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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* SAUMITRA DAS, STEPAN SOKOLOV, and  
BILL YUAN-CHI CHIU

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Appeal 2019-004075  
Application 14/697,490  
Technology Center 2100

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Before JOHN A. JEFFERY, JAMES R. HUGHES, and  
MICHAEL T. CYGAN, *Administrative Patent Judges*.

HUGHES, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Claims 1, 2, 4, and 6–8 are pending, stand rejected, are appealed by Appellant, and are the subject of our decision under 35 U.S.C. § 134(a).<sup>1</sup> *See* Final Act. 1; Appeal Br. 1.<sup>2</sup> We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> We use the word Appellant to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as IpVenture, Inc. *See* Appeal Br. 1.

<sup>2</sup> We refer to Appellant’s Specification (“Spec.”), filed Apr. 27, 2015 (claiming benefit of multiple applications including US 60/371,659, filed Apr. 10, 2002); Appeal Brief (“Appeal Br.”), filed Mar. 5, 2019; and Reply

### CLAIMED SUBJECT MATTER

The invention, according to Appellant, “relates to computer systems and, more particularly, to management of computer systems” (Spec. ¶ 2) and “operates or includes various products (e.g., software products) that can be managed in a management system or collectively by a group of management systems” (Spec. ¶ 6). More specifically, Appellant’s invention relates to computer-readable media for managing an enterprise computer system capable of operating multiple different software products, by: receiving a fact pertaining to a condition of one of the software products, asserting (providing) the fact to an inference engine that uses rules (that are based on facts, and are obtained from a knowledge base), retrieving an updated fact from the inference engine, initiating an action based on the updated fact, using the inference engine to diagnose a software problem within the enterprise computer system due to one (or more) of the software products operating in the enterprise computer system and identify the software product(s) causing the software problem, making log entries to store log data pertaining to asserted fact. *See* Spec. ¶¶ 6–11; Abstract. Claim 1 (directed to a computer-readable medium including computer program code stored therein) is independent. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A non-transitory computer-readable medium including at least computer program code stored therein for managing an enterprise computer system, the enterprise computer system being configured to operate a plurality of

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Brief (“Reply Br.”), filed May 1, 2019. We also refer to the Examiner’s Final Office Action (“Final Act.”), mailed Aug. 7, 2018; and Answer (“Ans.”) mailed Mar. 25, 2019.

different software products, said computer-readable medium comprising:

computer program code for receiving a fact pertaining to a condition of at least one of the plurality of different software products that are operating in the enterprise computer system;

computer program code for asserting the fact to an inference engine, the inference engine using rules based on facts, the rules are obtained from a knowledge base that stores the rules as well as resources associated with the plurality of different software products;

computer program code for retrieving at least one updated fact from the inference engine based on at least one rule from those of the rules stored in the knowledge base that are dependent on the fact that has been asserted;

computer program code for initiating an action in view of the at least one updated fact;

computer program code for diagnosing a software problem at the enterprise computer system due to at least one of the plurality of different software products operating at the enterprise computer system, using the inference engine and the at least one rule from the knowledge base, where the diagnosing of the software program operates to identify the at least one of the plurality of different software products operating at the enterprise computer system that is a cause of the software problem; and

computer program code for making log entries to store log data in a log,

wherein at least one of the log entries pertains to at least the fact that has been asserted,

wherein at least one of the plurality of different software products comprises a JAVA application, and

wherein the plurality of different software products operating at the enterprise computer system pertain to software products other than software providing network access.

## REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Bowman-Amuah	US 6,345,239 B1	Feb. 5, 2002

Reticular Systems, Inc., *AgentBuilder—An Integrated Toolkit for Constructing Intelligent Software Agents* (Feb. 18, 1999) (“Reticular”).

Richard Fox et al., *Automated Debugging of Syntax Errors*, University of Texas-Pan American, Department of Computer Science Technical Report (Aug. 1995) (“Fox”).

## REJECTION<sup>3, 4</sup>

The Examiner rejects claims 1, 2, 4, and 6–8 under 35 U.S.C. § 103(a) as being unpatentable over Reticular, Fox, and Bowman-Amuah. *See* Final Act. 12–20.

