UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte R. MARK HALLIGAN and RICHARD WEYAND

Appeal 2008-1588
Application 09/757,206
Technology Center 3600

Decided: November 24, 2008

Before ALLEN R. MACDONALD, *Vice Chief Administrative Patent Judge,* and LINDA E. HORNER and ANTON W. FETTING, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

R. Mark Halligan and Richard Weyand (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 1-70 and 119-123, all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM-IN-PART and ENTER A NEW GROUND OF REJECTION PURSUANT TO OUR AUTHORITY UNDER 37 C.F.R. § 41.50(b).

THE INVENTION

The Appellants' claimed invention accounts for trade secret intellectual property assets (Spec. 1). Claims 1 and 119, reproduced below, are representative of the subject matter on appeal.

> 1. A programmed computer based upon the six factors of a trade secret from the First Restatement of Torts for identifying trade secrets within a plurality of potential trade secrets of a business, where each of the plurality of potential trade secrets comprises information, said programmed computer comprising:
>
> a) means within the programmed computer for providing a predetermined criteria for evaluating a potential trade secret of the plurality of potential trade secrets under each of the six factors of a trade secret from the First Restatement of Torts, said six factors including (1) the extent to which the information is known outside of the business; (2) the extent to which it is known by employees and others involved in the business; (3) the extent of measures taken by the business to guard the secrecy of the information; (4) the value of the information to the business and its competitors; (5) the amount of time, effort or money expended by the business in developing the

information and (6) the ease or difficulty with which the information could be properly acquired or duplicated by others;

b) means within the programmed computer for receiving a numerical score value for the potential trade secret under the predetermined criteria for each of the six factors;

c) means within the programmed computer for calculating a metric from the received numerical score values under the six factors; and

d) means within the programmed computer for ranking the potential trade secret with regard to another potential trade secret found among the plurality of potential trade secrets based upon the calculated metric.

119. A programmed computer method based upon the six factors of a trade secret from the First Restatement of Torts for identifying trade secrets within a plurality of potential trade secrets of a business, where each of the plurality of potential trade secrets comprise information, said method implemented by the programmed computer to effect the following steps:

a) the programmed computer providing a predetermined criteria for evaluating a potential trade secret of the plurality of potential trade secrets under each of the six factors of a trade secret from the First Restatement of Torts, said six factors including (1) the extent to which the information is known outside of the business; (2) the extent to which it is known by employees and others involved in the business; (3) the extent of

> measures taken by the business to guard the secrecy of the information; (4) the value of the information to the business and its competitors; (5) the amount of time, effort or money expended by the business in developing the information and (6) the ease or difficulty with which the information could be properly acquired or duplicated by others;
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> b) the programmed computer receiving a numerical score value for the potential trade secret under the predetermined criteria for each of the six factors;
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> c) the programmed computer calculating a metric from the received numerical score values under the six factors; and
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> d) the programmed computer determining that the potential trade secret is a trade secret when the calculated metric exceeds a predetermined threshold value.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Haber	US 5,136,646	Aug. 4, 1992
Donner	US 6,263,314 B1	Jul. 17, 2001
Spencer	US 6,356,909 B1	Mar. 12, 2002
Eder	US 6,393,406 B1	May 21, 2002
Barney	US 6,556,992 B1	Apr. 29, 2003

The following rejections are before us for review:

1. Claims 1-70 and 121 are rejected under 35 U.S.C. § 112, first paragraph because the Specification does not disclose adequate

structure for performing the recited functions in the "means plus function" language.

2. Claims 1-70 and 119-123 are rejected under 35 U.S.C. § 112, first paragraph for lack of enablement.
3. Claims 1-70 and 119-123 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.
4. Claims 8-31, 49-56, and 69 are rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter.
5. Claims 1, 3-35, 37-39, 43, 44, 47-57, 60-63, 67-70, and 121 are rejected under 35 U.S.C. § 102(e) as anticipated by Donner.
6. Claims 1-41, 43, 44, 47-57, 60-63, 67-70, and 121 are rejected under 35 U.S.C. § 102(e) as anticipated by Eder.
7. Claims 42, 45, 46, 58, 59, and 64-66 are rejected under 35 U.S.C. § 103(a) as unpatentable over Donner, Eder, and Haber.
8. Claims 2, 40, and 41 are rejected under 35 U.S.C. § 103(a) as unpatentable over Donner and Eder.
9. Claims 119, 120, 122, and 123 are rejected under 35 U.S.C. § 103(a) as unpatentable over Spencer and Barney.[1]

[1] The Examiner withdrew a rejection of claims 1-70 and 119-123 under 35 U.S.C. § 112, first paragraph for lack of enablement on the grounds that the claimed invention is not supported by a specific or well-known utility (Ans. 4) and a rejection of claims 119, 120, 122, and 123 under 35 U.S.C. § 112, first paragraph on the grounds that the means plus function claim elements have no support in the Specification (Ans. 23).

REJECTION OF CLAIMS 1-70 AND 121 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

ISSUE

The Examiner determined the Appellants' Specification does not disclose adequate structure for performing the recited functions of claims 1 and 121. Ans. 5-7 and 23-26.

The Appellants point to the computer system of Figure 1, the predetermined criteria, as shown for example in Table C, and various other portions of the written description of Appellants' Specification and the detailed functional specification of the invention as described in Appendix I as structure disclosed for performing the recited functions. App. Br. 22-25.

The issue before us is:

Have the Appellants shown the Examiner erred in determining that the Specification fails to provide adequate disclosure of structure to perform the recited functions in claims 1-70 and 121?

