

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZSCALER INC.,
Petitioner,

v.

SYMANTEC CORPORATION,
Patent Owner.

IPR2018-00916
Patent 7,360,249 B1

Before JEFFREY S. SMITH, BRYAN F. MOORE, and NEIL T. POWELL,
Administrative Patent Judges.

MOORE, *Administrative Patent Judge.*

TERMINATION
Dismissal After Institution of Trial
37 C.F.R. § 42.72

I. INTRODUCTION

Zscaler Inc. (“Petitioner”) requests *inter partes* review of claims 1, 2, 5–9, 12–17, 20, and 22 of U.S. Patent No. 7,360,249 B1 (“the ’249 patent,” Ex. 1001) pursuant to 35 U.S.C. §§ 311 *et seq.* Paper 1 (“Pet.”). Petitioner

relies on the testimony of Dr. Erez Zadok. Ex. 1003. Symantec Corporation (“Patent Owner”) filed a Preliminary Response. Paper 10 (“Prelim. Resp.”). On November 15, 2018, the Board instituted trial on claims 1, 2, 5–9, 12–17, 20, and 22 of the ’249 patent based on all grounds of unpatentability alleged in the Petition. Paper 15. The Board has jurisdiction under 35 U.S.C. § 6(c).

After institution of trial, Patent Owner, filed a Patent Owner Response (“PO Resp.”). Paper 21. Petitioner filed a Reply. Paper 26. Patent Owner filed a Sur-reply. Paper 33. An oral hearing was held on August 8, 2019. A transcript of the oral hearing is included in the record as Paper 40. Paper 40 (“Tr.”).

For the reasons discussed below, we are unable to reach a determination on the alleged grounds of unpatentability over prior art. Accordingly, we terminate this proceeding under 37 C.F.R. § 42.72.

A. Related Matters

A decision in this proceeding could affect or be affected by the following case pending in the United States District Court for the Central District of California and involving the ’249 patent: *Symantec Corp. and Symantec Ltd. v. Zscaler, Inc.*, Case No. 17-cv-04414 (N.D. Cal.). Pet. 3; Paper 5, 2.

B. The ’249 patent

The ’249 patent is directed to “computer security, and in particular, to detecting and blocking malicious code propagation on computer systems.” Ex. 1001, 1:6–8. The ’249 patent provides that “[c]omputer systems face a threat of attack by malicious computer code, such as worms, viruses, and Trojan horses.” *Id.*, 1:12–13.

C. Illustrative Claim

Claims 1, 12, 16, and 20 are independent claims. Independent claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A computer implemented method for preventing malicious code from propagating in a computer, the method comprising the steps of:

a blocking-scanning manager detecting attempted malicious behavior of running code;

responsive to the detection, the blocking-scanning manager blocking the attempted malicious behavior;

the blocking-scanning manager generating a signature to identify the code that attempted the malicious behavior;

the blocking-scanning manager detecting code identified by the signature, wherein detecting code identified by the signature comprises;

the blocking-scanning manager alerting a user of the detection; and the blocking-scanning manager allowing the user to choose whether or not to block the execution of the identified code;

the blocking-scanning manager overriding the user's choice responsive to the user incorrectly choosing to block non-malicious behavior or incorrectly choosing not to block malicious behavior; and

the blocking-scanning manager blocking the execution of the identified code.

Ex. 1001, 11:5–27.

D. References

Petitioner relies on the following references. Pet. 14–27.

Name	Reference	Exhibit
AppletTrap	TREND MICRO INTERSCAN APPLETRAP GETTING STARTED GUIDE, archived at Wayback machine on May 4, 2003	1005
Wells	U.S. Patent No. 6,338,141 B1, filed Sept. 30, 1998, issued Jan. 8, 2002	1007

E. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1, 2, 5–9, 12–17, 20, and 22 are unpatentable based on the following grounds:

Claims Challenged	35 U.S.C. §	Reference(s)
1, 2, 5–9, 12, 16, 17, 20, 22	103	AppletTrap
13–15	103	AppletTrap and Wells

Pet. 4.

II. DISCUSSION

A. Relevant Law

1. Obviousness

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (“KSR”). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any

differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations, including commercial success, long-felt but unsolved needs, failure of others, and unexpected results.¹ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966) (“the *Graham* factors”).

2. *Level of Skill*

For an obviousness analysis, prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). Moreover, “it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). That is because an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007) (“*Translogic*”).

Petitioner asserts a person of ordinary skill in the art of the subject matter of the ’249 patent would have had a “Bachelor of Science degree in computer science, computer engineering, or a similar degree, along with at least 2-3 years of experience in software development, preferably related to cyber-security or information assurance [and a] higher level of education may substitute for a lesser amount of experience, and vice versa.” Pet. 14

¹ Patent Owner does not put forth evidence it alleges tends to show secondary considerations of non-obviousness in its Patent Owner Response.

(citing Ex. 1003 ¶¶ 34–37). Patent Owner’s proposed level of skill does not differ, in any way relevant to determinations made in this Decision, from Petitioner’s statement nor does Patent Owner argue that there is any significance difference between the two articulations of level of skill. PO Resp. 7–8. Thus, we adopt Petitioner’s articulation of the level of skill and acknowledge that the level of ordinary skill in the art is also reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978).

B. Claim Construction

In an *inter partes* review, we construe claim terms in an unexpired patent according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b) (2017).² Consistent with the broadest reasonable construction, claim terms are presumed to have their ordinary and customary meaning as understood by a person of ordinary skill in the art in the context of the entire patent disclosure. *See Translogic*, 504 F.3d at 1257.

1. “*a running code blocking module, configured to block the attempted malicious behavior in response to positive detection*”
claim 16

² A recent amendment to this rule does not apply here because the Petition was filed before November 13, 2018. *See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board*, 83 Fed. Reg. 51,340 (Oct. 11, 2018) (amending 37 C.F.R. § 42.100(b) effective November 13, 2018).