## ANALYSIS

Appellant argues independent claim 1 and dependent claims 2, 4, and 6 together as a group with respect to the § 103(a) rejection. *See* Appeal Br. 13–16. Appellant provides nominal separate arguments with respect to claims 7 and 8. *See* Appeal Br. 16–18. We select independent claim 1 and dependent claims 7 and 8 as representative of Appellant’s arguments with respect to claims 1, 2, 4, and 6–8. 37 C.F.R. § 41.37(c)(1)(iv).

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<sup>3</sup> The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011), amended 35 U.S.C. § 103. Because the present application has an effective filing date (Apr. 10, 2002) prior to the AIA’s effective date for applications (March 16, 2013), this decision refers 35 U.S.C. § 103(a).

<sup>4</sup> The Examiner has withdrawn a rejection under 35 U.S.C. § 101. *See* Ans. 3; Final Act. 2–4. We do not address Appellant’s arguments to the withdrawn rejection. *See* Appeal Br. 3–13.

*Obviousness Rejections of Claims 1, 2, 4, and 6*

The Examiner rejects independent claim 1 as being obvious in view of Reticular, Fox, and Bowman-Amuah. *See* Final Act. 13–17; Ans. 3–7. Appellant contends Reticular, Fox, and Bowman-Amuah do not teach the disputed features of claim 1. *See* Appeal Br. 13–16; Reply Br. 1–3. Specifically, Appellant contends the Examiner relies on Fox to teach diagnosing of the software program, and “Fox is concerned with debugging syntax errors, not identification of a software product in an enterprise computer system that is a cause (e.g., [‘]root-cause’) of a software problem.” Appeal Br. 15; *see* Reply Br. 2–3. Appellant further contends “the Examiner’s attempted rationale for combining the disparate references of Reticular, Fox and Bowman-Amuah is insufficient” and “conclusory.” Appeal Br. 15.

We adopt as our own (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken (Final Act. 13–17) and (2) the reasons set forth by the Examiner in the Examiner’s Answer (Ans. 3–7) in response to Appellant’s Appeal Brief. We concur with the findings and conclusions reached by the Examiner, and we provide the following analysis for emphasis.

Appellant’s claim 1 broadly recites software (computer program code) “for diagnosing a software problem at the enterprise computer system due to . . . one of the . . . different software products . . . using the inference engine and the at least one rule from the knowledge base . . . to identify the . . . different software product[] . . . that is a cause of the software problem” (Appeal Br. A-1 (Claim App.) (claim 1))—i.e., diagnosing a software problem and identifying the software product exhibiting the problem using

the inference engine (and a rule). As explained by the Examiner, Reticular describes intelligent software agents at length, as well as intelligent agents utilizing inference to accomplish problem-solving. *See* Final Act. 13–15; Ans. 4–5; Reticular, pp. 6, 7, 12, 16, 53. Reticular, as explained by the Examiner, also teaches debugging/diagnosing software problems (in the agents). *See* Final Act. 13–15; Ans. 4–5; Reticular, pp. 36, 37, 40, 41, 45, 58. Accordingly, Reticular teaches, or at least suggests, using inference (an inference engine) to perform tasks as well as debugging software. Appellant does not dispute that Reticular teaches an inference engine, debugging software (the agents) in a network environment (the enterprise computer system), or debugging/diagnosing software problems, generally.

Reticular, however does not explicitly teach using an inference engine to identify a software product that is a cause of the software problem or the software problem itself. The Examiner relies on Fox for this teaching. As explained by the Examiner, Fox describes that debugging is a form of diagnosis, that debugging may be a routine (that can be performed by an agent), that debugging requires inference or inferential capabilities, that agents can perform tests for hypotheses (causes of error) including debugging/software diagnosis, and agents using inference to perform debugging. *See* Final Act. 15–17; Ans. 5–6; Fox, pp. 1, 2, 5, 6. Accordingly, Fox teaches, or at least suggests, an agent using inference to perform debugging/diagnosis of software problems.

Appellant interprets Fox too narrowly, and does not address the combination of Fox with Reticular. Although Appellant is correct that Fox describes the specific task of debugging syntax in software, Appellant fails to appreciate the broader teaching or suggestion by the combination of

Reticular and Fox—using an inference engine to diagnose software problems. Instead, Appellant focusses on the individual teaching of Fox and does not address the combination of Reticular and Fox discussed by the Examiner. *See* Ans. 4–6.