FINDINGS OF FACT

We find that the following enumerated findings are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. It is undisputed that Appellants intended to invoke 35 U.S.C. § 112, sixth paragraph, by the use of "means for" language in independent claims 1 and 121. App. Br. 22-25; Ans. 5-7.
2. The last element of claim 1 recites "means within the programmed computer for ranking the potential trade secret with regard to another potential trade secret found among the plurality of potential trade secrets based upon the calculated metric."
3. The original Abstract of Appellants' Specification states only that analysis of the entered data includes "the ranking of trade secrets." The Abstract does not provide an algorithm by which the ranking is implemented.
4. The Specification describes Figure 12 as "a block diagram of processors of the accounting digital computer of FIG. 1." Spec. 10:9-10. Figure 12 includes a block labeled "comparison processor." Spec. Fig. 12. The Specification does not provide any further description of the comparison processor of Figure 12.
5. Figure 1 shows a diagram of a general purpose computer. For example, the Specification discloses a digital computer used for data processing and a user interface device that displays data to the user and allows the user to enter data. Spec. 10-11; Fig. 1.
6. The Specification describes that this computer includes "[a]t least one means for storing the data entered into the system, as well as the programs required to implement the system, and the results of

searches and calculations of the system that may be stored for later use or display, called a mass data storage device." Spec. 12:1-4. This is the only reference in the Specification to a program used to implement the system.

7. Thus, we understand the comparison processor of Figure 12 to be merely a processor found in any general purpose computer that is capable of performing a comparison between two values.

8. The Specification does not disclose any specific algorithm that the comparison processor would use to perform a comparison or ranking.

9. Pages 23-24 of the Specification describe comparing the metric with one or more threshold values to verify the existence of a trade secret and identifying outlying values where the metric is very high or very low. This identification of outlying values is described in the context of comparing the metric to the threshold value and does not refer to ranking of a trade secret. Thus, this portion of the Specification does not disclose ranking of trade secrets.

10. Even if the portion of the Specification discussed in Finding of Fact 9 were found to describe ranking of trade secrets generally, this description provides only a recitation of the function of ranking and does not disclose an algorithm for implementing the ranking function.

11. Page 35 of Appendix I discloses, under the section entitled "Sorting Lists," that "[t]he system shall be able to sort any list or sub-list of trade secrets or other records in increasing or decreasing order on any field or weighting." This disclosure merely uses different wording to describe the function of ranking, but does not describe an algorithm for carrying out this function.

12. Thus, the Appellants' Specification describes only a general purpose computer and generally refers to a program on the computer that performs the function of ranking of trade secrets, but it does not describe an algorithm by which the function of ranking the trade secrets is implemented.

13. The fourth element of claim 121 recites "means within the programmed computer for determining that the potential trade secret is a trade secret when the calculated metric exceeds a predetermined threshold value."

14. The Specification describes Figure 12 as "a block diagram of processors of the accounting digital computer of FIG. 1." Spec. 10:9-10. Figure 12 includes a block labeled "arithmetic processor." Spec. Fig. 12. The Specification further describes that "[t]he defendability factors may be compared with one or more threshold values within the accounting system (e.g., within an arithmetic processor (AU)[)] to verify the existence of a trade

secret." Spec. 23:1-3. The Specification does not otherwise provide any description of the arithmetic processor of Figure 12.

15. Thus, we understand the arithmetic processor of Figure 12 to be merely a processor found in any general purpose computer that is capable of performing an arithmetic operation.

16. The Specification does not disclose any specific algorithm that the arithmetic processor would use to determine a trade secret.

17. Pages 23-24 of the Specification describe the same function of the arithmetic processor as recited in the claims, *viz.*, comparing the metric with one or more threshold values to verify the existence of a trade secret. Thus, this portion of the Specification does not disclose any algorithm for determining a trade secret.

18. Finally, page 34 of Appendix I discloses, under the section entitled "Sorting Lists," that the system shall be able to perform a standard search for trade secrets whose weighted priority is greater than a specified value using specified weighting. While this portion of the Appendix describes performing a search by comparing the metric for a potential trade secret with a specified value, it does not describe the function of determining that the potential trade secret is a trade secret in the manner claimed, nor does it provide any algorithm for implementing the recited function.

19. Accordingly, the Appellants' Specification describes only a general purpose computer and generally refers to a program on the

> computer that performs the function of determining if a potential trade secret is a trade secret, but it does not describe an algorithm by which the function of determining a trade secret is implemented.

PRINCIPLES OF LAW

When a claim uses the term "means" to describe a limitation, a presumption inheres that the inventor used the term to invoke § 112, ¶ 6. *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1375 (Fed.Cir.2003). "This presumption can be rebutted when the claim, in addition to the functional language, recites structure sufficient to perform the claimed function in its entirety." *Id*. Once a court concludes that a claim limitation is a means-plus-function limitation, two steps of claim construction remain: 1) the court must first identify the function of the limitation; and 2) the court must then look to the specification and identify the corresponding structure for that function. *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1210 (Fed. Cir. 2003).

"If there is no structure in the specification corresponding to the means-plus-function limitation in the claims, the claim will be found invalid as indefinite." *Biomedino, LLC v. Waters Technologies Corp.*, 490 F.3d 946, 950 (Fed. Cir. 2007); *see also In re Donaldson*, 16 F.3d 1189, 1195 (Fed. Cir. 1994) (en banc).

