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Paper 35  
Entered: November 19, 2014

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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HEWLETT-PACKARD CO.,  
Petitioner,

v.

MPHJ TECHNOLOGY INVESTMENTS, LLC,  
Patent Owner.

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Case IPR2013-00309  
Patent 6,771,381 B1

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Before MICHAEL P. TIERNEY, KARL D. EASTHOM, and  
GREGG I. ANDERSON, *Administrative Patent Judges*.

EASTHOM, *Administrative Patent Judge*.

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

## I. INTRODUCTION

Petitioner, Hewlett-Packard Co., filed a (resubmitted) Petition requesting *inter partes* review of claims 1–15 of U.S. Patent No. 6,771,381 (Ex. 1001). Paper 6 (“Pet.”). Patent Owner, MPHJ Technology Investments, LLC, did not file a (non-required) Preliminary Response, and we instituted *inter partes* review of claims 1–15, on two grounds of unpatentability, as listed below. *See* Paper 9 (“Dec. on Inst.”).

Subsequent to institution, Patent Owner filed a Patent Owner Response (Paper 20, “PO Resp.”), and Petitioner filed a Reply (Paper 25, “Pet. Reply”) thereto. Substantively, Petitioner relies on a declaration by Mark Wibbels (Ex. 1005), and Patent Owner relies on a declaration by Glenn Weadock (Ex. 2002). Patent Owner deposed Mr. Wibbels. Ex. 2003. The parties requested and appeared at an oral hearing before the panel, which transpired on August 18, 2014. The record includes a transcript of the hearing. Paper 34 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision, issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73, addresses issues and arguments raised during trial.

For the reasons that follow, we determine that Petitioner has met its burden of proving, by a preponderance of the evidence, that claims 1–12, 14, and 15 of the ’381 Patent are unpatentable. Petitioner, however, has not demonstrated by a preponderance of the evidence that claim 13 of the ’381 Patent is unpatentable.

### A. Related Proceedings

According to Petitioner, the ’381 Patent is involved in a declaratory judgment action, *Engineering & Inspection Services, LLC v. IntPar, LLC*, No. 13-0801 (E.D. La., Oct. 10, 2013), and, with related patents, is also the subject of a consumer protection lawsuit, *Vermont v. MPHJ Tech. Investments LLC*, No. 282-5-

13 (Ver. Sup. Ct. May, 2013) (MPHJ filing notice of removal to D. Vt., June 7, 2013 (No. 2:13-cv-00170)). *See Pet.* 1; Ex. 1016. The '381 Patent application is a grand-parent to U.S. Patent No. 7,986,426, which is also the subject of an *inter partes* review. *See Ricoh Americas Corp. v. MPH Tech. Invs., LLC*, Case IPR2013-00302 (PTAB) (“302 IPR”).

#### *B. The '381 Patent*

The '381 Patent describes a “Virtual Copier” (VC) system. The system enables a personal computer user to scan paper from a first device and copy an electronic version of it to another remote device, or integrate that electronic version with a separate computer application in the network. *See Ex.* 1001, Abstract.

According to the '381 Patent, “VC can be viewed as a copier. Like a copier, VC takes paper in, and produces paper going out. The only difference is that VC does not distinguish between electronic and physical paper.” *Id.* at col. 71, ll. 62–65.

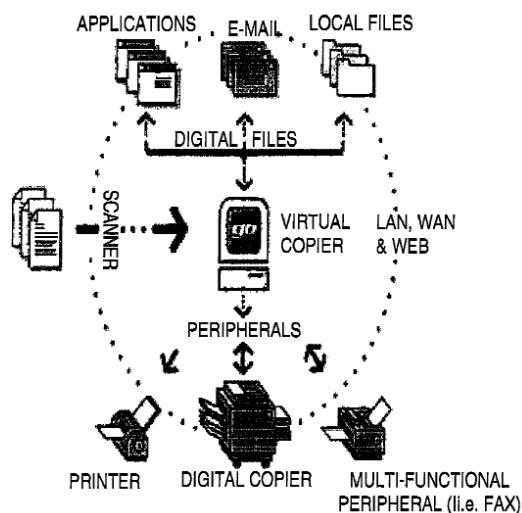
The VC extends from “its simplest form” to its “more sophisticated form”: In its simplest form it extends the notion of copying from a process that involves paper going through a conventional copier device, to a process that involves paper being scanned from a device at one location and copied to a device at another location. In its more sophisticated form, VC can copy paper from a device at one location directly into a business application residing on a network or on the Internet, or [vice] versa.

*Id.* at col. 5, ll. 47–54.

The VC includes “five essential modules”: input module, output module, process module, client module, and server module. “Each module is a counterpart to an aspect that is found on a conventional copier.” *Id.* at col. 71, l. 66 – col. 72, l. 1. Notwithstanding that the latter sentence refers to each module, the '381 Patent ambiguously states that “[t]here is no counterpart to VC’s Server Module on a

conventional copier.” *Id.* at col. 72, ll. 59–60. In any event, the other four modules have “counterparts” on “conventional” copiers: “The Input Module manages paper or electronic paper entering VC. . . . The counterpart to VC’s Input Module on a conventional copier is the scanner subsystem.” *Id.* at col. 72, ll. 5–13. “The Output Module manages paper or electronic paper exiting VC. . . . The counterpart to VC’s Output Module on a conventional copier is the printer or fax subsystem.” *Id.* at ll. 14–23. “The Process Module applies processing to the electronic paper as it is being copied. . . . The counterpart to VC’s Process Module on a conventional copier is the controller.” *Id.* at ll. 24–34. “The Client Module presents the electronic paper as it is being copied, and any relevant information related to the input or output functions. . . . The counterpart to VC’s Client Module on a conventional copier is the panel.” *Id.* at ll. 34–45. “Unlike conventional copiers, VC’s Server Module is a unique subsystem that can communicate with the other modules as well as third-party applications.” *Id.* at ll. 44–47.

Figure 28 of the ’381 Patent follows:



**FIG. 28**

Figure 28 depicts various peripheral devices attached to a VC on a network.

*See id.* at Abstract.

### *C. Illustrative Claim*

Of the challenged claims, claims 1 and 12–15 are independent. Challenged claim 1 follows:

1. [1.P] A computer data management system including at least one of an electronic image, graphics and document management system capable of transmitting at least one of an electronic image, electronic graphics and electronic document to a plurality of external destinations including one or more of external devices and applications responsively connectable at least one of locally and via the Internet, comprising:

[1.1] at least one memory storing a plurality of interface protocols for interfacing and communicating;

[1.2] at least one processor responsively connectable to said at least one memory, and implementing the plurality of interface protocols as a software application for interfacing and communicating with the plurality of external destinations including the one or more of the external devices and applications, wherein said software application comprises at least one of:

[1.3] at least one input module managing data comprising at least one of paper and electronic paper input to the computer data management system, and managing at least one imaging device to input the data through at least one of a scanner and a digital copier, and managing the electronic paper from at least one third-party software applications; and

[1.4] at least one module communicable with said at least one input, output, client, and process modules and external applications, and capable of dynamically

combining the external applications with at least one of digital capturing devices and digital imaging devices.

*See Pet. 9 (bracketing by Petitioner), 44 (same).*

#### *D. The Grounds*

We instituted trial on the following grounds:

Claims 1–15 as anticipated under 35 U.S.C. § 102(b) by SJ5.<sup>1</sup>

Claims 1–15 as anticipated under 35 U.S.C. § 102(b) by Cotte.<sup>2</sup>

## II. ANALYSIS

### *A. Claim Construction*

In an *inter partes* review, “[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see also Office Patent Trial Practice Guide*, 77 Fed. Reg. 48,756, 48,766 (Aug. 14, 2012) (Claim Construction). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the absence of such a special definition or other consideration, “limitations are not to be read into the claims from the specification.” *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

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<sup>1</sup> HEWLETT PACKARD, HP NETWORK SCANJET 5 SCANNER USER’S GUIDE (2d ed. 1997) (Ex. 1006).

<sup>2</sup> U.S. Patent No. 5,499,108 (Mar. 12, 1996) (Ex. 1011).

*At least one, at least one of*

Claim 1 and most of the other claims recite the phrase “at least one” or “at least one of” in a number of places. For example, claim 1 recites “[1.2] . . . wherein said software application comprises at least one of: [1.3] at least one input module managing data . . . ; and [1.4] at least one module communicable with said at least one input, output, client, and process modules and external applications.”

In our Institution Decision, we interpreted phrases of the type “at least one of A and B” and “at least A and B” in the alternative, i.e., “one or more A or B.” Dec. on Inst. 11. The parties do not challenge this interpretation. Patent Owner agreed with it during the oral hearing, stating that “as Petitioner stated, these are alternative claim elements. Patent Owner takes no issue with that interpretation, that either - - that claim element 1.3 [at least one input module] and 1.4 [at least one module communicable] are claimed in the alternative.” Tr. 31:6–9 (*see supra* claim 1). Patent Owner’s declarant, Mr. Weadock, also agrees with this general construction outlined in the Petition. *See* Ex. 2002 ¶ 17.

