

In the United States Court of Federal Claims

No. 16-346C

(Originally filed: February 3, 2023)

(Reissued: February 21, 2023)¹

GEOSPATIAL TECHNOLOGY
ASSOCIATES, LLC,

Plaintiff,

v.

THE UNITED STATES,

Defendant.

Patent infringement;
Obviousness;
Motivation to combine;
Indefiniteness; Improper
combination of method
and apparatus claims;
Means-plus-function
structure

Richard T. Matthews, Raleigh, NC, for plaintiff.

Jenna Munnely, Trial Attorney, United States Department of Justice, Washington, DC, with whom were *Scott Stewart*, Deputy Assistant Attorney General, *Gary L. Hausken*, Director, for defendant.²

OPINION

BRUGGINK, *Judge.*

This is a patent and copyright case brought against the government for infringement of plaintiff’s Patent No. 8,897,489 (the “489 patent”) and the associated software protected by copyright. Plaintiff alleges that defendant

¹ This opinion was originally issued under seal to afford the parties an opportunity to propose redactions of protected information. They agreed that none were necessary. The opinion thus appears in full.

² Mr. Stewart was listed on the briefs at the time the motions were initially filed and subsequently briefed. Brian M. Boyton is now the Principal Deputy Assistant Attorney General at the Department of Justice on the government’s briefs filed in this case.

improperly possessed and used the '489 invention in violation of its patent. Defendant has responded, *inter alia*, by arguing that it did not infringe because the '489 patent is invalid. Pending are the parties' renewed motions for summary judgment on patent validity. As explained below, plaintiff's motion is granted in part, and defendant's is denied.

BACKGROUND

The '489 patent teaches the creation and use of a solid-object detection and identification apparatus. The technology "eliminates the need for an analyst to visually inspect all data and instead enables the analyst to quickly focus on an accurate and ranked list of target detections" within each image. '489 patent at 4. The invention functions by using a computer to accept a series of images from its user, and then uses a statistical detection algorithm to "filter each pixel in each of one or more images" to generate "a statistical detection score" for each pixel in the image. *Id.* The apparatus then examines the regions surrounding high-scoring pixels and uses an algorithm to unmix the pixels, collate the scores, and determine an "object based score for each [image's] identified regions." *Id.* at 4 (language added for clarity). Once regions with high target scores are identified, the '489 invention cross-references the scores with geographical data, further increasing the accuracy of the target detection process. The apparatus then feeds a report on the geographical location of the identified objects to the user who verifies if identified pixels and regions hold objects of interest to the analyst. *Id.*

Five steps fully encompass this process (as described in the patent's second figure): 1) obtaining images; 2) applying a statistical filter to generate a per pixel detection score; 3) "apply[ing] spatial process to per pixel . . . scores to identify regions" and to determine the score "in each detection plane;" 4) determining "corresponding geographical information for each identified region;" 5) and providing the selected regions and object scores "with corresponding geographical information." *Id.* at 3. Steps two through four can be repeated iteratively on each image to provide greater accuracy in the final report issued to the user analyst.

The '489 invention was developed between 2008 and 2011 by Dr. William Basener and was filed in a patent on January 28, 2011. Portions of the invention's software were subsequently copyrighted in July of 2017 under Registration No. TX 8-420-604. The invention's intellectual property rights were originally assigned by Dr. Basener to the Rochester Institute of Technology ("RIT"), but were later reassigned on November 12, 2015 to Geospatial Technology Associates, LLC. ("GTA", the plaintiff here.

