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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte PARITOSH SAXENA, ADRIAN M.M.T. DUNBAR,
MICHAEL S. HUGHES, JOHN TEDDY, DAVID MICHAEL DURHAM,
BALAJI VEMBU, PRASHANT DEWAN, DEBRA CABLAO,
NICHOLAS D. TRIANTAFILLOU, and JASON M. SURPRISE

Appeal 2017-010749
Application 14/523,884
Technology Center 2400

Before ST. JOHN COURTENAY III, LARRY J. HUME, and
JOYCE CRAIG, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134(a) from the Examiner’s Final Rejection of claims 83–106, which are all the claims pending in this application.¹ Claims 1–82 are cancelled. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

¹ We refer herein to the Final Office Action (“Final Act.”), mailed July 6, 2016; the Appeal Brief (“App. Br.”), filed Jan. 20, 2017; the Examiner’s Answer (“Ans.”), mailed June 5, 2017; and the Reply Brief (“Reply Br.”), filed Aug. 3, 2017.

STATEMENT OF THE CASE

Invention

The disclosed and claimed invention on appeal relates to “Computing Platform Security Methods and Apparatus.” Spec. 1, Title.

Independent claim 83 is reproduced below:

83. A method, comprising:

establishing, by executing an instruction with a processor, *a trusted channel between a graphics driver and an application driver via mutual authentication of the graphics driver and the application driver;*

in response to the mutual authentication of the graphics driver and the application driver, offloading, via the trusted channel, a computing task associated with the application driver from the processor to a graphics processing unit; and

configuring, by executing an instruction with the processor, a monitor to monitor memory associated with the computing task offloaded via the trusted channel for an unauthorized access attempt.

(Contested limitations emphasized in italics).

Rejections

A. Claims 83 and 85–106 are rejected under AIA 35 U.S.C. § 103(a) as being obvious over the combination of Tormasov et al. (US 8,938,723 B1, iss. Jan. 20, 2015) (hereinafter “Tormasov”), Pham et al. (US 2005/0182966 A1, publ. Aug. 18, 2005) (hereinafter “Pham”), and Shanbhogue (US 2012/0222114 A1, publ. Aug. 30, 2012). (Final Act. 4, 9).

B. Claim 84 is rejected under AIA 35 U.S.C. § 103(a) as being obvious over the combination of Tormasov, Pham, Shanbhogue, and Lee at

al. (US 2010/0281273 A1, publ. Nov. 4, 2010) (hereinafter “Lee”). (Final Act. 7).

ANALYSIS

Issue: Under AIA 35 U.S.C. § 103, did the Examiner err in finding the cited Tormasov, Pham, and Shanbhogue references collectively teach or suggest the contested limitation:

establishing, by executing an instruction with a processor, a trusted channel between **a graphics driver and an application driver** via mutual authentication of the graphics driver and the application driver[,]

within the meaning of independent claim 83? ² (emphasis added).

In reaching this decision, we consider all the evidence presented and all arguments actually made by Appellants. We focus our analysis on the contested language: “**a graphics driver and an application driver**” (App. Br. 17, App’x A, Claim 1 (emphasis added)).

Appellants contest the recited limitations “an application driver” and also a “graphics driver” in both the Appeal Brief (11–13), and the Reply Brief (3–4), urging that the cited sections of the Tormasov reference do not teach or suggest these elements of method claim 83. Independent claims 91 and 99³ each recite the identical limitations having commensurate scope. (App’x A).

² We give the contested claim limitation the broadest reasonable interpretation consistent with the Specification. *See In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997).

³ The preamble of independent claim 99 is directed to “[a] tangible computer readable storage medium” We note paragraph 147 of the Specification provides a limiting definition: “As used herein, the term tangible computer readable storage medium is expressly defined to include

Appellants contend, *inter alia*:

[T]he Examiner equates the VM with an application driver (see Final Office action page 4, emphasis added). A VM is a virtual machine (see Column 1, line 20 of Tormasov). A virtual machine is not an application driver. Instead, a virtual machine is “a type of an isolated Virtual 25 Environment where multiple VMs can run on the same physical machine simultaneously.” (see Column 1, lines 25–27 of Tormasov). In addition, in the same statement, the Examiner equates a GPU with a graphic driver. A Graphic Processing Unit (GPU) is not a graphic driver. A GPU is a hardware element with multiple processors (see Column 4, lines 8 - 18 of Tormasov).

(App. Br. 11–12).