*Software Application/Application*

As indicated above, claim 1 recites “said software application comprises at least one of: at least one input module . . . and at least one module communicable with” other modules. Claim 1 also recites “one or more of external devices and applications,” and “external applications.” Patent Owner contends that an “application” is “a discrete software program executable on an operating system for the purpose of accomplishing a task.” PO Resp. 6. Patent Owner also contends that an “application” and a “software application” do not include “firmware”: “While firmware is made up of software, it is not the same thing as a software application. Nowhere in the specification of the ‘381 patent is ‘application’ or ‘software application’ used in the context of device firmware.” *Id*

Petitioner contends that Patent Owner’s interpretation is too narrow. *See* Pet. Reply 2–3. Petitioner points out that the ’381 Patent describes “‘VC is in one embodiment . . . optionally a standalone application.’” Pet. Reply 3 (quoting Ex. 1001, col 8, ll. 66–67, emphasis by Petitioner). The Specification supports a broader interpretation than Patent Owner urges in other places. For example, it shows specific examples of an application or software application that are not limited to a discrete software program and do not preclude firmware: “an application (e.g., Lotus Notes, Microsoft Exchange, *the Internet*, or *an electronic filing system*).” Ex. 1001, col. 6, ll. 59–61 (emphasis added). Also, VC can copy “in and out of devices and business applications (such as Microsoft Office, Microsoft Exchange, Lotus Notes).” *Id.* at col. 46, ll. 19–20.

Patent Owner essentially contends that an “application” and a “software application” mean the same thing. *See* PO Resp. 6–7. This interpretation renders the term “software” redundant. The term “application” is not limited to software, as the disclosed examples of the Internet and electronic filing systems verify. We found in the Institution Decision that the ’381 Patent Specification “refers to copying paper ‘one device and[/]or application to another device and/or application,’ thereby broadly blurring any distinction between a device and a device having a software application.” Dec. on Inst. 12 (quoting Ex. 1001, col. 6, ll. 44–46). Claim 8, which depends from claim 1, provides for “integrat[ing]” or “embedding the computer data management system,” which includes the “software application,” into an “external application.” This claim 8 phrase further shows that an application includes hardware. Therefore, based on the disclosure, including specific examples, an “application” may include hardware, software, or software and hardware.

As to a software application, notwithstanding Patent Owner’s arguments, Patent Owner does not distinguish “firmware” from stored software that is part of a distributed software application. The Specification includes distributed architecture with the VC software stored virtually anywhere. For example, the Specification states that “[t]he VC software can reside on a PC, LAN/WAN server, digital device (such as a digital copier), or on a web server to be accessed over the Internet.” Ex. 1001, col. 46, ll. 21–24.

Patent Owner also contends that a “software application” means a “single software application.” PO Resp. 18–19. To support the argument, Patent Owner reasons that a “software application” precludes “firmware”: “It would not make sense to say that the firmware of a scanner and host software make up the same (discrete) software application.” *Id.* at 19. Contrary to the arguments, the claims do not recite the word “single” or “discrete,” or otherwise preclude firmware.

The ’381 Patent Specification also does not support a “software application” as limited to a “single” or “discrete” software application. Examples of a broader meaning abound in the ’381 Patent Specification: “Accounting systems, like most business applications, typically have no way of maintaining an electronic copy of the physical invoice and adding a document management system to an accounting system is cumbersome . . . and . . . difficult to coordinate.” Ex. 1001, col. 47, ll. 51–56. This disclosure equates a “system” with a “business application,” and implies that the invention allows a “document management system,” including the software application claimed therein, to coordinate with the existing “accounting system.”

The ’381 Patent Specification also refers to “Microsoft Office,” Ex. 1001, col. 53, l. 38, whereas Patent Owner points to “Microsoft Word, Excel and Outlook,” as examples of single applications. PO Resp. 19. The former example,

Microsoft Office, like the “Internet,” or “filing system,” verifies that a software application is not limited to a single application. During the oral hearing, Patent Owner conceded that that “one of ordinary skill in the art would understand that [Microsoft Office is] . . . as an example as a destination that could include multiple discrete software applications,” in response to a question by Judge Tierney.

Tr. 26:16–19.

Although Patent Owner relies on its declarant, Mr. Weadock, prior testimony by Mr. Weadock in unrelated litigation, cited by Petitioner, supports Petitioner. For example, Mr. Weadock asserted in a declaration that “[i]t is difficult to define software products according to any specific grouping of files. Software products are typically defined according to their features.” Ex. 1019, 2 ¶ 1. Mr. Weadock also declared that “[a]ttempting to define software as a particular collection of files is ultimately impossible if code units within the same file are shared. . . . Attempting to define software strictly as a collection of files is a fruitless exercise when some of those files perform double duty in different contexts.” *Id.* at 6 ¶ 14. Quoting another source, he stated that “[y]ou cannot isolate application code easily anymore.” *Id.* (quoting “the director of information technologies for US Steel Group”). “[Y]ou know, it becomes very difficult to draw a specific line at which you’ve drawn a boundary between [an] operating system and application.” *Id.* (quoting Scott Vesey, Boeing’s Windows Web Browser Manager). “Indeed, both industry professionals and computer customers think of a software product more as that which enables a set of related features than as a collection of specific files.” *Id.* at 6 ¶ 15.

Software, according to the ’381 Patent Specification, is stored in “any multitude or combination of . . . storage devices.” Ex. 1001, col. 62, ll. 43–46; Fig. 15 (depicting system components including memory devices 60, 62, 66, 68, 70,

and processor/CPU 58). The software may reside on different servers and clients: “Alternatively, the engine object layer and the engine may be optionally located in a distributed environment on different machines, servers, and the like.” *Id.* at col. 68, ll. 17–22. “The VC software can reside on a PC, LAN/WAN server, digital device (such as a digital copier) or on a web server to be accessed over the Internet.” *Id.* at Abstract. The Abstract verifies that the software can reside on a device, and does not preclude firmware, as Patent Owner argues.

The title of the ’381 Patent is “Distributed Computer Architecture and Process for Virtual Copying.” The title bolsters the finding that the disclosed invention contemplates a software application that works in a distributed manner as a suite of programs, in different machines and on different memory locations, to accomplish various functions. The ’381 Patent also discloses “combin[ing] with any . . . suitable processing circuits, including programmable logic devices, such as PALs (programmable array logic) and PLAs (programmable logic arrays), DSPs (digital signal processors) . . . ASIC’s (application specific integrated circuits), VLSIs (very large scale integrated circuits) or the like.” *Id.* at col. 63, ll. 10–16. This disclosure shows that the invention may include distributed firmware.

Accordingly, a “software application” is a program or group of programs which operate together in a system to perform a function or functions, and the programs can be stored in a variety of places on a variety of machines, and operate in a distributed manner. An application may include software and hardware and performs a function.

*Third-party software application/external applications*

Claims 1 and 14 recite “managing the electronic paper from at least one third-party software applications.” In our Institution Decision, we determined that the terms “third-party software application” and “applications” mean “a program

that may or may not be on a device.” Dec. on Inst. 12. Patent Owner urges a narrower construction of a “third-party software application,” and states that it means “a software application that is provided to the end user by a different manufacturer.” PO Resp. 7. Patent Owner does not explain how a “different manufacturer” is involved in claim 1. Mr. Weadock urges that the term implies “commercially available software made by someone other than the creator of the computer data management system.” Ex. 2002 ¶ 24.

The Specification refers to “third-party” software as “proprietary” software. *See* Ex. 1001, col. 8, l. 11. It also refers to “business applications (such as Microsoft Office, Microsoft Exchange, Lotus Notes).” *See id.* at col. 5, ll. 56–57; col. 46, ll. 19–21. Claims 1 and 14 are drawn to “a computer data management system,” comprising an input module to manage a “third-party software application[.]” Mr. Weadock and Patent Owner fail to explain how the maker of a software application has anything to do with the structure of computer data management system or the third-party software application. Claims 1 and 14 are system claims, not method claims. The ’381 Patent specifically states that a “third-party” may create one of the modules of the claimed invention: “The Client Module can be a GUI that Imagination Software develops, or a third-party application that directly communicates with the Server Module.” Ex. 1001, col. 80, ll. 47–49. This verifies that the identification of the programmer who creates any software that communicates with the claimed “computer data management system” does not structurally distinguish software made by the maker of the “computer data management system.”

Similar to “applications,” these related terms (third-party and external) do not preclude software that resides in printers, scanners, or other devices. An external application, according to the construction of “application” *supra*, does not

preclude hardware, because it includes a file system and the Internet. As also discussed, the Specification refers to copying paper from “one device and[/]or application to another device and/or application,” thereby further broadly blurring any distinction between a device and a device having a software application. Dec. on Inst. 12 (quoting Ex. 1001, col. 6, ll. 44–46). Further, software, according to the Specification, as explained above, is stored somewhere in the system, in “any multitude or combination of . . . storage devices.” Ex. 1001, col. 62, ll. 43–46; Fig. 15 (depicting system components including memory devices 60, 62, 66, 68, 70, and processor/CPU 58).

Claim 1 requires a system that transmits electronic paper (i.e., “at least one of an electronic image, electronic graphics and electronic document”) to “a plurality of external destinations including one or more of external devices and applications.” This phrase informs that “external” means at a location remote from the source that transmits the electronic paper.