Subsequently, the government licensed the use of the ‘489 invention for a short image processing contract. Under this agreement, plaintiff used the ‘489 invention to process and analyze images furnished by the government. Because the analysis process used an iterative procedure that used previous image results to accurately identify future images, at least one copy of plaintiff’s invention remained on government computers after the end of the image processing contract. Plaintiff alleges that the government’s possession of this ‘498 invention copy and use of other detection programs beyond the termination of the license, have infringed the ‘489 patent. In total, the nine programs causing alleged infringement are: Full Spectrum Tool Kit (“FSTK”), FTSK with Probabilistic Identification of Solid Materials (“PRISM”), GeoReplay, GeoReplay with Prism, GeoReplay Full Spectrum Exploitation (“GeoReplay-FX”), Lobo, HyperSEAL, GEOMATE, and Object-Based Identification, Sorting, and Ranking (OBISR) algorithms. As a result, plaintiff filed suit against the government on March 16, 2016, to seek damages for the unlicensed use of plaintiff’s intellectual property.

On July 24, 2020, defendant filed a brief presenting three bases on which it believed that the ‘489 patent was invalid: 35 U.S.C. §102 lack of novelty, 35 U.S.C. §103 obviousness, and 35 U.S.C. §112 indefiniteness.³ Plaintiff responded to this brief with a motion for summary judgment asserting the ‘489 patent’s validity; defendant replied with an opposing cross-motion regarding invalidity. Both motions were fully briefed, and on April 8, 2021, Judge Griggsby, previously assigned to this case, ruled against plaintiff and held that all claims in the ‘489 patent were non-novel and invalid under 35 U.S.C. §102 because they were fully anticipated by the Civil Air Patrol’s Hyperspectral Sensor System (“Archer”). *Geospatial Tech. Assocs. v. United States*, No. 16-346C, 2021 U.S. Claims LEXIS 1085 (Fed. Cl. Apr. 8, 2021). Because this decision invalidated the entire patent, Judge Griggsby did not decide whether the ‘489 patent was obvious or indefinite. Plaintiff then sought reconsideration of the holding of obviousness.

The case was thereafter transferred to the undersigned. On reconsideration, plaintiff argued (amongst other unsuccessful arguments) that the court previously had erred because, “for a court to find a feature of a patent obvious or anticipated by some prior art, without that feature being explicitly taught, that feature must be ‘necessarily present in the thing recognized by persons of ordinary skill.’” *Geospatial Tech. Assocs., LLC v.*

³ The court invited defendant to present its views on the patent’s validity in a brief. *See* ECF No. 196 (Order of July 14, 2020). Dispositive motions were to be scheduled later, but plaintiff responded to the government’s brief with a motion, and defendant followed course.

United States, 158 Fed. Cl. 113, 119 (2021) (quoting *In re Robertson*. 169 F.3d 743, 745 (Fed. Cir. 1999)). Plaintiff used this precedent to argue that because the “unmixing” capabilities of the ‘489 patent were not found in the ARCHER prior art, the ‘489 patent could not have been fully anticipated by ARCHER. We agreed and, on November 29, 2021, held that “it is insufficient that the prior art *might* be capable of performing a function of a patented invention [unmixing] if only it were modified, tweaked, or . . . used in a machine. For a feature to be inherent in the prior art, however, that feature must be necessarily present in the steps, functions, or elements of the prior art.” *Id.* at 6, language added for clarity.

Because the ARCHER system did not have “unmixing” as a step, function, or element, the undersigned granted the motion in part and declared that the ARCHER system did not anticipate claims 5, 14, 23, 29, 31, and 33 of the ‘489 patent. *Id.* Although this ruling had the effect of reviving the ‘489 patent, it did not adjudicate the obviousness and indefiniteness arguments for patent invalidity. Because those issues are unresolved and have been fully briefed, we will consider the validity issues.

Discussion

In its brief on patent invalidity, defendant argued that the ‘489 patent was obvious under §103 because of existing prior art that taught target detection and identification from images. Defendant also argued that the ‘489 patent was indefinite under §112 because the patent confused method and apparatus claims and failed to disclose the “specific structure” of the patent’s algorithm. ECF No. 201 at 13, 23-25. Plaintiff opposed these arguments and sought summary judgment to declare that the ‘489 patent was both non-obvious and definite.

