brett Mangrum (no longer with the firm), Kevin E. Cadwell, Kurt M. Pankratz, Travis W. Thomas, Samara L. Kline, Brian D. Johnston - Baker Botts LLP

Dated: December 5, 2014

/s/ Douglas M. Kubehl

Douglas M. Kubehl

*Counsel for Defendants-Appellees  
Webex Communications, Inc., Cisco  
Webex, LLC, and Cisco Systems, Inc.*

Counsel for International Business Machines Corporation certifies the following:

1. The full name of every party represented by me is International Business Machines Corporation.
2. The name of the real parties in interest represented by me is named in the caption.
3. No publicly owned company directly owns more than 10% of International Business Machines Corporation.
4. The names of all law firms and the partners or associates that appeared for the party now represented by me in the District Court, or are expected to appear in this Court, are:

Mark J. Abate  
Gregory S. Bishop (no longer with the firm)  
William F. Sheehan  
Calvin E. Wingfield, Jr.  
Benjamin Keller (no longer with the firm)  
GOODWIN PROCTER LLP

Dated: December 5, 2014

*/s/ Mark J. Abate*  
\_\_\_\_\_  
Mark J. Abate  
*Counsel for Defendant-Appellee  
International Business Machines  
Corporation*

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## FEDERAL CIRCUIT RULE 35(B) STATEMENT

Based on my professional judgment, I believe this appeal requires an answer to one or more precedent-setting questions of exceptional importance:

(1) What are the criteria for determining whether functional claim language is subject to 35 U.S.C. § 112(6) (now § 112(f)) , and, in particular:

- a. What presumptions, if any, apply as a matter of law and how can they be rebutted?
- b. What legal standard determines whether a claim element that does not use the word “means” is nevertheless “expressed as a means . . . for performing a specified function without the recital of structure,” and therefore subject to 35 U.S.C. § 112(6)?
- c. Is the use of a term that merely “connotes structure” sufficient to avoid the application of 35 U.S.C. § 112(6), (Maj. Op. at 13-16), or must a claim recite a sufficiently definite structure for performing the recited function to avoid application of the statute?

Based on my professional judgment, I believe the panel decision is in conflict with the statutory language of 35 U.S.C. § 112(6), as well as with the following decisions of the Supreme Court of the United States and the precedents of this Court: *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946); *General Elec. Co. v. Wabash Appliance Corp.*, 304 U.S. 364 (1938); *Holland*

*Furniture Co. v. Perkins Glue Co.*, 277 U.S. 245 (1928); *O’Reilly v. Morse*, 56 U.S. 62 (1854); *Robert Bosch, LLC v. Snap-On Inc.*, 769 F.3d 1094 (Fed. Cir. 2014) (Prost, C.J.).

## SUMMARY OF THE PANEL DECISION

The claim limitation at issue in this petition recites:

“a *distributed learning control module for* receiving communications transmitted between the presenter and the audience member computer systems and for relaying the communications to an intended receiving computer system and for coordinating the operation of the streaming data module.”

The district court found that there was “no evidence . . . that the[] name[] [distributed learning control module] connote[s] well understood structures in the computer technology field,” and therefore concluded that it must be construed in accordance with 35 U.S.C. § 112(6). [A32.] In attempting to identify corresponding structure in the specification, the district court found that there was no structure for performing the function “coordinating the operation of the streaming data module,” and therefore held the claim term indefinite. [A32-33.]

The majority reversed, relying dispositively on a “strong” presumption that § 112(6) does not apply because the claim does not use the word “means.” (Maj. Op. at 12-13). The majority held that, to rebut this “strong presumption,” it must be demonstrated that “skilled artisans, after reading the patent, would conclude that [the] claim limitation is **so devoid of structure** that the drafter constructively

engaged in means-plus-function claiming.” (*Id.* (emphasis added).) The majority noted that the strength of the presumption is so great that “[w]e have seldom held that a limitation not using the term ‘means’ must be considered to be in means-plus-function form,’ and ‘the circumstances must be unusual to overcome the presumption.’” (*Id.*, citing *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1362 (Fed. Cir. 2004)).

The majority held that the “strong presumption” against applying § 112(6) was not overcome here. (*Id.*). In particular, the majority concluded that the district court had “failed to appreciate” that the word “module” had “understood dictionary meanings as connoting either hardware or software structure to those skilled in the computer arts,” (Maj. Op. at 14-15), even though no party, either in the district court or in this Court, offered any dictionary definitions for that term, or suggested that it would be useful or appropriate to rely on such definitions. The majority further criticized the district court for failing to give proper weight to “the supporting text of the specification.” (*Id.*). The majority concluded that, “[w]hile the supporting specification describes the claimed expression ‘distributed learning control module’ **in a high degree of generality, in some respects using functional expressions**, it is difficult to conclude that it is devoid of structure.” (*Id.* (emphasis added)).

The dissent agreed with the district court that the “distributed learning control module” element did not recite sufficiently definite structure; that the “module” limitation in the patent is claimed only in terms of the functions that it performs; and that references to “generic software or hardware” are insufficient to provide “sufficiently definite” structure. (Dissenting Op. at 4-8). The dissent also would have affirmed the district court’s decision that there was no corresponding structure in the specification for the “coordinating” function. (*Id.* at 8-9).

### **ARGUMENT**

Section 112, paragraph 6, sets forth a statutory bargain. Congress permitted a patentee the ease and flexibility of expressing a claim element as a “means . . . for performing a specified function without the recital of structure, material, or acts in support thereof,” 35 U.S.C. § 112(6), a practice previously condemned by the Supreme Court. But such claim-drafting flexibility came at a price, in terms of claim construction: “such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.” *Id.*

Respectfully, this Court’s means-plus-function jurisprudence has drifted from this statutory mandate, resulting in a significant doctrinal divergence in which different panels have given contradictory guidance on when § 112(6) applies to functional claim terms. On the one hand, panels have found that the recitation of

generic structures, such as “program recognition device” and “settable control module,” are subject to 35 U.S.C. § 112(6). See *Robert Bosch*, 769 F.3d 1094 (Fed. Cir. 2014); *Ranpak Corp. v. Storopack, Inc.*, 1998 U.S. App. LEXIS 16348 (Fed. Cir. July 15, 1998) (unpublished). For example, the *Robert Bosch* panel noted that the computer-implemented claim function at issue “could be achieved by using any type of device that comprises hardware, software, or both,” leading the panel to conclude that the claims “fail[ed] to provide sufficiently definite structure,” and thus the claim terms were construed in accordance with § 112(6). 769 F.3d at 1100. The holdings of these cases are logically consistent with the statutory language and its emphasis on substance, not form.

It is likewise consistent with the long line of precedent from this Court that, in attempting to identify corresponding structure for a means-plus-function claim element, generic general-purpose computer hardware or software alone (such as a “computer” or a “processor”) is not definite structure because general purpose hardware and software can be programmed to perform any of an infinite number of specific algorithms. See *Aristocrat Techs. Austl. PTY Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008) (“general purpose computers can be programmed to perform very different tasks in very different ways”).