Accordingly, the term “third-party software application” means “programming code that may or may not be on a device.” An “external application” means software, hardware, or both, at a remote destination, remote, for example, from the source that transmits electronic paper.

### *Module*

Claim 1 recites a “computer data management system” comprising “at least one input module,” “at least one module communicable with said at least one input, output, client, and process modules and external applications.” In the Decision to Institute, we noted that one plain meaning of “module,” is “a logically separable part of a program.” Dec. to Inst. 13 (citing IEEE 100 THE AUTHORITATIVE DICTIONARY OF IEEE STANDARDS TERMS SEVENTH EDITION 704 (2000), *available at*

<http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=4116801> (last visited Sept. 19, 2013)).

We determined that “each ‘module’ . . . is a logically separable part of the claimed data management system, and a module may include another module and overlap with another module in functionality.” *Id.* at 14–15. Petitioner agrees with the definition, and Patent Owner does not. Pet. Reply 8; PO Resp. 6.

In reaching the construction, we also noted that the ’381 Patent states that the modules have “counterparts” to “aspects” in conventional devices: “Each module [except possibly a server module] is a counterpart to an aspect that is found on a conventional copier.” Dec. on Inst. 3 (quoting Ex. 1001, col. 71, l. 66–col. 72, l. 1). As to the server module, the ’381 Patent Specification states that “[u]nlike conventional copiers, VC’s Server Module is a unique *subsystem* that can communicate with the other modules.” Ex. 1001, col. 72, ll. 44–47 (emphasis added). We further noted that “[t]he ’381 Patent also states that ‘[t]he Client Module is generally simply an interface to the Server Module.’” Dec. on Inst. 13 (quoting Ex. 1001, col. 50, ll. 15–16). Therefore, a module in a software application may be a “unique subsystem” of that application, and as an “interface” to another module, may overlap with other modules. *See id.*

Notwithstanding these disclosures in the ’381 Specification, Patent Owner maintains that the Specification provides no support for the determination that modules may include other modules and may overlap in functionality. PO Resp. 7. Patent Owner states that a “module” is “a logically separable part of the software application of the data management system that can function in a plug-and-play manner within a Virtual Copier.” *Id.* at 8.

Patent Owner cites to its declarant, Mr. Weadock, as support. *Id.* (citing Ex. 2002 ¶¶ 26, 28–29). Mr. Weadock states that this definition constitutes a

“more appropriate interpretation of ‘module’ in the context of the ‘381’ Patent. Ex. 2002 ¶ 29. Mr. Weadock cites to the Institution Decision at page 10, where we noted that the ’381 Patent states that “[a]s long as the input and output [m]odule conform to the API specified in this document it will plug-and-play with VC.”” *See id* ¶ 27 (quoting the Institution Decision, which quotes Ex. 1001, col. 9, ll. 35–39).

Mr. Weadock’s interpretation ignores the quoted qualifier in the Specification, which is missing from claim 1: “as long as the . . . Module conform[s] to the API specified in this document . . . it will plug-and-play.” Although claim 10 recites a generic “application programmer interface (API).” No claim requires a module to conform to the “API specified,” the “‘C’-language API” or “COM-based interface,” as specified in the ’381 Patent Specification. *See* Ex. 1001, col. 50, ll. 21–34. None of the claims recite the “discrete” or “plug-and-play” feature.

Patent Owner chose not to limit the claims by qualifying the modules as “discrete” or “plug-and-play.” The ’381 Patent implies that a module, as set forth in the claims, is broader than any specific examples of discrete “plug-and-play” modules. In essence, a software module has boundaries defined by specific code that produces a specific software function associated in the claim with the module. This generic software module is “logically separable,” because it can be defined by the logic code that produces its function, even if the module cannot be physically extracted from a single memory location as “plug-and-play” module.

Patent Owner also does not address broader implications in the ’381 Patent Specification, including the module counterparts to prior art aspects, the modules as interfaces to each other, or the modules as subsystems. *See* Ex. 1001, col. 7, l. 67–col. 8, l. 1, col. 50, ll. 15–16, col. 71, l. 66–col. 72, l. 1, col. 72, ll. 44–47; *see*

also Ex. 1005 ¶¶ 35–39 (Mr. Wibbels discussing the disclosed modules, including inconsistent descriptions in the ’381 Patent Specification of the server module, one of the five disclosed modules). The ’381 Patent does not describe these “counterparts” or “subsystems” as discrete modules, and an “interface” to another module implicitly overlaps in code and function with the module for which it interfaces. Therefore, the modules need not be discrete.

In the related ’302 IPR, during cross-examination by Patent Owner, Dr. Melen, petitioner (Ricoh’s) witness in that case, testifies that “the word ‘module’ is very broad and very nonspecific, and [can] be comprised of modules and modules of mod - - modules, modules spread across the network, modules which include other people’s code.” ’302 IPR, Ex. 2003, 144:16–20.

Dr. Melen similarly testified, when asked about the five modules claimed and disclosed in a related patent having the same Specification as the ’381 Patent, that

I don’t think . . . module is necessarily one thing. You can have a module inside a . . . module. You can have a module which spans machines. Module is not so precise. *But what is more specific is exactly what they do. And so the question is, does [the prior art] talk about those basic functions of scanning and printing and - - yes. . . . It’s just software.*

*Id.* at 142:5–15 (emphasis added).

Dr. Melen’s testimony is not required to support this claim construction, but we employed the same claim construction in the ’302 IPR. His testimony informs our construction of the same term in the two proceedings—the ’381 Patent and the patent challenged in the ’302 IPR share a common specification.

In the ’302 IPR, Mr. Weadock candidly stated during cross-examination that a module may overlap in code with another module, retreating from statements in his declaration that may have been interpreted as absolutely precluding overlap in

modules: “And normally when we talk about modules, we think of them as not overlapping, but there might be situations in which modules could share some code. There might be some common code between the two modules.” ’302 IPR Ex. 1013, 191:3–7. Mr. Weadock also acknowledged that separate functionality between modules may not be required: “I would hesitate to ever make any absolute statements when it comes to software. . . . Because there’s so many different designers and so many different philosophies, but it would - - I can say that it would surprise me to see a modular software application with *heavy* overlap of functionality between the modules.” *Id.* at 192:6–15. The experts, therefore, agree, that a module may share or overlap in code (which performs the function).

Petitioner points to another passage in the ’381 Patent that implies that module functions overlap: “[W]hile the above discussion has separated the various functions into separate layers of functionality, the layers may be combined, physically and/or logically, and various functions may be combined together.” Pet. Reply 8 (quoting Ex. 1001, col. 85, ll. 9–12).

Petitioner also points out that a book written by Mr. Weadock employs a definition of a “module” that is consistent with the meaning set forth in the Institution Decision: “a logical unit of separation in the application.” Pet. Reply 4 (citing Ex. 1020, 1). Implicitly, this definition agrees with ours because code that performs a specific function in an application can be separated as a logical set of code that performs a required function.

According to the foregoing discussion, each “module,” as recited in claim 1, does not require a discrete or plug-and-play feature, but each module is a logically separable part of the claimed “software application,” demarcated by code corresponding to the specific function recited for that software module. Each

software module may include another software module and overlap with another such module.

*Claims 8 and 12, certain phrases*

Claim 8 recites “wherein the one or more of the external devices and applications integrates the computer data management system into an external application via one of running the computer data management system, as an external service and embedding the computer data management system as an embedded service.” Based on the claim language, “one of” refers to running and embedding, and means one of running or embedding. The claim does not define a relative internal system for the “external” application. Claim 8 depends from claim 1 and requires that the computer data management system includes a memory and a processor. It is not clear how that hardware portion of the claimed management system can be integrated by means of embedding or running. Accordingly, integrating by one of embedding and running, means that the computer data management system connects to, exists as, runs as, or was built as, part of another (i.e., external) application.

Patent Owner’s declarant, Mr. Weadock, states that “the Board has a valid point” about the hardware not being embedded into anything, such as software, but “that a person of ordinary skill would understand that the ‘wherein’ clause of Claim 8 pertains to the software components of the computer data management system” as being embedded. *See Ex. 2002 ¶ 36.* Nevertheless, a reasonable interpretation, which does not require ignoring specific claim limitations that require the processor and memory hardware in the claimed management system to be “integrate[d] . . . into an external application,” via “embedding . . . as an embedded service,” implies that an external application includes hardware. The ’381 Patent Specification supports this interpretation, for the reasons explained

above. Another supported and reasonable interpretation is that “integrates” includes “running . . . as an external service,” as claim 8 specifies, which implies that “integrates” means that two devices, systems, or applications, are compatible with each other.

Claim 12 recites “[a] computer data management system” that includes a “single function copy operation linking devices,” “a one step programming method[,] . . . a method of recreating a module oriented copier in software,” and “a copier interface.” Claim 12 recites phrases that appear to place the claim into two statutory categories, “process” and “machine,” which is impermissible under 35 U.S.C. § 101. For purposes of this proceeding, the “one step programming method” is interpreted either to describe functional characteristics of a machine, the data management system, or to include a method of making the “electronic business processes” in the machine, so that the machine includes “a module oriented copier in software,” made “with no or minimal reprogramming.” *See* Claim 12. This product-by-process step is not afforded patentable weight, because Patent Owner does not direct attention to a disclosure in the Specification that indicates that after the system has been made, it behaves differently than a system made with more than minimal reprogramming.

