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Paper 50
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

EBAY INC.,
Petitioner,

v.

MONEYCAT LTD.,
Patent Owner.

Case CBM2014-00091
Patent 8,051,011 B2

Before BRYAN F. MOORE, MIRIAM L. QUINN, and MINN CHUNG, *Administrative Patent Judges.*

CHUNG, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

I. BACKGROUND

Petitioner eBay Inc. ("Petitioner") filed a Petition (Paper 1, "Pet.") requesting a covered business method patent review of claims 1, 2, 4–8, 10, and 11 (the "challenged claims") of U.S. Patent No. 8,051,011 B2 (Ex. 1001[1], "the '011 patent") pursuant to Section 18(a) of the Leahy-Smith America Invents Act ("AIA").[2] MoneyCat Ltd. ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp."). Taking into account Patent Owner's preliminary response, the Board determined that the information presented in the Petition demonstrated it was more likely than not that claims 1, 2, 4–8, 10, and 11 are unpatentable. Pursuant to 35 U.S.C. § 324, the Board instituted a covered business method patent review on September 24, 2014 as to 1, 2, 4–8, 10, and 11 of the '011 patent. Paper 12 ("Dec. to Inst."). Subsequent to institution, Patent Owner filed a Request for Rehearing (Paper 14, "Req. Reh'g") seeking reversal of the Board's Decision to Institute, which was denied (Paper 21, "Reh'g Dec."). Thereafter, Patent Owner filed a Patent Owner's Response (Paper 22, "PO Resp."), and Petitioner filed a Reply (Paper 30, "Pet. Reply").

Subsequently, Patent Owner filed a Motion to Exclude (Paper 41, "PO Mot. to Exclude") certain prior-art evidence and Declarations of Clifford Neuman in their entirety. Petitioner filed an Opposition (Paper 43, "Pet. Exclude Opp."), and Patent Owner filed a Reply (Paper 46, "PO Exclude

[1] All citations to Petitioner's Exhibits in this Decision refer to corrected Exhibits filed in response to the Notice of Filing Date Accorded to Petition. *See* Paper 4.
[2] Pub. L. 112-29, 125 Stat. 284, 329 (2011).

Reply"). Patent Owner also filed a Motion for Observation (Paper 40, "Obs.") on certain cross-examination testimony of B. Clifford Neuman, Ph.D. Petitioner filed a Response (Paper 45, "Obs. Resp.").

A combined oral hearing in this proceeding and related Cases CBM2014-00092 and CBM2014-00093 was held on June 5, 2015. A transcript of the hearing is included in the record as Paper 49 ("Tr.").

The Board has jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 328(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1, 2, 4–8, 10, and 11 of the '011 patent are unpatentable.

A. Related Proceedings

Petitioner indicates that the '011 patent has been asserted against PayPal Inc., a privy of Petitioner, in the following patent infringement case: *MoneyCat, Ltd. v. PayPal, Inc.*, No. 1:13-cv-01358 (D. Del. filed July 30, 2013). *See* Pet. 4, 11; Paper 8. U.S. Patent Nos. 7,590,602 B1 ("the '602 patent") and 8,195,578 B2 ("the '578 patent") are also the subject of instituted trial proceedings *eBay Inc. v. MoneyCat Ltd.*, Cases CBM2014-00092 and CBM2014-00093, respectively. The '011 patent and the '578 patent issued from respectively a divisional and a continuation application of the application that resulted in the '602 patent.

B. The '011 Patent

The '011 patent describes a method and system for electronic currency transactions. *See* Ex. 1001, Abstract. The subject matter claimed

in the ’011 patent relates to an approach to electronic currency transaction that utilizes a server in the middle, connected to the parties to the transaction over a network. *See id.* at Abstract, col. 5, ll. 64–67, col. 15, l. 60–col. 16, l. 37, Figure 7. The claimed invention purports to “eliminat[e] the problem of electronic theft of electronic currency, in systems employing an isolation server to effect currency transactions.” *Id.* at col. 5, ll. 65–67. According to the ’011 patent, an “isolation server” is “isolatedly connected” to the users and manages electronic currency transactions between them. *See id*. at col. 9, ll. 12–19.

Figures 6 and 7 of the ’011 patent are shown below:

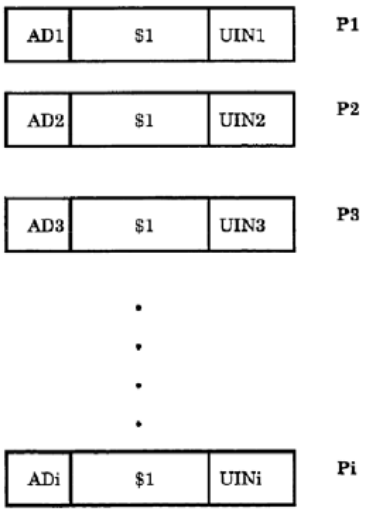

Fig. 6

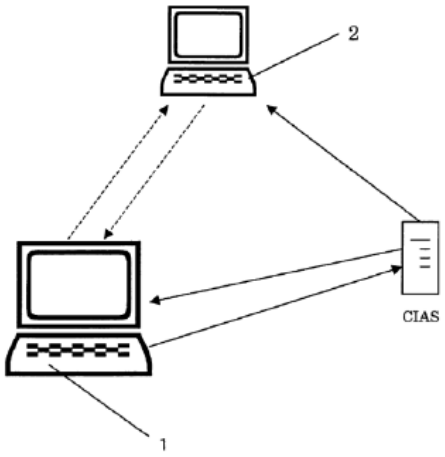

Fig. 7

Figure 6 illustrates a sum of electronic money, and Figure 7 schematically represents an electronic currency transaction claimed in the ’011 patent. *See id.* at col. 12, ll. 60–64.

As depicted in Figure 6, each data packet P1, P2, . . . Pi corresponds to an amount of electronic money. *See id.* at col. 14, ll. 33–39. Each packet

Pi contains three components: a unique identifier UINi, which identifies packet Pi among all such data packets issued by a Currency Issuing Authority ("CIA"); the monetary value associated with packet Pi; and authentication data ADi to confirm that packet Pi was generated by the CIA. *See id.* at col. 13, ll. 17–22, col. 14, ll. 49–54, Fig. 6.

As illustrated in Figure 7, user 1 interacts with provider 2 via the Internet (broken arrows) to effect a payment of electronic currency to provider 2. *See id.* at col. 15, ll. 60–col. 16, l. 1. User 1 has data packets Pi stored in an active data packet area of a data storage area accessible by a CIA server ("CIAS"). *See id.* at col. 14, l. 57– col. 15, l. 26. When user 1 and provider 2 decide upon a transaction, user 1 instructs the CIAS to effect payment to provider 2 of the required sum on behalf of user 1. *See id.* at col. 15, ll. 62–col. 16, 1. 1. In response, the CIAS accesses the active data packet area of user 1 to copy to a local memory of the CIA one or more data packets Pi corresponding to the indicated sum, and delete or deactivate the packets Pi from the active data packet area. *See id.* at col. 16, ll. 10–16. The CIAS verifies the authentication data ADi of the packets Pi, and checks the identifiers UINi of the packets Pi against a database of previous transactions, to verify the packets Pi have not previously been used to effect payment. *See id.* at col. 16, ll. 24–28. If the CIAS verification is successful, the CIAS invalidates the packets Pi provided by user 1, and issues a new set of packets Pi for the same value to provider 2. *See id.* at col. 16, ll. 28–37.

Admitted Prior Art NetCash System

In a section titled "BACKGROUND OF THE INVENTION," the '011 patent discusses several systems for carrying out electronic payment transactions that were known prior to the filing of the '011 patent. *See id.* at col. 1, ll. 22–27, col. 1, l. 55–col. 4, l. 39. One such prior art system is "NetCash." *Id.* at col. 2, l. 47. Petitioner relies on the NetCash admitted prior art as a basis for asserting two grounds of unpatentability. *See, e.g.*, Pet. 13–15, 34, 46. In our discussions below, consistent with the Decision to Institute (Dec. to Inst. 4), we will refer to the disclosure of admitted prior art at column 2, line 47 through column 3, line 39 and Figure 2 of the '011 patent as "the APA NetCash System."

C. Illustrative Claim

Of the instituted claims, claims 1 and 7 are the independent claims. All other challenged claims depend from claims 1 or 7. Claim 1 is illustrative of the challenged claims and is reproduced below:

> 1. A system for effecting transactions over a network, comprising
>
> at least one isolation server and
>
> a first communication device, associated with a first user, connected over the network for communication purposes;
>
> a second communication device, associated with a second user, connected over the network for communication purposes;
>
> the first communication device and the second communication device are isolatedly connected to one another through said isolation server for the purpose of indirectly exchanging electronic money from the first user to the second

user, wherein the first user is provided with money-representing data packets in a first active data packet area located in a first storage area associated with said first user, wherein the money-representing data packets are issued by a Currency Issuing Authority (CIA),

a Currency Issuing Authority trusted server (CIAS) programmed to receive an instruction from the first user to pay the second user a first monetary sum and in response to the instruction the CIAS is programmed to (i) delete one or more money-representing data packets in the first active data packets area or (ii) mark one or more money-representing data packets in the first active data packets area as spent; and

a data packets database (DPD) associated with the first user comprising money-representing data packets;

said CIAS collectively comprising:

a) access to the first user's DPD containing money-representing data packets; and

b) software to generate new money-representing data packets and deliver to the second user the new money-representing data packets having a monetary value equal to or less than the first monetary sum.

D. Instituted Grounds of Unpatentability

The Board instituted the instant covered business method patent review based on the following grounds of unpatentability:

Claims Challenged	Statutory Basis	Ground
1, 2, 4–8, 10, and 11	§ 103(a)	Teramura[3] and the APA NetCash System

[3] Ex. 1007, CA 2,221,399 (June 11, 2002).

Claims Challenged	Statutory Basis	Ground
1, 2, 4–8, 10, and 11	§ 103(a)	Bernstein[4] and the APA NetCash System

II. ANALYSIS

A. Claim Construction

In a covered business method patent review, claim terms are given their broadest reasonable interpretation in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b); *see also In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1276–79 (Fed. Cir. 2015) (In considering the broadest reasonable interpretation standard for post-grant review proceedings, the Federal Circuit determined that "Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA," and "the standard was properly adopted by PTO regulation."), *reh'g en banc denied*, 793 F.3d 1297 (Fed. Cir. 2015). Under the broadest reasonable interpretation standard, and absent any special definitions, claims 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).

[4] Ex. 1006, US 5,915,023 (June 22, 1999).

"Currency Issuing Authority Trusted Server"

The term "Currency Issuing Authority trusted server" is included in all claims of the '011 patent. *See* Pet. 12. Petitioner proposes that the term "should be interpreted as a server trusted to make transactions using data packets issued from a particular CIA." *Id.* Patent Owner had argued that Petitioner's proposal does not comport with the broadest reasonable construction standard. Prelim. Resp. 26. In the Decision to Institute, we adopted Patent Owner's construction of the term "Currency Issuing Authority trusted server" to mean a "server that is trusted by the Currency Issuing Authority" under the broadest reasonable interpretation standard. Dec. to Inst. 7 (citing Ex. 1001, col. 7, ll. 5–13, col. 12, ll. 2–8). In the Patent Owner's Response and the Petitioner's Reply, the parties do not dispute the construction of this term or any other terms. We see no reason, therefore, to revise the claim construction adopted in our Decision to Institute. Accordingly, we construe the term "Currency Issuing Authority trusted server" to mean "a server that is trusted by the Currency Issuing Authority."

We see no need to construe expressly any other claim terms for purposes of this Decision. *See, e.g.*, *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (only those terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy).

B. Whether the '011 Patent is a Covered Business Method Patent

The Board determined, in the Decision to Institute, that the '011 patent is a covered business method patent as defined in Section 18(d)(1) of the AIA and 37 C.F.R. § 42.301(a). Dec. to Inst. 7–10. As discussed in the Decision to Institute, the definition of "covered business method patent" in Section 18(d)(1) of the AIA excludes patents for "technological inventions." Patent Owner asserts that the '011 patent is not a covered business method patent because it is a patent for a "technological invention." PO Resp. 78–80.

In determining whether a patent is for a technological invention, we consider "whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution." 37 C.F.R. § 42.301(b). The following claim drafting techniques, for example, typically do not render a patent a "technological invention":

> (a) Mere recitation of known technologies, such as computer hardware, communication or computer networks, software, memory, computer-readable storage medium, scanners, display devices or databases, or specialized machines, such as an ATM or point of sale device.
>
> (b) Reciting the use of known prior art technology to accomplish a process or method, even if that process or method is novel and non-obvious.
>
> (c) Combining prior art structures to achieve the normal, expected, or predictable result of that combination.