It would be anomalous to have a statutory regime in which the recitation of vague or generic structure in the specification is insufficient to satisfy the

“corresponding structure” requirement of § 112(6)—thus resulting in invalidity under § 112(2)—but the recitation of that same vague or generic structure in the claims avoids application of § 112(6) entirely.

Yet that anomaly follows directly from the decisions by other panels—including the majority here—rejecting the proposition that the claims must recite a “sufficiently definite structure” to perform the recited function. Those panels limit the application of § 112(6) to claim terms that are entirely devoid of structure. On this rationale, a claim element that recites a token amount of structure, in the most abstract of terms, avoids § 112(6) even if that structure is not sufficiently definite to perform the claimed function. (*See* Maj. Op. at 13, citing *Inventio*). Indeed, per the majority, claim language that merely “connotes” structure, even generic hardware or software, is sufficient to avoid application of § 112(6). (*Id.* at 15).

This is a serious departure from the language of the statute, its legislative history, and the Supreme Court authority that precipitated it. What started out as a straightforward issue of substance—does a claim recite an undue level of functionality in lieu of structure?—has morphed into an issue of form—if a claim fails to recite the word “means,” does it recite even the barest level of structure that could conceivably be used to perform the recited function? The addition of a “strong” presumption—whatever that might mean on an issue that is

fundamentally one of claim construction—to the calculus only reinforces how untethered the doctrine has become from its underpinnings.

This doctrinal divergence was crystalized in the competing opinions of *Apple v. Motorola*, in which the dissent, observing that the Court’s means-plus-function jurisprudence allows functional claim language to escape the reach of § 112(6) provided it is accompanied by generic computer-related “structure,” observed that such a result “should compel our court to reconsider when we treat functional claims as means-plus-function claims.” 757 F.3d 1286, 1338 (Fed. Cir. 2014) (Prost, C.J., dissenting).

To resolve this doctrinal divergence, the Court must return to the plain language of the statute and the bargain that it represents—the ability to utilize functional claim language, with the *quid pro quo* that such language is limited to the corresponding structure disclosed in the specification and equivalents. The statute necessarily and always applies when the claim drafter resorts to functional language without reciting sufficiently definite structure for performing the claimed function. Appellees respectfully request that the law be restored on this issue, that the panel decision be vacated, and that the district court’s decision with respect to the “distributed learning control module” limitation be affirmed.

**A. Nothing in the Statute or the Relevant Legislative History Supports Adopting a Presumption Against § 112(6) When Claim Terms Do Not Use The Word “Means.”**

35 U.S.C. § 112(6) states:

[a]n 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.

The statute’s mandatory language requires that functional claim language “*shall* be” limited to the corresponding structure disclosed in the specification.

The plain language, as well as an examination of the history leading to its enactment, confirms that the statute is about the substantive issue of functional claiming, not about elevating the word “means” to special statutory significance.

There is general consensus that this portion of the statute was added in response to the Supreme Court’s decision in *Halliburton*. See *In re Lundberg*, 244 F.2d 543, 547 (C.C.P.A. 1957). The patent in *Halliburton* recited a “means associated with said pressure responsive device for tuning said receiving means to the frequency of echoes from the tubing collars of said tubing sections to clearly distinguish the echoes from said couplings from each other.” 329 U.S. at 8-9. The Court noted that it had previously struck down claims that used “conveniently functional language at the exact point of novelty.” *Id.*, citing *General Electric*. The Court highlighted the “broadness, ambiguity, and overhanging threat of the

functional claim” in that it bars any performance of the claimed function using any possible structures, and thus found the claim invalid because the patentee failed to “adequately depict the structure, mode, and operation of the parts in combination.” *Id.* at 8-12.

Nor was the Supreme Court’s concern confined to the use of the specific words “means for.” In *General Electric*, the claim recited a “filament for electric incandescent lamps” made of tungsten “grains of such size and contour as to prevent substantial sagging and off-setting during a normal or commercially useful life for such a lamp or other device.” 304 U.S. at 368. The Court noted that the claim “uses indeterminate adjectives which describe the function of the grains to the exclusion of any structural definition, and thus falls within the condemnation of the doctrine that a patentee may not broaden his product claims by describing the product in terms of function.” *Id.* at 371. The Court stated that “the vice of a functional claim exists not only when a claim is ‘wholly’ functional, if that is ever true, but also when the inventor is painstaking when he recites what has already been seen, and then uses conveniently functional language at the exact point of novelty.” *Id.*<sup>1</sup> See also *Holland Furniture*, 277 U.S. at 250, 256 (“an inventor may not describe a particular starch glue which will perform the function of animal glue

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<sup>1</sup> Other early cases striking down functional claiming include *In re Hill*, 34 C.C.P.A. 783 (C.C.P.A. 1947); *In re Fullam*, 34 C.C.P.A. 1018 (C.C.P.A. 1947); and *In re MERCIER*, 36 C.C.P.A. 880 (C.C.P.A. 1949).

and then claim all starch glues which have those functions” where claim at issue recited “[a] glue ... having substantially the properties of animal glue,” without reciting “means”); *O’Reilly*, 56 U.S. at 112, 120 (finding “illegal and void” telegraph claim directed to “the use of the motive power of the electric or galvanic current ... for marking or printing intelligible characters, signs, or letters, at any distances,” where claim did not recite “means”).

Congress enacted § 112(6) to address such problematic functional claiming. In effect, Section 112(6) provides a safe harbor, but with an important *quid pro quo*: functional claiming would be saved from invalidity, but only because it would be construed to cover the corresponding structure disclosed in the specification, and equivalents thereof.

The legislative history for what became § 112(6) likewise attached no significance to the particular words used to introduce the functional content of the claim, simply stating that, “[a] new paragraph relating to functional claims is added.” Reviser’s Note, 35 USC § 112, H.R. Rep. No. 1923, 82d Cong., 2d Sess. 19 (1952). Contemporaneous comments consistently reflect that the section was meant to address the substantive issue of functional claiming, not the formalistic use of the words “means for:”

- From Stefan A. Riesenfeld, Professor of Law, University of California: “Probably as a reaction against what seemed to be a dangerous trend and **excessive formalism** the framers of the new code

inserted a special paragraph designed to authorize within certain limits the use of **functional expressions in patent claims.**” *See In re Fisher*, 50 C.C.P.A. 1019, 1022 (C.C.P.A. 1963) (emphasis added).

- From the P. J. Federico Commentary: “It is unquestionable that some measure of greater liberality in the use of **functional expressions** in combination claims is authorized than had been permitted by some court decisions...” *Id.* (emphasis added).
- From the Hon. Joseph R. Bryson, Representative from South Carolina: “I should like to say a word on the provision in the bill for **functional claiming**. This provision in reality will give statutory sanction to combination claiming as it was understood before the *Halliburton* decision. **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.**” *In re Fuetterer*, 50 C.C.P.A. 1453, n.11 (C.C.P.A. 1963) (emphasis added).