### *Claims 9–11*

Claims 9–11 recite a “server module.” Claim 9 depends from claim 7, which depends from claim 1, and recites “wherein the server module includes” the four means-plus-function limitations. However, “the server module” recited in claim 9 lacks antecedent basis, because claim 1 does not recite a server module. In our Institution Decision, we determined that “the server module” recited in claim 9 is interpreted either to refer back to “at least one module communicable,” element

1.4, as recited in claim 1, or to refer to an additional module, a server module. Dec. on Inst. 17.

Patent Owner does not disagree with this interpretation. Rather, as noted above in the construction of “at least one of,” during the oral hearing, Petitioner asserted and Patent Owner agreed, that claim 1 recites “at least one of” “at least one input module” or “at least one module communicable,” in the alternative. Therefore, if claim 9 refers back to clause 1.4, “at least one module communicable,” which claim 1 does not require necessarily because it is an alternative to clause 1.3, it follows that claim 9 does not limit claim 1 under this interpretation. Similarly, “the server module” recited in claims 10 and 11 also lacks antecedent basis, because they each refer back to claim 7, which refers back to claim 1. Accordingly, claims 9–11 recite limitations that do not limit the claims under the alternative interpretation that we employ, wherein “the server module” implicitly refers back to clause 1.4, “at least one module communicable,” as recited in claim.

*The Demand Letter*

To support its claim construction, Petitioner submitted a demand letter (Ex. 1016, 26) by Patent Owner to accused infringers of Patent Owner’s patents. *See Pet. Reply 4* (arguing “it would be improper to ignore [Patent Owner’s] prior statements for purposes of BRI [broadest reasonable interpretation].”) The demand letter is not necessary to the claim construction or holding, but it serves to corroborate the claim construction of module and application outlined above. The demand letter implies that Patent Owner’s claim construction of these terms corresponds to the constructions outlined above.<sup>3</sup>

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<sup>3</sup> Patent Owner was questioned about the demand letter during the ’302 IPR hearing and the ’309 IPR hearing. *See Tr. 18–22, IPR ’302, Tr. 43.*

For example, Patent Owner's demand letter states that

[a] good example of an infringing system, and one your company likely uses, is an office local area network ("LAN") which is in communication with a server, employee computers having email software such as Outlook or Lotus, and a third-party scanner (or a multi-function printer with scanning functionality) which permits the scanning of a document directly to [an] employee email address as a pdf attachment. Such a system would be a typical example of what infringes. There are other examples listed further below.

. . . [Y]ou may find it useful to consider, as illustrative examples, claims 1–5 of the '426 Patent. Reviewing those you can see that the patent claims are directed to a system having a digital copier/scanner/multifunction device with an interface to office equipment (or to the web) and related software, for scanning or copying and transmitting images electronically to one or more destinations such as email, applications or other local files. Coverage of this type of system, and of the more generally worded example [above] . . . , is further reflected in claims 1, 8 and 15 of the '410 Patent, claims 12 and 15 of the '381 Patent, and claims 9 and 16 of the '590 Patent.

Ex. 1016, 27.

Claim 5 of the '426 Patent, the subject of the related '302 IPR, includes "a software application" that "comprises . . . at least one input module . . . at least one output module . . . at least one process module . . . at least one client module . . . at least one client module . . . and at least one server module." See '302 IPR, Ex. 1001, col. 86, ll. 21–28. The demand letter implies that claim 5, which recites modules, similar to claim 1 of the '381 Patent, does not require discrete modules or a single application, because the claimed system is "directed to a system having a copier/scanner/multifunction device with an *interface to office equipment (or to the web)* and related software, for scanning or copying and transmitting images electronically to one or more destinations such as email, applications or other local

files.” Ex. 1016, 27 (emphasis added); *see also* Pet. Reply 4–5 (describing as “inconsisten[t]” Patent Owner’s claim constructions in this proceeding and with respect to the demand letter).

Claim 12 of the ’381 Patent recites “a computer data management system . . . wherein the system comprises . . . a method of recreating a module oriented copier in software.” Claim 12 also recites “a copier interface implemented as [a] software application.” The demand letter indicates that typical office systems that scan and transmit images “to one or more destinations” infringe claim 12. Therefore, in line with the claim construction, the demand letter and claim 12 imply that a software module need not be discrete and a “software application” need not be a single application.

#### *B. Mr. Wibbels*

Patent Owner asserts that Mr. Wibbels is not a person of ordinary skill in the art so that his opinions included in his declaration “should be given little to no weight.” PO Resp. 12. Patent Owner contends that Mr. Wibbels’s “experience with printers . . . is limited to firmware rather than high level software applications.” *Id.* at 11. Patent Owner acknowledges that Mr. Wibbels has a B.S. in physics, a B.A. in mathematics, and an M.S. in mechanical engineering and “has had some formal instruction in the C language and is self-taught in the QuickBasis language.” *Id.* at 10. According to Patent Owner, Mr. Wibbels also “worked on a number of printer hardware level algorithms, such as half-toning algorithms, calibration algorithms, and under-exposure algorithms.” *Id.* at 10–11.

Patent Owner’s assertions bolster the record evidence and show that Mr. Wibbels has experience and education in software. Patent Owner does not qualify “high level” software. Patent Owner had the opportunity to challenge the declaration of Mr. Wibbels through cross-examination and competing testimony.

*See In re TMI Litig.*, 193 F.3d 613, 692 (3d Cir. 1999) (“So long as the expert’s testimony rests upon ‘good grounds,’ it should be tested by the adversary process—competing expert testimony and active cross-examination.” (quoting *Ruiz-Troche v. Pepsi Cola of P. R. Bottling Co.*, 161 F.3d 77, 85 (1st Cir.1998))). In addition to having a Master’s degree in engineering, Mr. Wibbels has been a “Distinguished Technologist/Strategist” at Hewlett Packard Company since 2004. Mr. Wibbels is “an inventor of 17 issued U.S. Patents” and has “spent approximately 20 years working on product development of HP scanning and printing solutions.” Ex. 1012, 1–2; Ex. 1005, 2.

The record shows that Mr. Wibbels possesses “at least . . . ‘ordinary skill in the art’” (Ex. 1005 ¶ 20):

the level of ordinary skill in the art of the ’381 [Patent] at the time of the effective filing date is a person with a bachelor of science degree and two years experience in research or development (e.g., engineering, product development, requirements analysis) in fields or industries pertinent to the art (e.g., digital imaging systems, such as scanners or printers). With more education, for example post-graduate degrees and/or study, less industry experience is needed to attain an ordinary level of skill.

*Id.* ¶ 19.

The claims of the ’381 Patent generally recite systems for processing and transmitting electronic images with “counterparts” in conventional printing systems. The ’381 Patent Specification also summarizes the disclosed invention as involving C-level software. *See* Ex. 1001, col. 3, ll. 35–67. Firmware skill, contrary to Patent Owner’s arguments, skill in creating computer algorithms, and other languages, including C-level, represent relevant skill. Mr. Weadock testifies that the requisite level of skill includes experience in “printing, networking, scanning, and e-mail.” Ex. 2002 ¶ 15. Patent Owner acknowledges that

Mr. Wibbels had “formal education” in software languages including C-level. PO Resp. 10. The record, including the prior art, which is directed to similar systems as the claimed invention, show that Mr. Wibbels has the requisite engineering education, and experience at least in imaging art, encompassing printer, scanning, and networking—“digital imaging systems.” Ex. 1005 ¶ 19. Mr. Wibbels invented systems as specified in several relevant patents generally involving computer based imaging. *See* Ex. 1012, 1–2. Patent Owner has not demonstrated through cross-examination or otherwise that Mr. Wibbels’s testimony is unreliable. Mr. Wibbels qualifies to aid in the Board’s understanding and his opinion is entitled to due weight.

### *C. Asserted Grounds of Unpatentability*

#### *1. Cotte – Anticipation, Claims 1–15*

##### Cotte—Overview

Cotte generally describes an integrated system that produces scanned document data that can be sent to a host computer and e-mailed, faxed, or printed. Ex. 1011, Abstract, Fig. 10, col. 10, ll. 42–58. Cotte’s paper input device senses the insertion of a document to be scanned, initiates a host computer process, i.e., controls the host process by insertion of the paper and symbols on the paper, scans the images and text on the paper, . . . send[s] the scanned data to the host for further electronic processing such as display, transmission, storage or modification. Principally, this new technology is a paper input device using scanning technology which controls the host computer rather than the other way around.

*Id.* at col. 2, ll. 42–51.

Cotte also discloses that

the user can put the document in the paper input device and the input device software will automatically scan the document, send the data to the host in any of the ways described herein, and the input device software resident on the host will then cause a pop-up window to

appear on the screen where the image of the scanned document appears.

*Id.* at col. 16, ll. 58–63.

One way to send data involves symbol recognition software: “the input device includes symbol recognition software that can recognize symbols on the document to be scanned which indicate where the document is to be FAX’ed, sent as E-mail[,] etc.” *Id.* at col. 11, ll. 27–31.