Office Patent Trial Practice Guide, 77 Fed. Reg. 48,756, 48,763–64 (Aug. 14, 2012).

Petitioner asserts, citing the legislative history of the AIA, that "[a]bstract business concepts and their implementation, whether in computers or otherwise," are not included in the definition of "technological inventions," and, therefore, even if the '011 patent's brokering system were novel, this is not a "technological" feature. Pet. 7–8 (internal quotation marks omitted) (citing Ex. 1004, 634 (quoting 157 Cong. Rec. S1364, S1379 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl))). Petitioner further asserts that the '011 patent claims do not solve a technical problem using a technical solution because "introducing an age-old brokering concept to network transactions is neither technological nor novel." *Id.* at 8. Petitioner argues that the problems identified by the inventor of the '011 patent were that "prior art systems required direct interaction between the seller and buyer . . . and that prior art systems involved complicated encryption key agreement processes between the buyer and the seller." *Id.* (citing Ex. 1001, col. 4, ll. 13–16). Petitioner asserts that the solution described in the '011 patent is to restructure the sequence of events in the transaction so that the electronic currency of the prior art is exchanged indirectly through the CIAS, rather than directly between the buyer and seller, eliminating the need for the buyer and seller to interact directly or exchange encryption keys. *Id.* at 8–9. Petitioner asserts that this rearrangement simply mirrors a traditional brokered transaction and that adopting a traditional brokerage format is not a technical solution. *Id.* at 9. Petitioner also discusses each limitation of claim 1 and argues each limitation was known in the prior art, providing detailed explanations and citations to the known prior art discussed in the '011 patent. *Id.* at 9–11.

Patent Owner contends that the '011 patent claims include a novel and unobvious technical feature—that is, upon receiving payment instructions from a first user, a CIAS issues new data packets to a second user and deletes the data packets associated with the first user. *See* PO Resp. 78–79. Patent Owner argues this is a novel and unobvious technical feature because it solves security problems. *See id.* at 79. Patent Owner further contends that the technical problem addressed by the '011 patent is "to cause value associated with electronic data (data packets) of a first user to be transferred to a second user in a convenient, reliable and secure manner, while minimizing theft and forgery." *Id.* Patent Owner asserts that the technical solution to this problem is "to provide an *intermediary isolation server* between the first user (the sender) and the second user (the recipient)," which "enables the transfer of value to take effect, without physically transferring the first user's data packets to the second user and without requiring the use of complex encryption techniques." *Id.* (emphasis added).

We are persuaded by Petitioner's argument that the subject matter of claim 1 does not recite a technological feature that is novel and unobvious over the prior art. In the Decision to Institute, the Board analyzed, taking into account Petitioner's and Patent Owner's arguments, the steps recited in claim 1 relating to the operation of the CIAS and concluded that, even if the claimed process were novel and non-obvious, it does not render the '011 patent a "technological invention." Dec. to Inst. 9–10 (citing 77 Fed. Reg. at 48,764 (claim drafting technique "(b)")). We see nothing in Patent Owner's arguments in the Patent Owner's Response that would justify altering this conclusion. Patent Owner contends that the Board did not address

previously the claimed feature that "the data packets ***of the first user*** are accessed and deactivated and never reach the second user [and] the second user receives new data packets." PO Resp. 2–3. Similar to the discussion in the Decision to Institute (*see* Dec. to Inst. 9–10), accessing, deleting, and issuing data packets are known prior art methods of managing and manipulating digital data (*see*, *e.g.*, Ex. 1001, col. 2, l. 47–col. 4, l. 6). Thus, even if the claimed method, as a whole, is novel and non-obvious, reciting the use of known prior art technology to accomplish that method does not render the '011 patent a "technological invention" under AIA § 18(d)(1) and 37 C.F.R. § 42.301. *See* 77 Fed. Reg. at 48,763–64.

We are also persuaded by Petitioner's explanation that the claimed subject matter does not solve a technical problem using a technical solution. We note that Petitioner and Patent Owner appear to agree that the solution of the '011 patent is to provide an "intermediary server" between the first user and the second user to restructure the transaction in the prior art so that electronic currency is exchanged indirectly through the intermediary server, i.e., CIAS, rather than directly between the users. We agree with Petitioner that this rearrangement is not a "technical solution" because it adopts a traditional brokered transaction approach and applies it to the electronic currency transaction of the prior art.

Accordingly, we are persuaded that Petitioner has met its burden of demonstrating that the '011 patent is a covered business method patent under AIA § 18(d)(1) and is eligible for review under the transitional covered business method patent program.

C. Whether a Covered Business Method Patent Review Can Be Based on the APA NetCash System

Patent Owner asserts that "admitted prior art," as a category, does not fall within AIA § 18(a)(1)(C) and, therefore, cannot form the basis of an unpatentability ground in this proceeding. *See* PO Resp. 35–36, Prelim. Resp. 18–19, Req. Reh'g 10–13. For the reasons described below, we conclude that the Petitioner's challenges in this proceeding can be based properly on the APA NetCash System under AIA § 18(a)(1)(C)(i).

Section 18(a)(1)(C) of the AIA provides "[a] petitioner in a transitional proceeding who challenges the validity of 1 or more claims in a covered business method patent on a ground raised under [the pre-AIA version of] section 102 or 103 of title 35, United States Code . . . *may support such ground only on the basis of*—(i) *prior art that is described by section 102(a) of such title* . . . " (emphasis added). The pre-AIA version of 35 U.S.C. § 102(a) states "[a] person shall be entitled to a patent unless—(a) the invention was *known or used by others in this country*, or patented or *described in a printed publication in this or a foreign country*, before the invention thereof by the applicant for patent" (emphases added). The '011 patent states that the APA NetCash System is a "*prior art system . . . described*" in two articles by Gennady Medvinsky and B. Clifford Neuman published in 1993 and "*developed* at the Information Sciences Institute of the University of Southern California." Ex. 1001, col. 2, ll. 47–56 (emphases added). In the Decision to Institute and the Decision on Request for Rehearing, the Board determined preliminarily that those statements constitute an admission that the APA NetCash System described in the '011

patent is a prior art system under § 102(a) as known by others in the United States and as described in a printed publication. Dec. to Inst. 13, Reh'g Dec. 4.

Patent Owner asserts that the portion of the '011 patent cited by the Board is "at most an admission that the cited articles by Medvinsky *et al.* are § 102(a) references and that NetCash is a 'framework' for electronic cash developed at the University of Southern California." PO Resp. 36. Patent Owner further argues that the Petition is not based on the Medvinsky publications or the "framework," but, rather, is based on the description of the APA NetCash System in the '011 patent, "which can only be considered non-102 'admitted prior art' at best." *Id.*

Patent Owner does not describe the admissions made in the '011 patent accurately. The '011 patent's admission described in the Board's decisions includes two related, but independent components: (1) an admission regarding the prior art status of the APA NetCash System—i.e., it is a prior art system under § 102(a) as described in the Medvinsky-Neuman publications and as known or used by others in this country; and (2) an admission regarding the teachings of the APA NetCash System—i.e., the teachings of the APA NetCash System are described in column 2, line 47 through column 3, line 39 and Figure 2 of the '011 patent. Patent Owner does not explain how relying on admission (2)—i.e., the '011 patent's representation that the teachings of the APA NetCash System are described in the patent—renders the APA NetCash System non-102(a) prior art, essentially erasing admission (1) that the APA NetCash System is prior art under § 102(a). Absent countervailing considerations, the public is entitled

to rely on the patentee's representations made on the face of the '011 patent as admissions regarding the NetCash prior art for purposes of patentability challenges, including using the '011 patent's description of the APA NetCash System as evidence of the teachings of the NetCash prior art. In *Application of Nomiya*, 509 F.2d 566 (CCPA 1975), when the appellants' application included two figures, Figures 1 and 2, that were labeled as "prior art" and described as such in the specification, the court held "[w]e see no reason why appellants' representations in their application should not be accepted at face value as admissions that Figs. 1 and 2 may be considered 'prior art' for any purpose, including *use as evidence of obviousness under [Section] 103*." *Id.* at 570–71 (emphasis added).

Patent Owner also asserts that the Federal Circuit "has long recognized that 'admitted prior art' is not prior art 'described by section 102(a)' or any other portion of 102/103" and "described prior art created by admission as a separate and distinct class of prior art from § 102 prior art." Prelim. Resp. 18, Req. Reh'g 11, PO Resp. 35 (citing *Riverwood Int'l Corp. v. R.A. Jones & Co., Inc.*, 324 F.3d 1346, 1354 (Fed. Cir. 2003); *In re Fout*, 675 F.2d 297 (CCPA 1982)). In other words, Patent Owner asserts that, under the Federal Circuit's case law, all "admitted prior art" is categorically excluded from the class of § 102 prior art.

The cases cited by Patent Owner, however, do not support Patent Owner's contention. In *Riverwood Int'l Corp.*, the issue was whether the patent, which was admitted as prior art, constituted prior art under 103(a) and 102(e) when the prior art patent was issued to the same inventor or inventive entity as the challenged patent. The court held "[w]hile . . . a

reference can become prior art by admission, that doctrine is inapplicable *when the subject matter at issue is the inventor's own work*." *Riverwood Int'l Corp.*, 324 F.3d at 1354 (emphasis added). In *Fout*, the issue was whether the prior invention described in the preamble of a Jepson claim constituted prior art under § 103 when the appellants admitted they had actual knowledge of the prior invention. *See Fout*, 675 F.2d at 300. Although the appellants argued that "[t]he preamble of appellants' own claims cannot properly be used as a reference against them," the court held that "[t]his court has recognized that section 102 is not the only source of section 103 prior art" and that "[v]alid prior art may be created by the admissions of the parties." *Id.* The court in *Riverwood Int'l Corp.* made essentially the same statement, citing *Fout*. *See Riverwood Int'l Corp.*, 324 F.3d at 1354 (citing *Fout*, 675 F.2d at 300). Although these cases may stand for the proposition that *some* prior art created by party admission may not qualify as § 102 prior art, these cases did *not* hold *all* prior art created by admissions of the parties are non-102 prior art. In other words, contrary to Patent Owner's contention, these cases did *not* conclude *all* prior art created by admission must be excluded from the category of § 102 prior art. More importantly, none of these cases held that prior art expressly admitted in a patent to be known or used by others in the U.S. or described in a publication is not available as 102(a) prior art to the patent; nor did the cases hold that the description of the admitted prior art included in the patent cannot be relied upon as evidence of the teachings of the admitted prior art.

Therefore, Patent Owner's arguments, including its reliance on *Riverwood International Corp.* and *Fout*, are unpersuasive. Accordingly, we

conclude this proceeding for a covered business method review can be based properly on the APA NetCash System prior art under AIA § 18(a)(1)(C)(i).

D. Whether Teramura Is Prior Art

Petitioner asserts that Teramura (Ex. 1007) is prior art to the '011 patent under 35 U.S.C. § 102(b)[5] because it bears an "Open to Public Insp." date of May 21, 1998. *See* Pet. 19. In response to Patent Owner's objection that Exhibit 1007 is not a copy of the application "laid open" in the Canadian Patent Office on May 21, 1998 (*see* Req. Reh'g 3–9), Petitioner has filed a certified copy of the application file history that includes the Teramura laid-open application (*see* Paper 17, 2; Ex. 1014, 2–3, 89).

Patent Owner asserts that Exhibit 1007 is a copy of a Canadian patent issued and published on June 11, 2002, and, hence is not prior art to the '011 patent, which has an earlier foreign priority filing date of August 26, 1999. *See* PO Resp. 28–30, Prelim. Resp. 23. Patent Owner further argues the Petition fails because it is based on Exhibit 1007, not on "a related application file . . . laid open in 1998." PO Resp. 29. Patent Owner asserts that Petitioner "did not rely on Ex. 1007 as evidence of what was in a different document," namely the Teramura laid-open application, but, rather, "wrongly asserted that Ex. 1007 *itself* had been published in May 21, 1998." *Id.* at 29–30 (citing Pet. iii, 19). Patent Owner argues the Board should not "substitute a different theory (that Ex. 1007 is evidence of the alleged

[5] The section of the AIA that modified 35 U.S.C. § 102 went into effect on March 18, 2013. Because the application for the '011 patent was filed before that date, we refer to the pre-AIA version of § 102 throughout the present decision.

publication of a different document in 1998) for the theory Petitioner included in its petition (that Ex. 1007 *itself* was published in 1998)." *Id.* at 30. We are not persuaded by Patent Owner's arguments.