In short, the text of the statute, the Supreme Court authority leading to it, and its legislative history universally confirm that it applies to all claims that do not recite sufficiently definite structure for performing the recited function—regardless of whether the word “means” is used.

**B. Even if Some “Presumption” is Appropriate, a “Strong” Presumption Further Improperly Elevates Form Over Substance.**

Nothing in the statute or its legislative history warrants imposing a presumption based on the presence or absence of a “magic word.” The first mention of a “presumption” appears to be in *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d 1580, 1584 (Fed. Cir. 1996), and in that case it was an *affirmative* presumption that the statute applied where the word “means” was used:

[T]he use of the term ‘means’ has come to be so closely associated with ‘means-plus-function’ claiming that it is fair to say that the use of the term ‘means’ (particularly as used in the phrase ‘means for’) generally invokes section 112(6) and that the use of a different formulation generally does not.

This and other early cases do not characterize the affirmative “presumption” as “strong” (or “weak”). They simply note that if a claim uses the statutory language (“means for”), presumably the statute applies.<sup>2</sup>

The statement that the presumption is “strong” first appeared in *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004). That case addressed the issue of a presumption arising from absence of the word means—*i.e.*, a *negative* presumption. The Court announced that “the presumption flowing from the absence of the term ‘means’ is a **strong one** that is not readily overcome.” *Id.* (citing *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1318-19 (Fed. Cir. 1999), and *Personalized Media Communs., L.L.C. v. ITC*, 161 F.3d 696, 703 (Fed. Cir. 1998)). However, neither *Al-Site* nor *Personalized Media* says anything about the “strength” of the presumption.

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<sup>2</sup> Moreover, the preeminence that the word “means” (and the absence thereof) has assumed in this Court’s jurisprudence cannot be reconciled with the fact that that jurisprudence also equates the term “means” with other “nonce” words. *Lighting World*, 382 F.3d at 1360 (“What is important is whether the term is one that is understood to describe structure, as opposed to a term that is simply a nonce word or a verbal construct that is not recognized as the name of structure and is simply a substitute for the term ‘means for.’”) *See also* *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006) (“The generic terms ‘mechanism,’ ‘means,’ ‘element,’ and ‘device,’ typically do not connote sufficiently definite structure.”).

Like an echo chamber, the “strength” of the “presumption” seems to have grown with each telling. What started as a casual observation in connection with claims that recited the word “means” became an affirmative “presumption.” That affirmative presumption expanded to a negative presumption when the word “means” was absent. In turn, that negative presumption was elevated to a “strong presumption.” Even if some presumption were appropriate where a claim element is phrased as a “means for” performing a function, it does not follow that a “strong” *negative* presumption—or any presumption at all, for that matter—applies merely because the word “means” is absent. Putting a thumb on the scale in that circumstance makes it a trivial exercise to claim an invention functionally while avoiding the *quid pro quo* reflected in the statutory bargain, leading back to the pernicious claim formulations the Supreme Court condemned in *Halliburton*.

**C. Various Panels Have Used Conflicting Standards for When § 112(6) Applies in the Absence of the Word “Means.”**

Not only has the law become untethered from the statute and the Supreme Court authority that led to it, but the majority and dissenting opinions here reflect the significant split in authority over when functional claim language that does not use the word “means” nevertheless invokes § 112(6).

The majority here relied primarily upon the premise that the presumption against the application of § 112(6) is “a strong one that is not readily overcome.”

(Maj. Op. at 13). It stated that, “[t]o rebut this strong presumption, it must be demonstrated that ‘skilled artisans, after reading the patent, would conclude that the claim limitation is so **devoid of structure** that the drafter constructively engaged in means-plus-function claiming.’” (*Id.* (emphasis added), citing *Inventio*). The majority turned to dictionary definitions to conclude that the term “module” is a “structure-connoting term,” and therefore not subject to § 112(6). (*Id.* at 16).

First, the majority’s “devoid of structure” test conflicts with other decisions of this Court, from *Aristocrat* and its holding that general-purpose hardware or software provides insufficient written description support for a § 112(6) term, to *Bosch* and its holding that the claim term must recite “sufficiently definite structure” to avoid § 112(6). 769 F.3d at 1101. The *Bosch* panel noted that the computer-implemented claim function “could be achieved by using any type of device that comprises hardware, software, or both,” *id.* at 1100, and accordingly “fail[ed] to provide sufficiently definite structure.” *Id.* at 1101. Yet the majority here—presented with essentially the same generic computer-related “structure” as in *Bosch*—reached the opposite conclusion.

Second, the majority’s approach of searching for a “connotation” of structure in the specification<sup>3</sup> turns § 112(6) into the exception, rather than the rule

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<sup>3</sup> Indeed, on that point, the majority did not find any specific “algorithm” for performing the recited function, either in the claims or in the specification. The

Congress implemented for functional claim terms. As the dissent explained in *Apple*: “In effect, what the majority has done is imported the second step of the analysis (where you define the scope of a means-plus-function claim term based on the corresponding structure in the specification) into the first step (where you identify whether the term is drafted in means-plus-function format). The majority’s analysis implies that so long as a claim term has corresponding structure in the specification, it is not a means-plus-function limitation.” 757 F.3d at 1335.

The Court’s means-plus-function jurisprudence has created a regime that allows a patentee—depending on which panel it draws—to engage in the “vice of a functional claim” simply by replacing the word “means for” with the equally generic words “computer for,” “software for,” or “module for.” That was not the intent of Congress in passing § 112(6), and it is contrary to the language of the statute requiring a sufficiently definite structure in the claims themselves to avoid being treated according to the statute.

## CONCLUSION

For the above-stated reasons, Defendants-Appellees respectfully request that the Court grant this petition, vacate the panel opinion, hear the case *en banc*, and affirm the district court’s judgment.

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majority instead acknowledged that “the supporting specification describes the claimed expression ‘distributed learning control module’ in a high degree of generality, in some respects using functional expressions.” (Maj. Op. at 16).

Dated: December 5, 2014

Respectfully submitted,

/s/ Kurt L. Glitzenstein

Frank E. Scherkenbach  
Kurt L. Glitzenstein  
FISH & RICHARDSON P.C.  
One Marina Park Drive  
Boston, MA 02210  
(617) 542-5070

Indranil Mukerji  
FISH & RICHARDSON P.C.  
1425 K Street, NW 11<sup>th</sup> Floor  
Washington, DC 20005  
(202) 783-5070

*Counsel for Defendants-Appellees Citrix  
Online, LLC, Citrix Systems, Inc.,  
Microsoft Corporation, and Adobe  
Systems, Inc.*

/s/ Douglas M. Kubehl

Douglas M. Kubehl  
Samara L. Kline  
Brian D. Johnston  
BAKER BOTTS LLP  
2001 Ross Avenue  
Dallas, TX 75201  
(214) 953-6500

*Counsel for Defendants-Appellees  
Webex Communications, Inc., Cisco  
Webex, LLC, and  
Cisco Systems, Inc.*

*/s/ Mark J. Abate*

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Mark J. Abate

Calvin E. Wingfield Jr.