I. Obviousness

The aim of the U.S. patent system is to encourage innovation and promote the spread of new technology throughout the public by creating a disclosure that will “give the public the benefit of an invention after the patent shall expire.” *Beidler v. United States* 253 U.S. 447, 453 (1920). In line with this goal, it is Congress’s desire only to allow patents for true innovations, and not for the use of previously known elements in an obvious combination. *See generally KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

To achieve this purpose, Congress included §103 as a qualification for earning a valid U.S. Patent: “A patent for a claimed invention may not be

obtained . . . if the differences between the claimed invention and the prior art are . . . obvious . . . to a person having ordinary skill in the art.” This means that, when previous inventions (prior art) can be combined in obvious ways to result fully in the now-claimed invention, any patents granted for that invention are invalid and not able to serve as the basis for a patent infringement lawsuit. In this case, defendant argues that the ‘489 patent runs afoul of §103 because the claimed invention is:

- (1) a combination of prior art elements according to known methods to yield predictable results,
- (2) a simple substitution of one known element for another to yield predictable results,
- (3) an application of known techniques to known devices ready for improvement to yield predictable results,
- (4) and/or obvious to try.

ECF No. 201 at 14-15.

In support of these assertions, defendant commissioned Alan Stocker, an engineering consultant, as an expert to review the ‘489 patent and write a report (the “Stocker Report”) evaluating the ‘489 patent’s validity. In it, Mr. Stocker opines that two primary pieces of prior art existed before the ‘489 patent’s filing date that together disclose all of the claims of the ‘489 patent, rendering it obvious under §103. The first of the prior art references identified by Mr. Stocker is a type of “automated algorithm” used “for detecting gas plumes and identifying their chemical constituents via a detailed analysis of aggregated pixel spectra.” ECF No. 201-1, at 12-13. The second piece of prior art is an image identification algorithm named “GeoID” developed by the Air Force national Air and Space Intelligence Center to “process spectral imagery from . . . sensors as well as several other instruments.” *Id.* Taking these two together, Mr. Stocker avers that all of the features and limitations of the ‘489 patent are found. Assuming that to be true, which plaintiff disputes, the only remaining question is whether a person of ordinary skill in the art (POSITA) would have been motivated to combine the two algorithms at the time of the invention at issue.

Defendant points to a particular line in Mr. Stocker’s report as indicative of just this motivation in the field at the time: “there was an ‘emphasis’ in the H.S.I. [(Hyper-spectral imaging)] community towards utilizing known methods and algorithms of target identification used for gas problems to address solid-matter problems.” ECF NO. 201 at 15. Thus, any POSITA would have thought it simple and obvious to “combine target detection [(gas plume detection)] and target identification [(the GeoID algorithm)] to reduce false alarm rate[s]” and thereby develop the ‘489

invention. *Id.* If so, the ‘489 patent’s invention is obvious under § 103 and ineligible for intellectual property protection.

Plaintiff disagrees on all counts, emphasizing that an invention which combines known elements is novel if there is no known motivation to combine them at the time of the invention. Plaintiff points out that “the fact [that] a POSITA might or even would be able to combine certain references does not mean they would have had a reason or motivation to do so.” ECF No. 204 at 19 (citing *TQ Delta, LLC v. Cisco Sys.*, 942 F.3d 1352 (Fed. Cir. 2019); *InTouch Techs., Inc. v. VGo Communs., Inc.*, 751 F.3d 1327 (Fed. Cir. 2014)) (emphasis omitted). Plaintiff finds the line in Mr. Stocker’s report regarding the use of gas plume identification algorithms for solid matter problems lacking the crucial details of how that would have motivated a skilled artisan to combine the two pieces of cited prior art in a manner that teaches the claim limitations of the ‘489 patent. Plaintiff also doubts the veracity of Mr. Stocker’s statement, presenting 2011 emails from Mr. Stocker in which he expressed doubt regarding combining these two types of algorithms to meet the need for solid matter identification. ECF No. 204-6. Plaintiff further cites to its own validity expert, Dr. Jones, who opined that the prior art teaches away from the combination of methods found in the ‘489 patent. *See* ECF No. 202-2 (Jones Report) at ¶¶ 170-71, 167-68, 423-26. At best, per plaintiff, Mr. Stocker’s statements raise a disputed question of fact.