In *Aristocrat Techs. Austl. Pty Ltd. v Inter. Game Tech*., 521 F.3d 1328, 1333 (Fed. Cir. 2008), the court set forth that for a claim to a programmed computer, a particular algorithm may be the corresponding structure under § 112, sixth paragraph:

> For a patentee to claim a means for performing a particular function and then to disclose only a general purpose computer as the structure designed to perform that function amounts to pure functional claiming. Because general purpose computers can be programmed to perform very different tasks in very different ways, simply disclosing a computer as the structure designated to perform a particular function does not limit the scope of the claim to "the corresponding structure, material, or acts" that perform the function, as required by section 112 paragraph 6.
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> That was the point made by this court in *WMS Gaming, Inc. v. International Game Technology*, 184 F.3d 1339 (Fed. Cir. 1999). In that case, the court criticized the district court, which had determined that the structure disclosed in the specification to perform the claimed function was "an algorithm executed by a computer." The district court erred, this court held, "by failing to limit the claim to the algorithm disclosed in the specification." *Id.* at 1348. The rationale for that decision is equally applicable here: 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.*, *quoting In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994). The instructions of the software program in effect "create a special purpose machine for carrying out the particular algorithm." *WMS Gaming*, 184 F.3d at 1348. Thus, in a means-plus-function claim "in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm." *Id*. at 1349.
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> In a later case, this court made the same point, stating that a "computer-implemented means-plus-function term is limited to the corresponding structure disclosed in the specification and equivalents thereof, and the corresponding structure is the algorithm." *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1253 (Fed. Cir. 2005). The court in that case characterized the rule of *WMS Gaming* as follows: "[T]he corresponding structure for a § 112 ¶ 6 claim for a computer-implemented function is the algorithm disclosed in the specification." 417 F.3d at 1249.

In *Aristocrat*, the only portion of the specification that described the structure corresponding to the three functions performed by the claimed "game control means" was a statement that it is within the capability of a worker in the art "to introduce the methodology on any standard microprocessor base [*sic*] gaming machine by means of appropriate programming." 521 F.3d at 1334. The court found that the reference to

"appropriate programming" imposed no limitation whatever, as any general purpose computer must be programmed. *Id.* The court further found that the language of claim 1 referring to "the game control means being arranged to pay a prize when a predetermined combination of symbols is displayed in a predetermined arrangement of symbol positions selected by a player" simply describes the function to be performed and not the algorithm by which it is performed. *Id.* The court further found that the language in claim 1 that recites "defining a set of predetermined arrangements for a current game comprising each possible combination of the symbol position selected by the player which have one and only one symbol position in each column of the display means" is merely a mathematical expression that describes the outcome of performing the function and not a means for achieving that outcome. *Id.* The court also found that the figures and tables in Aristocrat's patent, which provided examples of how player selections translate to possible winning combinations, and the corresponding portion of the written description, which contained mathematical descriptions of how many winning combinations would be produced, are simply examples of the results of the operation of an unspecified algorithm. *Id.* at 1335. Thus, the court held that Aristocrat failed to disclose the algorithms that transform the general purpose microprocessor to a special purpose computer programmed to perform the disclosed algorithm. *Id.*

In two other recent cases, the Federal Circuit followed *Aristocrat* in holding means-plus-function claims invalid for indefiniteness for lack of

sufficient description of algorithms to transform a general purpose computer to a special purpose of computer under 35 U.S.C. § 112, sixth paragraph. *See Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1340-41 (Fed. Cir. 2008) and *Net Moneyin, Inc. v. Verisign, Inc.*, No. 2007-1565, __ F.3d __, 2008 WL 4614511 (Fed. Cir. Oct. 20, 2008).

ANALYSIS

It is undisputed that Appellants intended to invoke 35 U.S.C. § 112, sixth paragraph, by the use of "means for" language in independent claims 1 and 121 (Fact 1). Our rules require that for claims including "means for" language, the Appeal Brief contain:

> For each independent claim involved in the appeal and for each dependent claim argued separately under the provisions of paragraph (c)(1)(vii) of this section, every means plus function and step plus function as permitted by 35 U.S.C. § 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference character.

37 C.F.R. § 41.37(c)(1)(v). Thus, we consult the Appellants' Summary of the Claimed Subject Matter in the Brief to assess whether sufficient structure is disclosed in the Specification for performing the function in the means-plus-function elements of claims 1 and 121.

Our analysis will focus on the last element of claims 1 and 121. The last element of claim 1 recites "means within the programmed computer for ranking the potential trade secret with regard to another potential trade secret found among the plurality of potential trade secrets based upon the calculated metric" (Fact 2). The function recited in this element is ranking the potential trade secret with regard to another potential trade secret.

The Appellants point to line 32 of the original Abstract, the comparison processor shown in FIG. 12, page 23, last paragraph through page 24, line 26, and page 35 of Appendix I as support for ranking the potential trade secret as claimed. App. Br. 6-7.

The original Abstract states only that analysis of the entered data includes "the ranking of trade secrets." The Abstract does not provide an algorithm by which the ranking is implemented (Fact 3). The processor of Figure 12 is merely a processor found in any general purpose computer that is capable of performing a comparison between two values (Facts 4-7). The Specification does not disclose any specific algorithm that the comparison processor would use to perform a comparison or ranking (Fact 8). The description on pages 23-24 of the Specification does not disclose ranking of trade secrets as claimed, and even if it were found to describe ranking of trade secrets generally, this description provides only a recitation of the function of ranking and does not disclose an algorithm for implementing the ranking function (Facts 9-10). Finally, page 35 of Appendix I discloses only

the function of ranking, but does not describe an algorithm for carrying out this function (Fact 11).

Thus, the Appellants' Specification describes only a general purpose computer and generally refers to a program on the computer that performs the function of ranking of trade secrets, but it does not describe an algorithm by which the function of ranking the trade secrets is implemented (Fact 12). Accordingly, the Specification fails to disclose the algorithms that transform the general purpose processor to a special purpose computer programmed to perform the disclosed function of the last element of claim 1.

The fourth element of claim 121 recites "means within the programmed computer for determining that the potential trade secret is a trade secret when the calculated metric exceeds a predetermined threshold value" (Fact 13). The function recited in this element is determining that the potential trade secret is a trade secret when the calculated metric exceeds a predetermined threshold value.