Patent Owner does not dispute Exhibit 1007 on its face shows two different dates: June 11, 2002 as the "Issue Date"; and May 21, 1998 as the "Open to Public Insp." date. *See* Ex. 1007, cover page; *see also* PO Resp. 29 ("*While the Teramura Patent cover page suggests that a related application file was laid open in 1998*, that document is not mentioned or relied upon in the Petition.") (emphasis added). Based on this undisputed evidence, we understand Petitioner's statement that Exhibit 1007 was "published on May 21, 1998" (Pet. 19) to be a contention that the disclosure of Exhibit 1007 was "laid open to public inspection" on May 21, 1998.

Furthermore, Patent Owner's formulation of the issue—whether Exhibit 1007 *itself* qualifies as prior art under §§ 102(a) or (b)—is inexact. *See* PO Resp. 29–30. Rather, the issue under §§ 102(a) and (b) is whether the invention claimed by the '011 patent was "described in a printed publication in this or a foreign country" before the relevant dates.

The issue, then, is whether the disclosure of Exhibit 1007 relied upon by Petitioner is any different from the disclosure that was laid open in the Canadian Patent Office on May 21, 1998. In its Request for Rehearing, Patent Owner argued that it is "severely disadvantaged" because it has not seen the laid open application, which may not have in fact contained the subject matter disclosed in Exhibit 1007, or may have included additional subject matter detrimental to Petitioner's arguments concerning the potential unpatentability of the '011 patent. *See* Req. Reh'g 7–8. Now, having

received Exhibit 1014 produced by Petitioner in response to Patent Owner's objections, Patent Owner does not contend the disclosure in Exhibit 1014 is any different from the disclosure in Exhibit 1007. Nor does Patent Owner contend Exhibit 1014 fails to corroborate the representation on the face of Exhibit 1007 that the Teramura disclosure was laid open to the public on May 21, 1998. Instead, Patent Owner contends that it does not have the burden to show the disclosure contained in Exhibit 1014 is different from the disclosure of Exhibit 1007. Rather, Patent Owner contends that Petitioner bears the burden to demonstrate that the disclosures are the same and the disclosure included in Exhibit 1007 was in fact laid open on May 21, 1998. *See* PO Resp. 31–32.

As discussed above, Petitioner asserts that Exhibit 1014 is a certified copy of the Teramura application file history, which includes a copy of the Teramura application laid open to the public on May 21, 1998. *See* Paper 17, 2; Pet. Exclude Opp. 3 (citing Ex. 1014, 2–3, 89–130). Patent Owner argues that Exhibit 1014 is "merely a copy of the Teramura file history ***as it exists today***," and "is not sufficient evidence of what existed (and was "laid-open") on May 21, 1998" because "[o]ld documents could have recently been added, for proper or improper purposes." PO Resp. 32. Patent Owner also argues that there is no evidence of what specific documents or pages were part of the allegedly "laid open" file in 1998, and that "[w]ithout a copy of the file – *as laid open in 1998* – there is no evidence on this issue." *Id.* at 31 (emphasis added). Patent Owner asserts that "Petitioner bears this burden and it is not appropriate to shift the burden to Patent Owner to attempt to prove a negative." *Id.*

Petitioner asserts that Exhibit 1014 corroborates the laid-open date of the Teramura application and that Patent Owner has offered no evidence to suggest that the certified records of the Canadian Patent Office cannot be trusted. Pet. Exclude Opp. 2–4. Petitioner further argues that absolute certainty regarding the instant Teramura was laid open is not the proper evidentiary standard, but, rather, Petitioner need only present evidence sufficient to show that it was more likely than not that Teramura was laid open to the public on May 21, 1998. *Id.* at 4 (citing 37 C.F.R. § 42.1(d)). We agree with Petitioner that a preponderance of evidence is the proper evidentiary standard and also agree that Exhibit 1014 corroborates Teramura's laid-open date under that standard.

Furthermore, we are not persuaded by Patent Owner's arguments that Petitioner has not met its burden, because we find no evidence that the disclosure contained in Exhibit 1014 is different from the disclosure of Exhibit 1007. *See* Tr. 48:5–49:6. Patent Owner's argument that Exhibit 1014 is "merely a copy of the Teramura file history ***as it exists today***" and not a copy of the file "as it existed when . . . laid-open on May 21, 1998" (PO Resp. 32) is unpersuasive. Patent Owner's argument is unsupported by facts, as there is no evidence that Exhibit 1014 is different from what was laid open in 1998, and Patent Owner does not explain why the certified records of the Canadian Patent Office cannot be trusted. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of evidence, that the Teramura disclosure was laid open for public inspection on May 21, 1998, as confirmed by Exhibit 1014.

In connection with the argument above, Patent Owner also asserts that there is insufficient evidence that the Teramura laid-open application was *publicly accessible* prior to the critical date of the '011 patent. *See* PO Resp. 33. According to Patent Owner, "[t]he Petition contains no information or evidence that prior to the '011 Patent effective date, the application was properly classified, indexed or that a 'road map' to its existence was available." *Id.* at 34 (citing *Bruckelmyer v. Ground Heaters, Inc.*, 445 F.3d 1374, 1378–79 (Fed. Cir. 2006)). Patent Owner further argues that the parties and the court in *Bruckelmyer* agreed that the Canadian application at issue "was not formally indexed." PO Exclude Reply 4 (internal quotation marks omitted) (citing *Bruckelmyer*, 445 F.3d at 1378). Petitioner asserts Exhibit 1014 demonstrates that the Teramura application was classified and indexed, and, therefore, was sufficiently accessible to those of ordinary skill when it was laid open to the public on May 21, 1998. Pet. Exclude Opp. 3 (citing Ex. 1014, 2–3, 89–130).

Whether a document qualifies as a "printed publication" that is "available to the public" for the purposes of 35 U.S.C. § 102 is a question of law based on underlying findings of fact. *In re Enhanced Sec. Research, LLC*, 739 F.3d 1347, 1354 (Fed. Cir. 2014) (citing *In re Hall*, 781 F.2d 897, 899 (Fed.Cir.1986)). The Federal Circuit "has interpreted § 102 broadly, explaining that even relatively obscure documents qualify as prior art so long as the public has a means of accessing them." *Id.* (citing *Hall*, 781 F.2d at 899).

> Our leading case on public accessibility is *In re Hall*, 781 F.2d 897 (Fed. Cir. 1986). In *Hall* we concluded that "a single

> cataloged thesis in one university library" constitutes "sufficient accessibility to those interested in the art exercising reasonable diligence." *Id.* at 900. Thereafter, in *Constant v. Advanced Micro–Devices, Inc.*, we explained that "[a]ccessibility goes to the issue of whether interested members of the relevant public could obtain the information if they wanted to." 848 F.2d 1560, 1569 (Fed. Cir. 1988). Therefore, "[i]f accessibility is proved, there is no requirement to show that particular members of the public actually received the information." *Id.*

Enhanced Sec. Research, LLC, 739 F.3d at 1354. The determination of whether a document is a "printed publication" under 35 U.S.C. § 102 involves a case-by-case inquiry into the facts and circumstances surrounding its disclosure to members of the public. *In re Klopfenstein*, 380 F.3d 1345, 1350 (Fed. Cir. 2004).

In this case, we are persuaded that Petitioner has shown by a preponderance of the evidence that the Teramura laid-open application was publicly accessible prior to August 26, 1999, the foreign priority filing date for the '011 patent. To the extent that Patent Owner relies on *Bruckelmyer* to show Canadian laid-open applications, such as the Teramura application, are not "formally indexed," Patent Owner's argument is not persuasive because the application at issue in *Bruckelmyer* was *not* laid open for public inspection. First, the Canadian patent applications filed prior to October 1, 1989 were not open to public inspection. *See* Manual of Patent Office Practice ("MOPOP") § 2.01.01 (Canadian Intellectual Property Office, 1998 ed.), *available at* https://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/wr01566.html#itm2_01_01. Second, the prior art patent at issue in *Bruckelmyer* issued December 6, 1983. *Bruckelmyer* 445 F.3d at

1376. Hence, the application for the patent was filed before October 1, 1989, and, therefore, was not laid open for public inspection, unlike the Teramura application at issue in this case. Thus, *Bruckelmyer* has no bearing on the issue of whether Canadian laid-open applications, such as the Teramura application, are "formally indexed." Based on the evidence and arguments provided by Petitioner, we are persuaded that the "interested members of the relevant public" could have obtained the Teramura application "if they wanted to" after the application was laid open to public inspection in the Canadian Patent Office on May 21, 1998. *See Enhanced Sec. Research, LLC*, 739 F.3d at 1354 (quoting *Constant v. Advanced Micro–Devices, Inc.*, 848 F.2d at 1569) (internal quotation marks omitted). As reflected in the certified application file history, the Canadian Intellectual Property Office classified the Teramura application and indexed it. *See* Exhibit 1014, 3, 89 (showing classification according to the International Patent Classification (IPC) codes), 89 (showing indexing according to the International Identification (INID) codes). Accordingly, there is sufficient evidence to conclude that the Teramura application was publicly accessible prior to August 26, 1999, the foreign priority filing date for the '011 patent.

Patent Owner further argues Exhibit 1007 is inadmissible and not competent evidence because it fails to satisfy the Best Evidence Rule. PO Resp. 31 (citing Fed. R. Evid. 1002); PO Mot. to Exclude 7–8. For the reasons discussed below in Section II.G, we are not persuaded by Patent Owner's argument. Accordingly, we are persuaded that Petitioner has shown, by a preponderance of evidence, that the Teramura disclosure was part of a printed publication before the foreign priority filing date for the

’011 patent, and, therefore, constitutes prior art to the ’011 patent under §§ 102(a) and (b).

E. Obviousness over Teramura and the APA NetCash System

Petitioner asserts that claims 1, 2, 4–8, 10, and 11 are unpatentable under 35 U.S.C. § 103(a) over the combination of Teramura and the APA NetCash System. Pet. 34–46. Upon review of all of the parties’ papers and supporting evidence discussed in those papers, we are persuaded that Petitioner has demonstrated, by a preponderance of evidence, that claims 1, 2, 4–8, 10, and 11 are unpatentable under 35 U.S.C. § 103(a) over the combination of Teramura and the APA NetCash System.

1. Relevant Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. *KSR Int’l Co. v. Teleflex Inc*., 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

For an obviousness analysis, prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *In*

re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994) (quoting *In re Samour*, 571 F.2d 559, 562 (CCPA 1978)). Moreover, "it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). That is because an obviousness analysis "need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR*, 550 U.S. at 418; *see Translogic Tech., Inc.*, 504 F.3d. at 1259. We analyze this asserted ground based on obviousness with the principles identified above in mind.

2. Level of Ordinary Skill in the Art

In determining the level of one with ordinary skill in the art, various factors may be considered, including "type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field." *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). In addition, we are guided by the level of ordinary skill in the art reflected by the prior art of record. *See Okajima v. Bourdeau*, 261 F.3d. 1350, 1355 (Fed. Cir. 2001); *GPAC*, 57 F.3d at 1579; *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). In a given case, one or more factors may predominate. *GPAC*, 57 F.3d at 1579.

The "BACKGROUND OF THE INVENTION" section of the '011 patent describes various prior art systems for electronic payments and electronic currency transactions. Although many of the known prior art systems described in the '011 patent are direct payment systems, the '011 patent also describes the "Millicent" system, which utilizes a "two-step" process involving "trusted brokers" that mediate electronic payment transactions between a buyer and a seller (or merchant) using electronic currency called "scrip." *See* Ex. 1001, col. 2, ll. 18–24. In addition, the '011 patent discusses the security problems as an overriding concern for electronic payment transactions using electronic currency. *See, e.g.*, *id.* at col. 1, ll. 30–32; col. 1, ll. 45–48 ("While purchases made over the Internet are by no means the sole use for the electronic cash, they probably are the most problematic, mainly because of *security problems*.") (emphasis added); col. 1, ll. 49–52.

Petitioner's declarant, Dr. Neuman, testifies that the prior art discussed in his declaration demonstrates that a person of ordinary skill in the art, at the time the '011 patent was filed, was aware of various aspects of electronic commerce. Ex. 1009 ("Neuman Decl.") ¶ 7. The features of the relevant prior art discussed by Dr. Neuman—such as PayWord, Millicent, Bernstein, Teramura, and Simon—include middleman transactions to increase transaction confidence or trustworthiness. *Id.* at ¶¶ 15–19, 28, 29.[6]

[6] Patent Owner asserts that "Petitioner fails to advance any expert opinion or other testimony" on the issue of the level of ordinary skill in the art. PO Resp. 17. Although Patent Owner argued in its Preliminary Response that the Neuman Declaration should be excluded or accorded no weight (Prelim.