Appellants emphasize: “the Examiner makes no credible explanation as to why the VM or the GPU can be considered as an application driver and a graphics driver.” (App. Br. 12).

Appellants further contend:

The Examiner is mistaken. First, a Virtual Machine with an Anti-Virus module is not properly construed as an application. The Virtual Machine described by Tormasov provides a virtual operating system that can execute applications, for example the Anti-Virus module (see column 1, lines 50–56 of Tormasov). As such, the Anti-Virus module described by Tormasov is instead, the application that is being executed by (e.g.,] running on) the Virtual Machine (e.g.,] the virtual operating system). In the originally filed application, an operating system is not an

any type of computer readable storage device and/or storage disk and to *exclude propagating signals and to exclude transmission media.*” (emphasis added). However, the recited claim term “tangible” (claim 99) does not have the same limiting scope as “non-transitory,” so as to exclude non-statutory propagating signals within the *plain language* of the claim. We leave it to the Examiner to consider whether independent claim 99 should be amended to include “non-transitory” to comply with the policy guidance found in *Subject Matter Eligibility of Computer Readable Media*, 1351 Off. Gaz. Pat. Office 212 (Feb. 23, 2010).

application driver. For example, figure 1 of the originally filed application shows the operating system 102 and a separate and distinct application driver 122. There is no teaching or suggestion in Tormasov that the Anti-Virus module is associated with an application driver separate and distinct from the Virtual Machine (e.g.,] the virtual operating system).

(Reply Br. 3, emphasis omitted).

Regarding the Examiner's use of dependent claim 88 to interpret independent claim 83, Appellants note "[t]he Examiner alleges that an application is equivalent to an application driver." (Reply Br. 3).

Appellants point to the Specification:

Figure 1 of the originally filed application clearly shows that the application driver (122) is *separate and distinct* from the security application (114). In fact, the security application and the application driver have completely different functions as set forth in the originally filed application. Paragraph [0034] of the originally filed application describes the operation of the security application and figure 7 and paragraphs [0103]–[0106] describe the functioning of the application driver. As such, the security application of claim 88 is *separate and distinct* from the application driver of claim 83. Therefore, the Anti-Virus module and the virtual machine described by Tormasov cannot *reasonably correspond* to the application driver as set forth in claim 88. In fact, Tormasov does not mention an application driver anywhere in its specification.

(Reply Br. 3–4) (emphasis added).

In rejecting independent claim 83 under § 103, the Examiner finds Tormasov's VM [(Virtual Machine)] teaches "an application driver" and Tormasov's GPU teaches "a graphics driver." (Final Act. 4, citing Tormasov Fig. 3, step 360).

To support the obviousness rejection, the Examiner compares the limiting language of dependent claim 88 to the broader language of

independent claim 83: “Claim 88 recites that ‘the application driver *corresponds* to a security application,’ and therefore the VM (application with Anti-Virus module, i.e.[,] a security application) *corresponds* to the claimed ‘application driver.’” (Ans. 4) (emphasis added).

See Final Act. 6–7, and Tormasov, col. 8, ll. 16–19, proffered by the Examiner as evidence in support of the rejection of dependent claim 88: “a Virtual Machine with [an] AV [(Anti-Virus)] module can be implemented on the GPU for detecting and deleting malicious software from infected Host OS.”

Thus, the Examiner appears to be applying the doctrine of claim differentiation in construing the language of dependent claim 88 (“wherein the application driver *corresponds* to a security application”) as further limiting the “application driver” of independent claim 83, to *be* a security application, according to a least one embodiment. (emphasis added).

Under the doctrine of claim differentiation, “dependent claims are presumed to be of narrower scope than the independent claims from which they depend.” *Howmedica Osteonics Corp. v. Zimmer, Inc.*, 822 F.3d 1312, 1323 (Fed. Cir. 2016). However, “claim differentiation is a rebuttable presumption that may be overcome by a contrary construction dictated by the written description or prosecution history.” (*Id.*). Moreover, “[c]laim differentiation is not conclusive; it is a guide, not a rigid rule.” (*Id.*). (citations omitted).

Here, Appellants point to a contrary construction dictated by the written description: “In fact, the security application and the application driver have completely different functions as set forth in the originally filed

application.” (Reply Br. 3; citing as evidence Spec. ¶¶ 34, 103–106, and Fig. 7).

Based upon our review of the portions of the Specification cited by Appellants (*id.*), we find the Examiner’s claim interpretation misconstrues the limiting language of claim 88 (“wherein the application driver *corresponds* to a security application”) to mean “the application driver [*is*] a security application” (according to at least one embodiment).