The Appellants point to the arithmetic processor shown in FIG. 12, page 23, line 1 paragraph through page 24, line 9, and page 35 of Appendix I, which "provides a functional description of the software that searches for trade secrets with a 'weighted priority greater than specified value,'" as support for determining a trade secret as claimed. App. Br. 17.

The arithmetic processor of Figure 12 is merely a processor found in any general purpose computer that is capable of performing an arithmetic operation (Facts 14 & 15). The Specification does not disclose any specific

algorithm that the arithmetic processor would use to determine a trade secret (Fact 16). The description on pages 23-24 of the Specification describes only the same function of the arithmetic processor as recited in the claims, *viz.*, comparing the metric with one or more threshold values to verify the existence of a trade secret. Thus, this portion of the Specification does not disclose any algorithm for determining a trade secret (Fact 17). Finally, page 34 of Appendix I does not describe the function of determining that the potential trade secret is a trade secret in the manner claimed, nor does it provide any algorithm for implementing the recited function (Fact 18). Thus, the Appellants' Specification describes only a general purpose computer and generally refers to a program on the computer that performs the function of determining if a potential trade secret is a trade secret, but it does not describe an algorithm by which the function of determining a trade secret is implemented (Fact 19). Accordingly, the Specification fails to disclose the algorithms that transform the general purpose processor to a special purpose computer programmed to perform the disclosed function of the last element of claim 121.

The Appellant has failed to disclose any algorithm, and thus has failed to adequately describe sufficient structure, for performing the recited functions of claims 1 and 121 so as to render the claims definite. Accordingly, claim 1, claims 2-70 depending therefrom, and claim 121 are unpatentable under 35 U.S.C. § 112, second paragraph, as indefinite. *Aristocrat*, 521 F.3d at 1333.

We reverse the Examiner's rejection of claims 1-70 and 121 under 35 U.S.C. § 112, first paragraph, for lack of sufficient description of structure for implementing the recited function, as being made under an improper paragraph of § 112 of the statute, and enter a new ground of rejection of claims 1-70 and 121 under 35 U.S.C. § 112, second paragraph as being indefinite.

REJECTION OF CLAIMS 1-70 AND 119-123 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH FOR LACK OF ENABLEMENT

ISSUE

The Examiner determined that one skilled in the pertinent art could not make and use the invention of claims 1-70 and 119-123 without undue experimentation because there is not sufficient direction as to how to produce the numerical score value for the potential trade secret, how to identify or produce the predetermined threshold level, or how to calculate the metric from the received numerical scores. Ans. 11-13. In particular, the Examiner determined that "there is a lack of concreteness in appellant's invention due to the inability of the invention to produce reproducible results" because the subjective information input by the user would result in different values for different users. Ans. 12, 14, 44.

The Appellants contend that "[t]he essence of the independent claims is a method or apparatus that aggregates user judgment with respect to six

necessary component variables for a trade secret into a single variable, condensing the user's judgment into one variable that can be more easily compared, sorted on, and characterized." App. Br. 28. As such, the Appellants assert that the output of the method is "useful, deterministic, and therefore concrete." *Id.*

The issue before us is:

Have the Appellants shown the Examiner erred in determining that claims 1-70 and 119-123 are unpatentable for lack of an enabling disclosure because the results are based on subject perceptions of the user and are thus non-repeatable and non-predictable?

PRINCIPLES OF LAW

The PTO bears the initial burden when rejecting claims for lack of enablement.

> When rejecting a claim under the enablement requirement of section 112, the PTO bears an initial burden of setting forth a reasonable explanation as to why it believes that the scope of protection provided by that claim is not adequately enabled by the description of the invention provided in the specification of the application; this includes, of course, providing sufficient reasons for doubting any assertions in the specification as to the scope of enablement. If the PTO meets this burden, the burden then shifts to the applicant to provide suitable proofs indicating that the specification is indeed enabling.

In re Wright, 999 F.2d 1557, 1561-62 (Fed. Cir. 1993) (citing *In re Marzocchi*, 439 F.2d 220, 223-24 (CCPA 1971)).

It is by now well-established law that the test for compliance with the enablement requirement in the first paragraph of 35 U.S.C. § 112 is whether the disclosure, as filed, is sufficiently complete to enable one of ordinary skill in the art to make and use the claimed invention without undue experimentation. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

ADDITIONAL FINDINGS OF FACT

20. There is adequate disclosure in Appellants' Specification to enable one having ordinary skill in the art to calculate a metric based on the inputted numerical score values. Spec. 24:10-13.
21. Further, the predetermined threshold of claim 121 can be any number selected by the user, and the Specification need not provide any specific direction as to how to determine this threshold value in order to enable one skilled in the art to make and use the invention.
22. Even though the inputs may be based on the subjective characterization of a human being, the steps for calculating a metric based on the inputs and comparing or ranking based on the calculated metric are repeatable for any input provided.

ANALYSIS

The invention of independent claims 1 and 121 is a programmed computer including hardware and software that is programmed to perform the recited functions. The fact that the data input by the user on which the computer performs the recited functions is based on subjective characterization by the user does not render the claimed programmed computer not enabled. One having ordinary skill in the art could still program the computer to perform the recited functions in the manner claimed regardless of the numerical score values input by the user without undue experimentation (Facts 20 & 21).[2]

The invention of independent claims 119 and 120 is a programmed computer method having steps that correspond to the functional recitations in the "means" elements of claims 121 and 1, respectively. Thus, for the same reasons as provided for claims 1 and 121, the Appellants' Specification provides adequate disclosure for one having ordinary skill in the art to make

[2] Although there is adequate description to enable one skilled in the art to make and use the invention, there is still inadequate disclosure of a specific algorithm (structure) for implementing the function of the last "means" element of claims 1 and 121 to pass muster under 35 U.S.C. § 112, sixth paragraph. *See Aristocrat*, 521 F.3d at 1336 ("Enablement of a device requires only the disclosure of sufficient information so that a person of ordinary skill in the art could make and use the device. A section 112 paragraph 6 disclosure, however, serves the very different purpose of limiting the scope of the claim to the particular structure disclosed, together with equivalents.")

and use the method of claims 119 and 120 without undue experimentation (Facts 20 & 21).

