No. 14-1135

United States Court of Appeals for the Federal Circuit

CARDSOFT (ASSIGNMENT FOR THE BENEFIT OF CREDITORS), LLC,
Plaintiff-Appellee,

– v. –

VERIFONE, INC., HYPERCOM CORP., VERIFONE SYSTEMS INC.,
Defendants-Appellants,

INGENICO S.A., INGENICO CORP., INGENICO INC., WAY SYSTEMS, INC.
Defendants.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE EASTERN DISTRICT OF TEXAS, CASE NO. 08-CV-00098
HON. ROY S. PAYNE & HON. CHAD EVERINGHAM, M.JJ.

CORRECTED REPLY BRIEF OF DEFENDANTS-APPELLANTS

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INTRODUCTION

CardSoft has filed a one-trick answering brief.

The relevant claim language refers to a "virtual machine" which includes "instructions." As VeriFone's opening brief explained, the supposed "magic" of the claimed "virtual machine" is that the "applications," also referred to as "instructions," can run without modification on a variety of different terminal types. VeriFone's Opening Brief ("VOB") 17-25. CardSoft's founder believed that this platform would eliminate the wasted programming effort he discerned in an industry that relied on custom terminals running specific applications.

Instead of meaningfully engaging with the relevant tools of claim construction, CardSoft's answering brief ("CAB") doubles down on the linguistic sleight-of-hand that confused the magistrate judge below. CardSoft's answering brief rests on the unwarranted combination of two "cursory" (CAB 23) observations: the virtual machine itself is written in terminal-specific code (VOB 19; CAB 16-17) and the virtual machine "includes" applications (VOB 17-18; CAB 14-15). From these undisputed points, CardSoft offers a misleading syllogism: the virtual

machine includes applications, the virtual machine can be written in terminal-specific code, and thus the included applications can be written in terminal-specific code. CAB 15; 16-17; 18-19; 21; 22.

As this Court has explained over and over again, claim construction is not an exercise in linguistic games. Courts must analyze disputed terms "in the context of the entire patent," which provides "a full understanding of what … the inventors … claim[ed]." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) (en banc). Of course, the virtual machine, like any operating computer, includes or contains within it the application programs that the machine is running. But that observation says nothing, one way or the other, about whether the application programs may or may not be written in terminal-specific code. Just as the direction to build a house that includes windows says nothing about the type of windows to install, the claim to a "virtual machine" that "includes" applications says nothing about the language of applications that the machine must run.

Nothing else in the answering brief begins to excuse the basic claim construction error that led to an unwarranted multimillion dollar judgment. CardSoft concedes (at 29) that under VeriFone's claim

construction this Court should enter a judgment of noninfringement. That is the correct outcome here.

ARGUMENT

CardSoft starts its brief with overheated adjectives that do not describe the appellate record. *See, e.g.*, CAB 3, 8, 10, 11, 12, 17. For example, CardSoft opens by shouting that VeriFone's brief "flouts the Rules of this Court and particularly the requirements of Rule 28" by combining a Statement of the Case with a Statement of the Facts. CAB 3, 5. As this Court knows, the current version of the rules requires only a single "statement of the case setting out the facts relevant to the issues." Fed. Cir. R. 28(b)(6) (revised Dec. 1, 2013).

So too, CardSoft's substantive arguments are all heat and no light. For example, CardSoft suggests (at 12) that VeriFone's "entire approach to claim construction flies in the face of this Court's *en banc* holding in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), regarding the paramount importance of intrinsic evidence, including the language of the claims, the specification and the prosecution file history." But VeriFone's opening brief carefully tracks this Court's claim construction teachings as set out in *Phillips*. *See* VOB 36, 38, 43, 44, 48 (all citing

Phillips). As shown next, the balance of CardSoft's arguments are similarly meritless.