Plaintiff also raises the more basic point that defendant has not presented any evidence, and very little argument, as to how the prior art compares to the patent claims, i.e., a claim-by-claim analysis of whether the pre-existing algorithms disclosed the limitations contained in the asserted patent. It finds any such analysis lacking from Mr. Stocker and asserts that the claim chart appended to the government’s motion is grossly inadequate, or, as counsel described it, “a ‘choose-your-own adventure’ endeavor.” ECF No. 204 at 22.

Defendant replies that it has presented undisputed evidence on both points. On the question of motivation, it admits that the precise term was not used by Mr. Stocker but argues that his statements at deposition and in his report are sufficient to show the motivation present at the time of the invention. The government quotes the following from Mr. Stocker’s deposition testimony: “[the] hyperspectral community emphasis shifted towards solid-material targets with reflective-band spectral signatures, analytical methods and algorithms previously optimized for the gas problem in the thermal infrared region were tailored and extended to apply to the solids realm using reflective-band imagery.” ECF No. 201, Ex. A ¶¶ 37-38. This “shift” or “emphasis,” according to the government, demonstrates that,

as of the patent's priority date, other researchers in the field were working on developing methods to use gas signatures for solid object identification. If those in the field were already trying to use known identification methods for solid objects, then the motivation was already present and further motive need not be proved, argues defendant. That may ultimately be proven, but the facts are in dispute.

A showing of motivation to combine is critical to the obviousness analysis because "inventions in most, if not all, instances rely on building blocks long since uncovered, and claimed discoveries almost of necessity will be combination of what, in some sense, is already known." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-19 (2007). Patents are not often issued in truly novel areas of endeavor. Science and industry are largely advancing incrementally, building upon what came before. Thus, courts must consider carefully whether a motivation to combine previously known in elements in the way claimed by the patent in suite was present in the field of art before declaring a patent invalid. Because "obviousness determinations cannot rely on hindsight," courts must carefully consider motivation to combine arguments to prevent ex post reasoning. *Belcher Pharm., LLC v. Hospira, Inc.*, 450 F. Supp. 3d 512, 538 (D. Del. 2020) (citing *KSR*, 550 U.S. at 421).

The government's Stocker Report states that, at the time of the '489 patent's filing, other non-party researchers were moving towards using existing gas analysis programs for solid object identification. Plaintiff presents evidence that casts at least some doubt on this asserted inertia in the form of Mr. Stocker's own prior statements and Dr. Jones' opinion that prior art taught away from combining in the manner that the invention did, which casts doubt on a finding of the necessary motivation to combine. "Obviousness is a question of law based on underlying findings of fact, which include the motivation to combine multiple prior art references and any objective indicia of non-obviousness." *S. Ala. Med. Sci. Found. v. Gnosis S.p.A.*, 808 F.3d 823, 826 (Fed. Cir. 2015). On the present record, motivation is disputed, and very little evidence or argument regarding the secondary indicia has been presented. For those reasons alone, summary judgment is inappropriate. We note, further, however, that, as plaintiff points out, no claim-by-claim analysis was presented beyond the government's chart. No citations to or argument from it were made in defendant's briefing, however. The issue of whether the cited prior art meets the limitations of the '489 claims is also preserved for trial as the record at this point is immature on the issue.