Patent Owner's declarant, Dr. Tygar, testifies that, at the time the '011 patent was filed, "a person of ordinary skill in the art would have possessed a bachelor's degree in computer science or in engineering with exposure to computer science or its equivalent." Ex. 2012 ("Tygar Decl.") ¶ 15. Due to the specific nature of the technology and problems at issue, the general education level of a person of ordinary skill, such as a bachelor's degree in computer science or its equivalent, does not provide much guidance in this proceeding. *See GPAC*, 57 F.3d at 1579 ("In a given case, every factor may not be present, and one or more factors may predominate.") (internal citation omitted). Dr. Tygar's testimony also focuses on the prior art systems that require direct interaction between a payor and a payee, and does not address the middleman systems or features discussed by Dr. Neuman, other than to argue the lack of motivation to combine the middleman systems with the APA NetCash System, argument which does not rely on the level of ordinary skill in the art. Ex. 2012 at ¶¶ 18–34.

On this record, we find that a person of ordinary skill in the art, at the time of the invention of the '011 patent, would have been familiar with various conventional systems for electronic payments and electronic currency transactions, including two-step transaction systems that employ intermediary "broker servers" that can be trusted, and would have

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Resp. 26–29), the Board declined to do so for purposes of institution of trial. Dec. to Inst. 10–11. Therefore, Patent Owner is not justified to presume Dr. Neuman's testimony is not part of the record in this proceeding and conclude it does not exist for the purposes of trial in this case.

understood the security problems to be an important issue in existing systems. In addition, the level of ordinary skill is relatively high and would require knowledge specific to electronic currency and electronic payment transactions. *See* Ex. 1001, col. 1, ll. 49–54 ("The problem of payments over the Internet is . . . a *complicated* one, because the use of credit cards over the Internet is *unsafe*, and because in many transactions the buyer does not wish to provide details of himself, or of his bank account.") (emphases added).

3. Teramura Disclosure Overview

Teramura describes a method and system for electronic trading that employs a broker server to send electronic money in two steps, including "sending of electronic money from the terminal of the consumer to the broker server and sending of electronic money from the broker server to the server of the merchant." Ex. 1007, Abstract. Figure 1 of Teramura is reproduced below.

FIG.1

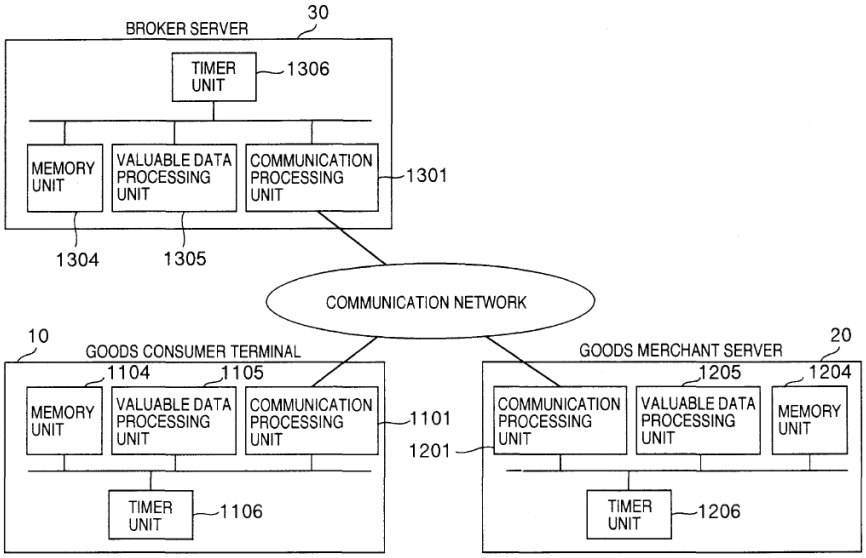

Figure 1 depicts a system including consumer terminal 10, merchant server 20, and broker server 30, which are connected over a communication network. *See id.* at 8:3–10. According to Teramura, "unjust transactions," such as theft and fraud may be a particular problem with electronic currency. *See id.* at Abstract, 3:2–18. To address this problem, Teramura describes a transaction approach in which broker server 30 temporarily stores electronic money received from consumer terminal 10, and sends the electronic money to merchant server 20 when a predetermined settlement condition is brought into existence. *See id.* at Abstract.

Figure 4 of Teramura is shown below.

FIG.4

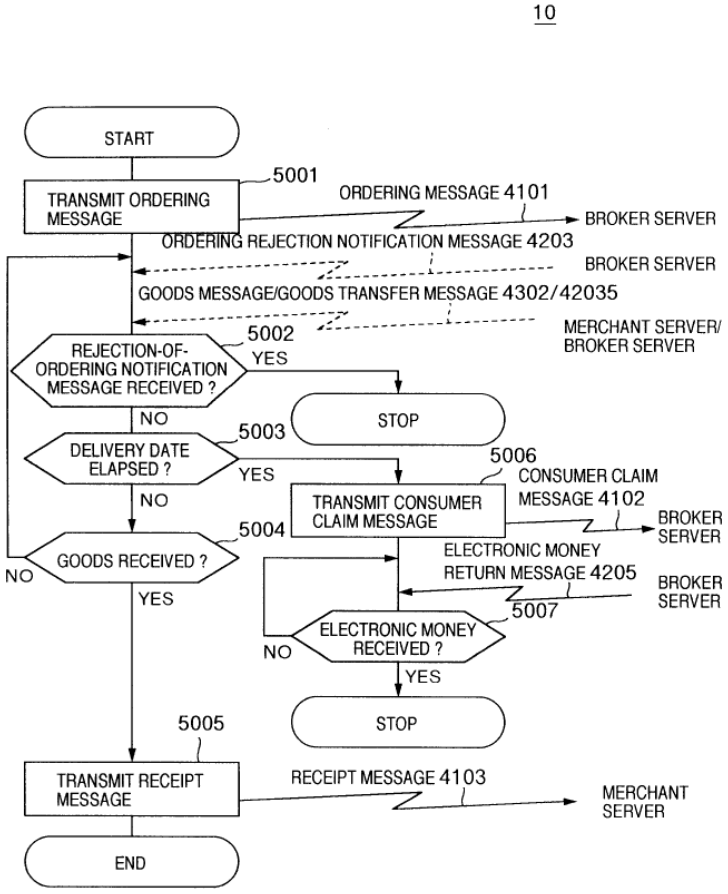

Figure 4, together with Figures 5, 6, and 7, depicts the flow of transaction disclosed in Teramura. When the buyer is ready to purchase an item, the buyer transmits an ordering message 4101 to broker server 30 through the communication network. *See id.* at 15:24–27, Fig. 4 (step 5001). The ordering message includes the details of the transaction and the electronic money with which the buyer intends to pay the merchant. *See id.* at 11:1–6, Figs. 2A and 2B. Upon receipt of the ordering message, broker server 30 generates data items representing the transaction in its memory—the broker information and trading and ordering information. *See id.* at 10:24–26, 11:6–11, 17:15–18. These data items are depicted in Figures 2A and 2B. *See id.* at 9:25–26, 10:27–28. The broker server then transmits an ordering notification to the merchant. *See id.* at 17:18–21, Fig. 5 (step 6003). The merchant confirms the ordering notification (*see id.* at 21:2–12, Fig. 7 (step 8002)) and attempts to transmit the goods to the buyer (*see id.* at 21:19–22, Fig. 7 (step 8003)). After transmitting the ordered goods, the merchant waits for the buyer to acknowledge receipt of the goods. *See id.* at 22:10–14, Fig. 7 (step 8004). If the buyer acknowledges receipt, the receipt is transferred to the broker and the broker releases the funds to the merchant. *See id.* at 22:15–17, 22:23–23:13.

4. The APA NetCash System Disclosure Overview

As discussed above, column 2, line 47 through column 3, line 39 and Figure 2 of the ’011 patent describe the APA NetCash System. According to the ’011 patent, the APA NetCash System includes buyers, merchants,

and currency servers, which mint electronic coins. *See* Ex. 1001, col. 2, ll. 61–62, col. 3, l. 3. Figure 2 of the '011 patent is reproduced below.

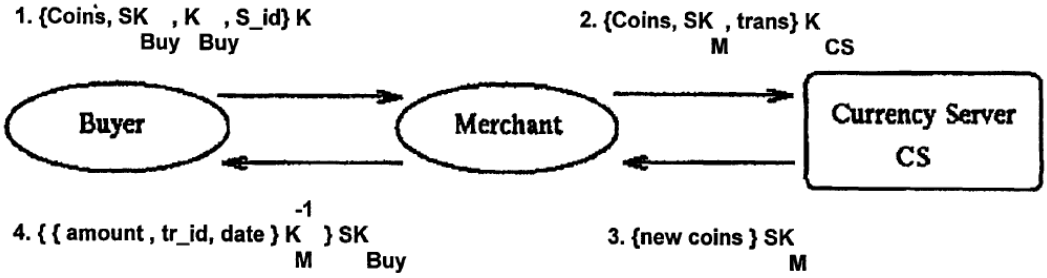

Fig. 2 (Prior Art)

Figure 2 describes how a buyer uses NetCash coins to purchase items from a merchant. *Id.* at col. 3, ll. 33–34. Each electronic coin includes the name of the server that issued the coin, the server's network address, the expiry date of the coin, the coin's serial number, and the value of the coin. *Id.* at col. 3, ll. 3–12. The currency server keeps track of the serial numbers of all outstanding coins in a database—if a coin's serial number is found in the database, it has not been spent and is valid. *Id.* at col. 3, ll. 14–19. When the currency server checks a coin, the coin's serial number is deleted form the database and a new coin is issued to replace the deleted coin. *See id.* at col. 3, ll. 19–21. Thus, double spending can be prevented by checking a coin's serial number with the currency server at the time of purchase (or exchange). *Id.* at col. 3, ll. 15–17, Fig. 2.

5. Claim 1

a. Whether the Combination of Teramura and the APA NetCash System Teaches Every Limitation of Claim 1

Claim 1 is set forth in Section I.C above. Petitioner has shown that the combination of Teramura and the APA NetCash System teaches every limitation of claim 1. Pet. 34–39. For example, Petitioner explains that Teramura discloses a broker server that manages currency transactions between a first user (a buyer) and a second user (a seller), and teaches an "isolation server" recited in claim 1. *See id.* at 34–38. Petitioner also identifies the currency server of the APA NetCash System to teach a CIA and a CIAS. *See id.* at 36–39. Petitioner proposes to combine the teachings of Teramura and the APA NetCash System such that Teramura's broker can serve as both an intermediary as well as the currency server of the APA NetCash System, "[c]o-locating the currency server with the intermediary" that handles the currency transactions using the electronic currency of the APA NetCash System. *Id.* at 36–37. Petitioner provides explanations, with citations to the relevant portions of Teramura and the APA NetCash System, how this combination teaches each limitation of claim 1, including a claim chart that maps each limitation of claim 1 to the teachings of the combination of Teramura and the APA NetCash System. *See id.* at 36–39.

Patent Owner disputes Petitioner's assertions for every limitation of claim 1. *See* PO Resp. 37–56. We discuss the issues presented by Patent Owner's arguments, grouping similar arguments and issues together.

Patent Owner's Arguments Against Individual Teachings of Teramura or the APA NetCash System

Patent Owner asserts that the broker server described in Teramura is not an "isolation server" recited in claim 1 because "there is no isolation between the parties" in Teramura. PO Resp. 43, Ex. 2012 ¶ 66. As an example of the "direct interaction" between the parties, Patent Owner points to Teramura's description of the consumer sending a receipt message to the merchant to confirm receipt of goods. *See* PO Resp. 43–44 (citing Ex. 1007, 16:22–26).

The '011 patent provides a definition of the terms "isolation" and "isolation server" as follows:

> The terms "isolation" or "isolation server" are meant to indicate that no simultaneous or direct involvement exists between the users *in the process of moving currency* through the LAN or WAN.

Ex. 1007, col. 9, ll. 19–22 (emphasis added). Given this definition, Patent Owner's argument is not persuasive because transmission of a receipt described in the cited passage of Teramura is not a direct interaction during the transfer of electronic currency. Dr. Neuman testifies that, in Teramura, "any direct interaction between the consumer and the merchant does not occur *in the process of moving currency*" and "during [the] interactions [between the consumer and the merchant] the currency is not in the process of moving between any of the parties or the broker." Ex. 1012 ¶ 37. We credit Dr. Neuman's testimony and are persuaded by Petitioner's argument and evidence that the co-located server in the proposed combination of

Teramura and the APA NetCash System teaches an "isolation server" as recited in claim 1.