Appellant does not persuasively rebut the Examiner’s findings with respect to the combination of references and improperly attacks the references individually instead of addressing the combination as a whole. The cited references must be read, not in isolation, but for what each fairly teaches in combination with the prior art as a whole. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references). Appellant’s arguments do not take into account what the combination of Reticular and Fox would have suggested to one of ordinary skill in the art —

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; . . . . Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

*In re Keller*, 642 F.2d 413, 425 (CCPA 1981) (citations omitted).

Accordingly, we find a preponderance of the evidence supports the Examiner’s finding that the combination of Reticular and Fox (in combination with Bowman-Amuah) together teaches or at least suggests software (computer program code) “for diagnosing a software problem” as recited in claim 1—“diagnosing a software problem” (at an enterprise computer system) due to one or more software products operating in the enterprise computer system using an “inference engine and the at least one rule from [a] knowledge base . . . to identify the . . . software product[] . . .



that is a cause of the software problem” (Appeal Br. A-1 (Claim App.) (claim 1)).

With respect to Appellant’s second contention of error, Appellant contends the Examiner failed to provide a sufficient rationale for combining Reticular, Fox, and Bowman-Amuah. *See* Appeal Br. 15. We disagree.

The Examiner provides a rationale for combining Reticular and Fox—Reticular and Fox are in “the same field of endeavor,” which is “solving problems using software agents,” and it “would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Reticular by applying the intelligent agents to automatic debugging [or] diagnosing root causes of software problems as taught by Fox” because the combination is more efficient (“for the benefit of saving programmers much effort”) and “could be extended to solve other diagnostic problems” such as aiding “educators who teach programming.” Final Act. 16 (citing Fox, p. 2). The Examiner further explains that it would have been “obvious to apply these automatic debugging agents to debugging other software,” because the agents use “a known technique (agent-based automated debugging) to improve[] similar devices.” Final Act. 16. The Examiner also provides a rationale for combining Reticular and Fox with Bowman-Amuah—“Bowman-Amuah and the combination of Reticular and Fox are from the same field of endeavor,” which is “automated software problem diagnosis” and it “would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of the combination of Reticular and Fox by logging and tracking problems” and other information “as taught by Bowman-Amuah for the benefit of later analysis.” Final Act. 17 (citing Bowman-Amuah, col. 54, ll. 15–45).

Appellant does not contend the references teach away from each other, the proposed modification make the references inoperable, or otherwise persuasively explain why the Examiner's rationale is unreasonable. Instead, Appellant simply contends, without detailed explanation, that the Examiner's "rationale for combining the disparate references . . . is insufficient," "contained only conclusory assertions," and "is unreasonable." Appeal Br. 15. We agree with the Examiner that it would have been well within the skill of one skilled in the art to combine such known techniques of using an intelligent agent (inference engine) to solve problems as taught by Reticular, such as diagnosing software problems (debugging software) using an agent and inference techniques as taught by Fox, as well as logging and tracking problems for additional analysis as taught by Bowman-Amuah. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) ("[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill"). We are not persuaded that combining the respective familiar elements of the cited references in the manner proffered by the Examiner would have been "uniquely challenging or difficult for one of ordinary skill in the art" at the time of Appellant's invention. *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418).

Thus, Appellant does not persuade us of error in the Examiner's obviousness rejection of representative claim 1. Accordingly, we affirm the Examiner's obviousness rejections of independent claim 1 and dependent

claims 2, 4, and 6, not separately argued with particularity (*supra*). *See* 37 C.F.R. § 41.37(c)(1)(iv).

*Obviousness Rejection of Claim 7*

The Examiner rejects claim 7 over Reticular, Fox, and Bowman-Amuah. *See* Final Act. 18–19; Ans. 7–8. Appellant contends Reticular, Fox, and Bowman-Amuah do not teach the disputed feature of claim 7. *See* Appeal Br. 16–17; Reply Br. 4. Specifically, Appellant contends the Examiner relies on Reticular to teach the disputed limitation—“wherein the at least one of the plurality of different software products . . . that the diagnosing of the software problem has identified as the cause of the software problem is the JAVA application” (Appeal Br. A-2 (Claim App.) (claim 7)). *See* Appeal Br. 16. Appellant concedes the Examiner-cited portions of Reticular “indicat[e] that agents can be constructed from JAVA and agents can be debugged” (Appeal Br. 16), but contends the referenced portions of Reticular do not teach or suggest “any ability or desire to diagnose which of a plurality of different software products operating on the enterprise computer system is the cause of a software problem, and further that the cause of the software problem is from a software product that is a JAVA application” (Appeal Br. 17). *See* Reply Br. 4.