GOODWIN PROCTER LLP

The New York Times Building

620 Eighth Avenue

New York, New York 10018

(212) 813-8800

William F. Sheehan

GOODWIN PROCTER LLP

901 New York Avenue, N.W.

Washington, DC 20001-4432

(202) 346-4000

*Counsel for Defendant-Appellee  
International Business Machines  
Corporation*

# **ADDENDUM**

**United States Court of Appeals  
for the Federal Circuit**

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**RICHARD A. WILLIAMSON, Trustee for At Home  
Bondholders Liquidating Trust,  
*Plaintiff-Appellant,***

**v.**

**CITRIX ONLINE, LLC, CITRIX SYSTEMS, INC.,  
MICROSOFT CORPORATION, AND  
ADOBE SYSTEMS, INC.,  
*Defendants-Appellees,***

**AND**

**WEBEX COMMUNICATIONS, INC., CISCO WEBEX,  
LLC, AND CISCO SYSTEMS, INC.,  
*Defendants-Appellees,***

**AND**

**INTERNATIONAL BUSINESS MACHINES  
CORPORATION,  
*Defendant-Appellee.***

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2013-1130

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Appeal from the United States District Court for the  
Central District of California in No. 11-CV-2409, Judge A.  
Howard Matz.

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Decided: November 5, 2014

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BRETT J. WILLIAMSON, O'Melveny & Myers LLP, of Newport Beach, California, argued for plaintiff-appellant. With him on the brief was TIMOTHY D. BYRON. Of counsel on the brief were WILLIAM NORVELL, JR., SCOTT D. MARRS and BRIAN THOMAS BAGLEY, Beirne, Maynard & Parsons, L.L.P., of Houston, Texas.

KURT L. GLITZENSTEIN, Fish & Richardson P.C., of Boston, Massachusetts, argued for all defendants-appellees. With him on the brief for defendants-appellees Citrix Online, LLC, et al. were FRANK E. SCHERKENBACH, of Boston, Massachusetts; and INDRANIL MUKERJI, of Washington, DC. Of counsel was Jonathan J. Lamverson, of Redwood City, California. On the brief for defendants-appellees Webex Communications, Inc., et al. were DOUGLAS M. KUBEHL, SAMARA L. KLINE and BRIAN D. JOHNSTON, Baker Botts LLP, of Dallas, Texas. On the brief for defendant-appellee International Business Machines Corporation were MARK J. ABATE and CALVIN E. WINGFIELD, JR., Goodwin Procter LLP, of New York, New York, GREGORY S. BISHOP, of Menlo Park, California, and WILLIAM F. SHEEHAN, of Washington, DC. Of counsel was ISABELLA E. FU, Microsoft Corporation, of Redmond, Washington, for defendant-appellee Microsoft Corporation.

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Before MOORE, LINN, and REYNA, *Circuit Judges*.<sup>1</sup>

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<sup>1</sup> Randall R. Rader, who retired from the position of Circuit Judge on June 30, 2014, did not participate in this decision. Judge Moore was appointed to join the panel pursuant to Fed. Cir. R. 47.11.

Opinion for the court filed by *Circuit Judge* LINN.

Dissenting opinion filed by *Circuit Judge* REYNA.

LINN, *Circuit Judge*.

Richard A. Williamson (“Williamson”), as trustee for the At Home Corporation Bondholders’ Liquidating Trust, owns U.S. Patent No. 6,155,840 (“the ’840 patent”) and appeals from the stipulated final judgment in favor of defendants Citrix Online, LLC; Citrix Systems, Inc.; Microsoft Corporation; Adobe Systems, Inc.; Webex Communications, Inc.; Cisco Webex, LLC; Cisco Systems, Inc.; and International Business Machines Corporation (collectively, “Appellees”). Because the district court erroneously construed the limitations “graphical display representative of a classroom” and “first graphical display comprising . . . a classroom region,” we vacate the judgment of non-infringement of claims 1–7 and 17–24 of the ’840 patent. Because the district court erroneously construed the limitation “distributed learning control module,” as a means-plus-function expression, we vacate the judgment of invalidity of claims 8–12 of the ’840 patent under 35 U.S.C. § 112, para. 2. Accordingly, we remand.

## BACKGROUND

### I. The ’840 Patent

The ’840 patent describes methods and systems for “distributed learning” that utilize industry standard computer hardware and software linked by a network to provide a classroom or auditorium-like metaphor—i.e., a “virtual classroom” environment. The objective is to connect one or more presenters with geographically remote audience members. ’840 patent, col. 2 ll. 10–14. The disclosed inventions purport to provide “the benefits of classroom interaction without the detrimental effects of complicated hardware or software, or the costs and incon-

venience of convening in a separate place.” *Id.* at col. 2 ll. 4–7.

There are three main components of the “distributed learning” system set forth in the ’840 patent: (1) a presenter computer, (2) audience member computers, and (3) a distributed learning server. The distributed learning server implements a “virtual classroom” over a computer network, such as the Internet, to facilitate communication and interaction among the presenter and audience members. The presenter computer is used by the presenter to communicate with the audience members and control information that appears on the audience member’s computer screen. *Id.* at col. 4 l. 66–col. 5 l. 2. An audience member’s computer is used to display the presentation and can be used to communicate with the presenter and other audience members. *Id.* at col. 5 ll. 11–14.

The ’840 patent has three independent claims. These claims recite the following:

1. A method of conducting distributed learning among a plurality of computer systems coupled to a network, the method comprising the steps of:

providing instructions to a first computer system coupled to the network for:

creating a *graphical display representative of a classroom*;

creating a graphical display illustrating controls for selecting first and second data streams;

creating a first window for displaying the first selected data stream; and

creating a second window for displaying the second selected data stream, wherein

the first and second windows are displayed simultaneously; and

providing instructions to a second computer system coupled to the network for:

- creating a *graphical display representative of the classroom*;
- creating a third window for displaying the first selected data stream; and
- creating a fourth window for displaying the second selected data stream, wherein

the third and fourth windows are displayed simultaneously.

8. A system for conducting distributed learning among a plurality of computer systems coupled to a network, the system comprising:

a presenter computer system of the plurality of computer systems coupled to the network and comprising:

- a content selection control for defining at least one remote streaming data source and for selecting one of the remote streaming data sources for viewing; and

- a presenter streaming data viewer for displaying data produced by the selected remote streaming data source;

an audience member computer system of the plurality of computer systems and coupled to the presenter computer system via the network, the audience member computer system comprising:

- an audience member streaming data viewer for displaying the data produced by the selected remote streaming data source; and

a distributed learning server remote from the presenter and audience member computer systems of the plurality of computer systems and coupled to the presenter computer system and the audience member computer system via the network and comprising:

a streaming data module for providing the streaming data from the remote streaming data source selected with the content selection control to the presenter and audience member computer systems; and

a *distributed learning control module* for receiving communications transmitted between the presenter and the audience member computer systems and for relaying the communications to an intended receiving computer system and for coordinating the operation of the streaming data module.