The invention of independent claims 122 and 123 is a method not tied to a computer. The method, however, includes steps that functionally correspond to the steps of claims 120 and 119, respectively. Although these claimed steps could be performed entirely by a human, that fact does not render them any less reproducible or repeatable. Even though the inputs to the method may be based on the subjective characterization of a human being, the steps for calculating a metric based on the inputs and comparing or ranking based on the calculated metric are repeatable for any input provided (Fact 22).

REJECTION OF CLAIMS 1-70 AND 119-123 UNDER 35 U.S.C. § 101

ISSUE

The Examiner determined that the invention of claims 1-70 and 119-123 is not directed to patent-eligible subject matter under 35 U.S.C. § 101 because the claimed invention does not produce a useful, concrete, and tangible result. Ans. 15.

The Appellants contend despite the numerical scores of the claimed invention being based on subjective input of the user, the claimed invention nonetheless produces useful, concrete, and tangible results.

The issue before us is:

Have the Appellants shown the Examiner erred in determining that the subject matter of claims 1-70 and 119-123 is not directed to patent-eligible subject matter under 35 U.S.C. § 101?

PRINCIPLES OF LAW

The law in the area of patent-eligible subject matter for process claims has recently been clarified by the Federal Circuit in *In re Bilski*, No. 2007-1130, __ F.3d __, 2008 WL 4757110 (Fed. Cir. Oct. 30, 2008) (en banc). The en banc court in *Bilski* held that "the machine-or-transformation test, properly applied, is the governing test for determining patent eligibility of a process under § 101." *Id.* at *7. The court in *Bilski* further held that "the 'useful, concrete and tangible result' inquiry is inadequate [to determine whether a claim is patent-eligible under § 101.]" *Id.* at *9.

The court explained the machine-or-transformation test as follows: "A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing." *Id.* at *5 (citations omitted). The court explained that "the use of a specific machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility" and "the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity." *Id.* at *11 (citations omitted).

The court declined to decide under the machine implementation branch of the inquiry whether or when recitation of a computer suffices to tie a process claim to a particular machine. *Id.* As to the transformation branch of the inquiry, however, the court explained that transformation of a particular article into a different state or thing "must be central to the purpose of the claimed process." *Id.* As to the meaning of "article," the court explained that chemical or physical transformation of physical objects or substances is patent-eligible under § 101. *Id.* The court also explained that transformation of data is sufficient to render a process patent-eligible if the data represents physical and tangible objects, i.e., transformation of such raw data into a particular visual depiction of a physical object on a display. *Id.* at *12. The court further noted that transformation of data is insufficient to render a process patent-eligible if the data does not specify any particular type or nature of data and does not specify how or where the data was obtained or what the data represented. *Id.* (citing *In re Abele*, 684 F.2d 902, 909 (CCPA 1982) (process claim of graphically displaying variances of data from average values is not patent-eligible) and *In re Meyer*, 688 F.2d 789, 792-93 (CCPA 1982) (process claim involving undefined "complex system" and indeterminate "factors" drawn from unspecified "testing" is not patent-eligible)).

ANALYSIS

We apply the machine-or-transformation test, as described in *Bilski*, to determine whether the subject matter of process claims 119, 120, 122, and 123 are patent-eligible under 35 U.S.C. § 101.

Process claims 122 and 123 recite a series of process steps that are not tied in any manner to a machine. In other words, these claims do not limit the process steps to any specific machine or apparatus. Thus, the claims fail the first prong of the machine-or-transformation test because they are not tied to a particular machine or apparatus. The steps of process claims 122 and 123 also fail the second prong of the machine-or-transformation test because the data does not represent physical and tangible objects.[3] Rather, the data represents information about a trade secret, which is an intangible asset. Thus, the process of claims 122 and 123 fails the machine-or-transformation test and is not patent-eligible under 35 U.S.C. § 101.

Process claims 119 and 120 recite "a programmed computer method" in which each of the process steps is performed by the programmed computer. The issue presented by these claims is whether recitation of a programmed computer suffices to tie the process claims to a particular machine. This is the exact issue that the court in *Bilski* declined to decide. *Bilski* at *11. The court did, however, provide some guidance when it

[3] Because the data does not represent physical and tangible objects, we need not reach the issue of whether mere calculation of a number based on inputs of other numbers is a sufficient "transformation" of data to render a process patent-eligible under § 101.

explained that the use of a specific machine must impose meaningful limits on the claim's scope to impart patent-eligibility. *Id.* Claims 119 and 120 recite a method performed on a programmed computer. This recitation fails to impose any meaningful limits on the claim's scope as it adds nothing more than a general purpose computer that has been programmed in an unspecified manner to implement the functional steps recited in the claims. Were the recitation of a "programmed computer" in combination with purely functional recitations of method steps, where the functions are implemented using an unspecified algorithm, sufficient to transform otherwise unpatentable method steps into a patent eligible process, this would exalt form over substance and would allow pre-emption of the fundamental principle present in the non-machine implemented method by the addition of the mere recitation of a "programmed computer." Such a field-of-use limitation is insufficient to render an otherwise ineligible process claim patent eligible. *Bilski*, slip. op. at 15, citing *Diehr*, 450 U.S. at 191-92 (noting that eligibility under § 101 "cannot be circumvented by attempting to limit the use of the formula to a particular technological environment.").