Each limitation in the body of challenged claim 16 recites a “module” which is “configured to” perform a function. Under 35 U.S.C. § 112, paragraph 6 (“§ 112 ¶ 6”), “[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.”³

Patent Owner asserts:

[T]he Petition includes no analysis of whether any claim term should be construed under § 112 ¶ 6. In addition, the Petition provides no (i) identification of any structure, material, or acts corresponding to any term that should be construed under § 112 ¶ 6 or (ii) structural analysis of the references demonstrating that the corresponding structure is present in such references. For the reasons explained below, Petitioner’s failure to do so is fatal to the Petition.

PO Resp. 16. For example, claim 16 recites “a running code blocking module, configured to block the attempted malicious behavior in response to positive detection.” This phrase, containing a functional limitation, does not include the word “means” and thus presumptively is not a means-plus-function limitation under § 112 ¶ 6. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1348 (Fed. Cir. 2015) (en banc) (“*Williamson*”). Nevertheless, that presumption can be overcome when the phrase does not recite

³ Paragraphs 1–6 of § 112 were replaced with §§ 112(a)–(f) when § 4(c) of the Leahy-Smith America Invents Act, Pub. L. No. 112–29, 125 Stat. 284, 329 (2011) (“AIA”) took effect on September 16, 2012. Because the patent application resulting in the ’249 patent was filed before the effective date of the AIA, we refer to the pre-AIA version of 35 U.S.C. § 112.

sufficiently definite structure or recites function without sufficient structure for performing that function. *Id.* at 1349. That is the case here.

The term “module” is so broad that it does not sufficiently convey definite structure. *See id.* at 1350 (“‘Module’ is a well-known nonce word that can operate as a substitute for ‘means’ in the context of § 112, para. 6.”). As the Federal Circuit has stated, “[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 ‘typically do not connote sufficiently definite structure.’” *Id.* at 1350 (citation omitted). In this case, “module” is used as a generic place-holder for anything that performs the recited function, much as the word “means” does. *Id.* at 1350–51 (recognizing “the term ‘module,’ standing alone is capable of operating as a ‘nonce word’ substitute for ‘means’”). The words before and after “module” are “running code blocking” and “configured to block the attempted malicious behavior.” Those recitations are not structural but functional. The words are generic and do not impart specific structure. Rather, they would literally cover any structure that performs the function that follows. Furthermore, the entire phrase reflects the typical format of a means-plus-function element that does employ the word “means,” with “module” substituting for “means” and “configured to” substituting for “for.” *See Unified Patents Inc. v. Blackbird Tech LLC*, IPR2017-01525, Paper 11 at 8–11 (PTAB Dec. 1, 2017) (“[A] plain reading of the term ‘module configured to’ in context of the claim language suggest the term ‘module configured to’ is analogous to ‘means for.’”)

Accordingly, the non-means presumption is overcome by the absence of sufficiently definite structure in the language used and by the fact that the language at issue recites function without sufficient structure for performing that function. We determine the phrase “a running code blocking module, configured to block the attempted malicious behavior in response to positive detection” is properly construed as a means-plus-function element under § 112 ¶ 6. The function recited is “block[ing] the attempted malicious behavior in response to positive detection.” The words “running code blocking” are simply part of the name for the element and do not change the function recitation that comes after it.

For a means-plus-function limitation, Petitioner is required to “identify the specific portions of the specification that describe the structure, material, or acts corresponding to each claimed function.” 37 C.F.R. § 42.104(b)(3). As the Federal Circuit has noted: “structure disclosed in the specification is ‘corresponding’ structure *only* if the specification or prosecution history clearly links or associates that structure to the function recited in the claim. This duty to link or associate structure to function is the quid pro quo for the convenience of employing § 112, ¶ 6.” *Saffran v. Johnson & Johnson*, 712 F.3d 549, 562 (Fed. Cir. 2013) (quoting *B. Braun Med., Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed. Cir. 1997)); *see also Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1312 (Fed. Cir. 2012).

With respect to “a running code blocking module, configured to block the attempted malicious behavior in response to positive detection,” Petitioner has not identified sufficient corresponding structure described in the Specification of the ’249 patent for performing the recited “blocking.” In fact, Petitioner does not acknowledge the possibility that this claim

language may be considered means plus function language despite the fact that in the Federal Circuit’s *Williamson* decision (discussed further below), the word “module,” when referring to computer routines, was considered to indicate means plus function treatment and a lack of structure. See *Williamson*, 792 F.3d at 1351.

As quoted above Patent Owner argues that “the Petition provides no . . . identification of any structure, material, or acts corresponding to any term” and that Petitioner’s failure to do so “is fatal to the Petition.” PO Resp. 16. In fact, the Petition does not construe any claim term. Pet. 12–13. We agree that the Petition does not explicitly identify structure corresponding to terms such as “running code blocking module” which should be construed as 112 ¶ 6 limitations. Nevertheless, below we examine whether the Petition suggested corresponding structure, whether the Specification in fact discloses such structure, and the arguments in Petitioner’s Reply brief.

As stated above, the Petition does not explicitly identify structure corresponding to this limitation. Nevertheless, the “running code blocking module” relates to the “blocking-scanning manager” recited in the Specification.⁴ Thus, in the Petition, the closest Petitioner comes to making an identification of structure is this: “the blocking-scanning manager

⁴ Here the phrase “blocking-scanning manager” is similar to a term “access control manager” which the Federal Circuit determined, when found in the specification, did not impart structure. *Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1383 (Fed. Cir. 2009) (“[W]hat the patent calls the ‘access control manager’ is simply an abstraction that describes the function of controlling access to course materials, which is performed by some undefined component of the system. The ACM is essentially a black box that performs a recited function.”) (“*Blackboard*”).