Patent Owner further argues nearly all limitations of claim 1 are not obvious because either Teramura or the APA NetCash System, when treated individually, does not disclose the claim limitations. For example, Patent Owner asserts Teramura does not teach the following limitations because Teramura does not disclose a CIA or CIAS: "the money-representing data packets are issued by a Currency Issuing Authority (CIA)," "a Currency Issuing Authority trusted server (CIAS) programmed to receive an instruction from the first user to pay the second user a first monetary sum," and "said CIAS collectively comprising: (a) access to the first user's DPD containing money representing data packets." *See* PO Resp. 46, 48–50. Similarly, Patent Owner argues that Teramura does not teach "money-representing data packets" because the broker information of Teramura does not constitute "data packets." *See id.* 45–47, 49. Patent Owner's arguments are not persuasive because they focus on Teramura individually whereas Petitioner relies on the combination of Teramura and the APA NetCash System to teach these limitations. *See* Pet. 36–39. Nonobviousness cannot be established by attacking the references individually when the unpatentability challenge is based on a combination of prior art disclosures. *See In re Merck & Co. Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

In a similar vein, Patent Owner asserts that the APA NetCash System, when treated individually, fails to teach several limitations because "NetCash APA is a direct payment system in which the payee (second user) receives electronic coins directly from the payor (first user)" (PO Resp. 40

(citing Ex. 2013, 147:14–148:6, Ex. 1001, Fig. 2)), and "[o]nly after value is transferred does the payee/second user have the **option** to exchange the coin with a currency server for a new coin" (*id.*, (citing Ex. 2013, 83:15–21; Ex. 1001, col. 3, ll. 24–25)). For example, Patent Owner argues that the APA NetCash System does not teach a CIAS with "access to the first user's DPD containing money representing data packets" because the currency server of the APA NetCash System "deals exclusively with the second user." *Id.* at 49–50. Similarly, Patent Owner argues that the APA NetCash System does not teach a CIAS programmed to delete or mark as spent "one or more money-representing data packets in the first active data packets area" because the currency server of the APA NetCash System does not access the first user's data packets. *See id.* at 48–49. Patent Owner also argues that the APA NetCash System does not teach or suggest a CIAS is programmed to perform a deleting or marking step in response to the instruction from the first user to pay the second user because "in NetCash APA the deleting or marking as spent only occurs after the payment from the first user to the second user has been completed." *See id.*

In its Reply, Petitioner responds that Patent Owner's arguments are improper because they treat the APA NetCash System individually rather than in combination with Teramura. *See* Pet. Reply 4. As discussed above, Petitioner's proposed combination is to "co-locate" the APA NetCash System's currency server with Teramura's intermediary broker server to provide middleman transactions using the APA NetCash System's electronic currency. *See* Pet. 36–37. In response to Patent Owner's arguments, Petitioner explains that, citing the testimony of Dr. Neuman, when the

proposed combination is considered as a whole, "Teramura . . . provide[s] the first and second user, mediating a transaction through a middleman that receives payment instructions from the first user," and "the middleman is integrated with a CIAS," which is disclosed by the APA NetCash System. Pet. Reply 4 (citing Ex. 1012 ¶¶ 43–47, 81–85; Ex. 1009 ¶¶ 111, 176–77). According to Petitioner, "[i]n the proposed combination, the buyer instructs the integrated middleman/CIAS to make payment to the seller." *Id.* Petitioner further argues,

> [t]he middleman in the combination is the APA currency server and the money is the APA NetCash coins, which the middleman server deletes or marks as spent in accordance with the APA. . . . Since the instruction from the first user causes the middleman server to delete or mark as spent the first user's APA NetCash coins, the deleting or marking as spent is in response to the instruction.

Id. at 5 (citing Ex. 1012 ¶¶ 43–47, 81–85; Ex. 1009 ¶¶ 119–22, 186–90).

We agree with Petitioner that Patent Owner's arguments fail because they attack the APA NetCash System individually when Petitioner's unpatentability challenge is based on a combination of Teramura and the APA NetCash System.

Patent Owner also asserts that, as described in the Specification, the CIAS is able to charge a commission, as part of the payment transaction. *See* PO Resp. 55. Patent Owner argues that neither Teramura nor the APA NetCash System teaches this feature, and, therefore, fails to satisfy "deliver[ing] to the second user the new money-representing data packets

having a monetary value equal to or less than the first monetary sum," as recited in claim 1. *See id.* at 55–56.

We disagree with Patent Owner that claim 1 requires "automatically charging a commission for the transaction by delivering 'less than' the first monetary amount." *See id.* at 56. Because the claim recites "equal or less than," a transaction delivering a value equal to the first monetary sum, i.e., not charging a commission, satisfies the recited limitation.

Patent Owner's Arguments Against the Combined Teachings of Teramura and the APA NetCash System

Patent Owner makes two arguments directed to the combination of Teramura and the APA NetCash System. The first one is that, when the buyer deposits NetCash coins with the broker, they become broker's coins. Thus, Patent Owner argues, when the NetCash coins are deleted and exchanged for new coins within the currency server, the broker's coins are deleted, not the first user's coins. *See* PO Resp. 55. Therefore, Patent Owner asserts that the proposed combination does not teach "delet[ing] or mark[ing] as spent money-representing data packets in a first active data packet area, associated with a first user." *Id.*

Petitioner responds that the broker is holding the first user's (or the buyer's) coins on behalf of the first user (or the buyer). *See* Pet. Reply. 6. According to Petitioner, there is no suggestion in Teramura that the middleman can spend the buyer's money for the middleman's own purposes. *Id.* (citing Ex. 1012 ¶¶ 56, 93). Petitioner argues Teramura specifically contemplates that the broker server must return money to the buyer if the

buyer makes a claim against the merchant and the merchant is unable to prove that the goods have been sent. *Id.* (citing Ex. 1007, 18:25–27, 19:7–20:23, Figs. 3–6; Ex. 1012 ¶ 56). Thus, Petitioner argues, when the co-located currency server of the proposed combination deletes the data packets, the currency server is deleting the first user's data packets, not the middleman's or the broker's data packets. *See id.* at 7. We are persuaded by Petitioner's arguments as supported by the record before us.

Secondly, Patent Owner argues that claim 1 requires "delet[ing] or mark[ing] as spent money-representing data packets in the first active data packets area, associated with the first user while generating and delivering new data packets to a second user." PO Resp. 52. In other words, "the data packets ***of the first user*** are accessed and deleted/marked as spent and never reach the second user; instead, the second user receives new data packets." *Id.* at 2. Patent Owner asserts that "Petitioner and the Board did not address this issue previously." *Id.* Patent Owner asserts that the combination of Teramura and the APA NetCash System does not teach these limitations because, when a first user (i.e., a buyer) deposits a coin with the middleman broker, Teramura transfers it to the payee (second user) "as-is" (*see id.* at 37) and the currency server deletes the coin when the payee (second user) exchanges it for a new coin (*see id.* at 40). Hence, similar to the discussion above, the second user's coins, as opposed to the first user's coins required by the claim, are deleted. *See id.* at 39.

In its Reply, Petitioner responds that the middleman with a co-located currency server would first check the coins received from the first user to verify that they are authentic and valid—i.e., they have not been previously

used or spent. *See* Pet. Reply 8 (citing Ex. 1001, col. 3, ll. 14–21 (describing the feature of the APA NetCash System that prevents "double spending"). Citing the testimony of Dr. Neuman, Petitioner asserts that this means that the middleman generates new coins by "*exchanging the old coins internally*" with the currency issuing authority and transfers them to the merchant (i.e., second user). *Id.* at 9 (emphasis added) (citing Ex. 1012 ¶¶ 5, 7).

As discussed above, the APA NetCash System teaches that "[w]hen the coin is checked the serial number is then removed from the database. The coin is then replaced with a new coin (coin exchange)." Ex. 1001, col. 3, ll. 19–21. In other words, checking a coin with the currency server of the APA NetCash System results in a coin exchange. Thus, the difference between the parties' positions appears to be when to check the coin received from the first user or the buyer. Patent Owner would have the broker merely forward the coin to the second user or the merchant, leaving it up to the second user to check the coin at a later time. Petitioner, on the other hand, would have the broker check the coin first with the co-located currency server. Petitioner argues, citing the testimony from Dr. Neuman, that its approach is more desirable due to increased security and because "the logical place, really the only place, to include coin replacement is at the middleman." *See* Pet. Reply 8, 11 (citing Ex. 1012 ¶ 16).

We are persuaded by Petitioner's arguments that the combination of Teramura and the APA NetCash System, as proposed by Petitioner—i.e., the broker checking the coin received from the buyer with the co-located currency server and, upon verification, replacing it with a new coin, which is then forwarded to the merchant—teaches deleting the first user's data

packets and issuing new data packets to the second user. The issue of whether, as Patent Owner contends, the combination of Teramura and the APA NetCash System must forward the coin received from the first user to the second user without checking it with the co-located currency server, as opposed to checking the coin first upon receipt as Petitioner contends, relates more closely to the issue of the motivations to combine, which we address in the Reasons to Combine section below.

Patent Owner asserts that Petitioner's response is a "new theory" raised improperly in a reply. In its Motion for Observation, Patent Owner points to deposition testimony from Dr. Neuman allegedly admitting that this "second theory"—i.e., the middleman with an internal coin exchange function—was not described in the Petition. *See* Obs. 1–3 (Obs. Nos. A.1–A.4). Petitioner responds that Dr. Neuman explained during the deposition that the discussion in his Reply Declaration and the Petitioner's Reply of this "second theory" were made in rebuttal to Patent Owner's arguments raised first in the Patent Owner Response. *See* Obs. Resp. 1–3 (Resp. Nos. A.1–A.4). In a telephone conference held on March 30, 2015 upon request by Patent Owner, Patent Owner argued that Petitioner's Reply contained the same "new theory" that was not included in the Petition. *See* Paper 35, 10:20–12:1[7]. We agree with Petitioner that this "new" theory was presented to rebut Patent Owner's arguments raised first in the Patent Owner Response. Indeed, as discussed above, Patent Owner stated in its Patent Owner Response "[t]he Petitioner and the Board *did not address this issue*

[7] Paper 35 is a transcript of the March 30, 2015 telephone conference, arranged and filed by Patent Owner.

previously" when making the arguments to which Petitioner's response describing a middleman with an internal coin exchange function is directed. PO Resp. 2 (emphasis added). Therefore, Petitioner's response is an argument raised properly as part of the Petitioner's Reply.

Furthermore, as discussed above, the Petition described Petitioner's proposed combination of Teramura and the APA NetCash System to "co-locate" the APA NetCash System's currency server with Teramura's intermediary broker to provide middleman transactions using the APA NetCash System's electronic currency. *See* Pet. 36–37. Hence, Petitioner's response in its Petitioner Reply can be fairly characterized as describing further Petitioner's proposed combination—i.e., when to check the coin received from the buyer—in response, and in rebuttal to, arguments raised by Patent Owner in the Patent Owner Response.

Patent Owner also points to deposition testimony from Dr. Neuman that he does not recall the Teramura broker server including coin replacement, and argues, therefore, any replacement of the currency in Teramura would have to be performed outside of the broker server. Obs. 5–6. Petitioner responds that the cited testimony is irrelevant to Petitioner's argument because it is directed to the teaching of Teramura individually without regard to the combination of Teramura and the APA NetCash System. Obs. Resp. 5. We agree with Petitioner that Patent Owner's arguments and observations in its Motion for Observation do not rebut Petitioner's assertions regarding the proposed combination because Patent Owner's statements are directed to Teramura individually.

Accordingly, on this record, we find that Petitioner has demonstrated, by a preponderance of evidence, that the proposed combination of Teramura and the APA NetCash System teaches every limitation of claim 1.

b. Reasons to Combine Teramura and the APA NetCash System

If all elements of a claim are found in the prior art, as is the case here, the fact-finder must further consider the factual questions of whether a person of ordinary skill in the art would be motivated to combine those references, and whether in making that combination, a person of ordinary skill would have had a reasonable expectation of success. *Dome Patent L.P. v. Lee*, No. 2014-1673, 2015 WL 5155181, at *6 (Fed. Cir. Sept. 3, 2015). Although "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness," *KSR*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)), "[t]he obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents." *Id.* at 419. Rather, courts must take an "expansive and flexible approach" to the question of obviousness. *Dome Patent L.P.*, 2015 WL 5155181, at *6 (quoting *KSR*, 550 U.S. at 415) (internal quotation marks omitted).