We reverse *pro forma* the rejection of claims 1-70 and 121 under § 101. A rejection of a claim, which is so indefinite that "considerable speculation as to meaning of the terms employed and assumptions as to the scope of such claims" is needed, is likely imprudent. *See In re Steele*, 305 F.2d 859, 862(CCPA 1962) (holding that the examiner and the board were wrong in relying on what at best were speculative assumptions as to the

meaning of the claims and basing a rejection under 35 U.S.C. § 103 thereon.) The issue before us here is whether claims 1-70 and 121 seek to pre-empt the use of a fundamental principle or only foreclose others from using a particular "application" of that fundamental principle. *See Diamond v. Diehr*, 450 U.S. at 187. We find it imprudent to speculate as to the scope of the "means" elements of these claims in order to reach a decision on this issue under § 101. It should be understood, however, that our reversal is based on the indefiniteness of the claimed subject matter and does not reflect on the merits of the underlying rejection.

REJECTION OF CLAIMS 8-31, 49-56, AND 69 UNDER 35 U.S.C. § 101

We reverse *pro forma* the rejection of claims 8-31, 49-56, and 69 under § 101. For the same reasons provided above, we find it imprudent to speculate as to the scope of the "means" elements of claim 1, from which claims 8-31, 49-56, and 69 depend, in order to reach a decision on this rejection under § 101. We reiterate that it should be understood that our reversal is based on the indefiniteness of the claimed subject matter and does not reflect on the merits of the underlying rejection.

PRIOR ART REJECTIONS OF CLAIMS 1-70 AND 121
UNDER §§ 102 AND 103

We also reverse *pro forma* the rejections of: claims 1, 3-35, 37-39, 43, 44, 47-57, 60-63, 67-70, and 121 under 35 U.S.C. § 102(e) as anticipated by Donner; claims 1-41, 43, 44, 47-57, 60-63, 67-70, and 121 under 35

U.S.C. § 102(e) as anticipated by Eder; claims 42, 45, 46, 58, 59, and 64-66 under 35 U.S.C. § 103(a) as unpatentable over Donner, Eder, and Haber; and claims 2, 40, and 41 under 35 U.S.C. § 103(a) as unpatentable over Donner and Eder. We find it imprudent to speculate as to the scope of the "means" elements of independent claims 1 and 121, in order to reach a decision on these rejections. *In re Steele*, 305 F.2d at 862. We reiterate that it should be understood that our reversal is based on the indefiniteness of the claimed subject matter and does not reflect on the adequacy of the prior art relied upon or the merits of the underlying rejections.

REJECTION OF CLAIMS 119, 120, 122, AND 123 UNDER 35 U.S.C. § 103(A) AS UNPATENTABLE OVER SPENCER AND BARNEY

ISSUE

The Examiner found Spencer discloses the method of claims 119, 120, 122, and 123 except that it does not disclose: that the subject matter of the invention is trade secrets, that the questions relate to the six factors for a trade secret of the First Restatement of Torts, calculating a single metric from the numerical score values, repeating the program for each of the remaining items to be evaluated, or ranking the items. Ans. 20-21. The Examiner found Barney discloses repeating the program for each of the remaining items to be evaluated and ranking the items, where the items are patents and other intangible intellectual property (IP) assets. Ans. 21. The Examiner concluded it would have been obvious to combine the ranking of

IP assets, as taught by Barney, into the disclosure of Spencer so as to allow an entity to identify and study relevant characteristics of IP to determine and measure those metrics that are predictive of a possible future event, such as an intangible IP asset being litigated. Ans. 21. The Examiner further found neither Spencer nor Barney explicitly discloses rating trade secrets, or the questions relating to the six factors, or calculating a single metric, such as by using a geometric mean of the numerical score values. Ans. 21. The Examiner found that a geometric mean is old and well known and concluded it would have been obvious to modify Spencer to include a geometric mean that is the sixth root of the product since the Appellants have identified six factors. Ans. 22. The Examiner also determined the fact that the subject matter is about trade secrets and that the questions relate to the First Restatement of Torts is non-functional descriptive material. Ans. 22.

The Appellants contend that Spencer forms his scorecards from a summing, or totaling, of weighted values assigned to questionnaire responses, and Barney uses a statistical regression analysis in generating his ranking criteria, and thus the combination of Barney and Spencer does not provide a basis for using a geometric mean for calculating a metric. App. Br. 45. The Appellants further contend that the Examiner erred in failing to give patentable weight to the claimed subject matter of trade secrets and the fact that the questionnaire relates to the six factors of a trade secret from the First Restatement of Torts. App. Br. 47-52.

The issues before us are:

Have the Appellants shown that the Examiner erred in determining that the step of calculating a metric would have been obvious to one having ordinary skill in the art at the time of the invention in view of the combined teachings of Spencer and Barney?

Have the Appellants shown that the Examiner erred in determining that the characterization of data in the claims as being related to trade secrets and the six factors from the First Restatement of Torts is non-functional descriptive material?

FINDINGS OF FACT

We find that the following enumerated findings are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

23. The Examiner found that Spencer discloses a method including the steps of providing a questionnaire of multiple-choice questions and providing a numerical score value to each of the responses on the questionnaire, accepting responses to the questionnaire through the input device, and converting the responses received to a numerical score value. Ans. 20.
24. The Appellants do not contest the Examiner's findings as to the scope of Spencer as stated in Finding of Fact 24 above. App. Br., *passim*.