17. A distributed learning server for controlling a presenter computer system and an audience member computer system coupled to the distributed learning server via a network, the distributed learning server comprising:

a module for providing a first graphical display on the presenter computer system, the *first graphical display comprising*:

a first presenter content selection control for selecting a first source of streaming content representative of graphical information;

a first presenter content display region for displaying the graphical information represented by the streaming content from the first selected source;

a second presenter content selection control for selecting a second source of streaming content representative of graphical information; and

a second presenter content display region for displaying the graphical information represented by the streaming content from the second selected source, wherein the first and second presenter content display regions are adapted to display simultaneously; and

*a classroom region* for representing the audience member computer system coupled to the distributed learning server; and

a module for providing a second graphical display on the audience member computer system, the second graphical display comprising:

a first audience member content display region for displaying the graphical information represented by the streaming content from the first source selected by the content selection control; and

a second audience member content display region for displaying the graphical information represented by the streaming content from the second source selected by the content selection control, wherein the first and second audience member content display regions are adapted to display simultaneously.

*Id.* at col. 10 ll. 28–52, col. 11 ll. 26–62, col. 12 ll. 29–65 (emphases added for relevant terms).

## II. Procedural History

Williamson accused Appellees of infringing the '840 patent based on their alleged manufacture, sale, offer for sale, use, and importation of various systems and meth-

ods of online collaboration. On March 22, 2011, Williamson filed suit in the United States District Court for the Central District of California specifically asserting infringement of all 24 claims of the '840 patent. On September 4, 2012, the district court issued a claim construction order, construing, *inter alia*, the following limitations of independent claims 1 and 17: “graphical display representative of a classroom” and “first graphical display comprising . . . a classroom region” (collectively, the “graphical display” limitations). The district court held that these terms require “a pictorial map illustrating an at least partially virtual space in which participants can interact, and that identifies the presenter(s) and the audience member(s) by their locations on the map.”

In its claim construction order, the district court also concluded that the limitation of claim 8, “distributed learning control module,” was a means-plus-function term under 35 U.S.C. § 112, para. 6. The district court then evaluated the specification and concluded that it failed to disclose the necessary algorithms for performing all of the claimed functions. The district court thus held claim 8 and its dependent claims 9–16 invalid as indefinite under § 112, para. 2.

Williamson conceded that under the district court’s claim constructions, none of Appellees’ accused products infringed independent claims 1 and 17 and their respective dependent claims 2–7 and 18–24, and that claims 8–16 were invalid. The parties stipulated to final judgment. Williamson appeals the stipulated entry of judgment, challenging these claim construction rulings. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

## DISCUSSION

### I. Standard of Review

Claim construction is a legal issue that this court reviews de novo on appeal. *Lighting Ballast Control LLC v.*

*Philips Elecs. N. Am. Corp.*, 744 F.3d 1272, 1276–77 (Fed. Cir. 2014) (en banc). To ascertain the scope and meaning of the asserted claims, this court looks to the words of the claims themselves, the specification, the prosecution history, and, lastly, any relevant extrinsic evidence. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315–17 (Fed. Cir. 2005) (en banc). Whether claim language invokes § 112, para. 6,<sup>2</sup> is an exercise of claim construction and is therefore a question of law, subject to de novo review. *Personalized Media Commc'ns, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 702 (Fed. Cir. 1998).

## II. The “graphical display” Limitations

Williamson asserts that the district court erred in its construction of the graphical display terms by improperly importing an extraneous “pictorial map” limitation into the claim. Williamson argues that requiring a “map” unduly narrows the claims to the preferred embodiment disclosed in the written description and that there is no support in the intrinsic record for confining the claims to a “pictorial map” that identifies the location of the participants. Williamson alleges that a proper definition must require the audience members to be able to interact with both the presenter and other audience members. He therefore asserts that the proper construction of the graphical display terms is “a viewable illustration of an at least partially virtual space that allows audience members to interact with both the presenter and other audience members.”

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<sup>2</sup> Paragraph 6 of 35 U.S.C. § 112 was replaced with newly designated § 112(f) when § 4(c)(6) of the Leahy–Smith America Invents Act (“AIA”), Pub. L. No. 112–29, took effect on September 16, 2012. Because the patent application that led to the ’840 patent was filed before the effective date of the AIA, we apply the pre-AIA version of that section.

Appellees respond that the district court's construction correctly limited the claims to a "pictorial map" consistent with the teachings of the written description. According to Appellees, this construction does not import a limitation from the preferred embodiment, but simply reflects the functional aspects of a "classroom" in a manner that is consistent with what the patentee invented and disclosed. Moreover, according to Appellees, it is consistent with the only depiction of a classroom shown in the '840 patent, which shows a pictorial map as a seating chart that identifies the presenters and audience members by their locations on the map.

We agree with Williamson. The district court erred in construing these terms as requiring a "pictorial map." First, the claim language itself contains no such "pictorial map" limitation. "[I]t is the *claims*, not the written description, which define the scope of the patent right." *Laitram Corp. v. NEC Corp.*, 163 F.3d 1342, 1347 (Fed. Cir. 1998); *see id.* ("[A] court may not import limitations from the written description into the claims."). While the specification discloses examples and embodiments where the virtual classroom is depicted as a "map" or "seating chart," nowhere does the specification limit the graphical display to those examples and embodiments. This court has repeatedly "cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327–28 (Fed. Cir. 2002) (quoting cases).

Here, there is no suggestion in the intrinsic record that the applicant intended the claims to have the limited scope determined by the district court. To the contrary, the embodiments and examples in the specification of classroom metaphors relating to "maps" are consistently described in terms of preference. For example, at column 2, lines 34–39, the specification states that "[t]he classroom metaphor *preferably* provides a map of the classroom showing the relative relationships among the

presenters and audience members.” ’840 patent, col. 2 ll. 37–39 (emphasis added). In another example, the graphical display of Figure 6 is described as an “exemplary display” on the presenter’s computer. *Id.* at col. 7 ll. 35–36. That exemplary display includes a window that “preferably provides a seating chart showing the audience members and presenters in the classroom or auditorium.” *Id.* at col. 9 ll. 5–7 (emphasis added).

The ’840 patent defines a classroom as “an at least partially virtual space in which participants can interact.” *Id.* at col. 6 ll. 5–7. Nothing further is required, and no greater definition is mandated by the language of the claims, the specification, or the prosecution history. As is well settled, the claims must “not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.” *Innova/Pure Water, Inc., v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004) (internal quotations omitted).