### Claim 1

Relying on Mr. Wibbels’s declaration (Ex. 1005), Petitioner reads the elements of claim 1 onto Cotte’s scanning network system. Pet. 43–50. According to the ’381 Patent, “VC can be viewed as a copier”—a copier in the sense of copying electronically—even though “VC does not distinguish between electronic and physical paper.” Ex. 1001, col. 71, ll. 62–65. Based on the foregoing descriptions, the two systems are similar, in terms of the functionality as a basic copier operating on electronic and physical paper.

The preamble of claim 1 follows:

A computer data management system including at least one of an electronic image, graphics and document management system capable of transmitting at least one of an electronic image, electronic graphics and electronic document to . . . one or more of external devices and applications . . . connectable at least one of locally and via the Internet.

Cotte discloses the preamble, according to the discussion *supra* and Petitioner’s showing. For example, as described *supra*, Cotte’s input device system manages the host computer and sends an image and text to an e-mail, fax, printer, or other similar applications or devices that have software, thus showing that Cotte’s system is “connectable at least one of locally and via the Internet,” as

the claim 1 preamble recites. *See* Pet. 43; Ex. 1011, Fig. 17, col. 10, ll. 35–58, col. 16, ll. 20–22 (disclosing local or wide area network); Ex. 1005 ¶ 291.

Claim 1 also recites the following limitations: “at least one processor responsively connectable to said at least one memory, and implementing the plurality of interface protocols as a software application” and “at least one memory storing a plurality of interface protocols for interfacing and communicating.” Cotte discloses microprocessor 352 implementing software for controlling operations of the input device that is stored in ROM/RAM 132. *See* Ex. 1011, Fig. 11A. As Petitioner and Mr. Wibbels explain, Cotte’s processor 352, which implements this stored software for fax and input communications, satisfies the listed limitations. *See* Pet. 43; Ex. 1005 ¶ 293; Ex. 1011, col. 8, ll. 37–55, col. 9, ll. 4–12. For example, “the input device software controlling the[ ]microprocessor 352 includes software routines to send the appropriate commands to the Fax modem to control its operations in sending the scanned data as a Fax.” Ex. 1011, col. 9, ll. 4–12. ROM/RAM memory 132 stores the input device software. *Id.* at col. 8, ll. 37–39.

Claim 1 also recites

at least one input module managing data comprising at least one of paper and electronic paper input . . . , and managing at least one imaging device to input the data through at least one of a scanner and a digital copier, and managing the electronic paper from at least one third-party software applications.

Claim 1 allows for each of the “managing” functions to be handled by one or more of the “at least one input module.” To satisfy the input module limitations, Petitioner relies on Cotte’s scanner, input device 114 at Figure 11A, which includes the stored fax protocol discussed *supra*. Pet. 43; Ex. 1005 ¶ 298. As noted, in Cotte, the “input device software controlling the[ ]microprocessor 352

includes software routines to send the appropriate commands to the Fax modem to control its operations in sending the scanned data as a Fax.” Ex. 1011, col. 9, ll. 8–12. Cotte’s input software also sends data automatically to a laser printer, thereby managing at least one imaging device to input data through a digital copier. *Id.* at col. 10, ll. 45–50, col. 11, ll. 33–37. Therefore, Cotte’s input device software routines manage paper and electronic paper, through the scanner, an imaging device, thereby satisfying at least the first two recited functions of the input module.

Cotte also implies that input software routines automatically control data between the host and the fax modem, in both directions. *See* Ex. 1011, col. 8, ll. 39–56. Controlling this fax data transfer also satisfies the first, second, and third input module functions, the third being “managing the electronic paper from at least one third-party software application[.]” As an example, microprocessor 352 programs UARTs 135 and 136 to receive fax data and send it to host CPU 110. Ex. 1011, col. 8, ll. 52–56, Fig. 11A. As another third-party software application, Cotte also discloses that the “input device includes symbol recognition software that can recognize symbols on the document to be scanned which indicate whether the document is to be FAX’ed, sent as E-mail[,] etc.” Ex. 1011, col. 11, ll. 27–31. The claimed input module functions read on that process, because the symbol recognition software helps to manage electronic paper from a scanner using symbol software, which constitutes a third-party application. Software resident on the host may also generate a drop-down menu, which also constitutes a third-party application relative to the input device software. *Id.* at col. 10, ll. 53–57, col. 15, ll. 35–44. Also, sending data to a word processor after performing optical character recognition constitutes managing electronic paper from at least one third-

party software application (the OCR third-party application). *Id.* at col. 10, ll. 53–57.

Patent Owner asserts that “Cotte’s ‘software routines,’ that are implemented by a microprocessor 252 of an input device 114, do not anticipate a software **application** that comprises an input module, as required by claim 1.” PO Resp. 13. Patent Owner asserts Cotte’s microprocessor “appears to be nothing more than a hardware device (e.g., microprocessor 52) controlled by firmware.” *Id.*

Patent Owner’s arguments are not persuasive. According to the claim construction outlined above, a “software application,” as set forth in claim 1, can include software stored in different places, including as firmware, which in this case includes RAM/ROM memory 132 in Cotte. *See* Ex. 1011, Fig. 11A, Fig. 17. The ’381 Patent Specification also specifically mentions that the disclosed program can “instruct the central processing unit,” Ex. 1001, col. 62, l. 39, and be stored in “ROM 60 and/or RAM 62” or another “memory media . . . [as] program information for controlling the computer to enable the computer to perform the functions described herein,” *id.* at ll. 30–37.

Patent Owner also asserts that Cotte’s “symbol recognition software cannot be an input module because the document has already been received”—“symbols cannot be recognized by software until after the document is scanned.” PO Resp. 14. This argument does not address the alternative of the input module controlling the programmed UARTs and performing other scanner input functions, for example, inputs to OCR, OCR outputs to other software, or input software deciding to send the scan as input to the fax, as input to the host for further processing, as input to a RAM buffer, or as input to a printer (i.e., “managing data through at least one of a . . . printer”). *See* Pet. 43; Ex. 1011, col. 9, ll. 1–12. Further, “special software in the input device compresses the scanned data, sends

the scanned data to the host and automatically carries out the desired processing” by receiving a menu command or symbol recognition command. Ex. 1011, col. 2, ll. 55–62. Therefore, even if claim 1 requires controlling the scanning, Cotte discloses compressing during scanning. Further, according to the ’381 Patent Specification, as noted above, input modules have counterparts to prior art scanners. Cotte’s input device software includes software to control the scan as a typical prior art input scanning device.

Patent Owner also argues that Cotte’s system does not manage paper from a third-party software application. PO Resp. 14. Patent Owner describes as “problematic” the Board’s finding in which Cotte’s symbol software recognition software is an input module that both manages one imaging device and manages electronic paper from at least one third-party software application. *Id.* at 15. According to Patent Owner, “it would be illogical for a software application to receive electronic paper from itself.” *Id.* at 15.

This argument is not clear, because the recited software application communicates with the recited third-party application. Cotte includes several third-party applications in addition to the software recognition software, such as OCR, e-mail, or fax. The argument also conflates the symbols, or third-party software which creates the symbols, with the recognition software in the input device or the host, the input module. The symbols, placed on the paper by a third-party software application, or the symbols as a third-party software application, are processed by the recognition software, or input module, which recognizes those symbols. For example, Cotte states that “the recognition software [input module] is taught to recognize the bit map of sticker 400 [the third-party software application] as a command to invoke the appropriate host software to receive the scanned image of document 402 and send it to the FAX modem 118 in Fig. 10.”

Ex. 1011, col. 12, ll. 11–14. “[T]he symbols may be printed on the document using [third-party application] software . . . .” *Id.* at col. 11, ll. 34–35.

As Patent Owner recognizes, Cotte states that the recognition software can be in the form of “specific ‘macros’ or predefined sequences of instructions.” *Id.* at col. 11, 48–49; *see* PO Resp. 20. Although Patent Owner’s declarant, Mr. Weadock, concludes that a “macro” is not a “module,” Mr. Weadock fails to set forth a meaningful distinction, and refers to a “macro” as a “predefined script of commands to be executed as a unit.” Ex. 2002 ¶ 77. These macros fit Patent Owner’s definition of a “discrete” set of instructions of a module, and the broader construction outlined above wherein the functions define the software module.

Patent Owner’s similar argument that “Petitioner seems to confuse a software function with a software module” relies on an assertion that a module requires “‘a consistent API [application programmable interface].’” PO Resp. 19 (quoting Ex. 2002 ¶ 77). The recited modules, however, do not require an API.

Patent Owner also alleges that Cotte’s system does not implement a plurality of software protocols as a software application to interface and communicate with a plurality of external destinations. *Id.* at 16. Patent Owner also asserts that a fax protocol and printer driver do not constitute a plurality of protocols. *Id.* Patent Owner acknowledges that Cotte’s system “communicates with other devices,” but argues that the evidence does not show that “‘a plurality of protocols’ is in fact implemented as a software application.” *Id.* at 17.