I. A "VIRTUAL MACHINE" IS SOFTWARE THAT RUNS APPLICATIONS THAT DO NOT DEPEND ON ANY SPECIFIC UNDERLYING OPERATING SYSTEM OR HARDWARE

A. CardSoft Does Not Dispute That The Ordinary Meaning Of "Virtual Machine" Is Software That Runs Applications That Do Not Depend On Any Specific Underlying Operating System Or Hardware

VeriFone presented a string of reasons why the "ordinary meaning" of the term "virtual machine" is software that runs applications that do not depend on any specific underlying operating system or hardware. VOB 38-44. Most obviously, this Court, and other courts, have used the term "virtual machine" to mean a computer with software that allows the computer to run programs that "'aren't specific to any processor.'" VOB 39 (quoting *Nazomi Cmmc'ns, Inc. v. Arm Holdings, PLC*, 403 F.3d 1364, 1366 (Fed. Cir. 2005)); *see* VOB 39-40 (discussing *Nazomi Cmmc'ns, Inc. v. Nokia Corp.*, 739 F.3d 1339, 1340 (Fed. Cir. 2014); *United States v. Microsoft Corp*, 253 F.3d 34, 74 (D.C. Cir. 2001); *Oracle Am., Inc. v. Google Inc.*, No. C-10-03561, 2011 WL 1565988, at *1 (N.D. Cal. Apr. 27, 2011); *Sun Microsystems, Inc. v. Microsoft Corp.*, 999 F. Supp. 1301, 1302 (N.D. Cal. 1998)).

Recently, this Court again confirmed that "virtual machine" refers to software that runs applications that do not depend on any specific underlying operating system or hardware. *Oracle Am., Inc. v. Google Inc.*, ___ F.3d ___, 2014 WL 1855277 (Fed. Cir. May 9, 2014). Quoting one of the district court decisions discussed in VeriFone's opening brief, the Court wrote that the "Java platform, through the use of a virtual machine, enable[d] software developers to write programs that [we]re able to run on different types of computer hardware without having to rewrite them for each different type." *Id.* at *2 (quoting *Oracle Am., Inc. v. Google Inc.*, 872 F. Supp. 2d 974, 977 (N.D. Cal. 2012)) (alterations in original). As a result, "[w]ith Java, a software programmer could 'write once, run anywhere.'" *Id.*

CardSoft does not dispute that VeriFone has accurately reported the caselaw. It merely points out (at 11-12) that none of these cases were explaining what "virtual machine" means as the term is used in a patent claim. But *Phillips* requires examining the "words of a claim" to give them "their ordinary and customary meaning … to a person of ordinary skill in the art … at the time of the invention." *Phillips*, 415 F.3d at 1312-13 (citations omitted). *Phillips* made clear that it is

appropriate to consider evidence of the "widely accepted meaning of commonly understood words" at the time, such as would be "immediately apparent" to anyone in the field. *Id.* at 1314; *see also id.* (noting propriety, where there is any doubt as to customary meaning, of looking to "'those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean'"(quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1116 (Fed. Cir. 2004)). The above cases are instructive of the "virtual machine" claim terms because each illustrates the "ordinary and customary meaning" of the "virtual machine." *See Mars, Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1374 (Fed. Cir. 2004) ("[o]ur decisions in [previous cases] support [a] construction" consistent with the disputed term's ordinary meaning) (citations omitted).

Other than the effort to marginalize the consistent judicial use of the key claim term, CardSoft does not directly respond to the litany of other evidence about the ordinary meaning of "virtual machine." VeriFone's brief detailed how, at the time of the patent application, the famed Java Virtual Machine was highly publicized for its "completely

portable" applications, VOB 41, and also described how European engineers were applying "virtual machine" technology to payment systems using an Open Terminal Architecture virtual machine that was "completely platform independent," *id.* at 42. So too, the CardSoft founder used the phrase "virtual machine" to refer to software that runs applications not written for specific terminals. *Id.* at 43.

