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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* KEITH HARRISON

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Appeal 2016-002198  
Application 13/822,239<sup>1</sup>  
Technology Center 2400

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Before ST. JOHN COURTENAY III, THU A. DANG, and  
LARRY J. HUME, *Administrative Patent Judges*.

HUME, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) of the final rejection of claims 1–10 and 12–19. Appellant has previously canceled claim 11. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

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<sup>1</sup> According to Appellant, the real party in interest is Hewlett-Packard Development Company, LP. App. Br. 1.

STATEMENT OF THE CASE<sup>2</sup>

*The Invention*

Appellant's disclosed and claimed inventions relate to virtual machines for virus scanning. Title.

*Exemplary Claim*

Claim 6, reproduced below, is representative of the subject matter on appeal:

6. A device for secure computing, comprising:
- a computer system including a processor and a memory;
  - a virtual machine monitor executable on the processor of the computer system to support a user-definable number of virtual machines;
  - a first forensic virtual machine to read memory allocated by the virtual machine monitor to a target virtual machine supported by the virtual machine monitor and to determine presence of a signature indicative of a threat in the target virtual machine; and
  - a supervisory virtual machine to deploy multiple other forensic virtual machines to read memory allocated to the target virtual machine to scan for presence of further signatures indicative of the threat,
- wherein each of the first and multiple other forensic virtual machines is outside the target virtual machine and includes a respective guest operating system.

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<sup>2</sup> Our decision relies upon Appellant's Appeal Brief ("App. Br.," filed May 12, 2015); Reply Brief ("Reply Br.," filed Dec. 8, 2015); Examiner's Answer ("Ans.," mailed Oct. 8, 2015); Final Office Action ("Final Act.," mailed Dec. 12, 2014); and the original Specification ("Spec.," filed Mar. 11, 2013).

*Prior Art*

The Examiner relies upon the following prior art as evidence in rejecting the claims on appeal:

Midgley	US 2006/0037079 A1	Feb. 16, 2006
Overcash et al. ("Overcash")	US 2008/0047009 A1	Feb. 21, 2008
Zheng et al. ("Zheng")	US 2010/0306849 A1	Dec. 2, 2010
Sobel et al. ("Sobel")	US 2011/0321040 A1	Dec. 29, 2011

*Rejections on Appeal*

R1. Claims 1, 3, 6, 8, 9, and 12–18 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Zheng and Overcash. Ans. 3.

R2. Claims 2, 4, and 5 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Zheng, Overcash, and Sobel. Ans. 3.

R3. Claim 7 stands rejected under 35 U.S.C. § 103(a) as obvious over the combination of Zheng, Overcash, and Midgley. Ans. 3.

R4. Claims 10 and 19 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Zheng, Sobel, and Overcash. Ans. 4.

CLAIM GROUPING

Based on Appellant's arguments (App. Br. 6–19), we decide the appeal of obviousness Rejection R1 of claims 1, 3, 6, 8, 9, and 12, 13, and 15–18 on the basis of representative claim 6. We address separately argued dependent claim 14 in Rejection R1, *infra*. We address the appeal of obviousness rejections R2–R4 of claims 2, 4, 5, 7, 10, and 19, not argued separately, *infra*.

## ISSUES AND ANALYSIS

In reaching this decision, we consider all evidence presented and all arguments actually made by Appellant. We do not consider arguments which Appellant could have made but chose not to make in the Briefs so that we deem any such arguments as waived. 37 C.F.R. § 41.37(c)(1)(iv).

We disagree with Appellant's arguments with respect to claims 1, 6, and 14, and we incorporate herein and adopt as our own: (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken, and (2) the reasons and rebuttals set forth in the Examiner's Answer in response to Appellant's arguments. We incorporate such findings, reasons, and rebuttals herein by reference unless otherwise noted. However, we highlight and address specific findings and arguments regarding claims 1, 6, and 14 for emphasis as follows.