Petitioner argues that Teramura provides the teaching that conventional electronic currency can be used in its system. Pet. 36 (citing Ex. 1007, 2:3–18). Hence, Petitioner asserts that it would have been well within the knowledge of a person of ordinary skill in the art to adapt Teramura such that Teramura's broker received the electronic currency of

the APA NetCash System. *Id.* Citing the testimonies of Drs. Neuman and Tygar, Petitioner asserts that it was well-known in the prior art that electronic currency was usable in middleman based currency transactions. Pet. Reply 7–8 (citing Ex. 1012 ¶ 4; Ex. 1011 (Tygar Dep.), 36:21–37:1, 40:19–41:5, 42:20–43:2; Ex. 1009 ¶ 30; Ex. 2012 ¶ 19). Petitioner further argues that Teramura teaches that its escrow middleman system provides an additional improvement in electronic currency transactions by using a trusted middleman to insulate the parties from the risk that the buyer or seller may "run out" on the transaction without completing their half of the bargain. *Id.* at 8 (citing Ex. 1007, 3:2–14; Ex. 1009 ¶ 107; Ex. 1012 ¶ 12).

Petitioner also asserts that it would also have been obvious to one of ordinary skill in the art that Teramura's broker can serve as both an intermediary as well as the currency server of the APA NetCash System, "[c]o-locating the currency server with the intermediary" that handles the currency transactions. Pet. 36–37. Petitioner asserts that a person of ordinary skill in the art would have been motivated to make the proposed combination because such a combination would result in increased security and efficiency. *Id.* at 37. Petitioner further asserts that co-locating the currency server with the intermediary would provide "an option for users to leave their electronic data packets with the intermediary server to hold on behalf of the user, protecting the user from loss due to the loss, destruction, or theft of the data storage device on which the user would otherwise maintain his data packets." *Id.* In addition, Petitioner asserts that Simon provides a clear teaching that an intermediary for monetary transactions can

also issue electronic currency. *Id.* at 36–37 (citing Ex. 1008, col. 8, ll. 5–57, Fig. 6).

Citing the testimony of Drs. Neuman and Tygar, Petitioner further asserts that a person of ordinary skill in the art would have been motivated to include an internal coin replacement function in a middleman system that adopts the currency server and the electronic currency of the APA NetCash System because the APA NetCash System solved the double spending problem of electronic currency by using a third party, i.e., the currency server, to exchange used or spent currency with new currency. *See* Pet. Reply 8 (citing Ex. 1001, col. 3, ll. 14–21; Ex. 1011, 26:20–27:8; Ex. 1012 ¶ 16). Dr. Neuman testifies that "[s]wapping the coins after the transaction, the only other option, heightens the risk that the buyer double spends the coin while the coin is sitting with the middleman." Ex. 1012 ¶ 16. Petitioner asserts that Dr. Tygar acknowledged that the risk of double spending goes up with time. Pet. Reply 8 (citing Ex. 1011, 73:17–18). Thus, Petitioner argues, "[b]ecause the electronic currency may sit idly at the middleman for some time, the logical place, really the only place, to include coin replacement is at the middleman." *Id.* (citing Ex. 1012 ¶ 16). According to Petitioner, "this exact solution, i.e., a middleman with currency swapping functionality," is disclosed by Simon. *Id.* at 8 (citing Ex. 1008, col. 8, ll. 5–64, Fig. 6; Ex. 1009 ¶¶ 29, 111, 177; Ex. 1012 ¶ 28).

Patent Owner asserts that neither Teramura nor the APA NetCash System discloses or suggests any problem that would motivate a person of ordinary skill in the art to modify Teramura in view of the APA NetCash System or vice versa. PO Resp. 22–23 (citing Ex. 2013, 171:16–172:6,

173:7–174:4). Patent Owner further asserts "generic motivations," such as those offered by Petitioner, i.e., to achieve benefits in security or efficiency (*see* Pet. 44, 58), are legally insufficient. PO Resp. 23 (citing *In re Laskowski*, 871 F.3d 115, 117 (Fed. Cir. 1989)). The *Laskowski* case Patent Owner relies on, however, predates the Supreme Court's landmark *KSR* decision. Contrary to Patent Owner's contention, "[i]t is well settled that, *even where references do not explicitly convey a motivation to combine*, '*any need or problem known in the field of endeavor at the time of invention* and addressed by the patent can provide a reason for combining the elements in the manner claimed.'" *ABT Sys., LLC v. Emerson Elec. Co.*, No. 2014-1618, 2015 WL 4924160, at *9 (Fed. Cir. Aug. 19, 2015) (emphasis added) (quoting *KSR*, 550 U.S. at 420). Further, when "the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient . . . there exists in these situations a motivation to combine prior art references *even absent any hint of suggestion in the references themselves*." *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006) (emphasis added). "In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him *capable* of combining the prior art references." *Id.* "As *KSR* established, the knowledge of such an artisan is part of the store of public knowledge that must be consulted when considering whether a claimed invention would have been obvious." *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013).

As discussed above, we determined that a person of ordinary skill in the art, at the time of the invention of the '011 patent, would have been familiar with various conventional systems for electronic payments and electronic currency transactions, including two-step transaction systems that employ trusted intermediary "broker servers," and would have understood the security problems to be an important issue in existing systems. In view of this knowledge of a person of ordinary skill and her awareness of the security issues, and in further view of the fact that, as discussed above, Teramura addresses the problems of theft and fraud in electronic currency transaction (*see* Ex. 1007, Abstract, 3:2–18) by using a trusted intermediary broker to send electronic money in two steps, we are persuaded by Petitioner's arguments that a person of ordinary skill in the art would have been motivated to combine Teramura with the APA NetCash System to improve the security of the electronic currency transaction of the APA NetCash System.

We are also persuaded by Petitioner's argument that a person of ordinary skill in the art would have been guided by Simon and motivated to co-locate the currency server of the APA NetCash System with Teramura's intermediary broker to further increase the security of the combined system. In addition, we credit the testimony of Dr. Neuman, and are persuaded that a person of ordinary skill would have been motivated by the double-spending problem addressed in the APA NetCash System and Simon's teaching of currency swapping at the middleman to recognize that, in a combined system where the currency server and the intermediary broker are co-located, the middleman is a preferred location to place the coin exchange

function. That is, a person of ordinary skill in the art would have found an internal coin exchange function at the middleman desirable. As discussed above, this means that an ordinary artisan would have found it desirable to have the broker check the coins received from the buyer with the co-located currency server, and, upon verification, replace them with new coins to be sent to the seller, as opposed to forwarding the coins "as-is" to the seller without checking them.

Patent Owner asserts that the double-spending motivation is a new argument raised improperly in Petitioner's Reply. *See* Paper 35, 12:18–13:1. This motivation, however, is introduced in connection with the internal placement of the coin exchange function, which, as discussed previously, was put forward by Petitioner in response and in rebuttal to the argument raised in the Patent Owner Response. Thus, the double-spending motivation cannot be viewed as a new argument raised improperly in a reply. Patent Owner's argument regarding Petitioner's reliance on Simon to provide the motivation for the internal coin exchange function (*see* Paper 35, 13:12–13; Obs. 6–7; PO Mot. to Exclude 10–11) is similarly unpersuasive.

Patent Owner also asserts that Simon cannot be relied upon to provide a motivation to combine in this proceeding because the Board did not institute any grounds of review based on it and none of the instituted grounds combine Teramura with APA NetCash System and Simon. PO Resp. 42. Patent Owner argues that Simon is not relevant to any issues in this proceeding because there is no instituted ground based on Simon. PO Mot. to Exclude 10. Patent Owner's arguments are unpersuasive because the fact that the Board exercised its discretion to decline to institute based on

Simon does not by itself render Simon irrelevant for all other purposes in this proceeding. As discussed above, the Petition relied on Simon to show the level of ordinary skill as well as a motivation to combine. Patent Owner does not explain why these issues become irrelevant merely because Simon is not the basis of a ground of unpatentability at trial. Contrary to Patent Owner's contention, prior art references are highly relevant to both of these issues, regardless of whether the references are relied upon to disclose or teach the features of the challenged claims. *See Randall Mfg*, 733 F.3d at 1362–63 ("One form of evidence to provide such a foundation [for what one of ordinary skill in the relevant art would have known], perhaps the most reliable because not litigation-generated, is documentary evidence consisting of prior art in the area."); *GPAC*, 57 F.3d at 1579.

Patent Owner further argues that Simon does not provide a motivation to co-locate the currency server and the intermediary broker because in Simon, the user, *not* an intermediary (the bank in Simon), issues the electronic currency. *See* PO Resp. 42 (citing Ex. 1008, Fig. 1, col. 5; Ex. 2012 ¶ 49), Obs. 7. Petitioner responds, citing the testimony of Dr. Neuman, that the coins in Simon do not become valid coins or hold any value until they are certified by the bank. Obs. Resp. 7–8 (citing Ex. 2026, 60:17–61:4), Ex. 1012 ¶ 28 (citing Ex. 1008, col. 5, l. 66–col. 6, l. 8). We credit Dr. Neuman's testimony and are persuaded by Petitioner's argument that Simon would have provided a motivation to co-locate the currency server with the intermediary broker and place the internal coin exchange function at the middleman.

Patent Owner also asserts that the proposed combination would result in a fundamental modification of the APA NetCash System as a direct payment system. *See* PO Resp. 19–20; Obs. 1–2; Ex. 2012 ¶ 50. Petitioner argues that Patent Owner misapprehends the combination proposed by Petitioner and that, as explained by Dr. Neuman, no or few changes are necessary to the APA NetCash System. Pet. Reply 9 (citing Ex. 1012 ¶ 5), Obs. Resp. 1 (citing Ex. 2026, 39:6–9; Ex. 1012 ¶ 5). Citing the testimony of Dr. Neuman, Petitioner asserts that a person of ordinary skill in the art would have recognized that the proposed combination with the internal coin exchange function at the middleman would have been no more than adding the functionality of currency exchange to the middleman server. Pet. Reply 9 (citing Ex. 1012 ¶¶ 5, 7).

The issue for the question of obviousness is not whether the proposed modification would amount to a "fundamental change" in some way, but, rather, whether, in making the proposed combination, a person of ordinary skill would have had a reasonable expectation of success. *See Dome Patent L.P.*, 2015 WL 5155181, at *6. We credit Dr. Neuman's testimony and are persuaded that, in making the proposed combination of Teramura and the APA NetCash System, a person of ordinary skill in the art would have had a reasonable expectation of success, because it would have involved relatively few changes, all of which were well-known to ordinary artisans.

Patent Owner further argues that the proposed combination would have rendered each system "unsatisfactory for its original purpose, and

change[d] the principle of operation."[8] PO Resp. 43 (citing Ex. 2012 ¶¶ 51, 101). Patent Owner asserts that a "key goal" of the APA NetCash System was providing anonymity and the combination would have destroyed the anonymous nature of the system. *Id.* at 20 (citing Ex. 2013, 70:16–22, 73:11–74:4, 77:25–78:2, 151:15–21); Ex. 2012 ¶ 49; Obs. 8–9. Petitioner disputes Patent Owner's contentions, e.g., the APA NetCash System provides anonymity by using network addresses, which can be adapted for a middleman system using the same principle. Pet. Reply 10; *see also* Obs. Resp. 8–10 (responding to various arguments from Patent Owner regarding anonymity and explaining why they are unpersuasive). We have reviewed the arguments and evidence from Patent Owner and Petitioner and find Patent Owner's arguments unpersuasive. We do not agree with Patent Owner that providing anonymity is the "principle of operation" of the APA NetCash System, rather than simply one of the goals of the system. *See In re Mouttet*, 686 F.3d 1322, 1331–32 (Fed. Cir. 2012).

Patent Owner asserts that Teramura teaches using the electronic currency described in WO91/16691 and Petitioner provides no motivation as to why a person of ordinary skill would use the electronic currency of the APA NetCash System instead. PO Resp. 37. Petitioner argues that, while Teramura points to the electronic currency of WO 91/16691 as an example

[8] Patent Owner cites the Examiner statement that rendering a system "*unsatisfactory* for its original purpose" is evidence of non-obviousness. *See* PO Resp. 11. However, we find that this is not a correct statement; the correct standard is whether the combination would "render[ ] [the invention] *inoperable* for its intended purpose. *In re Gordon*, 733 F.2d 900, 902 (Fed.Cir.1984) (emphasis added).

electronic currency that was known in the prior art, Teramura does not limit its system to this electronic currency, and none of its teachings depends upon any particular characteristics of this specific currency or on any particular type of electronic currency. Pet. Reply 12 (citing Ex. 1012 ¶ 27, Ex. 1009 ¶ 109). We are persuaded by Petitioner's argument. Because of the benefits of using a trusted intermediary system, a person of ordinary skill in the art would have been motivated to pursue combining Teramura with various types of electronic currency. This, however, does not take away from the ordinary artisan's motivation for the proposed combination with the APA NetCash System in any way.