Rather than engage, much less dispute, any of this evidence, CardSoft emphasizes the value of "intrinsic" evidence. But, as VeriFone showed (at 44-51) and discusses next, the intrinsic evidence is in accord with the ordinary meaning of "virtual machine." *Cf. Flo Healthcare Solutions, LLC v. Kappos*, 697 F.3d 1367, 1374 (Fed. Cir. 2012) ("No evidence intrinsic to the patent casts doubt on [the] conclusion" suggested by the ordinary meaning of the disputed claim term). For this reason, and contrary to CardSoft's assertion (at 13), *Harari v. Lee*, 656 F.3d 1331 (Fed. Cir. 2011), has no bearing here. Here, unlike in *Harari*, the meaning of the disputed term is *consistent with* the term's ordinary meaning. 656 F.3d at 1341 ("rule that the indefinite article 'a' means 'one or more' in open-ended claims" did not apply "when the

claim language and specification indicate that 'a' means one and only one").

B. The Specification And Prosecution History Confirm That The Virtual Machine Runs Applications That Do Not Depend On Any Specific Underlying Operating System Or Hardware

VeriFone's opening brief explained (at 44-48) that the patent specification confirms that the term "virtual machine," as used in the asserted patents, means software that runs applications that do not depend on any specific underlying operating system or hardware. The specification describes problems the inventor perceived due to the lack of application portability, *see, e.g.*, A116, col. 3:6-7 ("programming will be different for different types of devices"), and then proposes a "virtual machine" to "facilitate[] portability of programs," A117, col. 5:1-3. Because all payment terminals are "seen by the application as the same virtual machine," it is possible to just write one "generic" application "for the virtual computer" and have that application work on any payment terminal without modification. A117, col. 5:8; A116, col. 3:45. Applications written for the virtual computer are therefore "independent" of the underlying payment terminal. A116, col. 3:36-37.

The specification is clear that while the virtual processors are dependent on the underlying terminal, the instructions are not. The specification provides that the "message *processor*" is to be "translated into the native code of the microprocessor in each hardware device on which the virtual machine is to be implemented." A116, col. 4:5-7 (emphasis added); *id.*, col. 4:15-16 ("The [message] processor (executing as native code)"); *see also* A117, col. 5:19-21 ("The function processor means is preferably translated into the native code of the microprocessor"). But the "message processor *instructions*" "never requir[e] translation to any real hardware processor." A116, col. 4:8-11; A117, col. 5:22-25 (same with respect to "function processor instructions").

CardSoft's primary answer focuses on the word "includes" in the asserted claims. In the section of the answering brief purportedly discussing the "Claims and the Specification" (at 14-17), the brief (at 16) merely refers to a section of the specification that quotes, verbatim, the claim language. CardSoft argues that because the "virtual machine" "includes" the "instructions" as one component, and because another component of the virtual machine, the virtual machine processors, "can

be written in platform-specific code…, then it necessarily follows that [the instructions] can also be written in platform-specific code." CAB 16; *see id.* at 16-17. But this is not so.

This Court's discussion in *Forest Labs., Inc. v. Abbott Labs.* is instructive. 239 F.3d 1305 (Fed. Cir. 2001). There, the claimed invention was "[a] pharmaceutical composition … **comprising** an effective amount of a surface active material … and a pharmaceutically acceptable carrier thereof." *Id.* at 1306 (emphasis added).[1] The Court confirmed, despite the "comprising" language, that, although "[t]he surface active material [was] part of [the] pharmaceutical composition," it should be treated as "a distinct component of that composition" to be "evaluated independently of the pharmaceutical composition in order to determine if it meets the claim limitations." *Id.* at 1311. Likewise, here, the virtual machine includes instructions, but the instructions should be treated as "a distinct component of" the machine to be "evaluated independently." *See also Dyno Nobel, Inc. v. LDE Corp.*, No. 02-cv-199J, 2003 WL 25782760, at *1, *6 (D. Wyo. 2003) (in "a dry

[1] CardSoft agrees that "comprises" is akin to "includes." *See* CAB 18 (highlighting a statement in the prosecution history that the virtual machine "comprises, inter alia" a "message instruction means").

mix explosive composition including a bulking agent," the "including" term does not mandate that the bulking agent also be dry; it may "include liquids"); *LMT Mercer Group, Inc. v. Maine Ornamental, LLC*, No. 10-4615, -6699 (FLW), 2014 WL 183823, at *23 (D.N.J. Jan. 16, 2014) (claim language "describes a connector member ***comprising*** several component elements, but ***no mention is made*** of whether these elements are separate or contained together as a single piece") (emphasis added); *Parker-Hannifin Corp. v. Wix Filtration Corp.*, 560 F. Supp. 2d 950, 965 (E.D. Cal. 2008) (components "compris[ing]" invention all had "different structures, purposes and function").