‘blocks’ the attempted malicious behavior.” Pet. 8–9 (citing Ex. 1001, 9:48–51).

In its “OVERVIEW OF THE 249 PATENT” section of the Petition, Petitioner describes the invention in general and describes disclosure that may be related to corresponding structure. For example, Petitioner cites to Figure 6, which is a flowchart for the “detecting and blocking” element of the alleged invention. Pet. 8. Figure 6 is reproduced below.

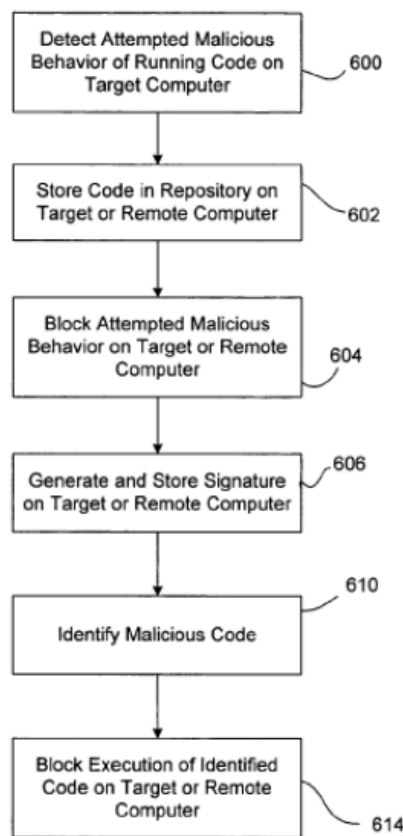
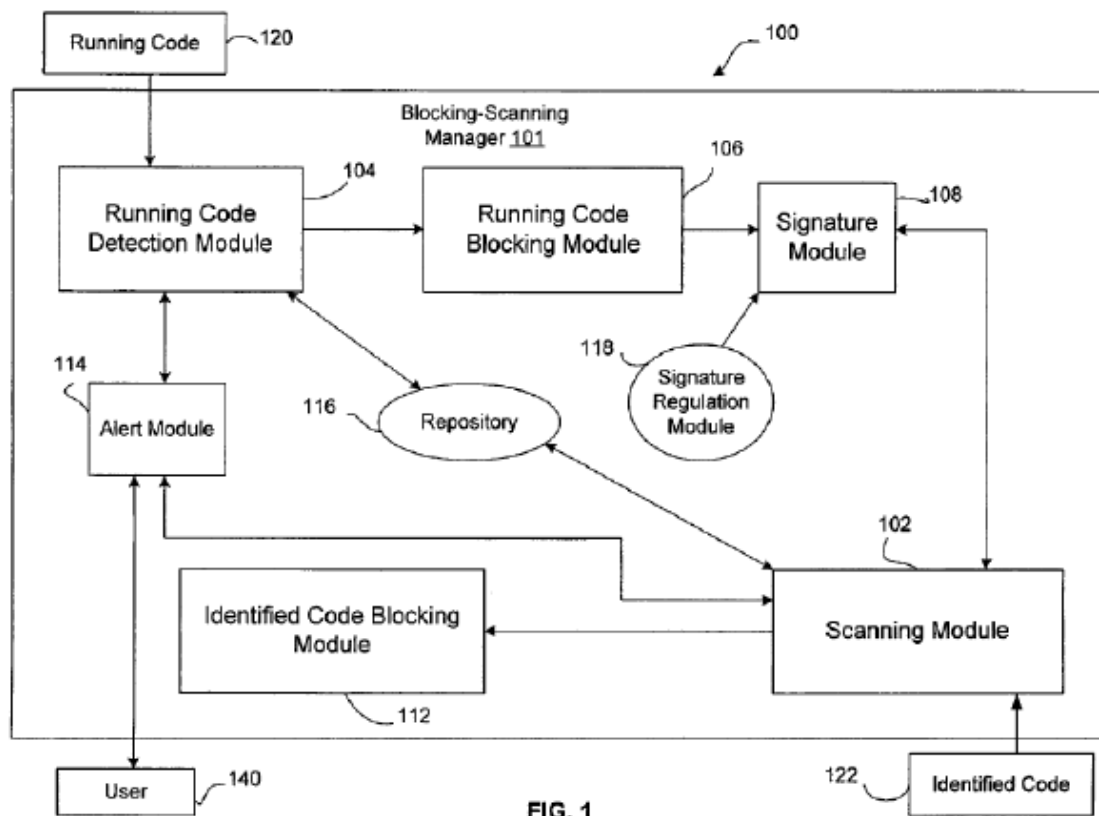


FIG. 6

Figure 6, above, is a flow chart regarding the “detecting and blocking” element of the alleged invention. The “blocking” portion of the flow chart in Figure 6 above, however, is represented by one box titled “Block

Execution of Identified Code on Target or Remote Computer.” Thus, this does not represent an algorithm for the “blocking” element of the claims.

Thus, at best, even assuming that Petitioner even intended to identify corresponding structure, Petitioner has identified the corresponding structure only generally as “the blocking-scanning manager.” Petitioner also points to Figure 1 of the Specification, which recites black box representations of elements of the “blocking-scanning manager.”



As shown in Figure 1, above, the reference to “running code blocking module” suggests only a module on a computer, which is too generic to identify any specific structure. Ex. 1001, Fig. 1.

In its Reply, Petitioner points to text in the Specification as possible corresponding structure. Reply 6–11. For “running code blocking module,”

Petitioner asserts “code routine(s) that block malicious behavior by removing, disabling or isolating the code” is possible corresponding structure for this limitation. *Id.* at 8 (citing Ex. 1001, 5:4–12). This citation is reproduced below:

In response to detection of attempted malicious behavior, the running code blocking module 106 of the blocking-scanning manager 101 blocks the behavior. The running code blocking module 106 can block the malicious behavior in a number of ways. For example, the running code blocking module 106 might remove the code from the computer system, might disable the code in some manner, might isolate the code by placing it in a repository where it is prevented from causing harm, etc.