These arguments are not persuasive. Mr. Wibbels testifies that Cotte discloses transmitting data using protocols, including printer drivers and fax protocol software. *See* Ex. 1005 ¶ 293. Mr. Weadock does not rebut this testimony persuasively. In response to the assertion that a printer driver constitutes an additional protocol to a fax protocol, Patent Owner responds that a scanner

would not have its own “printer driver that is implemented as a software application.” PO Resp. 16. Based on the claim construction, claim 1 does not preclude the location of the printer driver software from being stored in distributed manner acting with the recited software application.

Patent Owner acknowledges that a printer driver “is a discrete software program.” *Id.* The record shows that several protocols exist necessarily to communicate with different devices and their software, including a scanner, an e-mail service, a printer, a Clipboard, or a fax. *See, e.g.,* Ex. 1011, Fig. 17, col. 14, ll. 28–30; Pet. Reply 5. For example, Cotte supports this finding, by disclosing the mapping of an e-mail address and “communication protocol” for the e-mail. *See* Ex. 1011, col. 13, ll. 4–6. Cotte also discloses “any form of transmission of data to the host including transmission over a local or wide area network, satellite, packet radio, ISDN transmission, etc.” *Id.* at col. 16, ll. 20–23. Cotte discloses “prior art image compression algorithms” and “[a]ny known data compression process.” *Id.* at col. 14, ll. 56–60. Cotte discloses “parallel format transmission protocol,” *id.* at col. 14, l. 67–col. 15, l. 1, or a “serial protocol,” such as RS232, or a fiber optic link, *id.* at col. 17, l. 40–50. These different types of transmission and compression formats constitute different protocols. Petitioner points out that Patent Owner asserted in previous litigation, asserting infringement of a similar limitation in a related patent, that using ““protocols is a *requirement* . . . to communicate and interface with external devices and applications.”” Pet. Reply 5 (quoting Ex. 1022 ¶ 151, emphasis by Petitioner).

Claim 1 also recites “at least one module communicable with said at least one input, output, client, and process modules and external applications, and capable of dynamically combining the external applications with at least one of digital capturing devices and digital imaging devices.” As noted in the Claim

Construction section, the parties agree that this clause (1.4) is alternative to the preceding clause, the “at least one input module” (1.3). It follows that Cotte need not disclose both clauses to anticipate claim 1.

Nevertheless, in the alternative, Petitioner maintains that Cotte discloses the following: “A module in communication with an input module. Upon receiving a scanned image, other modules attach a scanned image to a clipboard, an email, or send it as a fax.” Pet. 43 (citing Ex. 1011, col. 10, ll. 43–53, FIG. 17; Ex. 1005 ¶ 295).

At the cited passage, Cotte discloses host software, which includes a drop down menu 250 presenting options to the user regarding what should be done with the scanned image. These menu options can be such things as “FAX this image” as symbolized by icon 253 or “Send this image as an E-mail message” as symbolized by icon 255, or “Send this image to the laser printer for printing” as symbolized by icon 257 . . . .

Ex. 1011, col. 10, ll. 43–50; *see also id.* at Fig. 17, col. 4, ll. 46–49 (describing a typical pop-up window based on software which exists on the host machine).

In other embodiments, Cotte describes performing similar processes using codes in an input stream, or using the symbols described above, using automatic processing, “without the user having to press any buttons, make any menu selections.” *Id.* at col. 11, ll. 42–43. Cotte implies that both sets of software can be used together, because the input device “includes” recognition software, and the separate host computer includes the typical pop-up menu. *Id.* at col. 11, l. 28, col. 10, ll. 44–48. The description of “without the user having to press any buttons, make any menu selections,” implies the user may make selections if the user runs out of stickers having symbols through the existing host pop-up menu. *See* col. 11, l. 44 – col. 12, l. 4, Fig. 17. In the preferred embodiment, the input device “includes symbol recognition software.” *Id.* at col. 11, l. 27. Therefore, Cotte

generally implies that the existing host computer retains its pop-up menu in some embodiments that include symbol recognition software as part of the input device.

Patent Owner also argues that Cotte does not disclose the element of “capable of dynamically combining the external applications with at least one of digital capturing devices and digital imaging devices.” PO Resp. 20–21 (emphasis omitted). One or more of Cotte’s symbols, software for creating same, the e-mail software, fax software, or word processing comprise external applications, which are capable of being combined with “at least one of digital capturing devices and digital imaging devices.” These host packages are external to the input device, for example. *See* Ex. 1001, col. 10, ll. 29–58 (disclosing sending an image as an e-mail or fax, or performing word processing on it).

Cotte’s drop down menu or symbol recognition software each constitutes “at least one module communicable with said at least one input . . . modules,” with input modules including the UART input module software, or the input module software that controls scanning functions, etc., as identified *supra*. *See* Pet. 43 (referring to other modules that attach a scanned image to an e-mail, clipboard, or fax). The menu software or recognition software is “capable of dynamically combining” the external fax application with at least digital capturing devices or digital imaging devices, such as, for example, the scanner or printer. In addition, similar to e-mail or fax, OCR or word processing each constitutes an external application relative to the input device, and those applications can be combined dynamically with “at least one of digital capturing devices and digital imaging devices” by processing data from those devices.

The host software communicates with the input device software, and includes the “appropriate software package,” including the “host FAX software,” or “E-mail software.” Ex. 1011, col. 10, l. 67, col. 12, l. 32, col. 13, ll. 35–37, 50–

54, col. 15, ll. 55–64, col. 17, ll. 51–61, col. 20, ll. 60–63. The host packages include word processing and OCR described *supra*. The input device includes a “recognition software portion.” *Id.* at col. 13, l. 13. The fax, e-mail, word processing, printing, OCR software, file storage, and other packages reasonably constitute or include “at least one input, output, client, and process modules and external applications,” with “at least one module communicable” also reading on part of the input device recognition software or the host menu software, each of which may generate commands to invoke the appropriate host software. Ex. 1011, col. 13, ll. 36–49, 14, ll. 30–34; Ex. 1005 ¶ 295. For example, the display portion of the host menu itself reasonably constitutes a client module, and OCR, word processing, or compression software, reasonably constitutes a process module.

Cotte’s input device software “invoke[s] specific types of software commonly found on user’s computers or to invoke specific ‘macros’ or predefined sequences of instructions.” Ex. 1011, col. 11, ll. 47–49. Therefore, similar to the explanation above, either the menu software, the part of the input device software that invokes one of the macros, the input software on the host that responds to the input device invoking commands, or one or more of the macros represent, “at least one module communicable with said at least one input” module. *See Dec. on Inst. 25.* Patent Owner responds by stating that the macros replace the recognition software, but it is not clear how that shows a missing limitation. *See PO Resp. 20.* Both constitute a form of symbol recognition software that may employ stickers (part of the third-party software discussed above). *See Ex. 1011, col. 11, ll. 44–66.* Patent Owner also argues that “[t]he Petition does not specify how Cotte discloses a macro or symbol recognition software that communicates with an input module, an output module, a client module, a process module, **and** external applications.” *PO Resp. 20.* This argument is not clear, but it appears to ignore the limitation “at

least one” in claim 1, i.e., “communicable with at said least one” input module and external application. As discussed in the Claim Construction section, the parties agree that “at least one” only specifies alternatives. In any event, as explained in the preceding paragraph and above, Cotte discloses module software such as e-mail, fax, UART control, printer drivers, OCR, word processing, and compression algorithms, thereby disclosing one or more of the claimed modules.

Patent Owner argues that Petitioner’s showing improperly combines disparate software elements as a “single software application” and covers “firmware.” *See* PO Resp. 19, 18–19. This argument is not persuasive because it assumes an overly narrow construction of “software application.”

Patent Owner contends that Cotte requires that a command be manually entered, so there is no disclosure of “dynamically combining.” *See* PO Resp. 21. This argument is not persuasive. Cotte’s system automatically combines actions through the symbol recognition software or menu options. Claim 1 does not specify when any dynamic action starts, and Patent Owner does not clearly demarcate a distinction based on the claim or even the disclosure (assuming arguendo a limiting disclosure). *See id.* at 20–21. Pressing the button in Cotte causes a dynamic action because after it is pressed, the system responds with an e-mail, fax, etc. In the ’381 Patent, a user similarly employs a “GO” command, according to claim 5, for example.

Based on the foregoing discussion and record, Petitioner shows by a preponderance of evidence that Cotte anticipates claim 1.

### Claim 2

Patent Owner argues that “Cotte fails to disclose one or more of the external devices and applications include a printer, a facsimile, **and a scanner**.” PO Resp. 22. Patent Owner’s argument does not explain clearly why the printer, facsimile,

and scanner of Cotte, identified above, and in the Institution Decision, do not anticipate claim 2.

Claim 1 requires the system to be capable of sending one or more of electronic images, documents, or graphics to “external destinations.” These “external destinations” include “the one or more of the external devices and applications” referenced in claim 2. However, Patent Owner does not maintain that Cotte’s system must send images, documents, or graphics *to a scanner* at one of such destinations to anticipate claim 1. Patent Owner does not contend specifically that the ’381 Specification provides support for sending electronic images, documents, or graphics, from the system to a scanner. Rather, during oral argument, Patent Owner raised an untimely new argument, contending that a scanner and printer are part of the same “multifunctional peripheral” device, and that claim 2 requires sending an electronic document to such a multifunctional device. That argument, presented for the first time at the oral hearing, is waived. *Compare* Tr. 39:10–20, with PO Resp. 22.

