

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EMC CORPORATION, EMC INTERNATIONAL US. HOLDINGS,
INC., AND VMWARE, INC.,

Petitioner,

v.

CLOUDING CORP.

Patent Owner.

Case IPR2014-01309

Patent 5,944,839 A

Before JAMESON LEE, RAMA G. ELLURU, and
MIRIAM L. QUINN, *Administrative Patent Judges*.

ELLURU, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

EMC Corporation, EMC International U.S. Holdings, Inc., and VMware, Inc. (collectively “Petitioner”) filed a Petition requesting an *inter partes* review of claims 1, 2, 6, 8, 14, 15, and 17 of U.S. Patent No. 5,944,839 A (Ex. 1001, “the ’839 patent”). Paper 1 (“Pet.”). Clouding Corp. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 9. On February 4, 2014, we instituted an *inter partes* review of claims 6, 8, and 14. Paper 14 (“Dec.”), 16. Patent Owner timely filed a Response to the Petition. Paper 22 (“PO Resp.”). Petitioner subsequently timely filed a Reply to Patent Owner’s Response. Paper 25 (“Pet. Reply”).

An oral hearing for this proceeding was held on October 20, 2015, a transcript of which has been entered in the record. Paper 33 (“Tr.”)

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons that follow, we determine that Petitioner has not shown by a preponderance of the evidence that claims 6, 8, and 14 of the ’839 patent are unpatentable.

A. *Related Proceedings*

The ’839 patent was the subject of IPR2013-00095 and IPR2013-00304, both of which have been terminated due to settlement. IPR2013-00095, Paper 18 (post-institution termination of *inter partes* review of claims 6, 8, and 14); IPR2013-00304, Paper 10 (pre-institution termination).

The parties identify several district court cases in which the

'839 patent was asserted. Pet. 3; Papers 7 and 8.

B. The '839 Patent (Ex. 1001)

The '839 patent is directed to a system and method for automatic maintenance of a computer system. Ex. 1001, Abstract. According to the specification, there is a need for a computer utility that can learn from the results of prior diagnoses and solutions and apply that learned knowledge to solve future computer system problems. *Id.* at 1:47–50. The disclosure of the '839 patent is directed to a “maintenance tool” that uses a set of sensors in combination with a case database to diagnose and solve computer problems automatically. *Id.* at 1:56–58. When one of the sensors detects a computer problem, it activates an artificial intelligence (“AI”) engine. *Id.* at 1:62–64.

The AI engine includes a database, which includes information to diagnose and correct problems with the computer system, and the sensors provide inputs to the database. *Id.* at 1:65. The AI engine diagnoses the cause of the problem and determines a solution, and if the AI engine needs more information, it may request additional data from one or more sensors. *Id.* at 2:4–8. If the maintenance tool has gathered all possible data and still does not include a solution to the computer problem, then the AI engine has failed to find a solution in the knowledge database, and the failure represents a computer problem that is new to the tool. *Id.* at 4:66–5:3. Accordingly, if the maintenance tool does not find a solution in the knowledge database, the tool preferably saves the state of the computer system and knowledge database to a location where the state and the database can be examined by a human computer expert. *Id.* at 2–8.

As recited in claim 6, the invention includes the requirement that when a likely solution cannot be determined, saving a state of the computer system.

C. Illustrative Claims

We instituted a review of claims 6, 8, and 14. Claim 6 is independent and reproduced below, with the limitation at issue italicized. Each of claims 8 and 14 depends from claim 6.

6. A method of optimizing a computer system, the method comprising the steps of:

detecting a problem in the computer system;

activating an AI engine in response to the problem detection;

utilizing, by the AI engine, selected ones of a plurality of sensors to gather information about the computer system;

determining, by the AI engine, a likely solution to the problem from the gathered information; and

when a likely solution cannot be determined, saving a state of the computer system.

D. Ground of Unpatentability Instituted for Trial

We instituted trial based on the following asserted references.