Ex. 1001, 5:4–11. This quote simply describes at high level conceptual options for performing the function in the claims but does not explain how the function in the claim is implemented in software.

In *Aristocrat Technologies Australia Proprietary Ltd. v. International Game Technology*, 521 F.3d 1328, 1333 (Fed. Cir. 2008), the Federal Circuit stated that “the corresponding structure for a § 112 ¶ 6 claim for a computer-implemented function is the algorithm disclosed in the specification.” *Id.* (quoting *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1249 (Fed. Cir. 2005)). As the Federal Circuit explained, “a general purpose computer programmed to carry out a particular algorithm creates a ‘new machine’ because a general purpose computer ‘in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software.’” *Id.*; see also *WMS Gaming, Inc. v. Int’l Game Tech.*, 184 F.3d 1339, 1349 (Fed. Cir. 1999). Consequently, a patent’s specification must disclose enough of a specific algorithm to provide the necessary structure under § 112 ¶ 6. *Finisar Corp. v. DirectTV*

Grp., Inc., 523 F.3d 1323, 1340 (Fed. Cir. 2008) (“*Finisar*”). Allowing a computer programmed to perform a specialized function to be claimed without disclosure of the algorithm used for that programming would exhibit the same type of impermissible overbreadth of purely functional claims. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008).

If special programming is required for a general purpose computer to perform the corresponding claimed function, then the default rule requiring disclosure of an algorithm applies. An algorithm need not be disclosed only in rare circumstances where any general purpose computer can perform the claimed function without any special programming. *Ergo Licensing, LLC v. CareFusion, 303, Inc.*, 673 F.3d 1361, 1365 (Fed. Cir. 2012); *see also Williamson*, 792 F.3d at 1352 (“In cases . . . involving a claim limitation that is subject to § 112, para. 6 that must be implemented in a special purpose computer, this court has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor. . . . [T]he specification [must] disclose an algorithm for performing the claimed function.” (citations omitted)).

By simply pointing to “running code blocking module,” which may be code routines performing the function of blocking (i.e., removing, disabling or isolating) malicious code, Petitioner has not identified the underlying algorithm of any such program. This is not a circumstance falling within the narrow exception explained in *In re Katz*, 639 F.3d 1303, 1316 (Fed. Cir. 2011), where the function recited is generic and can be performed by any general purpose computer without special programming, e.g., “processing,” “receiving,” and “storing.” The specialized function here includes “blocking the attempted malicious behavior.” Petitioner makes no explanation as to

why the recited function would be so basic that it could be performed by a general purpose computer without any special programming. Accordingly, in the Petition, Petitioner has not identified corresponding structure, described in the Specification of the '249 patent, that causes a computer to perform the recited function of “blocking the attempted malicious behavior.”

In its Reply, Petitioner asserts, based on two district court cases, that the test for whether a claim recites sufficient structure includes whether “the intrinsic evidence describes the term’s location and its interactions with other components.” Reply 5–6 (citing *Finjan, Inc. v. Proofpoint, Inc.*, 2015 WL 7770208, *11 (N.D. Cal. Dec. 3, 2015) (holding “content processor” did not invoke § 112 ¶ 6 because the claim language describes how it interacts with the invention’s other components, and the specification identifies its location in block diagrams and its relationship with other components); *Tech. Licensing Corp. v. Blackmagic Design Pty. Ltd.*, 2016 WL8902602, *12–14 (N.D. Cal. Nov. 23, 2016) (holding “fill calculator circuit” conveyed sufficient structural meaning because “the claim prefates the term ‘circuit’ with the identifier ‘fill calculator,’ and provides a description of the circuit’s operation”).⁵ Based on its reading of those cases, Petitioner relies on the following as showing “location” and “interaction” of components:

the running code blocking module is “communicatively coupled to the running code detection module,” the signature module is “communicatively coupled to the running code blocking

⁵ We note that *Technology Licensing* acknowledges that cases such as *Apex Inc. v. Raritan Computer, Inc.*, 325 F.3d 1364 (Fed. Cir. 2003) and *Linear Technology Corp. v. Impala Linear Corp.*, 379 F.3d 1311 (Fed. Cir. 2004) predate *Williamson*, but nevertheless found that the recitation of a “circuit” provides sufficient structure to avoid applying the means plus function rubric.

module,” etc. *See also* Ex. 1001, 13:26-28 (scanning module and signature module); 29-32 (identified code blocking module and scanning module); 36-38 (alert module and running code detection module and scanning module). Figure 1 specifies the location of each module within the blocking-scanning manager, and Figures 2-6 and the majority of the specification describe the relationships among the modules and the algorithmic structures of the modules.

Reply 5.

It is notable that Petitioner does not cite to *Williamson*, which states, in pertinent part, with regard to the claim at issue in that case,

[w]hile portions of the claim do describe certain inputs and outputs at a very high level (e.g., communications between the presenter and audience member computer systems), the claim does not describe how the ‘distributed learning control module’ interacts with other components in the distributed learning control server in a way that might inform the structural character of the limitation-in-question or otherwise impart structure to the ‘distributed learning control module’ as recited in the claim.”

Williamson, 792 F.3d at 1351. In other words, the Federal Circuit was concerned with whether the claim described interactions between components that inform the structural character or actually impart structure. *Id.*; *Media Rights Techs., Inc. v. Capital One Fin. Corp.*, 800 F.3d 1366, 1373 (Fed. Cir. 2015) (*Media Rights*) (“[describing how a limitation is] connected to other claimed components of the system [] alone was not sufficient to avoid the application of § 112 ¶ 6. Rather, it was the specification’s disclosure regarding how the [device] and its internal components operated as a circuit, which we had recognized in prior cases to connote sufficient structure”) (citations omitted).