Even if the argument is not waived, claim 2 does not explicitly require a scanner and printer to be at a single “external destination[].” Claim 2 refers to an “external destination,” in claim 1, but not a single “external destination.” Claim 1 recites “transmitting . . . to a *plurality* of external destinations including *one or more* of external devices and applications.” Each one of the plurality may include one or more external devices. Claim 2 requires “one or more of the external devices” to include “a printer, a facsimile, and a printer.” Hence, one external device may be a printer, another may be a facsimile, and another may be a scanner. Claim 1 requires transmitting to a plurality (e.g., two) of the devices, for example, a printer and a facsimile. Claim 2 does not require the capability to transmit to all the external devices, including the one that is a scanner. Therefore, claim 2 reads

on Cotte’s system, because Cotte’s system has the capability to transmit to at least two of three external devices, a printer, a facsimile, and a scanner, as claim 1 requires, and one or more of the external devices include a printer, a facsimile, and a scanner, as claim 2 requires.

Based on the foregoing discussion and record, Petitioner shows by a preponderance of evidence that Cotte anticipates claim 2.

Claim 5

Claim 5 recites an interface that enables copying images between physical devices, applications, and the Internet using a single “GO” operation. Petitioner generally relies on Cotte’s drop down menu, which provides a list of options, as explained above in connection with claim 1. *See* Pet. 44. Patent Owner argues that Cotte does not disclose transfers over an Internet, because Cotte discloses RS232 communications. PO Resp. 23. Patent Owner also argues that Cotte’s “menu is directed to images that have ***already been scanned***,” so it does not disclose “a single ‘GO’ operation.” *Id.*

Patent Owner’s assertion of a lack of Internet capability is not persuasive. Cotte discloses “any form of transmission . . . over a local or wide area network, satellite, packet radio, ISDN transmission, etc.” *See* Ex. 1011, col. 16, ll. 20–23. Mr. Wibbels supports Petitioner, declaring that “sending an email message would include use of either a local area network or the Internet.” Ex. 1005 ¶ 291. Mr. Weadock does not rebut this, but instead, states that in the 1992 timeframe, the Internet was not well-known. Ex. 2002 ¶ 72. Petitioner points out that 1992 is not the relevant timeframe. *See* Pet. Reply 6. Petitioner’s point is persuasive, based on the earliest possible effective filing date for the ’381 Patent of November 13, 1998. Therefore, skilled artisans would have recognized that Cotte discloses the transfer of images over the Internet at the time of the invention.

Patent Owner’s argument that a single “GO” operation does not apply to an image that has “already been scanned” also is not persuasive. Patent Owner explains that “copying” cannot occur because scanning occurred first. *See* PO Resp. 23. Contrary to the argument, claim 5 requires “copying images between physical devices, applications, and the Internet.” It is not clear what “copying . . . between . . . the Internet” means. In any event, claim 5 does not preclude “copying images between” a scanned image at a scanner and another device. In other words, “copying . . . between” as set forth in claim 5, reasonably means repeating or transmitting electronic image data. Cotte discloses automatically copying a scanned image or document to any software package, or internal or external storage devices, using a pop-up menu. *See* Ex. 1011, col. 18, ll. 54–56, Fig. 17.

Alternatively, as explained in the Institution Decision, “Figure 22 similarly discloses a copy button 310. Pressing the button causes the system to scan the image and send it to a printer for copying.” Dec. on Inst. 26 (citing Ex. 1011, col. 19, ll. 42–48). Therefore, Cotte also discloses copying images and sending them to a laser printer by “pressing copy button 310” (i.e., a single “GO” operation) before the scanner scans the images. *See* Ex. 1011, col. 19, ll. 42, 36–55. Patent Owner does not challenge this finding. Based on the foregoing discussion and record, Petitioner shows by a preponderance of evidence that Cotte anticipates claim 5.

### Claim 7

Claim 7 depends from claim 1 and recites “wherein the software application comprises at least one output module managing the data output from the computer data management system,” as set forth in claim 1. The Institution Decision notes Petitioner’s citation to Cotte’s blocks 328, 326 in Figure 23 as representing the claimed output module, as follows: “Cotte’s software that manages data,” and block 344, which checks scripts, in Figure 24. Dec. on Inst. 27–28 (citing Ex.

1011, col. 8, ll. 38–52, col. 10, ll. 49–50, col. 18, ll. 52–55). Block 328 (“SEND IMAGE DATA TO LASER PRINTER”) is part of “a flow chart of processing by input device software resident in both the paper input device and the host to implement a photocopy option.” *Id.* at col. 5, ll. 3–6. Block 344 also represents part of a “flow chart of the processing” that employs “HOST RESIDENT SOFTWARE.” *See id.* at col. 5, l. 8, Fig. 24.

Patent Owner argues that “it is possible for the printer [of Cotte] to be hardwired or to have firmware,” so that it does not constitute “at least one output [software] module,” as set forth in claim 1. PO Resp. 24. Patent Owner’s argument about possible printer hardware in Cotte fails to address the cited software teachings. Further, Patent Owner acknowledges that a printer driver “is a discrete software program.” *Id.* at 16.

Patent Owner also asserts that Cotte does not disclose a “modular software application,” *id.* at 24, and makes a similar argument about Cotte’s alleged failure to disclose “a discrete ‘process module,’” *id.* at 25. Patent Owner also argues that Cotte does not disclose a “single software application,” and cites “Microsoft Word,” as an example thereof. *Id.* at 19. Patent Owner makes a similar argument that the claimed process module requires a discrete module that Cotte does not disclose. *See* PO Resp. 25 (“assuming, for the sake of argument” that converting grayscale pixels satisfies the process module function).

These arguments rely on overly narrow claim constructions that the record does not support. Claim 7 does not recite or require the modules to be “discrete.” The record shows that Cotte’s system performs the claimed output or process functions using software. It follows that the software code in Cotte that produces the function, under a broadest reasonable claim construction, constitutes a software application that comprises a module for that function.

Claim 7 also recites “at least one client module” presenting the paper or electronic paper data and “information related to at least one of the input and output functions.” Claim 7 requires the client module to present the electronic paper data, and information related to at least one of the input and output functions. Petitioner cites Cotte’s pop-up displays, which include a display of the incoming electronic paper data, as reading on these client modules. Pet. 45 (citing Ex. 1011, col. 18, ll. 50–55, col. 16, ll. 60–66).

Petitioner also cites Figure 17 of Cotte (entitled “Incoming Pages”). *See* Pet. Reply 12. Figure 17 displays a pop-up menu showing different options for incoming pages. *See* Ex. 1011, col. 16, ll. 60–66, col. 18, ll. 50–55. Displaying the pages constitutes presenting paper and electronic paper data, because the data reveals relative gray scale data values or document types, etc., while portraying written output options for archiving, photocopying, mailing, and faxing, constitutes providing the requisite input and output function information. *See* Ex. 1011, col. 17, ll. 5–10, Fig. 17.

Patent Owner also argues that Cotte does not disclose a client module presenting data “as it is being copied,” as recited in claim 7. According to Patent Owner, Cotte’s pop-up window does not anticipate claim 7, because Cotte’s host may display the document after it is copied. *See* PO Resp. 25–26. The argument fails to address Figure 17 of Cotte, which includes pop-up windows with the title “Incoming Pages,” shows pages under the title, and shows function buttons listed as “Photocopy,” “Fax,” and “Mail,” among others. Cotte states that “incoming data is also displayed in a pop-up window.” Ex. 1011, col. 18, ll. 52–53.

During oral argument, Patent Owner argued that claim 7 requires the top of a document to be displayed while the bottom of the document is being copied, and also indicated that if fifty pages are being scanned, then some of the first pages

would appear during the scanning of the other pages. Tr. 42:22–43:2, 44:10–16. Patent Owner does not point the Board to support for this interpretation. In any event, the argument recognizes that an inherent delay exists between presenting and copying data in the claimed system. In Cotte’s system, a user can change the gray scale after viewing that document on the computer screen, in order to obtain another view of another copy of the document in the new selected gray scale. This also implies, in line with the “Incoming Pages” title, that a document image is displayed at least while it is being copied, or copied a subsequent time. *See* Ex. 1011, col. 16, ll. 57–66.

Based on the foregoing discussion and record, Petitioner shows by a preponderance of evidence that Cotte anticipates claim 7.

#### Claim 8

Patent Owner argues that Cotte does not “disclose embedding any software as an embedded service.” PO Resp. 26. Patent Owner points to VC as an embedded service in a third-party application. ““For example, rather than have VC as a separate application, a special button can be placed on a third-party application that launches VC in the background as illustrated in FIG. 33.”” *Id.* at 27 (quoting Ex. 1001, col. 73, ll. 43–49). Patent Owner contends that “Cotte’s pop-up window is simply a user interface that is not an embedded service.” *Id.* In the Institution Decision, we initially determined that “the computer management system software is integrated with an external application and external device and application by running part of it on the host and part of it on the external scanning device. *See* Ex. 1011, Fig. 11A. Petitioner sufficiently shows that Cotte anticipates claim 8.” Dec. on Inst. 29.