1. Rejection R1 of Claims 1, 3, 6, 8, 9, and 12–18

Issue 1

Appellant argues (App. Br. 6–12; Reply Br. 2–12) the Examiner's rejection of claim 6 under 35 U.S.C. § 103(a) as being obvious over the combination of Zheng and Overcash is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests "[a] device for secure computing" that includes, *inter alia*, the limitations of:

*a supervisory virtual machine to deploy multiple other forensic virtual machines to read memory allocated to the target*

virtual machine to scan for presence of further signatures indicative of the threat,

wherein each of the first and multiple other forensic virtual machines is outside the target virtual machine and includes a respective guest operating system,

as recited in claim 6? (Emphasis added).

Analysis

Appellant contends:

A collaborative detection module is depicted as element 308 in Fig. 3 of Overcash, which includes multiple threat detection engines. *Id.*, ¶ [0090]. However, it is clear that there is no indication whatsoever that the multiple threat engines in the collaborative detection module of Overcash are implemented as forensic **virtual machines**.

App. Br. 7.

We are not persuaded by Appellant's argument because Appellant is improperly arguing the references separately. The Examiner cites Zheng's scanner virtual machines which protect the target virtual machines teaches or at least suggests the disputed limitation "forensic *virtual* machine" as recited in claim 6. Zheng teaches a virtual environment. Ans. 5–6, Final Act. 7–8, citing Zheng Fig. 6, ¶¶ 52, 59.

The Examiner cites Overcash's collaboration detection module that includes multiple threat detection engines for teaching or suggesting a "supervisory" machine that deploys other "forensic" machines. Ans. 5–6, Final Act. 9, citing Overcash ¶ 12. The Examiner further finds Overcash's illustrating interchangeability of hardware and software by a skilled person teaches or suggests that Overcash's threat detection engines may also be "virtual." Final Act. 9, citing Overcash ¶ 247.

Appellant further argues a lack of motivation to combine the references:

This purported motivation to combine Overcash with Zheng is based on the false premise that the threat engines of Overcash are "forensic virtual machines" as recited in claim 6. Moreover, the stated motivation to combine ignores other objective evidence of record that clearly indicates that no reason existed that would have prompted a person of ordinary skill in the art to combine Zheng and Overcash to achieve the claimed subject matter.

App. Br. 10.

Appellant also argues the Sobel reference in regards to Rejection R1. App. Br. 10–11. We are not persuaded by Appellant's arguing a reference (Sobel) not cited by the Examiner in Rejection R1.

In response to Appellant's argument regarding the Examiner's proffered motivation to combine the cited references, we find the Examiner provides sufficient articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007). Final Act. 9–10. We find no error with the Examiner's conclusion it would have been obvious to someone of ordinary skill in the art to incorporate Overcash's use of multiple forensic machines to determine the presence of multiple other signatures into Zheng's forensic *virtual* machine environment to reduce false positives, prioritize successful attacks and provide indications of security threats detected in the application. Both references are in the same field of art. Final Act. 9–10; Ans. 7–8.

The U.S. Supreme Court has held "[t]he obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles

and the explicit content of issued patents." *KSR*, 550 U.S. at 419. Instead, the relevant inquiry is whether the Examiner has set forth "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (cited with approval in *KSR*, 550 U.S. at 418). Moreover, Appellant has provided no evidence that combining such teachings was "uniquely challenging or difficult for one of ordinary skill in the art," *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007), nor has Appellant presented evidence that this incorporation yielded more than expected results. Further, Appellant has not provided objective evidence of secondary considerations which our reviewing court guides "operates as a beneficial check on hindsight." *Cheese Sys., Inc. v. Tetra Pak Cheese and Powder Sys.*, 725 F.3d 1341, 1352 (Fed. Cir. 2013).

We find Appellant's invention is simply a combination of known teachings that, at the time of the invention, would have realized a predictable result. We also find the Examiner has met the requisite burden by articulating a rationale to modify Overcash's teachings and suggestions with the "virtual machine" environment taught by Zheng. Thus, we find the Examiner has set forth sufficient "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."

Although Appellant separately argues method claim 1 (App. Br. 12–13), for reasons similar to those discussed above with respect to independent device claim 6, we also find no error in the Examiner's rejection of independent claim 1.