Beyond the meritless "includes" argument, CardSoft says very little. CardSoft does not dispute that the virtual machine was designed to overcome the perceived portability problem by running instructions that are independent of the underlying terminal. Instead, it faults VeriFone for "dwelling exclusively on one of the many problems found in the prior art that certain embodiments were intended to overcome." CAB 15. But those "[other] problems found in the prior art" (which CardSoft never actually enumerates) are problems *over and above* portability: problems that exist in prior art *virtual machines*, not

conventional payment terminals. The patents make clear that the claimed invention is an improvement *relative to existing virtual machines, i.e.*, relative to prior art that has already overcome the portability problem. *See, e.g.*, A116, col. 3:47-49 ("A problem with virtual machines is emulation is slower than normal program execution"); *id.*, col. 4:56-60 (stating that the claimed virtual machine overcomes the "speed … problems with known virtual machines"). Put another way, every embodiment in the patent is a virtual machine that at the very least overcomes the perceived portability problem.

CardSoft also seeks (at 19) to draw meaning from the observation that the claims do not use the word "applications." But the abstract of the patent begins by explaining that the "instruction[s]" are "in the application." A102, Abstract. The specification then spells out that the "application includes protocol instructions, message instructions, function support and function instructions." A119, col. 10:40-42. Figure 2 of the patent also illustrates that the "Application" includes protocols, messages, function support, and function instructions. And it later refers to "the application, in particular the message and protocol instructions." A121, col. 14:31-32. "Claims," of course, "are not [to be]

interpreted in a vacuum, but are part of and are read in light of the specification." *Slimfold Mfg. Co. v. Kinkead Indus., Inc.*, 810 F.2d 1113, 1116 (Fed. Cir. 1987).[2]

CardSoft points (at 17) to one more sentence in the specification. The sentence states that the instructions "written by a programmer in one language" "are preferably subsequently converted to code." CAB 17 (quoting A117, col. 6:47-49) (emphasis removed). But this sentence says nothing about whether the programming language may or may not be terminal-specific. Moreover, the sentence CardSoft quotes is from a discussion of a "development tool for developing message instructions." A117, col. 6:36-37. In a later discussion of the "development tool for developing the application, in particular the message and protocol instructions," the specification explains that the "[m]essage instructions can subsequently be translated into code *readable by the virtual machine* and downloaded into the application device." A121, col. 14:31-40 (emphasis added). This confirms that the quoted sentence is

[2] Similarly, during prosecution of the patent, CardSoft stated that the "message instruction means are provided *in the application* to direct and control the message processor." A1115 (emphasis added).

referring to instructions that are written for the virtual machine and, thus, are independent of the underlying terminal.

As to the prosecution history, VeriFone's brief explained (at 48-51) that CardSoft told the patent office that its invention made "different incompatible computers," A1116, able to run the same program. CardSoft responds by noting that its "virtual machine [processed messages] using software instead of hardware," CAB 21. But, again, that observation has nothing to do with whether the machine can or cannot run applications that are independent of the underlying terminal. Regardless of whether a virtual machine is resident in hardware or software, it must run programs that are not specific to any one terminal.

C. The Magistrate Judge's Reasons For Concluding Otherwise Were Fatally Flawed

VeriFone's opening brief (at 51-63) demonstrated that the source of the magistrate's error was a failure to distinguish between the virtual machine (i.e., the virtual processors) and the applications (i.e., instructions) that the machine runs. To demonstrate this error, VeriFone's brief discussed the magistrate's confusion regarding claims 5 and 6, VOB 54-55, the specification, VOB 56-57, and the prosecution

history, VOB 57. VeriFone then detailed all the instances where the asserted patents, unlike the magistrate judge, distinguish between the virtual processors and its applications. VOB 58-60 (e.g., discussing Figure 2).