Reference	Patents	Date	Exhibit
Barnett	U.S. Patent 5,664,093	Sep. 2, 1997	Ex. 1005
Allen '664	U.S. Patent 5,581,664	Dec. 3, 1996	Ex. 1006

Petitioner provides declarations by Earl Sacerdoti, Ph.D. in support of its Petition. Exs. 1007, 1024. We instituted review of claims 6, 8, and

14 based on the assertion of unpatentability under 35 U.S.C. § 103 over Barnett and Allen '664. Dec. 17.

II. ANALYSIS

A. *Claim Construction*

In an *inter partes* review, the Board interprets claim terms in an unexpired patent according to the broadest reasonable construction in light of the specification of the patent in which they appear. *See In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–79 (Fed. Cir. 2015); 37 C.F.R. § 42.100(b). Even under this standard, absent any special definitions, we give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

For purposes of this Decision, we do not need to expressly construe any claim term.

B. *Prior Art References*

As noted above, the instituted review of claims 6, 8, and 14 was under 35 U.S.C. § 103 as having been obvious over the combination of Barnett and Allen '664. Dec. 17.

1. *Barnett*

Barnett discloses a fault management system that includes a configuration manager that maintains configuration information of components used in the distributed system. Ex. 1005, Abstract. The fault management system also includes a plurality of measuring

agents, which obtain performance information from the system being monitored, and a diagnostic system having a plurality of rules stored therein. Ex. 1005, 1:59–67. The diagnostic system receives performance information from the measuring agents, and uses the stored rules to identify faults and provide solutions for the faults. *Id.* at Abstract, 2:4–9. Barnett’s diagnostic system includes a rule based AI engine having a rules database. *Id.* at Fig. 2. According to Barnett, a primary objective of the invention is to provide a management system that understands abstract relationships between components (i.e., processes) and has rules written according to these abstract relationships. *Id.* at 1:50–54. Another objective of the invention is to provide a management system that understands the meta-model and model of the distributed system and has rules based on the meta-model relationship. *Id.* at 1:55–58.

2. *Allen ’664*

Allen ’664 describes a case-based-reasoning system for an application field that includes a rule base of inferential rules suited to that field and a case base of exemplar cases, which are notable in that field, and a database of relevant problem data for that field. Ex. 1006 at 2:45–49. For example, in a case-based-reasoning system for loan approval, the rule base may include rules about the creditworthiness of the customer, the case base may comprise exemplar cases that are known to match common fact scenarios, and the database may comprise relevant problem data such as loan payment histories, results of loan-officer interviews and credit-check data. *Id.* at 2:51–59.

D. Claim 6

Petitioner contends that claim 6 is unpatentable under 35 U.S.C. § 103 as obvious over the combination of Barnett and Allen '664. Pet. 53–59. As noted above, claim 6 is independent. The claim limitation at issue is “when a likely solution cannot be determined, saving a state of the computer system.” Read in the context of the whole claim, this claim requires, when a likely solution to a problem *in the computer system* cannot be determined, saving a state of the computer system. For example, claim 6 recites “[a] method of optimizing *a computer system*,” “detecting *a problem in the computer system*,” “activating an AI engine in response to *the problem*,” “utilizing . . . sensors to gather information *about the computer system*,” and “determining . . . a likely solution to *the problem*.” All these limitations indicate that the detected “problem” is a problem *in the computer system* and the “likely solution” is to this problem.

Petitioner has not demonstrated by a preponderance of the evidence that the combination of Barnett and Allen '664 teaches or suggests the condition “when a likely solution [to a problem in the computer system] cannot be determined,” as recited in claim 6. In its claim chart for claim 6, Petitioner refers to Allen '664 for the entire limitation “when a likely solution cannot be determined, saving a state of the computer system.” Pet. 56–57 (Ex. 1006, 8:21–36).