Here, claim 16 recites black box software structures that are merely described as inputs and outputs to each other, i.e., “communicatively

coupled” to each other. Thus, for the reasons above we find that claim 16 includes a means plus function limitation and that Petitioner has not cited to sufficient corresponding structure.

2. *“blocking-scanning manager blocking the attempted malicious behavior” claims 1 and 12*

Claims 1 and 12 are method claims that claim essentially the same functions as claim 16. Claim 1, reproduced in Section I.C. above, recites a “blocking-scanning manager” performing several functions, e.g., “detecting,” “blocking,” “generating,” “alerting,” etc. Claim 12 recites a “blocking-scanning manager” performing similar functions except claim 1 recites “generating a signature” and alerting the user of malicious code and allowing the user to block the code, and claim 12 recites using a hash of the signature to identify and block the code.

As we stated in the Decision to Institute, applying means plus function orthodoxy to method claims is uncommon but not unprecedented. As such we will discuss the background of this issue below. For discussion of the issue below, when appropriate we will refer to the limitation of claims 1 and 12 as “the blocking-scanning manager blocking the attempted malicious behavior.”

a. *Background of Method and Means Plus Function*

A couple of recent Federal Circuit cases have examined applying § 112 ¶ 6 to elements of a method claim. Before we discuss these cases we provide some background.

Steps in a method claim can be analyzed under § 112 ¶ 6. The statute explicitly authorizes expressing claim elements in both means-plus-function and step-plus-function form:

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 claims shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

35 U.S.C. § 112 ¶ 6. The statute’s format and language suggest a strong correlation between means and step-plus-function claim elements in both their identification and interpretation. Based on the arrangement of § 112 ¶ 6, it is apparent that “structure” and “material” are associated with “means,” while “acts” is associated with “step.” See *O.I. Corp. v. Tekmar Co. Inc.*, 115 F.3d 1576, 1583 (Fed. Cir. 1997) (“In this paragraph, structure and material go with means, acts go with steps.”). Therefore, a claim element deserves means-plus-function treatment when “expressed as a means . . . for performing a specified function without the recital of structure [or] material . . . in support thereof.” *Id.* (emphasis added). Similarly, a claim element deserves step-plus-function treatment when “expressed as a . . . step for performing a specified function without the recital of . . . acts in support thereof.” *Id.* (emphasis added).

Here, claims 1 and 12 do not use the “step for” language but they do recite language that can invoke § 112 ¶ 6. There are a few cases from the Federal Circuit that have clearly applied means-plus-function analysis to elements found in method claims. In *On Demand Machine Corp. v. Ingram Industries, Inc.*, 442 F.3d 1331 (Fed. Cir. 2006), the Federal Circuit affirmed the district court’s application of means-plus-function analysis to a limitation in a method claim. 442 F.3d at 1336, 1340–41 (in a claim reciting a “method of high speed manufacture of a single copy of a book,” the limitation “providing means for a customer to visually review said sales

information” was correctly deemed to be in means-plus-function form). Also, in *J & M Corp. v. Harley-Davidson, Inc.*, 269 F.3d 1360 (Fed. Cir. 2001), the Court indicated that a method claim contained a “means-plus-function limitation” that was “nearly identical” to the limitation found in apparatus claims reciting “gripping means for engaging the inner and outer surfaces of said helmet above the bottom edge, the gripping means including a fulcrum located below the bottom edge.” 269 F.3d at 1364 n.1, 1367 (Fed. Cir. 2001).

Notably, both cases had an explicit recitation of “means” in the claim. Also, more recent cases have made it clear that

[t]he mere fact that a method claim is drafted with language parallel to an apparatus claim with means-plus-function language does not mean that the method claim should be subject to an analysis under § 112, paragraph 6. Rather, each limitation of each claim must be independently reviewed to determine if it is subject to the requirements of § 112, paragraph 6.”

Generation II Orthotics Inc. v. Med. Tech. Inc., 263 F.3d 1356, 1368 (Fed. Cir. 2001). So the mere fact that claims 1 and 12 are written with similar language to claim 16 does not convert them to means plus function claims.

b. Application of Means Plus Function to “Blocking-Scanning Manager”

More recently the Federal Circuit has ruled that elements reciting nonce words that do not connote structure in a method claim can be analyzed under § 112 ¶ 6. *Media Rights*, 800 F.3d at 1372. In *Media Rights*, the Federal Circuit found that the term “compliance mechanism” in a method claim did not connote a definite structure because “the claims simply state[d]

that the ‘compliance mechanism’ can perform various functions.”⁶ *Id.* The written description in *Media Rights*, **did** “depict[] and describe[] how what [was] referred to as the ‘copyright compliance mechanism’ [was] connected to various parts of the system, how the ‘copyright compliance mechanism’ function[ed], and the potential—though not mandatory—functional components of the ‘copyright compliance mechanism.’” *Id.* Nevertheless, the Federal Circuit found that none of the passages, in the written description of *Media Rights*, describing the “compliance mechanism” defined the term “in specific structural terms.” *Id.* at 1372–73. Additionally, *Media Rights* found that the “claims [at issue did] not use the term ‘compliance mechanism’ as a substitute for an electrical circuit, or anything else that might connote a definite structure. Rather, the claims simply state that the

⁶ An illustrative claim at issue in *Media Rights* recites:

A method of preventing unauthorized recording of electronic media comprising:

activating a *compliance mechanism* in response to receiving media content by a client system, said *compliance mechanism* coupled to said client system, said client system having a media content presentation application operable thereon and coupled to said *compliance mechanism*;

controlling a data output pathway of said client system with said *compliance mechanism* by diverting a commonly used data pathway of said media player application to a controlled data pathway monitored by said *compliance mechanism*; and

directing said media content to a *custom media device* coupled to said *compliance mechanism* via said data output path, for selectively restricting output of said media content.