Other than reassert the meritless reading of "includes," CardSoft just notes that VeriFone's brief discusses portions of the patent that the asserted claim does not necessarily include. *See* CAB 22-24 (criticizing VeriFone for relying on Figure 2 of the patents). But the point of discussing Figure 2 was not to limit the scope of any particular claim. The point was to show that the magistrate's conflation of the virtual processors with the applications it runs is inconsistent with the patent's distinct treatment of virtual processors and applications.

VeriFone's opening brief explained that the magistrate judge misused the doctrine of claim differentiation, VOB 61-62, and applied the outmoded approach from *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), VOB 63. On the first point, CardSoft (at 26) only reasserts its claim construction argument addressed above.

On the second point, CardSoft responds (at 27-28) by noting that the judge did not cite to *Texas Digital*. But this argument elevates form over substance. *See Tokyo Kikai Seisakusho, Ltd. v. United States*, 529 F.3d 1352, 1360 n.5 (Fed. Cir. 2008) (declining to "exalt form over substance by delimiting the scope of … authority based on … label[s]"). As explained in VeriFone's opening brief (at 63), the magistrate judge improperly asked whether the specification "*compel[led* VeriFone's] proposed limitation," A45-46, a standard that "improperly restricts the role of the specification," *Phillips,* 415 F.3d at 1320.

* * *

CardSoft concedes (at 29) that its infringement argument depends entirely on the claim construction adopted by the magistrate judge. Since that construction was in error, a ruling of no infringement necessarily follows.

II. THERE WAS INSUFFICIENT EVIDENCE OF INFRINGEMENT EVEN UNDER THE ERRONEOUS CLAIM CONSTRUCTION

VeriFone's opening brief (at 66-73) explained that the jury verdict cannot stand even under the magistrate judge's erroneous construction of "virtual machine." Specifically, there is insufficient evidence that the accused products are "programmed to emulate a hypothetical

computer." CardSoft offered only one conclusory sentence by its technical expert, *see* VOB 67, and such "generalized testimony as to overall similarity" cannot support an infringement verdict. *See* VOB 69 (discussing cases).

In response, CardSoft does not try to defend that conclusory sentence as sufficient, and it provides no citation to, much less a discussion of, any of its own trial evidence. After quoting VeriFone's description of CardSoft's affirmative infringement evidence, CardSoft just asserts: "Such a contention, however, is belied by even the most cursory examination of the trial record." CAB 31. But CardSoft provides no citations to the record or any further detail.

Instead, CardSoft invokes *VeriFone's* evidence in an effort to construct its own infringement case. Predictably, that does not work.

CardSoft notes (at 31) that the record included "a substantial number of exhibits at trial, including Appellants' own documents … as well as selected portions of the actual code," and identifies 814 pages of VeriFone documents and Hypercom code. CAB 31 (citing A19,172-986). From this, CardSoft argues that the jury had sufficient evidence to find that the accused devices are "programmed to be capable of running the

same program even though they contain incompatible hardware." CAB 32.

But giving the jury a document containing hundreds of pages of source code without any explanation of that code cannot constitute "sufficient evidence." "'The average judge or jury cannot read source code ….'" *Dawson v. Hinshaw Music Inc.*, 905 F.2d 731, 736 (4th Cir. 1990) (quoting Clapes, Lynch & Steinberg, *Silicon Epics and Binary Bards: Determining the Proper Scope of Copyright Protection for Computer Programs*, 34 U.C.L.A. L. Rev. 1493, 1571 (1986-87)). And CardSoft does not even attempt to explain how these hundreds of pages support the verdict. *See Milmark Servs., Inc. v. United States*, 731 F.2d 855, 858-59 (Fed. Cir. 1984) (stating that because of a party's "indiscriminate" references to facts, the Court "will, therefore, address only the specific findings of fact challenged by [the party] and the legal arguments [the Court was] able to discern from its brief"); Fed. Cir. R. 30(a)(2)(C) (barring "[i]ndiscriminate referencing in briefs to blocks of record pages").