II. Indefiniteness

Defendant also challenges the patent's validity on definiteness grounds. Because the ultimate purpose of a patent is to encourage both innovation and disclosure of new technology to the public—a delicate balance to be sure—the patent must adequately give notice of what it claims. *See Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 909-10 (2014) (clarifying that the indefiniteness requirement is aimed at ensuring adequate notice to the public of what is claimed and what is not); *see generally Pfaff v. Wells Elecs., Inc.*, 525 U.S. 55, 63-64 (1998) (discussing the “carefully crafted bargain” of the patent system that encourages innovations and disclosure of technology). This notice requirement is found in 35 U.S.C. §112, which states that a patent “shall contain a written description of the invention, and of the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable a [POSITA] to make and use the [invention].” Should an invention fail to meet this standard of disclosure, the patent is indefinite and invalid.

Defendant presents two reasons why it believes the ‘489 patent does not adequately disclose the claimed invention to the public. First, the government argues that the ‘489 patent claims disclose both a method and an apparatus. Claims “reciting both an apparatus and a method of using that apparatus render a patent claim indefinite.” *I.P.X.L. Holdings, L.L.C. v. Amazon Inc*, 430 F.3d 1377, 1384 (Fed. Cir. 2005). The second argument is that the ‘489 patent is indefinite because the specifications fails to adequately disclose the algorithm claimed by the ‘489 invention. “[I]f there is no structure in the specification corresponding [to the invention’s details] . . . the claim will be found as indefinite.”⁴ *Biomedino, L.L.C. v. Waters Technologies Corp.*, 490 F.3d 946, 950 (Fed. Cir. 2007), (clarification added). Defendant argues that “when general purpose computers are disclosed, the specification must disclose a specific algorithm to transform the general-purpose microprocessor to a special purpose computer programed to perform the disclosed algorithm.” ECF No. 201 at 22.

A. Method and Apparatus

⁴ Defendant also argues that claims 5 and 29 are indefinite due to a failure to “provide reasonable certainty of the scope of the invention.” ECF No. 201 at 21-22. However, this question is encompassed by the broader means-plus-function argument addressed herein.

Claims 5 and 29 of the ‘489 patent describe methods of using a computer containing the ‘489 algorithm for “identification, sorting, and ranking detections of one or more targets.” ‘489 Patent at 7, 9. Conversely, claims 14, 23, 31, and 33 describe the actual physical set-up of a computer programed to perform the ‘489 algorithm, including “a non-transitory computer medium having stored thereon instructions for identification, sorting and ranking detection of one or more targets” *Id.* at 8-10.

The government contends these claims are indefinite by noting that the ‘489 patent claims mention an apparatus (alternatively referred to as a “medium”), but then detail a series of steps (“unmixing the target detection processing apparatus,” or “comparing [the image] with the target detection processing apparatus”) that must be performed for the invention to function. *See* claims 5, 14, 23, 29, 31, 33 of U.S. Patent No. 8,897,489 B2 (issued Nov. 25, 2014). The government argues the inclusion of these steps comprises a process patent claim which, when combined with the apparatus in the claim’s preamble, makes the patent so indefinite that a skilled artisan could not reproduce the invention.

Plaintiff makes two responses to this method-apparatus combination allegation. First, it argues that two of the claims (claim 5 and claim 29) are method claims that avoid the issue of combination indefiniteness because they claim only methods and not apparatuses. Plaintiff argues that these two claims are not methods that claim an apparatus, but rather methods that describe the functioning of the apparatus as a limitation of the method itself. Plaintiff argues that this distinction prevents claims 5 and 29 from being indefinite. *Id.* We find this line of reasoning persuasive and note that it is consistent with existing precedent that “a method claim may include an apparatus element that invokes 35 U.S.C. § 112.” *Spherix Inc. v. Vtech Telcoms. Ltd*, 2015 U.S. Dist. LEXIS 171949 (N.D. Tex. Mar. 19, 2015), citing the Federal Circuit Court of Appeal’s reasoning in both *On Demand Mach. Corp. v. Ingram Indus., Inc.*, 442 F.3d 1331, 1336, 1340-41 (Fed. Cir. 2006) and *J & M Corp. v. Harley-Davidson, Inc.*, 269 F.3d 1360, 1364 & n. 1, 1367 (Fed. Cir. 2001).