We have reviewed the remainder of Patent Owner's arguments regarding the rationale to combine (*see, e.g.*, PO Resp. 20 (offline feature of NetCash inconsistent with the proposed combination, negative effect on scalability and redundancy), 21 (smaller customer base for the combination); Obs. 5 (no one was actually doing the combination at the time of the invention)) and find them unpersuasive. Accordingly, we find Petitioner has shown that, at the time of the invention of the '011 patent, a person of ordinary skill in the art would have been motivated to combine Teramura with the APA NetCash System as proposed by Petitioner, and that, in making that combination, a person of ordinary skill would have had a reasonable expectation of success.

c. Conclusion

Upon considering all of the evidence of record, we determine that Petitioner has demonstrated, by a preponderance of evidence, claim 1 would

have been obvious under 35 U.S.C. § 103(a) based on the combination of Teramura and the APA NetCash system.

6. Claim 7

Claim 7 is a system claim which recites limitations similar to claim 1, and Petitioner presents for claim 7 essentially the same material as claim 1. *See* Pet. 42–44. Patent Owner also relies on its arguments for claim 1 to argue the patentability of claim 9. *See* PO Resp. 56. Therefore, for the same reasons discussed above with respect to claim 1, we determine that Petitioner has demonstrated, by a preponderance of evidence, claim 7 would have been obvious under 35 U.S.C. § 103(a) based on the combination of Teramura and the APA NetCash System.

7. Claims 2, 4–6, 8, 10, and 11

For our analysis of claims 2, 4–6, 8, 10, and 11, which depend from claims 1 or 7, we apply our findings and conclusions regarding claims 1 and 7 discussed above. Hence, we understand Petitioner's contentions regarding these dependent claims to be based on the proposed combination of Teramura and the APA NetCash System as discussed above. Thus, we interpret Petitioner's argument and evidence with the understanding that the Teramura's broker server is co-located with the currency server of the APA NetCash System and that an internal coin exchange function included in the co-located intermediary broker.

Patent Owner's arguments on these claims are similar to its arguments discussed above that treat the prior art individually without regard to the teachings of the proposed combination, which we found to be unpersuasive.

For example, Patent Owner asserts that claims 4 and 10 are not unpatentable because the claims require the CIAS to interact with two users (i.e., the first and second users), but Teramura does not teach a CIAS and the currency server of APA NetCash System does not interact with two users. PO Resp. 56–57. Patent Owner's argument is unpersuasive because it attacks the prior art references individually. Patent Owner also asserts that Teramura does not teach that the first and second users are isolated from each other. *See id.* Patent Owner's argument is unpersuasive for the same reasons discussed above during our analysis of the "isolation server" limitation.

Patent Owner further asserts that claims 5 and 11 are not unpatentable because Teramura does not teach "storing each money-representing data packet in the first user's active data packet area," as required by the claims. *See id.* at 57 (citing Ex. 2013, 95:19–96:5). According to Patent Owner, the Teramura broker at most would have "the limited electronic currency that was in transit from the first user to the second user during a transaction." *Id.* at 57–58 (citing Ex. 2012 at ¶ 91). To the extent that Patent Owner is arguing that the claims require storing all money-representing data packets at the same time, Patent Owner's argument is unpersuasive because the argued feature is not recited in the claims. In addition, to the extent that Patent Owner is arguing that Petitioner has not satisfied its burden of showing how "storing *each* money-representing data" is met by a showing of a single instance of storing the electronic currency during a transaction (*see id.*), "[the obviousness analysis] may include recourse to logic, judgment, and common sense available to the person of ordinary skill that do not necessarily require explication in a reference or expert opinion." *Perfect*

Web Tech., Inc. v. InfoUSA, Inc., 587 F.3d 1324, 1329 (Fed. Cir. 2009). In the absence of sufficient explanations or evidence, we find repeating the storing of data packets for each money-representing data is one of the "inferences and creative steps that a person of ordinary skill in the art would employ." *Id.* at 1330–31.

Patent Owner does not respond specifically to Petitioner's challenge to claims 2, 6, and 8 beyond Patent Owner's arguments advanced with respect to claims 1 or 7. We have reviewed the arguments and evidence presented by Petitioner (*see, e.g.*, Pet. 35–36, 40–42, 44–46) and, upon considering all of the evidence of record, we determine that Petitioner has demonstrated, by a preponderance of evidence, claims 2, 4–6, 8, 10, and 11 would have been obvious under 35 U.S.C. § 103(a) based on the combination of Teramura and the APA NetCash System.

F. Obviousness over Bernstein and the APA NetCash System

Petitioner asserts claims 1, 2, 4–8, 10, and 11 are unpatentable under 35 U.S.C. § 103(a) over the combination of Bernstein and the APA NetCash System. Pet. 46–61.

Upon review of all of the parties' papers and supporting evidence discussed in those papers, we are persuaded that Petitioner has demonstrated, by a preponderance of evidence, that claims 1, 2, 4–8, 10, and 11 are unpatentable under 35 U.S.C. § 103(a) over the combination of Bernstein and the APA NetCash System.

1. Bernstein Disclosure Overview

Bernstein describes a portable purchasing device. Figure 1 of Bernstein is shown below:

FIG. 1

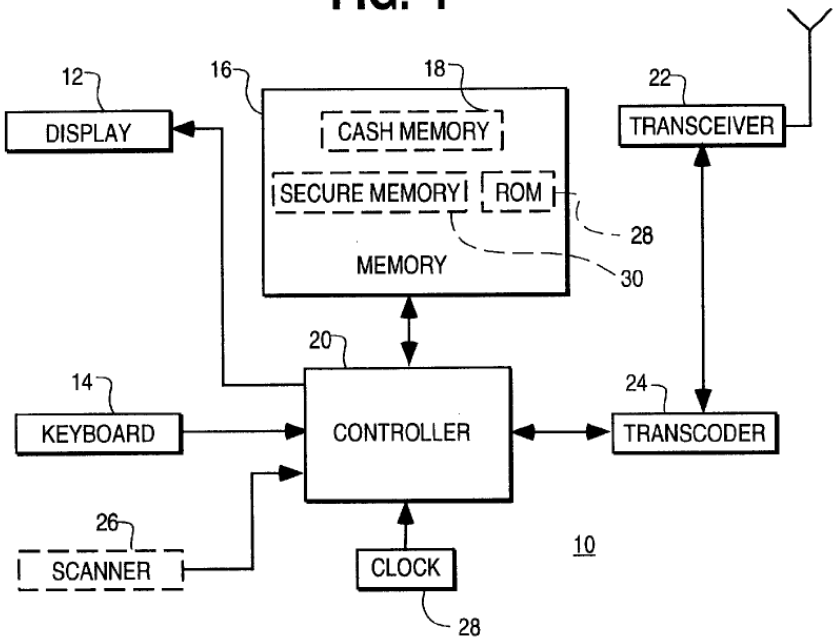

Figure 1 is a block diagram of portable purchasing device 10. *See* Ex. 1006, col. 4, ll. 65–67, col. 5, ll. 15–16. Purchasing device 10 has at least three modes of making a payment. In a "direct value transfer," purchasing device 10 communicates with a vendor cashbox using transceiver 22 to transfer electronic cash from cash memory 18 of purchasing device 10 to the vendor cashbox, without the assistance of a financial institution. *See id.* at col. 3, ll. 31–63, col. 5, ll. 20–32. In the second mode, purchasing device 10 again communicates directly with the vendor cashbox, but rather than using cash memory 18, device 10 uses the communication facilities of the vendor cashbox to contact a financial institution account of the authorized user of

the purchasing device to pay the vendor. *See id.* at col. 3, l. 64–col. 4, l. 4, col. 4, ll. 13–26, col. 8, l. 17–col. 9, l. 40.

The third mode is illustrated in Figure 5, reproduced below:

FIG. 5

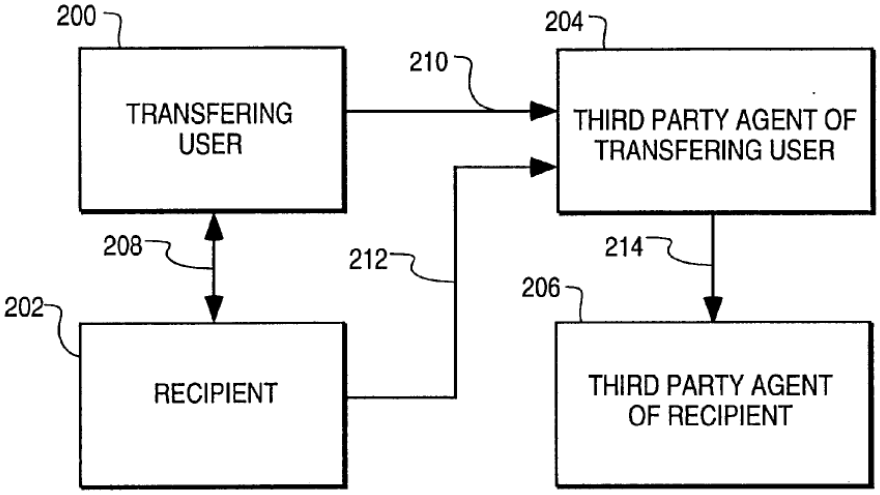

Figure 5 shows a system using purchasing device 10. *See id.* at col. 5, ll. 8–9. Referring to Figure 5, transferring user 200 uses device 10 to communicate with recipient 202 over phone line 208. *See id.* at col. 11, ll. 32–41, col. 4, ll. 14–15. The parties agree upon a monetary amount to be transferred from user 200 to recipient 202. *See id.* at col. 11, ll. 3–17, col. 11, l. 42–col. 12, l. 12. User 200 then sends a transaction summary to third party clearing agent 204 of user 200 over phone line 210. *See id.* at col. 11, ll. 17–22, col. 12, ll. 13–20. Recipient 202 does the same over phone line 212. *See id.* at col. 11, ll. 17–22, col. 12, l. 59–col. 13, l. 14. Agent 204 compares the two transaction summaries and, if they match, issues payment to recipient 202. *See id.* at col. 13, ll. 14–31.

2. Claim 1

a. Whether the Combination of Bernstein and the APA NetCash System Teaches Every Limitation of Claim 1

Petitioner has shown that the combination of Bernstein and the APA NetCash System teaches every limitation of claim 1. Pet. 46–53. Petitioner's theory basically parallels the theory for the proposed combination of Teramura and the APA NetCash System discussed above except that the financial institution of Bernstein plays the role of the intermediary in this combination. For example, Petitioner asserts that it would have been well within the knowledge of a person of ordinary skill in the art to adapt Bernstein's financial institution to include the currency and currency issuing capability of the APA NetCash System. *Id.* at 50. Similar to the Teramura-NetCash combination, the currency server is co-located with the intermediary—i.e., the financial institution of Bernstein. *Id.* In addition, the internal coin exchange function is placed at the intermediary, i.e., the financial institution, since the Petitioner's discussion in its Reply regarding the structure of the proposed combination and the middleman transaction applies equally to Teramura and Bernstein. *See* Pet. Reply 7–9.

Patent Owner argues that Bernstein does not teach an "isolation sever" because users must establish a connection and exchange information prior to actually transferring the money in order to set up the planned transaction. *See* PO Resp. 67 (citing Ex. 1006 at col. 11, ll. 33–41). However, as discussed above with respect to the Teramura-NetCash combination, the '011 patent provides a definition of the terms "isolation" and "isolation server" as follows:

> The terms "isolation" or "isolation server" are meant to indicate that no simultaneous or direct involvement exists between the users *in the process of moving currency* through the LAN or WAN.

Ex. 1007, col. 9, ll. 19–22 (emphasis added). Given this definition, Patent Owner's argument is not persuasive because the interaction described in the cited passage of Bernstein is not a direct interaction during the transfer of electronic currency. Dr. Neuman testifies that, in Bernstein, any direct interaction between the buyer and seller does not occur in the process of moving currency. Ex. 1012 ¶ 75. We credit Dr. Neuman's testimony and are persuaded by Petitioner's argument and evidence that the co-located server in the proposed combination of Bernstein and the APA NetCash System teaches an "isolation server" as recited in claim 1.