Petitioner, however, does not provide argument that Allen '664 teaches or suggests the condition “when a likely solution to a problem [in the computer system] cannot be determined.” In response to Patent Owner’s argument that Barnett does not “teach or suggest any outcome when the system cannot determine a likely solution to a

fault” and that this is “a situation that is not truly contemplated by Barnett” (PO Resp. 6–7), Petitioner does not contend that it instead relies on Allen ’664 as teaching or suggesting the condition “when a likely solution to a problem [in the computer system] cannot be determined.” See Pet. Reply 5–6. In any event, to the extent Petitioner relied, in its Petition, on Allen ’664 as teaching this condition, that reliance was withdrawn at oral argument. At the hearing, Petitioner acknowledged that Allen ’664 “does not describe using the AI engine to detect or respond to a problem *in the computer system* itself.” Tr. at 13:15–17 (emphasis added). Rather, Petitioner states that Allen ’664 describes “coming up with insurances rates or insurance quotes” and “whether you should offer a loan.” *Id.* at 13:19–20, 25:11–13. Petitioner concedes that Allen ’664 “does not specifically say anything about *solving a computer problem* in the terms of diagnosing a computer system or a computer error in the way that Barnett teaches.” *Id.* at 21:15–18, 26:3–6 (“Barnett is specifically directed to the exact, same kind of problem, a fault in the computer system that the ’839 patent is directed to.”). Petitioner further responded to our questioning as follows:

JUDGE LEE: I see. So the problem aspect doesn't come from Allen, then. It comes from Barnett.

MR. DE BLANK: Yes, Barnett clearly describes, would clearly describe the problem.

Id. at 27:16–20; see also *id.* at 38:19–22 (stating that in the context of Allen itself, Allen is silent as to whether “its template has *anything to do with the computer system*”) (emphasis added); *id.* at 27:9–11 (stating that what Allen ’664 “adds to [the asserted combination] is using a case base in conjunction with the rules-based system Barnett

describes”); 72:21–25. Thus, we discern no argument by Petitioner that Allen ’664 teaches or suggests “when a likely solution to a problem [in the computer system] cannot be determined.”

The Petition also refers to Barnett as teaching “when a likely solution cannot be determined, saving a state of the computer system.” Pet. 56 (citing Ex. 1005, 2:4–9). The portion of Barnett cited in the Petition describes the situation when a solution to a problem is determined, however, not “when a likely solution cannot be determined.” At the cited disclosure, Barnett states “[t]he diagnostic system [AI engine] receives the configuration information from the configuration manager and the performance information from the plurality of measurement agents and uses the configuration and performance information with the plurality of rules to identify faults *and provide solutions for the faults.*” Ex. 1005, 2:4–9 (emphasis added).

In its Response to the Petition, Patent Owner argues that Barnett does not contemplate the condition—“when the system cannot determine a likely solution to a fault.” PO Resp. 6–7; *see also id.* at 11 (“*Barnett* never even contemplates a situation where a solution to a problem cannot be found.”). Patent Owner asserts that Barnett is “capable of learning any necessary configuration information to analyze the performance of the subject computer system, and making recommendations on ways to improve the performance of that system without requiring any modification of its rules.” *Id.* at 7 (citing Ex. 1005, 6:50–56).

Petitioner acknowledges that Barnett does not *expressly* refer to the condition when a solution to a problem cannot be determined—“I

don't believe there's anything specific in Barnett that says a solution can't be -- can't be found. It's silent on that point." Tr. 19:16–19; Ex. 1024 (Petitioner's expert stating "Patent Owner is correct in stating Barnett does not disclose any outcome when the system cannot determine a likely solution to a fault"). Petitioner, however, argues that "a person of ordinary skill in the art, as Dr. Sacerdoti recognized, would understand that there are instances where Barnett can't find a solution." Tr. 19:19–22. Petitioner specifically relies on the following disclosure from Barnett:

Since the model of the distributed system is maintained by the configuration manager, and because the rules in the diagnostic system apply to classes of components, it is possible to introduce new component types, which require new models and meta-models. This includes new computer architectures (e.g. multiprocessor systems) as well as new software architectures.