Patent Owner does not rebut the findings. Claim 8 does not require an embedded service. Claim 8 recites two alternatives, “wherein the one or more of

the external devices and applications integrates the computer data manage system into an external application via *one of* running the computer data management system, [1] *as an external service* and [2] embedding the computer data management system.” Patent Owner does not dispute that Cotte’s computer data management system is integrated with an external application, and runs as an external service, as set forth in the Institution Decision.

Moreover, as discussed in the Claim Construction section above, in the Institution Decision, and during the oral hearing, it is not clear how the memory and processor hardware of the computer data management system, as recited in claim 1, can be “embedded” as recited in claim 8. *See* Tr. 37:22–25; Dec. on Inst. 20. Patent Owner acknowledged during the oral argument that the hardware recited in claim 1 must be read out of claim 8 for “embedded” to have a clear meaning. *See* Tr. 37:22–25 (MR. GANTI: “Right, I think one of ordinary skill in the art would know that that’s not a probable interpretation and it would be impossible to understand a system that has hardware and embed that into a system.”). It is not clear how the hardware and software can be “integrated into an external application,” unless the “external application” includes software and hardware. Cotte’s system includes integrated software and hardware, reasonably constituting an external application, because it runs partly on the host and the scanning input device.

Based on the foregoing discussion and record, Petitioner shows by a preponderance of evidence that Cotte anticipates claim 8.

#### Claims 9–11

These claims depend from claim 7, which depends from claim 1, and further limit “the server module.” As discussed in the Claim Construction section, and in the Institution Decision, we determined that “the server module” lacks clear

antecedent basis and implicitly refers back to “at least one module communicable” in claim 1, under one claim interpretation. As also discussed in the Claim Construction section, claim 1 does not require “at least one module communicable,” because it recites “at least one of” “at least one input module” and “at least one module communicable.” As noted, Patent Owner agrees that both modules (*see supra* 1.3 and 1.4 of claim 1) are not required to satisfy claim 1, from which claims 7–9 depend. *See* PO Resp. 5 (“Patent Owner generally will not take issue with the Board except in the follow[ing] instances.”); Tr. 31:6–9; Ex. 2002 ¶ 17.

Patent Owner’s arguments regarding claims 9 and 10 are directed to functions recited with respect to the server module. PO Resp. 27–31. Patent Owner does not argue claim 11 separately. Under the broadest reasonable claim construction, claims 9–11 fail to limit claims 1 and 7, because “the server module,” which refers under this construction to the “at least one module communicable,” is claimed in the alternative to “at least one input module,” in claim 1. Therefore, the recited dependent functions essentially describe alternative features that claims 9–11 do not require necessarily.

Based on the foregoing discussion and record, Petitioner shows by a preponderance of evidence that Cotte anticipates claims 9–11.

#### Claims 12 and 15

Claims 12 and 15 recite limitations that are similar to those addressed above in connection with claim 5. Patent Owner argues that Cotte does not disclose a “single function copy operation linking devices, applications and the internet” as recited in claims 12 and 15. PO Resp. 33 (emphasis omitted). Patent Owner argues that “because [Cotte’s] menu is directed to images that have *already been*

*scanned*, the menu cannot be intended for ‘copying.’” *Id.* These arguments are not persuasive.

Patent Owner does not explain how the recited “single function copy operation linking devices,” as set forth in claims 12 and 15, precludes a menu directed to images that already have been scanned or requires something more. Cotte’s menu provides for copying scanned images. As noted, a similar limitation is addressed above in connection with claim 5. For the reasons discussed above, Cotte discloses the copying as set forth in claims 5, 12, and 15. Similar to the discussion in connection with claim 5, claims 12 and 15 do not preclude electronic copying after scanning, and even if they do, Cotte discloses pressing a button to copy and send paper before scanning it. The demand letter, outlined above, asserts that many familiar systems that send scanned images to an e-mail or other software systems infringe claims 12 and 15. Cotte’s system performs scanning and sending, in the same manner as the allegedly infringing systems described in the demand letter. The Petition and Institution Decision outline how the claims read on Cotte’s system. *See* Pet. 49–51; Dec. on Inst. 32–33 (discussing the Petition). During the oral hearing, Patent Owner contended that “[t]o the extent the Board will take that demand letter into account, it should only be done so with respect to . . . claims 12 and 15.” Tr. 21:10–16.

Regarding the Internet limitation, Patent Owner maintains that Cotte copies an image from a scanner via a single serial port. PO Resp. 33 (citing Ex. 2002 ¶ 78). According to the discussion of claim 5, the record shows that skilled artisans at the time of the invention would have recognized that sending e-mails over wide area networks, or using satellite, packet radio, and ISDN transmission, as Cotte discloses, at least implies the Internet.

Based on the foregoing discussion and record, Petitioner shows by a preponderance of evidence that Cotte anticipates claims 12 and 15.

Claim 13

Claim 13 recites “a list of available module means.” Citing Mr. Weadock’s declaration, Patent Owner argues that Cotte does not disclose a list or a list that is read on startup. PO Resp. 30. During the oral hearing, Petitioner was asked “what’s the name [in the list] of the process module and server module [in the prior art]?” *See* Tr. 52:1–2. Petitioner conceded “[t]here is no specific name.” *Id.* at 52:23–53:5.

Petitioner does not show that Cotte discloses the claimed list as required by claim 13. In its Reply, Petitioner contends that “[c]laim 13 . . . only references other modules in a manner that lacks antecedent basis.” Pet. Reply 7. Claim 13 references “said . . . modules,” however, Petitioner’s explanation falls short of explaining how a list of modules cannot be afforded patentable weight. In its Petition, Petitioner asserts that Cotte discloses a list of menu options “used at startup of a copier.” Pet. 46 (citing Ex. 1011, col. 15, ll. 36–42, col. 18, ll. 43–51, col. 22, ll. 53–61, col. 23, ll. 19–25; Ex. 1005 ¶ 308). Nevertheless, Petitioner does not point out the specific list or show it is read on start-up. For example, the menu cited at column 15, lines 36–42, appears to be generated in response to an interrupt from the input device. *See* Ex. 1011, col. 15, ll. 30–32. Mr. Wibbels appears to rely on inherency “in a Windows implementation,” Ex. 1005 ¶ 308, but Petitioner does not provide a citation or persuasive evidence that shows that Cotte employs a Windows implementation. *See* PO Resp. 31.

On this record, Petitioner does not show how Cotte discloses the claimed list of modules, or the list read on start-up. Petitioner thus does not show by a preponderance of evidence that Cotte anticipates claim 13.

Claim 14

Claim 14 is similar in scope to claim 1. Patent Owner groups its arguments regarding claims 1 and 14 together. *See* PO Resp. 12, 18, 20–21. Patent Owner’s arguments are not persuasive, as explained above in connection with claim 1.

Based on the foregoing discussion and record, Petitioner shows by a preponderance of evidence that Cotte anticipates claim 14.

2. SJ5

Based on the finding of anticipation by Cotte of claims 1–12, 14, and 15, it is not necessary to reach the ground of anticipation of these claims by SJ5. On the other hand, it is necessary to reach the ground of anticipation of claim 13 by SJ5.

Patent Owner makes a number of arguments regarding claim 13. PO Resp. 44–47. Petitioner does not respond to the arguments. For example, Patent Owner asserts that SJ5 does not disclose “maintain a list of available module means for maintaining a registry containing a list of said input, output, and process modules.” PO Resp. 45 (emphasis omitted). Patent Owner also maintains that SJ5 does not disclose the claim phrase “maintain currently active modules means for maintaining said input, output, and process modules currently being used.” *Id.* at 46 (emphasis omitted). Patent Owner also contends that a list of destinations is not the same thing as a “registry,” and that SJ5 fails to show a registration process or even suggest that any software module is registered. *Id.*

Patent Owner also maintains that “SJ5 does not anticipate a server module that includes ‘maintain complete document information means for maintaining information regarding a current file being copied, and saving the information in a document template file,’ as recited by claim[] . . . 13.” *Id.* at 47 (emphasis omitted).

As noted above, at the oral hearing, Petitioner was unable to specify the relevant names for the process or server modules appearing in a list or lists recited. *See* Tr. 52–53. The Petition generally refers to the analysis of claims 1, 2, and 7, to address the limitations in claim 13. *See* Pet. 13. However, those claims recite different elements. Petitioner fails, among other things, to specify the required lists of modules. On this record, Petitioner does not specify clearly how SJ5 discloses all the recited and argued elements. Based on the foregoing discussion, Petitioner does not show by a preponderance of evidence that SJ5 anticipates claim 13.

### III. CONCLUSION

Patent Owner does not present persuasive separate arguments for claims 3, 4, and 6. Patent Owner’s remaining arguments track arguments addressed above and are not persuasive. Considering the record, including Petitioner’s showing in the Petition and otherwise, and Patent Owner’s arguments and evidence, Petitioner has demonstrated by a preponderance of evidence that Cotte anticipates claims 1–12, 14, and 15. Petitioner has not demonstrated by a preponderance of evidence that claim 13 is unpatentable.

### IV. ORDER

In consideration of the foregoing, it is hereby  
ORDERED that claims 1–12, 14, and 15 of U.S. Patent No. 6,771,381 B1  
are unpatentable;

FURTHER ORDERED that, because this is a final decision, 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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