Media Rights, 800 F.3d at 1368 (emphasis added).

‘compliance mechanism’ can perform various functions.” *Media Rights*, 800 F.3d at 1372.

Another case determining whether a limitation in a method claim can be analyzed as a means plus function limitation under § 112 ¶ 6 is *Alacritech, Inc. v. Century Link Communications LLC*, 271 F. Supp. 3d 850, 886–888 (E.D. Tex. 2017) (“*Alacritech*”), as cited by Patent Owner. This district court case is not binding on the Board, but it cites to a Federal Circuit case that is worth discussing. First, as to *Alacritech*, Patent Owner asserts

the *Alacritech* court found that the terms “first mechanism” and “second mechanism” in a method claim were means-plus-function limitations governed by § 112 ¶ 6, because the terms “play[ed] a meaningful [role] in defining claim scope,” were “defined solely by the fact that they perform the functions recited in the claims,” and did not themselves “connote sufficiently definite structure.”

PO Resp. 28 (citing *Alacritech*, 271 F. Supp. 3d at 886–888). We determine that *Alacritech* applied the test it gleaned from *Cox Communications, Inc. v. Sprint Communications Co.*, 838 F.3d 1228 (Fed. Cir. 2016) (*Cox*), i.e., the “played a meaningful role” and “defined solely by” test in a different context than *Cox*. That is, those tests do not apply here because, as explained in *Cox*, they apply to indefiniteness under § 112 ¶ 2, not to determining whether a limitation can be analyzed as a means plus function limitation under § 112 ¶ 6.

The *Cox* decision reviews a method claim with language potentially invoking § 112 ¶ 6, but in that case, the parties agreed that it did not apply. *Cox*, 838 F.3d at 1229–30 (“we note that the parties have agreed that ‘processing system’ is not a means-plus-function term”). The issue was

whether “processing system” rendered the claim indefinite under 35 U.S.C. § 112 ¶ 2. *Id.* As to indefiniteness, Cox explains that the structural limitation “processing system⁷” played no discernible role in defining the scope of the method claims where “the point of novelty resides with the steps of the[] methods, not with the machine that performs them.” Cox then went on to replace the word “processing system” in the claim with a blank or the word “computer” and noted that the meaning of the claim did not change because, given the context of the claim, a computer would perform the steps

⁷ An illustrative claim at issue in *Cox* recites:

“1. A method of operating a *processing system* to control a packet communication system for a user communication, the method comprising:

receiving a signaling message for the user communication from a narrowband communication system into the *processing system*;

processing the signaling message to select a network code that identifies a network element to provide egress from the packet communication system for the user communication;

generating a control message indicating the network code;

transferring the control message from the *processing system* to the packet communication system;

receiving the user communication in the packet communication system and using the network code to route the user communication through the packet communication system to the network element; and

transferring the user communication from the network element to provide egress from the packet communication system.

Cox, 838 F.3d 1226–27.

of the claim. Ultimately Cox found that because “[a]ll of the asserted claims are method claims, [i]t makes sense to define the inventive method as a series of functions.” *Id.* at 1232. Nevertheless, Cox does not make a finding on whether “processing system” or any other term may be considered a means plus function term in a method claim.

Here we have claim limitations which rest squarely in the logic of *Media Rights*. Under *Media Rights*, the blocking-scanning manager is not described as having a structure but rather is described as performing a list of functions. See *Media Rights*, 800 F.3d at 1372. Additionally, the Federal Circuit has treated terms similar to “manager” as nonce words that can invoke § 112 ¶ 6. See *Blackboard*, 574 F.3d at 1383 (determining that the term manager in a specification does not connote structure). As the Federal Circuit has stated, “[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 ‘typically do not connote sufficiently definite structure.’” *Williamson*, 792 F.3d at 1350 (citation omitted).

In this case, “manager” is used as a generic place-holder for anything that performs the recited function, much as the word “means” does. *Id.* at 1350–51 (recognizing “the term ‘module,’ standing alone is capable of operating as a ‘nonce word’ substitute for ‘means’”). Exemplary words before and after “manager” in both claims 1 and 12 are “blocking-scanning” and “blocking the attempted malicious behavior.” Those recitations are not structural but functional. The words are generic and do not impart specific structure. Rather, they would literally cover any structure that performs the function that follows. Furthermore, the entire phrase reflects the typical

format of a means-plus-function element that does employ the word “means,” with “module” substituting for “means” and “configured to” substituting for “for.”

Here, as in *Media Rights*, no structure, material, or acts are recited to achieve the specified function of blocking the malicious code, or other claimed functions. Additionally, here the claims do not use the term “blocking-scanning manager” as a substitute for an electrical circuit, or anything else that might connote a definite structure. Thus, we find that the term “blocking-scanning manager” in claims 1 and 12 invokes the means plus function analysis under § 112 ¶ 6.

Petitioner asserts that “[a] structure recited in a method claim is not subject to means-plus-function analysis when there is nothing unconventional about the structure itself.” Reply 2 (citing *Erfindergemeinschaft Uropep GbR v. Eli Lilly & Co.*, 2016 WL 6138124, at *5–6 (E.D. Tex. Oct. 21, 2016)) (determining that the chemical structure of the claimed “an inhibitor of phosphodiesterase [PDE] V” known as a PDE V inhibitor was well known at the time of the invention). Petitioner further asserts that a person of ordinary skill in the art would understand that “blocking-scanning manager” connotes structure because it is similar to “antivirus scanning and behavior blocking systems that existed when the ’249 patent was filed.” *Id.* (citing *Zeroclick, LLC v. Apple Inc.*, 891 F.3d 1003, 1008 (Fed. Cir. 2018) (applying the presumption against application of 35 U.S.C. § 112 ¶ 6 where the challenging party “provided no evidentiary support for [its] position”) (“*Zeroclick*”). In *Zeroclick*, the claims at issue “recite[d] ‘[a] graphical user interface,’ which their preambles make clear, may comprise ‘an update of an *existing* program.’” *Zeroclick*, 891 F.3d at

1008. In this case, however, blocking-scanning manager is not a conventional known structure like a graphical user interface or PDE V inhibitor. While a “blocking-scanning manager” can be used in an antivirus system, it is not conventional structure.