Pet Reply 6 (citing Ex. 1005, 6:31–37). Based on this disclosure, Petitioner asserts that "*Barnett* explicitly contemplates an embodiment in which the diagnostic system would initially fail to determine a likely solution to a fault, but in which its configuration manager nonetheless remains capable of introducing 'new component types, which require new models and meta-models.'" Pet. Reply 6 (citing Ex. 1005, 6:31–37) (emphasis added). Referring to its witness, Petitioner further argues, "absent the encoding of models and meta-models describing the new component types, the diagnostic system would be *unable to derive a precise diagnosis*." *Id.* (citing Ex. 1024 ¶ 18) (emphasis added).

We are not persuaded that Petitioner's evidence, Dr. Sacerdoti's opinion testimony, supports sufficiently its contention that Barnett

teaches or suggests the condition “when a likely solution to a problem [in the computer system] cannot be determined.” Barnett explains that because in its fault management system, the model of the distributed system being diagnosed is maintained by the configuration manager, and the rules in the diagnostic system apply to classes of components, it is possible to introduce new component types (e.g., computer and software architecture) into the system. Ex. 1005, 6:31–37. The diagnostic system, however, would “require new models and meta-models.” *Id.* Barnett is silent as to what happens when new models and meta-models are not provided to the configuration manager when new component types are introduced into the system being diagnosed. *Id.* Indeed, Petitioner has not persuaded us that Barnett contemplates its configuration manager not having a new model and meta-model describing the newly added component. Yet, relying on the cited disclosure in Barnett, Dr. Sacerdoti opines that “[o]ne of ordinary skill in the art would understand this citation to mean that, absent the encoding of models and meta-models describing the new component types, the diagnostic system would be *unable to derive a precise diagnosis.*” Ex. 1024, ¶ 18 (citing Ex. 1005, 6:31–37) (emphasis added); *see also id.* ¶ 19 (citing Ex. 1005, 6:66–7:6). Dr. Sacerdoti’s opinion is unpersuasive because it is unsupported by adequate factual basis and explanation.

In particular, Dr. Sacerdoti does not provide sufficient factual basis in support of his opinion that Barnett contemplates the situation in which there is an absence of models and meta-models describing the new component types. To the contrary, as Patent Owner argues (PO Resp. 6–7, n.19), Barnett teaches that “[t]he configuration of any

computer can be learned because the information is *known to the computer*.” Ex. 1005, 6:50–52 (emphasis added). Barnett explains that “[a] model can be constructed that describes a generic computer system” and “[r]ules can be constructed that analyze the performance of a generic computer.” *Id.* at 6:47–50. Therefore, Barnett’s “fault management system can be used to analyze the performance of *any computer system*, and make recommendations on ways to improve the performance of the system, without requiring any modification of the rules.” Ex. 1005, 6:52–56 (emphasis added). We find that Dr. Sacerdoti’s opinion is inconsistent with the above disclosure from Barnett. In sum, Petitioner has not sufficiently persuaded us regarding if and how Barnett’s system operates in the absence of a model and metal-model describing newly added components. Because Petitioner has not persuaded us that Barnett contemplates a situation in which the configuration manager does not have a model and meta-model describing newly added components, we are not persuaded sufficiently by Dr. Sacerdoti’s opinion, which is based on that premise. See Ex. 1024, ¶ 18.

Petitioner also relies on the following disclosure from Barnett:

For example, the fault and performance analysis can be customized to particular applications and provide precise isolation of the faulty component by adding additional relationships in the abstract, or meta-model, and by adding additional rules related to these new classes of components. Therefore, this invention can identify performance problems to a coarse level with little effort, and to a fine level with additional customization.