25. Spencer discloses that "the points for the weighted questions and sections are summed to produce the scorecard document that identifies the most qualified vendors." Spencer, col. 13, ll. 15-18.
26. Thus, Spencer discloses performing a logical and mathematical process of summing the scores according to the weightings assigned to each question to calculate a single metric (scorecard) for the vendor in order to determine the most qualified vendor.
27. Thus, Spencer discloses a step of calculating a single metric from multiple numerical scores values corresponding to user inputs, except that the numerical scores used to calculate the metric in Spencer are not six numerical scores that relate to the six factors of a trade secret from the First Restatement of Torts.
28. The Examiner found that Barney discloses a method for ranking intangible intellectual property assets. Ans. 21.
29. The Appellants do not contest the Examiner's findings as to the scope of Barney as stated in Finding of Fact 28 above. App. Br., *passim.*
30. The data elements used in the claimed method do not functionally change the implemented method in that they do not alter how the process steps are to be performed to achieve the utility of the invention.
31. Rather, these data elements represent merely underlying data in a database.

PRINCIPLES OF LAW

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented 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.*, 127 S. Ct. 1727, 1734 (2007). 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. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 ("While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.")

ANALYSIS

The Appellants argue claims 119, 120, 122, and 123 as a group. App. Br. 44-52. As such, we select claim 123 as representative of the group, and the remaining claims 119, 120, and 122 stand or fall with claim 123. 37 C.F.R. § 41.37(c)(1)(vii) (2007).

The Appellants contend that "[t]he use of the geometric mean differentiates applicant's invention from the prior art, including Spencer and Barney." App. Br. 46. Appellants' argument is not commensurate in scope with the claim language. Claim 123 recites the step of "(c) calculating a single metric for the trade secret from the six numerical scores using logical and mathematical processes." It does not specify the particular logical and mathematical processes used to perform the calculation. Spencer discloses a logical and mathematical process used to calculate a single metric based on numerical values for scoring vendors (Facts 25 & 26). Thus, Spencer discloses step (c) of claim 123 except that the numerical scores used to calculate the metric in Spencer are not six numerical scores that relate to the six factors of a trade secret from the First Restatement of Torts (Fact 27).

The issue thus turns on whether the Examiner properly determined that the data being processed in the claimed method is non-functional descriptive material. We agree with the Examiner's determination.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Exemplary "functional descriptive material" consists of data structures and computer programs, which impart functionality when employed as a computer component. "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the

medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. *Compare In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) with *In re Warmerdam*, 33 F.3d 1354, 1361-62 (Fed. Cir. 1994) (claim to computer having a specific data structure stored in memory held statutory product-by-process claim but claim to a data structure that referred to ideas reflected in nonstatutory process rather than referring to a physical arrangement of the contents of a memory held nonstatutory).

When presented with a claim including nonfunctional descriptive material, an Examiner must determine whether such material should be given patentable weight. The Patent and Trademark Office (PTO) must consider all claim limitations when determining patentability of an invention over the prior art. *In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983). The PTO may not disregard claim limitations comprised of printed matter. *See Gulack*, 703 F.2d at 1384; *see also Diamond v. Diehr*, 450 U.S. at 191. However, the PTO need not give patentable weight to descriptive material absent a new and unobvious functional relationship between the descriptive material and the substrate. *See Gulack*, 703 F.2d at 1386. *See also In re Ngai*, 367 F.3d 1336, 1338 (Fed. Cir. 2004); *In re Lowry*, 32 F.3d 1579, 1583-84 (Fed. Cir. 1994). The burden of establishing the absence of a novel, nonobvious functional relationship rests with the PTO. *In re Lowry*, 32 F.3d at 1584.

We conclude that when the prior art describes all of the claimed structural and functional relationships between descriptive material and the substrate, but the prior art describes a different descriptive material than the claim, then the claimed descriptive material is non-functional and will not constitute a sufficient difference from the prior art to establish patentability. That is, we conclude that such a scenario presents no new and unobvious functional relationship between the descriptive material and the substrate.

We find that the data elements used in the claimed method do not functionally change the implemented method in that they do not alter how the process steps are to be performed to achieve the utility of the invention (Fact 30). Rather, these data elements are analogous to printed matter in that they represent merely underlying data in a database (Fact 31). *See In re Lowry*, 32 F.3d 1579, 1583 (Fed. Cir. 1994). The prior art suggests using the method steps of accepting multiple inputs, providing a corresponding numerical score to each input, calculating a single metric based on the numerical scores using logical and mathematical processes, and comparing the calculated metric to a threshold value to determine the best qualified vendor (Facts 23-26). The present invention uses these same method steps to calculate a metric for a trade secret. The difference between the prior art and the claimed invention is simply the underlying meaning of the accepted inputs as relating to a trade secret instead of vendor qualifications. These inputs neither enhance nor diminish the functionality of the steps used to calculate the metric and compare it to a threshold value.

This case is distinguished from *Lowry*, because in *Lowry* the claims were directed to data structures stored in memory that contained both information used by application programs and information regarding their physical interrelationships within a memory. *Id.* As such, the court found that the claimed data structures of Lowry's invention were not analogous to printed matter because they managed information by imposing a physical organization on the data and provided increased computing efficiency. *Id.* By contrast, the present invention is directed to a method where the only distinction to the prior art is the content of the data elements. Unlike in *Lowry*, the data in the present case does not impose any functional requirements on the claimed method or otherwise depend functionally on the information content of the data elements. Nonfunctional descriptive material cannot render nonobvious an invention that would have otherwise been obvious. *In re Ngai*, 367 F.3d 1336, 1339 (Fed. Cir. 2004). *Cf. In re Gulack*, 703 F.2d 1381, 1385 (Fed. Cir. 1983) (when descriptive material is not functionally related to the substrate, the descriptive material will not distinguish the invention form the prior art in terms of patentability). *See also Ex parte Mathias*, No. 2005-1851 (BPAI Aug. 19, 2005), *aff'd. In re Mathias*, No. 2006-1103, 2006 WL 2433879 (Fed. Cir. Aug. 17, 2006) (Rule 36, unpublished) and *Ex parte Curry*, No. 2005-0509 (BPAI Jun. 30, 2005), *aff'd. In re Curry*, No. 2006-1003 (Fed. Cir. Jun. 12, 2006) (Rule 36, unpublished) (both cases treating data as nonfunctional descriptive material).