For the foregoing reasons, we conclude that the district court incorrectly construed the graphical display terms to have a “pictorial map” limitation. We therefore vacate the stipulated judgment of non-infringement of claims 1–7 and 17–24. The “graphical display” limitations in claims 1 and 17 are properly construed as “a graphical representation of an at least partially virtual space in which participants can interact.”

### III. The “distributed learning control module” Limitation

On appeal, Williamson argues that the district court erred in construing the term “distributed learning control module” as being governed by 35 U.S.C. § 112, para. 6. Williamson contends that the district court failed to give appropriate weight to the “strong” presumption against means-plus-function claiming that attaches to claim terms that do not recite the word “means.” Williamson

also argues that the district court wrongly focused its analysis on the word “module” instead of the full term, ignored the detailed support provided in the written description, and misapplied our law by failing to view the term from the perspective of one of ordinary skill in the art.

Appellees respond that the district court correctly concluded that the presumption against means-plus-function claiming was rebutted because “distributed learning control module” does not have a well understood structural meaning in the computer technology field. Appellees argue that the “distributed learning control module” limitation is drafted in the same format as a traditional means-plus-function limitation, and merely replaces the term “means” with the “nonce” word “module,” thereby connoting a generic “black box” for performing the recited computer-implemented functions. In Appellees’ view, since the term should be treated as a means-plus-function claim term and there is no algorithmic structure for implementing the claimed functions in the written description, the finding of indefiniteness should be affirmed.

We agree with Williamson that the district court erred in concluding that “distributed learning control module” is a means-plus-function claim term.

Section 112, para. 6, provides that “[a]n 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.” 35 U.S.C. § 112, para. 6 (1994). In *Personalized Media Commc’ns, LLC v. International Trade Commission*, 161 F.3d 696 (Fed. Cir. 1998), and again in *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005 (Fed. Cir. 2006), we stated that the failure to use the word “means” in a claim limitation created a rebuttable presumption that 35 U.S.C. § 112, para. 6 did not apply. See *Personalized Media*, 161 F.3d at 703–04; *DePuy Spine*,

469 F.3d at 1023. This presumption is “a strong one that is not readily overcome.” *Lighting World, Inc. v. Birchwood Lighting, Inc.*, 382 F.3d 1354, 1358 (Fed. Cir. 2004). To rebut this strong presumption, it must be demonstrated that “skilled artisans, after reading the patent, would conclude that [the] claim limitation is so devoid of structure that the drafter constructively engaged in means-plus-function claiming.” *Inventio AG v. ThyssenKrupp Elevator Ams. Corp.*, 649 F.3d 1350, 1357 (Fed. Cir. 2011). A claimed expression cannot be said to be devoid of structure if it 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.” *Lighting World*, 382 F.3d at 1359–60.

“Technical dictionaries, which are evidence of the understandings of persons of skill in the technical arts” may inform whether claim terms connote structure. *Linear Tech. Corp. v. Impala Linear Corp.*, 379 F.3d 1311, 1320 (Fed. Cir. 2004); *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1355 (Fed. Cir. 2006). Moreover, in circumstances in which “[a] structure-connoting term . . . is coupled with a description of [its] operation, sufficient structural meaning generally will be conveyed to persons of ordinary skill in the art.” *Linear Tech.*, 379 F.3d at 1320. In making this assessment, it is important to consider the claimed expression as a whole, and not merely any single word, as well as its surrounding textual context. *See Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364, 1372 (Fed. Cir. 2003) (“[T]he primary source of this error lies in the district court’s reliance on single words of the limitations . . . as opposed to the limitations as a whole . . . .”); *Mass. Inst. of Tech.*, 462 F.3d at 1356 (“The claim language here too does not merely describe a circuit; it adds further structure by describing the operation of the circuit.”).

The district court here failed to give weight to the strong presumption that 35 U.S.C. § 112, para. 6, did not apply based on the absence of the word “means.” “[W]e have seldom held that a limitation not using the term ‘means’ must be considered to be in means-plus-function form,” and “the circumstances must be [unusual] to overcome the presumption.” *Lighting World*, 382 F.3d at 1362.

Moreover, in determining that the strong presumption was overcome, the district court erred: (1) in failing to appreciate that the word “module” has a number of dictionary meanings with structural connotations; (2) in placing undue emphasis on the word “module” separate and apart from the claimed expression “distributed learning control module”; and (3) in failing to give proper weight to the surrounding context of the rest of the claim language and the supporting text of the specification in reaching the conclusion that the drafter employed means-plus-function claiming.

The district court, in characterizing the word “module” as a mere nonce word, failed to appreciate that the word “module” has understood dictionary meanings as connoting either hardware or software structure to those skilled in the computer arts. While the parties here have not cited any dictionaries, we have frequently looked to the dictionary to determine if a disputed term has achieved recognition as a term denoting structure. “[J]udges are free to consult dictionaries and technical treatises ‘at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent documents.’” *Phillips*, 415 F.3d at 1322–23 (quoting *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996)); see also *Lighting World*, 382 F.3d at 1360; *Mass. Inst. of Tech.*, 462 F.3d at 1355. The IBM Corporation, *IBM Dictionary of Computing* 439 (1st ed. 1994)

defines “module” as a “packaged functional hardware unit designed for use with other components” and a “part of a program that usually performs a particular function of related functions.” *See also* Alan Freedman, *The Computer Glossary* 268 (8th ed. 1998) (defining “module” as a “self-contained hardware or software component that interfaces with a larger system”); John Daintith & Edmund Wright, *Dictionary of Computing* 315 (4th ed. 1996) (defining “module” as a “programming or specification construct that defines a software component” and a “component of a hardware system that can be subdivided”). These definitions all show that the term “module” has a structure connoting meaning to persons of ordinary skill in the computer arts.

Appellees cite an unpublished opinion in *Ranpak Corp. v. Storopack, Inc.*, No. 98-1009, available at 1998 WL 513598 (Fed. Cir. July 15, 1998), to support their conclusion that “module” means nothing more than “means.” That case, however, dealt with reconciling two claimed expressions that differed only in those words. The court made no reference to any dictionary meanings of the word “module” and made no analysis or ruling as to the meaning of the word “module” beyond the limited context of the issue confronting it in that case.

Not only did the district court fail to appreciate the structure-connoting meanings of the word “module” reflected in dictionaries, it also failed to consider the claimed expression “distributed learning control module” as a whole. This was error. *See Apex*, 325 F.3d at 1372. The adjectival modifiers “distributed learning control” cannot be ignored and serve to further narrow the scope of the expression as a whole. *Id.* at 1374. Here, the “distributed learning control module” is claimed as a part of the definite structure “distributed learning server” and “receive[s] communications transmitted between the presenter and the audience member computer systems,” “relay[s] the communications to an intended receiving

computing system,” and “coordinat[es] the operation of the streaming data module.” ’840 patent, col. 11 ll. 55–62. These claimed interconnections and intercommunications support the conclusion that one of ordinary skill in the art would understand the expression “distributed learning control module” to connote structure.