CardSoft also cites testimony from Dave Faoro, VeriFone's Chief Payment Security Officer. Faoro explained that, for example, the Linux

(Mx) and Verix operating systems are "very, very different—it would be like comparing Microsoft Windows with … Apple OS …. They're just totally night and day different product[s]." A17,070-72. *See* VOB 72. His testimony undermines, rather than supports, CardSoft's assertion that VeriFone's terminals "are programmed to operate and function like the same computer." CAB 33.

CardSoft also cites testimony, without explanation, from Paul Rasori, VeriFone's Senior Vice President of Global Marketing. CAB 31. Rasori testified that VeriFone spent thousands of hours developing a different operating system for each type of terminal, A17,503-07, and that the Verix eVo operating system, for example, can only work on the ARM 11 processor, A17,506-07. *See* VOB 71. CardSoft claims that it rebutted Rasori's testimony "through VeriFone's own documents, such as A19,138-71 at 31-32 which describes how exactly the same application can be run both on devices using Verix V and on devices using Verix eVo, even after being compiled." CAB 33 (emphasis by CardSoft). But the document CardSoft cites shows the opposite. Because of the "VeriFone *application development difference[s]* between Verix V and Verix eVo platform," "[t]his document guides application

developers who want to learn more about, or are involved in, the *migration/porting* of Verix V applications to the Verix eVo platform." A19,142 (emphasis added). Indeed, the document describes numerous differences between Verix V and Verix eVo applications. *See, e.g.*, A19,146 (listing "the different libraries for Verix V and Verix eVo applications,"); A19,152 ("discusses some sample codes *specific to programming in Verix eVo*") (emphasis added); A19,164 ("discusses the differences" in the Verix V and Verix eVo libraries and functionalities).

CardSoft calls attention (at 33) to Chapter 4 of this Verix eVo "Porting Guide." But the cited pages require that applications developed for Verix V be modified and re-compiled in order to run on a Verix eVo terminal, consistent with VeriFone's statement that "at a minimum, for an application programmed to run on one particular terminal configuration to work on another, a programmer would have to 'recompil[e] the source code to target a different device.'" VOB 15 (quoting A83); *see* A19,168-69.

Finally, CardSoft suggests that its infringement theory would not cover every modern computer because the claims require the computers to "at least process 'messages' for 'communications'" using a "dedicated

'virtual message processor.'" CAB 34 (emphasis removed). But all computers "process messages for communications," i.e., they can "process[] information to be sent or received via a network" or the internet. A115, col. 1:4-6. These computers also have a "virtual message processor," which the magistrate construed to be "software implemented in the native code of the communications device that processes messages, including assembling, disassembling and/or comparing messages, for communication to and/or from a communications device." A53. That is, if a computer can process messages for communication, then it must have the software required to process those messages. CardSoft has said nothing in its answering brief to distinguish its virtual machine from any modern computer.

CONCLUSION

For the foregoing reasons, and the reasons given in VeriFone's opening brief, the judgment of the district court should be reversed.

Dated: May 20, 2014

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CERTIFICATE OF SERVICE

The foregoing Corrective Reply Brief for Defendants-Appellants VeriFone, Inc., Hypercom Corporation, and VeriFone Systems Inc. was electronically filed with the Clerk of the Court for the U.S. Court of Appeals for the Federal Circuit by using the appellate CM/ECF system on May 20, 2014. All participants in the case are registered CM/ECF users and service will be accomplished by the appellate CM/ECF system.

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CERTIFICATE OF COMPLIANCE
UNDER FEDERAL RULES OF APPELLATE PROCEDURE
32(a)(7) AND FEDERAL CIRCUIT RULE 32

Counsel for Defendants-Appellants VeriFone, Inc., Hypercom Corporation, and VeriFone Systems Inc. certifies that the brief contained herein has a proportionally spaced 14-point typeface, and contains 3922 words, based on the "Word Count" feature of Word 2007, including footnotes and endnotes. Pursuant to Federal Rule of Appellate Procedure 32(a)(7)(B)(iii) and Federal Circuit Rule 32(b), this word count does not include the words contained in the Certificate of Interest, Table of Contents, Table of Authorities, and Statement of Related Cases.

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