Both claims 5 and 29 describe the process of the ‘489 invention’s operation, and by their very nature must mention aspects of the apparatus’s components. This does not mean that claims 5 and 29 are claiming the apparatus components, but rather that 5 and 29 are using the apparatus as limitation for the method being described. We do not find that this use of apparatus as a limitation makes claims 5 and 29 vague to the point that a POSITA would be unable to reproduce the method due to confusion as to whether those claims are for a method or for an apparatus.

Plaintiff's second response to the government's method and apparatus combination argument is that the remaining apparatus claims (14, 23, 31, and 33) do not include a method claim that renders them indefinite. Instead, plaintiff argues that the alleged method of these claims is actually a limitation of the apparatus because the apparatus, not a user, performs the action.

We again agree with plaintiff. The Federal Circuit's decision in *Mastermine Software* instructs that an apparatus claim can have functional language so long as "the functional language does not appear in isolation, but rather, is specifically tied to the physical structure" of the apparatus *Mastermine Software Inc. v. Microsoft Corp.* 874 F.3d 1307, 1316 (Fed. Cir. 2017). So long as the function is performed by the structure of the apparatus and is not a series of steps performed by the user, the functional language merely defines the limitations and capacity of what the apparatus can do and is not indefinite because it combines an apparatus and a method. *Id.* Such is the case here.

There is no aspect of any part of claims 14, 23, 31, or 33 that requires the apparatus user to perform any action or step. Claims 14 and 31 detail a "computer readable medium" which "store[s] thereon instructions for identification, sorting and ranking detections of one or more targets." This language specifies a computer containing instructions for identification, sorting, and ranking, not a step wherein the computer's user identifies, sorts, and ranks targets. Thus, claims 14 and 31 meet the *Mastermine* standard. Similarly, claims 23 and 33 specify an "apparatus comprising . . . processors which are configured to execute programmed instructions stored in the memory." The programmed instructions include "determining a target detection score," "identifying a region," and unmixing the pixel with the highest determined . . . score." None of these steps are performed by the apparatus's user, and all are stipulated as limitations of what the apparatus can perform. Therefore, claims 23 and 33 also satisfy the *Mastermine* definiteness rule.

All functions performed in these four claims are performed by the apparatus, therefore the description of the apparatus's function is a limitation of the apparatus being claimed by the '489 patent. See also *UltimatePointer, L.L.C. v. Nintendo Co.*, where the Federal Circuit held that "if an apparatus claim is 'clearly limited to a[n apparatus] possessing the recited structure and capable of performing the recited functions,' then the claim is not invalid as indefinite." 816 F.3d 816, 825 (Fed. Cir. 2016) (citing *Microprocessor Enhancement Corp. v. Texas Instruments Inc.*, 520 F.3d 1367, 1375 (Fed. Cir. 2008)).

Accordingly, we do not find that the ‘489 patent is indefinite due to an invalid combination of method and apparatus claims. The method claims and the apparatus claims of the ‘489 patent are sufficiently distinct as to not be confused for each other by a person of ordinary skill.

This decision on the '489 claims, however, only pertains to whether the ‘489 patent is indefinite for combination-induced indefiniteness. As discussed below, there are other questions raised by defendant that are unresolvable at this point.

B. Necessary Structure

The government also argues that “the ‘489 patent relies upon a means-plus-function terminology that is crippled by the fact there is no disclosure of a corresponding algorithm for the ‘determining,’ ‘identifying,’ and ‘processing’ function Rather, the specification vaguely references hardware and software, but provides no identification of *a specific software/algorithm.*” ECF No. 204 at 24, (emphasis added). Instead of teaching the algorithm, the patent merely describes what the ‘489 formula can or should accomplish, says defendant.