Additionally, unlike in *Zeroclick*, where, with no opposition for the challenging party, the Federal Circuit held that a person of skill would recognize the claimed “program” and “user interface code” as “specific references to conventional graphical user interface programs or code,” *id.* at 1008, the “blocking-scanning manager” is a black box recitation untethered to any specific structure. Instead, like the “distributed learning control module” that the Federal Circuit held to be a means-plus-function term in *Williamson*, the “blocking-scanning manager” uses “manager” as a nonce word, the prefix to “manager” imparts no structure, and the Specification also fails to impart any structural significance to the term. *See Williamson*, 792 F.3d at 1351.

To the extent Petitioner is arguing that one of ordinary skill would know how to program anti-virus software, the same argument has been rejected by the Federal Circuit:

A 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. *See Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d 1374, 1380 (Fed. Cir. 1999) (“consideration of the understanding of one skilled in the art in no way relieves the patentee of adequately disclosing sufficient structure in the specification”).

That ordinarily skilled artisans could carry out the recited function in a variety of ways is precisely why claims written in “means-plus-function” form must disclose the particular structure that is used to perform the recited function. By failing to describe the means by which the access control manager will create an access control list, Blackboard has attempted to capture any possible means for achieving that end. Section 112, paragraph 6, is intended to prevent such pure functional claiming. *Aristocrat*, 521 F.3d at 1333.

Blackboard, 574 F.3d at 1385.

Petitioner also cites to the Specification of the ’249 patent, which states that the blocking-scanning manager can be “part of” “an antivirus behavior blocking system,” “an antivirus scanning system,” or a combination of the two. Reply 2 (quoting Ex. 1001, 3:52–61). The Federal Circuit recently warned against using structure in the specification to supply structure to a claim in order to avoid the application of § 112 ¶ 6. *MTD Prods. Inc. v. Iancu*, 933 F.3d 1336, 1344–45 (Fed. Cir. 2019). In order to import structure from the specification into the claims we need evidence that the patentee was his own lexicographer. *Id.* Petitioner does not cite to sufficient evidence of lexicography here.

c. No Sufficient Corresponding Structure

Next, we assess whether there is sufficient corresponding structure in the Specification under § 112 ¶ 6. Petitioner asserts that “‘blocking-scanning manager’ is not a ‘black box,’ given that claims 1 and 12 lay out the algorithms step-by-step so that a PHOSITA readily could provide an operative software program for detecting and blocking malicious code.” Reply 4 (citing Ex. 1016 (Zadok Decl.) ¶¶ 13–20; Ex. 1001, Fig. 1). Petitioner does not cite to any case law for this proposition. We disagree with this contention. Claims 1 and 12 recite steps defined by the functions

to be performed by the “blocking-scanning manager.” *See Cole v. Kimberly-Clark Corp.*, 102 F.3d 524, 531 (Fed. Cir. 1996) (“[The court] decide[s] on an element-by-element basis, based upon the patent and its prosecution history, whether § 112, ¶ 6 applies.”). Merely reciting a series of steps and functional language does not amount to an algorithm. In fact, *Media Rights* acknowledged that the claim at issue listed multiple functions, but the court did not treat those functions as an algorithm, instead noting the requirement of adequately identifying corresponding structure for each function. *Media Rights*, 800 F.3d at 1374.

For “blocking-scanning manager,” Petitioner asserts “a collection of algorithms, implemented in software, hardware, or firmware, that perform the claimed functions” (citing to column 3, line 27 to column 4, line 11) is possible corresponding structure for this limitation. This citation is reproduced below:

FIG. 1 illustrates a high level overview of a system 100 for performing some embodiments of the present invention. Illustrated is a blocking-scanning manager 101 that can detect and block attempted malicious behavior of running code 120, as well as generate identifying signatures and block execution of identified code 122. A running code detection module 104 of the blocking-scanning manager 101 is communicatively coupled to a running code blocking module 106, an alert module 114, and a repository 116. The running code blocking module 106 is also communicatively coupled to a signature module 108, which is in turn communicatively coupled to a signature regulation module 118 and a scanning module 102. The scanning module 102 is further communicatively coupled to an identified code blocking module 112. These components and functionalities are discussed in more detail below.

Although the blocking-scanning manager 101 is illustrated as a single entity, as the term is used herein a blocking-scanning manager 101 refers to a collection of functionalities that can be

implemented as software, hardware, firmware or any combination of the three. . . Where implemented as software, these modules can be implemented as a standalone programs, but can also be implemented in other ways, as described above in reference to the blocking-scanning manager.

The functionalities attributed to any one module can be divided up between multiple modules in various ways. Additionally, the functionalities attributed to more than one module can be incorporated into a single module. Of course, not all embodiments of the present invention have all of the illustrated modules.

Ex. 1001, 3:27–4:11. This quote simply describes at a high level how software modules may interrelate but does not explain how the function in the claim is implemented in software.

For the function “blocking the attempted malicious behavior” (used herein as an example of the multiple functions of the blocking-scanning manager), Petitioner asserts “block malicious behavior by removing, disabling or isolating the code” (citing to column 5, line 4 to line 12) is possible corresponding structure for this limitation. Reply 8. This citation is reproduced below:

In response to detection of attempted malicious behavior, the running code blocking module 106 of the blocking-scanning manager 101 blocks the behavior. The running code blocking module 106 can block the malicious behavior in a number of ways. For example, the running code blocking module 106 might remove the code from the computer system, might disable the code in some manner, might isolate the code by placing it in a repository where it is prevented from causing harm, etc.