The specification further explains that the distributed learning control module operates as a functional unit of the distributed learning server and coordinates the operation of the streaming data module through input from the presenter computer system. *Id.* at col. 5 ll. 34–36. The specification also makes clear that the distributed learning control module includes software that runs on a portion of the distributed learning server. *Id.* at col. 5 ll. 40–58. While the supporting specification describes the claimed expression “distributed learning control module” in a high degree of generality, in some respects using functional expressions, it is difficult to conclude that it is devoid of structure. *See Lighting World*, 382 F.3d at 1359–60 (A claimed expression cannot be said to be devoid of structure if it 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.”)

For these reasons, we determine that the Appellees have failed to overcome the strong presumption that the expression “distributed learning control module” is not subject to 35 U.S.C. § 112, para. 6. We therefore vacate the district court’s determination that claims 8–12 are invalid under 35 U.S.C. § 112, para. 2, based on that construction.

#### CONCLUSION

Because the district court erred in construing the “graphical display” limitations of claims 1 and 17 and the “distributed learning control module” limitation of claim

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8, we vacate the stipulated judgment of non-infringement of claims 1–7 and 17–24 and of invalidity of claims 8–16 and remand the case to the district court.

**VACATED AND REMANDED**

**COSTS**

Costs to Williamson.

**United States Court of Appeals  
for the Federal Circuit**

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**RICHARD A. WILLIAMSON, Trustee for At Home  
Bondholders Liquidating Trust,  
*Plaintiff-Appellant,***

**v.**

**CITRIX ONLINE, LLC, CITRIX SYSTEMS, INC.,  
MICROSOFT CORPORATION, AND ADOBE  
SYSTEMS, INC.,  
*Defendants-Appellees,***

**AND**

**WEBEX COMMUNICATIONS, INC., CISCO WEBEX,  
LLC, AND CISCO SYSTEMS, INC.,  
*Defendants-Appellees,***

**AND**

**INTERNATIONAL BUSINESS MACHINES  
CORPORATION,  
*Defendant-Appellee.***

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2013-1130

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Appeal from the United States District Court for the  
Central District of California in No. 11-CV-2409, Judge A.  
Howard Matz.

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REYNA, *Circuit Judge*, dissenting.

I agree with the majority that the district court erred in finding that the “graphical display representative of a classroom” terms require a pictorial map. The majority, however, ignores critical evidence showing that an image of a visually depicted virtual classroom is required. Further, I do not agree that claim 8 of the ’840 patent discloses sufficient structure to keep the claim limitation “distributed learning control module” outside of the requirements of 35 U.S.C. § 112, paragraph 6. For these and the reasons set forth below, I respectfully *dissent*.

## I

The majority reverses the district court’s conclusion that the “graphical display representative of a classroom” terms require a pictorial map and construes the terms as “a graphical representation of an at least partially virtual space in which participants can interact.” While the majority is correct that the claims of the ’840 patent do not require a pictorial map, the majority has adopted a construction that ignores a critical limitation. As reviewed below, the specification and prosecution history make clear that the “graphical display representative of a classroom” terms are properly construed as requiring a visually depicted virtual classroom.

During patent prosecution, the applicant explained that the invention is distinct from the prior art because the patent requires a “visual virtual classroom” displayed on both a first and second computer system:

Additionally, [the prior art] does not disclose the claimed feature of “creating a graphical display representative of the classroom” on a second computer system coupled to the network. The present invention allows both a first computer system (for example, the presenter computer system) and a second computer system (for example, an audience

member) to view a graphical display of the classroom. This claimed feature of the present invention allows the audience members to interact *in a visual virtual classroom environment* with both the presenter and other audience members.

By contrast, [the prior art] merely discloses “[as] the students log in, their seating locations in the classroom are shown by a highlighted icon in the classroom map on the teacher’s screen.” . . . *[The prior art] does not teach or suggest displaying a graphical display representative of a classroom on a student’s screen.*

J.A. 1267-68 (original emphasis removed and emphases added). These statements in conjunction with the patent’s claim terms confirm the significance of displaying a visually depicted virtual classroom.

The “classroom metaphor” is used extensively in characterizing the operation, and touting the benefits, of the inventions embodied in the ’840 patent. The Abstract teaches that “[t]he classroom environment module provides a classroom metaphor having a podium and rows of seats to the presenter and audience computer systems.” ’840 patent Abstract. The Summary of the Invention states that the drawbacks of the prior art are overcome “by a distributed learning system that uses industry-standard computer hardware and software linked by a network like the Internet to provide a classroom- or auditorium-like metaphor to at least one presenter and at least one audience member.” *Id.* col. 2 ll. 10-14. The patent further teaches that a “feedback region” on the presenter’s computer “preferably displays a graphical representation of the classroom” and the “classroom environment module” is used to provide “a classroom- or auditorium-like metaphor to the presenter and audience members.” *Id.* col. 3 ll. 11-13, col. 5 l. 67-col. 6 l. 1.

In this case, the repeated mention of the classroom metaphor within the context of the invention and the importance of a visually depicted virtual classroom in the prosecution history indicate that the “graphical display representative of a classroom” terms require a visually depicted virtual classroom. The construction derived by the majority reads out this important limitation that distinguishes the invention from the prior art. *See Callicrate v. Wadsworth Mfg., Inc.*, 427 F.3d 1361, 1369 (Fed. Cir. 2005) (holding that it was error for the district court to read out a limitation clearly required by the claim language and specification). It is error to read a claim too broadly, as it is to read a claim too narrowly. *See, e.g., Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (en banc). In reading out this important limitation on the “graphical display representative of a classroom” terms, the majority sidesteps our well established rules of claim construction, causing them to reach an erroneous result.

## II

The majority also concludes that the district court erred in construing the term “distributed learning control module” as a means-plus-function term. The majority holds that the term “distributed learning control module” connotes sufficient structure to keep the term outside the scope of 35 U.S.C. § 112, paragraph 6. Maj. Op. at 16. The majority, however, finds structure where none exists.

Here, “distributed learning control module” does not connote sufficiently definite structure, and thus, the term is governed by § 112, paragraph 6. In place of using the term “means,” this claim limitation uses “module.” The claim limitation then recites three functions performed by the “distributed learning control module”:

[D]istributed learning control module for [(1)] receiving communications transmitted between the presenter and the audience member computer

systems and [(2)] for relaying the communications to an intended receiving computer system and [(3)] for coordinating the operation of the streaming data module.”

’840 patent col. 11 ll. 56-61. This claim limitation is in the traditional means-plus-function format, with the minor substitution of the term “module” for “means.” The claim language explains what the functions are, but does not disclose how the functions are performed.<sup>1</sup> In this case, the term “module” is a “nonce” word, a generic word inherently devoid of structure.