It is our view that the Examiner’s interpretation is: (1) contrary to the plain meaning of the claim terms “application driver” and “security application” and, (2) is inconsistent with Appellants’ Specification. See Appellants’ Figures 1 and 5, which depict the security application (114) and the application driver (122), as *separate, discrete* elements. Accordingly, we conclude the claim term “corresponds to,” as recited in dependent claim 88, should be correctly interpreted as meaning “associated with” under a broad but reasonable interpretation consistent with the Specification.

As recently emphasized by our reviewing court in *Smith*:

Even when giving claim terms their broadest reasonable interpretation, the Board cannot construe the claims “so broadly that its constructions are *unreasonable* under general claim construction principles.” *Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1298 (Fed. Cir. 2015). “[T]he protocol of giving claims their broadest reasonable interpretation . . . does not include giving claims a legally incorrect interpretation” “divorced from the specification and the record evidence.” *Id.* (citations and internal quotation marks omitted); see *PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 747, 751–53 (Fed. Cir. 2016).

...

The correct inquiry in giving a claim term its broadest reasonable interpretation in light of the specification is not whether the

specification proscribes or precludes some broad reading of the claim term adopted by the examiner. And it is not simply an interpretation that is not inconsistent with the specification. It is an interpretation that corresponds with what and how the inventor describes his invention in the specification, i.e., an interpretation that is “consistent with the specification.” *In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997) (citation and internal quotation marks omitted); *see also In re Suitco Surface*, 603 F.3d 1255, 1259–60 (Fed. Cir. 2010).

In re Smith Int’l, Inc., 871 F.3d 1375, 1382–83 (Fed. Cir. 2017).

Applying our reviewing court’s guidance here (*id.*), we broadly but reasonably interpret the disputed claim language in a manner consistent with the Specification. *See e.g.*, Spec. Figures 1, 5 and 7, in which application driver 122 is depicted as a *separate* and *distinct* element from security application 114. We further note graphics driver 116 is similarly depicted as being *separate* and *distinct* from GPU 106. (*Id.*)

Given this *context (id.)*, we are of the view that the Examiner’s claim interpretation of “***a graphics driver*** and ***an application driver***,” as recited in each independent claim on appeal, is overly broad, unreasonable, and inconsistent with the Specification. (emphasis added). *See* Spec. Figs. 1, 5 and 7.

After reviewing the evidence cited by the Examiner (Final Act. 4–5, Ans. 2–5), we do not find the Examiner has identified in the combination of Tormasov, Pham, and Shanbhogue a teaching or suggestion of “***a graphics driver*** and ***an application driver***,” as required by the commensurate language of each independent claim on appeal. (Emphasis added).

The Examiner also finds Tormasov’s Virtual Machine Monitor (VMM) that establishes a channel between the VM and the GPU, inherently

requires a necessary software component. Ans. 4. The Examiner finds such software component teaches the disputed limitation “graphics driver.” *Id.*

We find the contested limitations are not reasonably taught or suggested by the VM with the anti-virus module, nor GPU, as shown and described in Tormasov (Col. 2, ll. 55–58, Col. 8, ll. 16–19, Fig. 2, 3), considered in combination with Pham, and Shanbhogue, without more.

For essentially the same reasons argued by Appellants, we are constrained on this record to find a preponderance of the evidence supports Appellants’ contention the Examiner has failed to establish a prima facie case of obviousness for independent claim 83. (App. Br. 10).

Because Appellants have persuaded us the Examiner erred, we reverse Rejection A under § 103 of method claim 83. For the same reasons, we also reverse Rejection A of independent apparatus claim 91, and independent “computer-readable storage medium” claim 99, which identically recite the contested limitations.

Because we have reversed Rejection A of each independent claim 83, 91, and 99, we also reverse rejection A of the respective associated dependent claims, 85–90, 92–98, and 100–106.

Regarding remaining dependent claim 84, rejected under § 103 Rejection B, the Examiner has cited one additional reference — Lee, in addition to the same three references cited as evidence in support of Rejection A. In reviewing the record, we find the Examiner has not shown how Lee overcomes the deficiencies of the Tormasov, Pham, and Shanbhogue references, as discussed above regarding Rejection A of independent claims 83, 91, and 99. Therefore, we are constrained on this record to also reverse § 103 Rejection B of dependent claim 84.

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DECISION

We reverse the Examiner's decision rejecting claims 83–106 under
AIA 35 U.S.C. § 103.

REVERSED