The patent’s specifications, in column 5, disclose the following:

. . . target detection processing apparatus identifies the highest scoring pixel in the image collection (e.g. call this highest scoring pixel X) and selects a local region around this pixel. Next, end members (e_1, e_2, \dots, e_n) are chosen by target detection processing apparatus 12 from this local region after the top statistical detection scores for the given target are masked out. The convex hull of these end members is a geometric model of the background for the detected pixel and is determined by target detection processing apparatus. The pixel is then “unmixed” by target detection processing apparatus by finding abundances $a_1, a_2, \dots, a_i, a_t$, that give the best approximation of the pixel spectra as a linear combination of the background end members and the target.

$$x \approx \sum_{i=1}^n a_i e_i + a_t t.$$

The background portion of the pixel is

$$b = \sum_{i=1}^n a_i e_i,$$

and the residual portion of the pixel is $r = X^{-1}(b - a)$. The estimated target fill percentage of the pixel is a , and the unmixing error is given by the target detection processing apparatus 12 comparing the target spectra to the residual spectra using a metric, such as spectra angle or percentage.

'489 Patent at 7.

Defendant cites Mr. Stocker, its validity expert, for the proposition that these mathematical equations are only descriptions of the algorithm's functions, not the algorithm itself. It thus asserts that Mr. Stocker and POSITAs like him would be unable to determine precisely what is claimed in the limitations by terms such as "determining," "identifying," and "processing," with the result that these claims are indefinite. Neither the claims nor the specifications define the terms, and the patent would be indefinite for lack of antecedent basis.

Plaintiff responds that "a lack of antecedent basis renders a claim invalid only when the claim term would not 'reasonably be understood by persons of ordinary skill when read in light of the specification.'" ECF No. 204 at 27 (quoting *Energizer Holdings v. ITC*, 435 F.3d 1366, 1370 (Fed. Cir. 2006)). The law, according to plaintiff only requires enough specificity to prevent undue experimentation. *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1385-86 (Fed. Cir. 2011) (discussing the "enablement" requirement of § 112). Plaintiff alleges that any POSITA would reasonably understand the meaning of the '489 claims considering the specification's description of the algorithm and cites its expert, Dr. Creed Jones, a professor of electrical and computer engineering, for support. In his report, Dr. Jones states that the '489 patent has an "adequate corresponding structure" supporting its claims, thus allowing a person of ordinary skill to reproduce the algorithm without undue experimentation. ECF No. 201-2 at 123-139.

Although plaintiff is correct that an exact copy of every part of the algorithm is not required to create a valid patent, sufficient "structure" of the invention, whether algorithm or otherwise, must be disclosed so that the patent terms' meaning are ascertainable and the public is on notice of how to

reproduce the invention. *See Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1385-86 (Fed. Cir. 2011). The Federal Circuit made clear, however, that, even when a computer executes the function, the law does not always require the source code or a detailed algorithm. *Id.* (citing *Aristocrat Techs. Australia Pty. Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1338 (Fed. Cir. 2008); *Finisar Corp v. DirecTV Group, Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008)). “A description of the function in words may ‘disclose, at least to the satisfaction of [a POSITA], enough of an algorithm to provide the necessary structure under §112.’” *Id.* at 1386 (quoting *Finisar*, 523 F.3d at 1340). The parties rely on conflicting expert reports, creating a disputed material fact. *Nat'l Westminster Bank, PLC v. United States*, 69 Fed. Cl. 128, 147 (2005). Both parties’ motions for summary judgment on the issue of antecedent basis for means-plus-function indefiniteness are thus denied. The question of whether the ‘489 patent is indefinite must go to trial. We have considered all other presented arguments regarding patent validity and found none of them persuasive.

Conclusion

For the abovementioned reasons, plaintiff’s renewed motion is granted in part and denied in part and defendant’s motion is denied. The patent is not indefinite due to a combined method and apparatus claims. The other issues of obviousness and indefiniteness, including the imbedded questions of fact and secondary indicia, must proceed to trial. A pretrial schedule has already been set by order on January 6, 2023.

s/ Eric G. Bruggink
ERIC G. BRUGGINK
Senior Judge