Accordingly, Appellant has not provided sufficient evidence or argument to persuade us of any reversible error in the Examiner's reading of the contested limitations on the cited prior art. Therefore, we sustain the Examiner's obviousness rejection of representative independent claim 6 and claims 1, 3, 8, 9, and 12, 13, and 15–18 which fall therewith. *See Claim Grouping, supra.*

2. Rejection R1 of Dependent Claim 14

Issue 2

Appellant argues (App. Br. 14–15; Reply Br. 13–15) the Examiner's rejection of claim 14 under 35 U.S.C. § 103(a) as being obvious over the combination of Zheng and Overcash is in error. These contentions present us with the following issue:

Did the Examiner err in finding the cited prior art combination teaches or suggests the method of claim 1 that includes, *inter alia*, the steps of "detecting that the threat has a risk greater than a specified risk; and in response to the detecting, redeploying a particular one of the multiple further forensic virtual machines to scan the host virtual machine rather than another target virtual machine," as recited in claim 14?

Analysis

Appellant admits "[p]aragraph [0092] of Overcash states that 'anomalous traffic identified by the behavioral analysis engine . . . is passed to one or more threat detection engines to identify any attacks and provide responsive actions.' Overcash, ¶ [0092]." App. Br. 15.

However, Appellant then contends:

This passage of Overcash also provides no teaching or hint of "detecting that the threat has a risk greater than a specified risk," and "in response to the detecting, redeploying a particular one of the multiple further forensic virtual machines to scan the host virtual machine rather than another target virtual machine."

*Id.*

We are not persuaded by Appellant's contentions and agree with the Examiner that under a broad but reasonable interpretation,<sup>3</sup> Overcash's detection of anomalies may teach or suggest "detecting that the threat has a risk greater than a specified risk." Ans. 10–11. We agree with the Examiner because Overcash's behavioral analysis engine 370 provides positive validation of all application traffic against a profile of acceptable behavior. Anomalous traffic identified by this behavioral analysis engine 370 is then sent to one or more threat detection engines to identify any attacks and provide responsive action. Overcash ¶ 92. Therefore, we agree with the Examiner's finding because Overcash's behavioral analysis engine's threat analysis against a profile of acceptable behavior teaches or at least suggests the disputed limitation "the threat has a risk greater than a specified risk," as recited in claim 14.

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<sup>3</sup> Any special meaning assigned to a term "must be sufficiently clear in the specification that any departure from common usage would be so understood by a person of experience in the field of the invention." *Multiform Desiccants Inc. v. Medzam Ltd.*, 133 F.3d 1473, 1477 (Fed. Cir. 1998); *see also Helmsderfer v. Bobrick Washroom Equip., Inc.*, 527 F.3d 1379, 1381 (Fed. Cir. 2008) ("A patentee may act as its own lexicographer and assign to a term a unique definition that is different from its ordinary and customary meaning; however, a patentee must clearly express that intent in the written description.").

Accordingly, Appellant has not provided sufficient evidence or argument to persuade us of any reversible error in the Examiner's reading of the contested limitations on the cited prior art. Therefore, we sustain the Examiner's obviousness rejection of dependent claim 14.

3. Rejections R2–R4 of Claims 2, 4, 5, 7, 10, and 19

In view of the lack of any substantive arguments directed to the obviousness rejections R2–R4 of claims 2, 4, 5, 7, 10, and 19 under § 103 (*see* App. Br. 18–19), we sustain the Examiner's rejection of these claims. Arguments not made are waived.

REPLY BRIEF

To the extent Appellant may advance new arguments in the Reply Brief (Reply Br. 2–15) not in response to a shift in the Examiner's position in the Answer, we note arguments raised in a reply brief that were not raised in the appeal brief or are not responsive to arguments raised in the Examiner's Answer will not be considered except for good cause, which Appellant has not shown. *See* 37 C.F.R. § 41.41(b)(2).

CONCLUSIONS

(1) The Examiner did not err with respect to obviousness Rejection R1 of claims 1, 3, 6, 8, 9, and 12–18 under 35 U.S.C. § 103(a) over the cited prior art combination of record, and we sustain the rejection.

(2) The Examiner did not err with respect to obviousness Rejections R2–R4 of claims 2, 4, 5, 7, 10, and 19 under 35 U.S.C. § 103(a) over the cited prior art combinations of record, and we sustain the rejections.

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DECISION

We affirm the Examiner's decision rejecting claims 1–10 and 12–19.

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).

AFFIRMED