Ex. 1001, 5:4–12

By simply pointing to “running code blocking module,” which may perform a number of optional alternative functions, Petitioner has not identified the underlying algorithm of any such module.

For the reasons above, we find that claims 1 and 12 do not recite structure and invoke § 112 ¶ 6. We also find that, in the context of identifying disclosed structure corresponding to the means-plus-function limitations, no algorithm is described in the Specification for programming a general purpose computer to perform the functions associated with the blocking-scanning manager.

3. *“program code for the blocking-scanning manager blocking the attempted malicious behavior in response to the detection” claim 20*

Claim 20 has similar language to claims 1 and 12.⁸ Petitioner asserts that “program code” is not a nonce word and thus, one of ordinary skill in

⁸ Petitioner asserts “Claim 20 is the Beauregard-format counterpart to claim 1, reciting “program code for [a/the] blocking-scanning manager” terms that perform the same functions as specified in claim 1.” Reply 4. Although claim 20 is written in one of the numerous claim formats that are collectively referred to as Beauregard claims, claim 20 is not written in the format of the original Beauregard-type, computer-program-product claim because it omits “means for” and adds the term “blocking-scanning manager” which has not nonce term “manager.” Beauregard (US 5,710,578), claim 1 recites (emphasis added):

An article of manufacture comprising:
a computer usable medium having computer readable program code ***means embodied therein for*** causing a polygon having a boundary definable by a plurality of selectable pels on a graphics display to be filled, the computer readable program code means in said article of manufacture comprising:

computer readable program code ***means for*** causing a computer to effect, with respect to one boundary line at a time, a sequential traverse of said plurality of selectable pels of each respective said boundary line;

computer readable program code ***means for*** causing the computer to store in an array during said traverse a value of an outer pel of said boundary of said plurality of selectable pels for each one of a plurality of scan lines of said polygon; and

the art would have recognized that claim 20 recites computer code to perform the recited functions. Reply 4 (citing *Zeroclick*, 891 F.3d at 1008; *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 2018 WL 1699429, *18 (E.D. Va. Apr. 6, 2018) (finding “computer code” has structural meaning based on dictionary definitions and the fact that “the claim language describes the computer code’s operation with a sufficient degree of specificity”). We disagree. As noted above, *Zeroclick* does not stand for the proposition that all computer code is structural and beyond § 112 ¶ 6. *C.f. Finisar*, 523 F.3d at 1340 (finding in a computer implement invention the specification must disclose enough of a specific algorithm to provide the necessary structure under § 112 ¶ 6); *see also Ubisoft, Inc. v. Uniloc 2017 LLC*, IPR2017-01291, Paper 26 at 10–11 (PTAB Oct. 25, 2018) (Final Written Decision) (treating a limitation to “computer-readable program code means embodied in said medium” as mean plus function limitation).

Rather, *Zeroclick* found that the words “program” and “user interface code” were “used not as generic terms or black box recitations of structure or abstractions, but rather as specific references to conventional graphical user interface programs or code, existing in prior art at the time of the inventions.” 891 F.3d at 1008. Here, Petitioner asserts the blocking-scanning manager can be a part of existing antivirus software, but Petitioner does not state that the functions listed in the claim are all conventional. Additionally, Petitioner does not cite to an algorithm in the Specification for how blocking would occur. In fact, the Specification states “the running

computer readable program code **means for** causing the computer to draw a fill line, after said traverse, between said outer pels having said stored values, for each said one of said scan lines.

code blocking module 106 might remove the code from the computer system, might disable the code in some manner, might isolate the code by placing it in a repository where it is prevented from causing harm, etc.” Ex. 1001, 5:8–12. In other words, the “blocking-scanning manager” attempts to claim blocking malicious code in any manner possible. The Federal Circuit has often stated that § 112 ¶ 6 “was meant to preclude the overbreadth inherent in open-ended functional claims, . . . which effectively purport to cover any and all means so long as they perform the recited functions.” See *e.g.*, *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1256 (Fed. Cir. 2008).

We determine that “program code for a blocking-scanning manager” does not impart structure on the nonce word “manager” by indicating that it is implemented in software code. Thus, for the reasons stated above as to claims 1, 12, 16, claim 20 is also written in means plus function form, and Petitioner has not pointed to sufficient corresponding structure in the specification.

C. Petitioner’s Argument that the Corresponding Structure Matches the Prior Art Structure

Petitioner asserts, based on its identification of structure, that the prior art in this case recites the same structure. Reply 6–11. That argument is unpersuasive. As explained above, we do not accept Petitioner’s recitation of corresponding structure as sufficient. Additionally, any structures or lack of structures in the prior art does not affect the inadequate showing of structures in the Petition.

D. Summary

As explained above, we determine that independent claims 1, 12, 16, and 20 contain means plus function limitations for which the Petitioner does not cite to sufficient corresponding structure. Thus, we cannot ascertain the proper claim scope. Without ascertaining the proper claim scope, we cannot conduct a necessary factual inquiry for determining obviousness—ascertaining differences between the claimed subject matter and the prior art. *See Graham*, 383 U.S. at 17–18.

IV. CONCLUSION

For the foregoing reasons, we are unable to determine obviousness of claims 1, 2, 5–9, 12–17, 20, and 22 of the '249 patent under 35 U.S.C. § 103. Accordingly, it is appropriate to terminate the proceeding under 37 C.F.R. § 42.72.

Accordingly it is

ORDERED that we do not proceed to a final written decision under 35 U.S.C. § 318(a); and

FURTHER ORDERED that this proceeding is hereby terminated under 37 C.F.R. § 42.72.

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