“Module” is a “nonce” word that can operate as a substitute for “means” in the context of § 112, paragraph 6. As the district court found, “‘module’ is simply a generic description for software or hardware that performs a specified function.”<sup>2</sup> J.A. 31. Generic 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 “typically do not connote sufficiently definite structure” and therefore may invoke § 112, paragraph 6. *Mass. Inst. of Tech. v. Abacus Software*, 462 F.3d 1344, 1354 (Fed. Cir. 2006); *see generally* M.P.E.P. § 2181 (“The following is a list of non-structural generic placeholders that may invoke . . . 35 U.S.C. [§] 112, paragraph 6: ‘mechanism for,’ ‘*module for*,’ ‘device for,’ ‘unit for,’ ‘component for,’ ‘ele-

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<sup>1</sup> As we have often held, structure may also be provided by describing the claim limitation’s operation, such as its input, output, or connections. *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1299 (Fed. Cir. 2014).

<sup>2</sup> Williamson concedes this point. Appellant’s Op. Br. at 43 (“[T]he term ‘module,’ standing alone, is capable of operating as a ‘nonce word.’”).

ment for,’ ‘member for,’ ‘apparatus for,’ ‘machine for,’ or ‘system for.’”) (emphasis added).

Recognizing that the term “module” is a mere placeholder word with no definition in the specification, the majority resorts to extrinsic evidence in the form of the following dictionary definitions of the term “module”:

- The IBM Corporation, *IBM Dictionary of Computing* 439 (1st ed. 1994) - a packaged functional hardware unit designed for use with other components and a part of a program that usually performs a particular function of related functions.
- Alan Freedman, *The Computer Glossary* 268 (8th ed. 1998) - a self-contained hardware or software component that interfaces with a larger system.
- John Daintith & Edmund Wright, *Dictionary of Computing* 315 (4th ed. 1996) - programming or specification construct that defines a software component and a component of a hardware system that can be subdivided.

Maj. Op. at 14-15. The majority concludes that “[t]hese definitions all show that the term ‘module’ has a structure connoting meaning to persons of ordinary skill in the computer arts.” *Id.* at 15.

The definitions, however, only identify that “module” is either hardware, software, or both. Without more, the concept of generic software or hardware only reflects function. It refers only to a “general category of whatever may perform specified functions.” *Robert Bosch, LLC v. Snap-On Inc.*, --- F.3d ---, No. 2014-1040, 2014 WL 5137569, at \*4 (Fed. Cir. Oct. 14, 2014) (holding that the claim terms “program recognition device” and “program loading device” are governed by 35 U.S.C. § 112, paragraph 6 because they fail to connote sufficient structure).

Consider that the *IBM Dictionary of Computing* uses the terms “functional hardware unit” and “[something] that performs a particular function.” Maj. Op. at 14-15. *The Computer Glossary* similarly defines “module” in terms of its function: “interfac[ing].” *Id.* at 15. Finally, the *Dictionary of Computing* defines “module” as a “construct” or “component.” *Id.* The definitions disclose what software or hardware potentially do, not how it is done.

Numerous other dictionary definitions from the relevant time period also define the “module” in functional terms. For example, the *Webster’s New World Dictionary of Computer Terms* 331 (6th ed. 1997) defines “module” as “[i]n a program, a unit or section that can function on its own.” The *IEEE Standard Dictionary of Electrical and Electronics Terms* 817 (5th ed. 1993) defines “module” as “a logically separable part of a program” and goes on to note that “[t]he terms ‘module,’ ‘component,’ and ‘unit’ are often used interchangeably.”<sup>3</sup> The *American Heritage College Dictionary* 877 (3d ed. 1997) defines “module” as “[a] portion of a program that carries out a specific function and may be used alone or combined with other modules of the same program.” These definitions, again, generally define “module” as generic software or hardware that performs a certain function.

The majority also undertakes a grammatical approach noting that the “adjectival modifiers . . . cannot be ignored and serve to further narrow the scope of the expression as a whole.” Maj. Op. at 15. The majority points to the terms “distributed,” “learning,” and “control” as modifiers

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<sup>3</sup> Cf. M.P.E.P. § 2181 (“The following is a list of non-structural generic placeholders that may invoke . . . 35 U.S.C. [§] 112, paragraph 6: ‘mechanism for,’ ‘module for,’ ‘device for,’ ‘unit for,’ ‘component for,’ ‘element for,’ ‘member for,’ ‘apparatus for,’ ‘machine for,’ or ‘system for.’”) (emphases added).

that connote structure. *Id.* at 15. While the majority is correct that the presence of modifiers can change the meaning of a claimed nonce word, the modifiers relied on by the majority do not provide any structural significance to the term “module.” The ordinary meanings of these terms do not connote structure, and neither the specification nor the prosecution history gives these adjectives any structural significance in this claim.

Finally, the majority concedes that the “distributed learning control module” operates as a functional unit that is “described in a high degree of generality” in the specification using “functional expressions.” *Id.* at 16. In my view, a “functional unit” claimed at a “high degree of generality” is pure functional claiming. The term “distributed learning control module” fails to connote any structure, the presumption against the application of means-plus-function claiming is rebutted, and, therefore, § 112, paragraph 6 applies.

### III

Although the majority does not reach the issue of corresponding structure, I believe this analysis is necessary because the claim limitation at issue fails to disclose sufficient structure to keep “distributed learning control module” outside of the requirements of § 112, paragraph 6. Thus, I turn to the issue of whether the specification discloses sufficient structure that corresponds to the claimed function. I conclude that it does not.

The district court identified three claimed functions associated with the “distributed learning control module” term: (1) receiving communications transmitted between the presenter and the audience member computer systems; (2) relaying the communications to an intended receiving computer system; and (3) coordinating the operation of the streaming data module. The district court concluded that the specification fails to disclose structure corresponding to the “coordinating” function.

On appeal, it is undisputed that the claimed “coordinating” function is associated with the “distributed learning control module.” Where there are multiple claimed functions, as we have here, the patentee must disclose adequate corresponding structure to perform all of the claimed functions. *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1318-19 (Fed. Cir. 2012).

The district court was correct that the specification of the '840 patent fails to disclose corresponding structure because the specification does not set forth an algorithm for performing the claimed functions. *See Aristocrat Techs. Austl. Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008). Thus, I would affirm the judgment that claims 8-16 are invalid for indefiniteness under 35 U.S.C. § 112, paragraph 2.

For the foregoing reasons, I *dissent*.

**CERTIFICATE OF SERVICE AND FILING**

I hereby certify that on December 5, 2014, I electronically filed the foregoing **APPELLEE’S PETITION FOR REHEARING EN BANC** using the Court’s CM/ECF filing system. Counsel was served via CM/ECF which constitutes service, pursuant to Fed. R. App. P. 25(c)(2), Fed. Cir. R. 25(a), and the Court’s Administrative Order Regarding Electronic Case Filing 6(A) (May 17, 2012), to all registered CM/ECF users.

Respectfully submitted,

Date: December 5, 2014

*/s/ Kurt L. Glitzenstein*  
Kurt L. Glitzenstein