We agree with and adopt the Examiner’s findings and reasoning. *See* Final Act. 18–19; Ans. 7–8. Reticular, as explained by the Examiner (*see* Final Act. 18; Ans. 7–8) and conceded by Appellant (Appeal Br. 16), describes debugging JAVA software (the agents). *See, e.g.*, Reticular, pp. 36, 37, 40, 41. The combination of Reticular and Fox (*see supra*, claim 1 discussion) at least suggests diagnosing software problems using an inference engine (agent software). In view of Fox’s teaching of debugging

JAVA software, the combination Reticular and Fox at least suggests diagnosing a software problem in a JAVA application and, therefore, that the diagnosed software is a JAVA application (the software product that “the diagnosing of the software problem has identified as the cause of the software problem is the JAVA application” (claim 7)). As with claim 1 (*supra*), Appellant does not address the combination of Reticular and Fox. Therefore, we are not persuaded of error in the Examiner’s obviousness rejection of claim 7 for the same reasons set forth with respect to claim 1 (*supra*).

*Obviousness Rejection of Claim 8*

The Examiner rejects claim 8 over Reticular, Fox, and Bowman-Amuah. *See* Final Act. 19–20; Ans. 8–9. Appellant contends Reticular, Fox, and Bowman-Amuah do not teach the disputed feature of claim 8. *See* Appeal Br. 17–18; Reply Br. 4. Specifically, Appellant contends the Examiner relies on Bowman-Amuah to teach the disputed limitations—“wherein at least one of the log entries pertains to the at least one updated fact” and “wherein at least one of the log entries pertains to the action being initiated” (Appeal Br. A-2 (Claim App.) (claim 8)). *See* Appeal Br. 17. Appellant also contends “none of these portions provides any teaching or suggestion for the admitted deficiencies of Reticular and Fox” and “the referenced portions of Bowman-Amuah” do not teach or suggest the disputed limitations. Appeal Br. 18; *see* Reply Br. 4.

We agree with and adopt the Examiner’s findings and reasoning. *See* Final Act. 19–20; Ans. 8–9. Appellant simply reiterates the disputed limitations and concludes Bowman-Amuah does not teach or suggest the limitations or remedy the deficiencies of Reticular and Fox. As explained by

the Examiner (*see* Final Act. 19–20; Ans. 8–9), Bowman-Amuah describes logging and log entries of a variety of information including facts (network events), updated facts (faults, hardware failure), and initiated actions (logging a help desk ticket). *See* Bowman-Amuah, col. 53, l. 30–col. 54, l. 30; col. 57, ll. 10–30; col. 72, ll. 30–50; col. 83, l. 55–col. 84, l. 5. The combination of Reticular, Fox, and Bowman-Amuah, with respect to claim 1, teaches “receiving a fact pertaining to a condition,” “asserting the fact to an inference engine,” “initiating an action in view of the at least one updated fact,” “making log entries to store log data in a log,” and that “the log entries pertain[] to at least the fact that has been asserted” (claim 1), none of which are disputed by Appellant. In view of Bowman-Amuah’s teaching of logging information, including updated information or facts, and logging actions (*supra*), and the Reticular, Fox, and Bowman-Amuah combination’s teaching of initiating action based on an updated fact (*supra*), the combination of Reticular, Fox, and Bowman-Amuah at least suggests the disputed features of claim 8. As with claim 1 (*supra*), Appellant does not address the combination of Reticular, Fox, and Bowman-Amuah. Therefore, we are not persuaded of error in the Examiner’s obviousness rejection of claim 8 for the same reasons set forth with respect to claim 1 (*supra*).

#### CONCLUSION

Appellant has not shown that the Examiner erred in rejecting claims 1, 2, 4, and 6–8 under 35 U.S.C. § 103(a). We, therefore, sustain the Examiner’s rejection of claims 1, 2, 4, and 6–8.

DECISION SUMMARY

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/ Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 2, 4, 6–8	103(a)	Reticular, Fox, Bowman-Amuah	1, 2, 4, 6–8	
<b>Overall Outcome</b>			1, 2, 4, 6–8	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv). See 37 C.F.R. § 41.50(f).

AFFIRMED