Pet. Reply 6–7 (Ex. 1005, 6:66–7:6). Referring to its witness, Petitioner asserts that “[a]bsent the coding of additional relationships

in the meta-model and additional rules in its rule base describing the new classes of components, the diagnostic system would be *unable to derive a precise diagnosis.*” *Id.* at 7 (citing Ex. 1024, ¶ 19) (emphasis added).

Dr. Sacerdoti also opines that “absent the coding of additional relationships in the meta-model and additional rules in its rule base describing the new classes of components, the diagnostic system would be unable to derive a precise diagnosis.” Ex. 1024, ¶ 19 (citing Ex. 1005, 6:66–7:6). As a preliminary matter, Dr. Sacerdoti bases this opinion on a disclosure describing the identification of a fault (i.e., a “problem”), not a solution to the problem. Specifically, at the cited disclosure, Barnett states that “the fault and performance analysis can be customized to particular applications and provide precise *isolation of the faulty component* by adding additional relationships in the abstract, or meta-model, and by adding additional rules related to these new classes of components.” Ex. 1005, 6:66–7:3. “Therefore, [the Barnett] invention can *identify performance problems* to a coarse level with little effort, and to a fine level with additional customization.” *Id.* at 7:4–6 (emphasis added). Moreover, similar to our analysis above, because Petitioner has not persuaded us that Barnett contemplates a situation in which the configuration manager does not have coding of additional relationships in the meta-model and additional rules in its rules base describing the new classes of components, we are not persuaded sufficiently by Dr. Sacerdoti’s opinion, which is based on that premise. *See* Ex. 1024, ¶ 19.

In any event, even accepting Dr. Sacerdoti’s opinion that “absent the encoding of models and meta-models describing the new

component types” (Ex. 1024, ¶ 18) or “absent the coding of additional relationships in the meta-model and additional rules in its rules base describing the new classes of components” (Ex. 1024, ¶ 19), “the diagnostic system would be unable to derive a *precise diagnosis*,” we are not persuaded by Petitioner’s argument. Indeed, Petitioner contends that there is a diagnosis in the absence of encoding new models and meta-models describing the new component types, albeit not a *precise* diagnosis. Pet. Reply 6–7. Claim 6’s recited condition is not “when a *precise* solution cannot be determined.” Rather, the claim recites the condition “when a *likely* solution cannot be determined.” Even if imprecise, Petitioner has not persuaded us that Barnett’s diagnosis system cannot determine a “likely solution,” when new components types are introduced into the diagnosed system, but a new model and metal-models describing the new components are not provided to the configuration manager. For example, Barnett explains that “if a service cannot be performed, then the diagnostic system will find *any* malfunctioning component.” Ex. 1005, 4:15–16 (emphasis added). Petitioner has not persuaded us sufficiently that the resulting solution is not a “likely solution,” even though it may not be a “precise” solution. In sum, the lack of a “precise” solution does not persuade us of a lack of a “likely” solution. Therefore, even accepting Dr. Sacerdoti’s testimony, we are not persuaded that Barnett teaches the condition “when a likely solution to a problem [in the computer system] cannot be determined.” In short, Petitioner has not proven by a preponderance of the evidence that Barnett’s diagnostic system fails to provide a likely solution for a detected problem in a computer system.

Accordingly, Petitioner has not proven by a preponderance of the evidence that the combination of Allen '664 and Barnett teaches or suggests “when a likely solution cannot be determined,” as recited in claim 6.

E. Claims 8 and 14

Each of claims 8 and 14 depends from claim 6. Petitioner’s argument and evidence with respect to claims 8 and 14 rely on its analysis of independent claim 6 and do not cure the deficiencies discussed above. Pet. 57–59.

III. CONCLUSION

For the foregoing reasons, we conclude that Petitioner has not shown by a preponderance of the evidence that any of claims 6, 8, and 14 of the '839 patent is unpatentable.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 6, 8, and 14 have not been shown to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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