The Appellants assert that this case is analogous to the facts presented in *In re Miller*, 418 F.2d 1392 (CCPA 1969), because "the presentation of the questionnaire based on the six factors of a trade secret to the user is thus functionally interrelated to the useful act of creating a listing of trade secrets in the ranked order in which they can be expected to pass legal muster, at least in the aggregated judgment of the user." App. Br. 49. We first note that method claim 123 does not require presentation of a "questionnaire" to the user and does not create a listing of trade secrets in ranked order. Rather, the first step of claim 123 recites merely "accepting six inputs as to the extent that a trade secret meets each of the six factors of a trade secret from the First Restatement of Torts…." The claim is broad enough to allow acceptance of these inputs in any manner, not necessarily as a result of a presentation of a questionnaire. Further, the last step of claim 123 recites simply comparing the calculated metric to a threshold value. Such a comparison relates to a single metric for a single trade secret and does not result in a ranked list, as argued.

The claims at issue in *Miller* related to a measuring receptacle such as a spoon or cup bearing quantity measuring indicia of a selected ratio or proportion to, but different from, the actual quantity measured in the receptacle by the indicia to allow the user to easily measure a fractional quantity of an amount called for in a recipe. 418 F.2d at 1394. The claims also recited that the measuring receptacle included a legend for specifying the ratio or proportion of a full recipe which the indicia actually measure.

Id. The court in *Miller* held that there was a "new and unobvious functional relationship between a measuring receptacle, volumetric indicia thereon indicating volume in a certain ratio to actual volume, and a legend indicating the ratio." *Id.* at 1396.

Considering the Appellants' broader point that the claims require acceptance of six inputs that relate to six factors of a trade secret, which six inputs are used in later method steps to calculate a metric that has some meaningful relationship to the underlying value of the trade secret, we find that this relationship is not a functional relationship between the input data and the operation of the method steps. All that the claim requires is acceptance of "six inputs" that are then converted to numerical score values, used to calculate a metric, and compared with a threshold value. The only part of the claimed method that arguably ties the method to a trade secret is the fact that the first step specifically requires six inputs. We do not find the number of inputs to be a patentable distinction since the prior art discloses providing a questionnaire that requires the input of answers to multiple questions. The remaining method steps are unchanged regardless of whether the input relates to a trade secret or something entirely different. Thus, the data elements used in the claimed method do not functionally change the implemented method in that they do not alter how the process steps are to be performed to achieve the utility of the invention.

CONCLUSIONS OF LAW

We conclude the Appellants have shown that the Examiner erred in rejecting claims 1-70 and 121 under 35 U.S.C. § 112, first paragraph for lack of adequate disclose of structure for performing the recited functions and under 35 U.S.C. § 112, first paragraph for lack of enablement. We enter a new ground of rejection of claims 1-70 and 121 under 35 U.S.C. § 112, second paragraph, as being indefinite. Based on this new ground of rejection, we reverse *pro forma* the Examiner's rejections of: claims 1-70 and 121 under 35 U.S.C. § 101 as being directed to non-statutory subject matter; claims 8-31, 49-56, and 69 under 35 U.S.C. § 101 as being directed to non-statutory subject matter; claims 1, 3-35, 37-39, 43, 44, 47-57, 60-63, 67-70, and 121 under 35 U.S.C. § 102(e) as anticipated by Donner; claims 1-41, 43, 44, 47-57, 60-63, 67-70, and 121 under 35 U.S.C. § 102(e) as anticipated by Eder; claims 42, 45, 46, 58, 59, and 64-66 under 35 U.S.C. § 103(a) as unpatentable over Donner, Eder, and Haber; and claims 2, 40, and 41 under 35 U.S.C. § 103(a) as unpatentable over Donner and Eder.

We conclude the Appellants have failed to show that the Examiner erred in rejecting claims 119, 120, 122, and 123 under 35 U.S.C. § 101 as being directed to non-statutory subject matter and under 35 U.S.C. § 103(a) as unpatentable over Spencer and Barney.

DECISION

The decision of the Examiner to reject claims 1-70 and 121 is reversed and the decision of the Examiner to reject claims 119, 120, 122, and 123 is affirmed.

FINALITY OF DECISION

Regarding the affirmed rejection(s), 37 C.F.R. § 41.52(a)(1) provides "Appellant may file a single request for rehearing within two months from the date of the original decision of the Board."

In addition to affirming the Examiner's rejections of one or more claims, this decision contains new grounds of rejection pursuant to 37 C.F.R. § 41.50(b) (2007). 37 C.F.R. § 41.50(b) provides "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that Appellant, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options with respect to the new grounds of rejection to avoid termination of the appeal as to the rejected claims:

> (1) *Reopen prosecution*. Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the Examiner, in which event the proceeding will be remanded to the Examiner. . . .
>
> (2) *Request rehearing*. Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

Should Appellants elect to prosecute further before the Examiner pursuant to 37 C.F.R. § 41.50(b)(1), in order to preserve the right to seek review under 35 U.S.C. §§ 141 or 145 with respect to the affirmed rejection, the effective date of the affirmance is deferred until conclusion of the prosecution before the Examiner unless, as a mere incident to the limited prosecution, the affirmed rejection is overcome.

If Appellants elect prosecution before the Examiner and this does not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejection, including any timely request for rehearing thereof.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED-IN-PART; 37 C.F.R. § 41.50(b)

vsh

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