Patent Owner further asserts that Petitioner "relies upon a grab bag of features from the second and third distinct payment modes in Bernstein," relying on features of different modes for different limitations. PO Resp. 61 (citing Pet. 52–53). This is not improper because Petitioner's challenge is based on obviousness grounds. Unlike anticipation, the obviousness analysis does not require all of the teachings to come from the same embodiment. *See Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (holding that anticipation requires the presence in a single prior art disclosure of all elements of a claimed invention arranged as in the claim and that any deviation invokes the question of obviousness).

Patent Owner further asserts that, of the three alternative modes of effecting payment described in Bernstein, only the first mode uses electronic

currency. Patent Owner argues that the second and third modes relied upon by Petitioner do not concern electronic currency. PO Resp. 61–62. Patent Owner's argument is not persuasive because "[c]ombining the *teachings* of references does not involve an ability to combine their specific structures." *Application of Nievelt*, 482 F.2d 965, 968 (CCPA 1973).

Patent Owner also makes several arguments attacking the prior art individually without regard to the proposed combination. *See, e.g.*, PO Resp. 69–70 (Bernstein does not disclose CIA or CIAS, or a CIAS programmed to receive payment instructions from the first user to pay a sum to a second user; Bernstein uses direct payment), 71 (NetCash does not teach a CIAS programmed to receive an instruction from a first user to pay the second user, or to perform deleting the first user's data packets). These arguments are unpersuasive for the same reasons discussed above with respect to the combination of Teramura and the APA NetCash System. Patent Owner also raises again the argument regarding deleting the first user's data packets and issuing new data packets to the second user. *See id.* at 73–74. As discussed above, Petitioner's internal coin exchange argument was presented in response to this argument. Patent Owner also makes the argument that the NetCash coin belongs to Bernstein's financial institution when the buyer sends the coin to the intermediary broker, which we found unpersuasive as discussed above. *See id.* at 76. Thus, for the same reasons discussed above with respect to the Teramura-NetCash combination, we are not persuaded by Patent Owner's arguments disputing the teachings of the combination of Bernstein and the APA NetCash System as proposed by Petitioner.

Accordingly, on this record, we find that Petitioner has demonstrated, by a preponderance of evidence, that the proposed combination of Bernstein and the APA NetCash System teaches every limitation of claim 1.

b. Reasons to Combine Bernstein and the APA NetCash System

Petitioner argues the same motivation to combine as the combination based on Teramura—i.e., Simon and the desire for increased security and efficiency would have motivated a person of ordinary skill to combine Bernstein and the APA NetCash System. *See* Pet. 50–51. Our discussion above regarding the motivation to combine based on the knowledge of a person of ordinary skill and Simon is applicable here, including the motivation for an internal coin exchange function at the middleman based on the double spending problem addressed in the APA NetCash System and Simon's teaching of currency swapping at the middleman (*see* Pet. Reply 8–9).

Patent Owner argues that Bernstein teaches away from the proposed combination because Bernstein excludes its own bank intermediaries from involvement in an electronic currency transaction. PO Resp. 65. According to Patent Owner, the financial institution or third party agent in Bernstein is only invoked to perform a cash or credit transaction using traditional money, not using electronic currency. *Id.* (citing Ex. 2013, 145:7–12; Ex. 1006, col. 3, ll. 64–67).

Citing the testimony of Dr. Neuman, Petitioner asserts that the accounts that fund the intermediary transactions disclosed in Bernstein can be either conventional or electronic cash. Pet. Reply 12–13 (citing Ex. 1012

¶¶ 64, 72; Ex. 1009 ¶¶ 175, 183, 191, 192). Petitioner argues, contrary to Patent Owner's assertion, that Bernstein never disclaims the use of electronic cash in these accounts. *Id.* We credit Dr. Neuman's testimony, and are persuaded that Bernstein does not teach away from the proposed combination.

Patent Owner further argues that a person of ordinary skill would not have been motivated to combine Bernstein with the APA NetCash System because the proposed combination would have frustrated the net settlement operations at Bernstein's bank. *See* PO Resp. 21–22 (citing Ex. 1202 ¶ 105; Ex. 2013, 184:17–185:12, 186:8–17). Petitioner asserts, citing the testimony of Drs. Neuman and Tygar, that a person of ordinary skill would have understood that the recipient in Bernstein need not be a bank, and, therefore, was not necessarily engaged in net settlement. Pet. Reply 13–14 (citing Ex. 1012 ¶ 68; Ex. 1011, 116:9–23). We are persuaded by Petitioner's argument. Moreover, Patent Owner's argument is not persuasive because, as discussed above, "[c]ombining the *teachings* of references does not involve an ability to combine their specific structures." *Nievelt*, 482 F.2d at 968.

Accordingly, based on the foregoing, we find Petitioner has shown that, at the time of the invention of the '011 patent, a person of ordinary skill in the art would have been motivated to combine Bernstein with the APA NetCash System as proposed by Petitioner, and that, in making that combination, a person of ordinary skill would have had a reasonable expectation of success.

c. Conclusion

Upon considering all of the evidence of record, we determine that Petitioner has demonstrated, by a preponderance of evidence, claim 1 would have been obvious under 35 U.S.C. § 103(a) based on the combination of Bernstein and the APA NetCash System.

3. Claim 7

Claim 7 is a system claim which recites limitations similar to claim 1, and Petitioner presents for claim 7 essentially the same material as claim 1. *See* Pet. 56–58. Patent Owner also relies on its arguments for claim 1 to argue the patentability of claim 7. *See* PO Resp. 77. Therefore, for the same reasons discussed above with respect to claim 1, we determine that Petitioner has demonstrated, by a preponderance of evidence, that claim 7 would have been obvious under 35 U.S.C. § 103(a) based on the combination of Bernstein and the APA NetCash System.

4. Claims 2, 4–6, 8, 10, and 11

Similar to our analysis of the ground based on the combination of Teramura and the APA NetCash System, we apply our findings and conclusions regarding independent claims 1 and 7 discussed above to our analysis of these claims, which depend from claims 1 or 7. Thus, we interpret Petitioner's argument and evidence with the understanding that the Bernstein's intermediary is co-located with the currency server of the APA NetCash System and that the internal coin exchange function included in the middleman.

Patent Owner's arguments for these claims are similar to its arguments in the ground based on the combination of Teramura and the APA NetCash System that treat the prior art individually without regard to the teachings of the proposed combination, which we found to be unpersuasive. *See* PO Resp. 77–78. We find Patent Owner's arguments similarly unpersuasive here.

We have reviewed the arguments and evidence presented by Petitioner (*see, e.g.*, Pet. 46–61) and, upon considering all of the evidence of record, we determine that Petitioner has demonstrated, by a preponderance of evidence, claims 2, 4–6, 8, 10, and 11 would have been obvious under 35 U.S.C. § 103(a) based on the combination of Bernstein and the APA NetCash system.

G. Patent Owner's Motion to Exclude

Patent Owner moves to exclude Exhibit 1007 (Teramura), the APA NetCash System, Exhibit 1008 (Simon), Exhibit 1009 (Neuman Declaration), and Exhibit 1012 (Neuman Reply Declaration). As the movant, Patent Owner bears the burden of proof to establish that it is entitled to the relief requested—namely, that the material sought to be excluded is inadmissible under the Federal Rules of Evidence. *See* 37 C.F.R. §§ 42.20(c), 42.62(a). For the reasons discussed below, Patent Owner's Motion to Exclude is DENIED.

1. Ex. 1007 (Teramura)

Patent Owner moves to exclude Exhibit 1007, which is a copy of Canadian Patent No. 2,221,399, issued June 11, 2002. Patent Owner repeats and supplements its argument in its Patent Owner Response that Exhibit 1007 is not prior art under § 102(b). *See* PO Mot. to Exclude 2–7.

Arguing that Exhibit 1007 is not prior art under 35 U.S.C. § 102(b) is a challenge to the sufficiency or weight to be given to the document. Such argument is not proper in a motion to exclude, which is a challenge to the admissibility of evidence, not a challenge to sufficiency. *See* 77 Fed. Reg. at 48,767 (A motion to exclude may not be used to challenge the sufficiency of the evidence to prove a particular fact.). Accordingly, we will not consider Patent Owner's arguments regarding the prior art status of Exhibit 1007 in this Motion to Exclude.

Best Evidence Rule

Patent Owner appears to argue that Exhibit 1007 fails to satisfy the Best Evidence Rule, Federal Rules of Evidence ("FRE") 1002, because it is "neither an original nor a duplicate of the allegedly laid-open application." PO Mot. to Exclude 7. Petitioner, however, represents that Exhibit 1007 is a copy or a duplicate of Canadian Patent No. 2,221,399. *See* Pet. iii; Paper 44, 1. Patent Owner does not appear to dispute that fact. Furthermore, as discussed above, Petitioner has filed a certified copy of Teramura file history as Exhibit 1014, which includes the Teramura laid-open application. *See* Paper 17, 2; Pet. Exclude Opp. 3 (citing Ex. 1014, 2–3, 89–130). Patent Owner does not dispute Exhibit 1014 is a certified copy of Teramura file

history; nor does it dispute Exhibit 1014 includes a copy of the Teramura application. *See* PO Mot. to Exclude 7–8. Patent Owner appears to argue "[w]ithout a copy of the file – *as laid open in 1998* – there is no evidence on this issue" (*id.* (emphasis added), PO Resp. 30–31) because Exhibit 1014 is "merely a copy of the Teramura file history ***as it exists today***," and "is not sufficient evidence of what existed (and was 'laid-open') on May 21, 1998" (PO Resp. 31–32). Patent Owner's argument is, at best, a challenge to the sufficiency or weight to be given to Exhibit 1014, not a challenge to the admissibility of Exhibit 1007. Hence, Patent Owner has not articulated why the Best Evidence Rule is applicable at all to Exhibit 1007. Moreover, as discussed above, a challenge to the sufficiency or weight of evidence is not proper in a motion to exclude.

Authentication

Patent Owner argues that Exhibit 1007 is not an authenticated copy of "the allegedly laid open application." PO Mot. to Exclude 8. But Patent Owner does not deny Exhibit 1007 is a copy of Canadian Patent No. 2,221,399. Nor does Patent Owner dispute Exhibit 1014 is a certified copy of the Teramura application file history. Thus, Patent Owner has not articulated why authentication is at issue here. Petitioner argues that Exhibit 1007 is self-authenticating under FRE 902(5). Pet. Exclude Opp. 7. We agree with Petitioner.

Therefore, Patent Owner has not carried its burden to show Exhibit 1007 is inadmissible under the Federal Rules of Evidence. Accordingly, Patent Owner's Motion to Exclude Exhibit 1007 is DENIED.

2. The APA NetCash System

Patent Owner repeats its argument in the Patent Owner Response that the APA NetCash System falls outside AIA § 18(a)(1)(C) and cannot form the basis of an unpatentability ground in a cover method review proceeding. PO Mot. to Exclude 9–10. As explained above, such an argument is a challenge to the sufficiency or weight to be given to the document. Such argument is not proper in a motion to exclude, which is a challenge to the admissibility of evidence, not a challenge to sufficiency. Accordingly, Patent Owner's Motion to Exclude the APA NetCash System is DENIED.

3. Ex. 1008 (Simon)

Patent Owner repeats its argument in the Patent Owner Response that Simon is irrelevant to this proceeding because the Board declined to institute on any grounds based on Simon. *Id.* at 10–12. Such argument is a challenge to the sufficiency or weight to be given to the document, and, therefore, not proper in a motion to exclude. Accordingly, Patent Owner's Motion to Exclude Simon is DENIED.

4. Ex. 1009 (Neuman Declaration)

Patent Owner moves to exclude paragraphs 1–125 of the Neuman Declaration and eight appendices to the Neuman Declaration because the Petition does not rely upon or refer to them. *Id.* at 12–14. According to Patent Owner, the Petitioner's Reply cited twenty-seven paragraphs of the Neuman declaration. Such argument is a challenge to the sufficiency or weight to be given to the document, which we are able to assess without

excluding it. Accordingly, Patent Owner's Motion to Exclude the Neuman Declaration is DENIED.

5. Ex. 1012 (Neuman Reply Declaration)

Patent Owner moves to exclude the Neuman Reply Declaration in its entirety because the Petitioner Reply cited only to certain paragraphs in the document. *Id.* at 14. Although Patent Owner argues the uncited paragraphs are prejudicial to it, Patent Owner does not explain what is the nature of the prejudice it will suffer and why. *Id.* Patent Owner also argues that because, at the deposition of Dr. Neuman, the parties stipulated to confine the scope of the deposition to those portions in Exhibit 1012 cited in the Petitioner Reply, the uncited paragraphs are prejudicial and irrelevant to this proceeding. *Id.* at 15. Patent Owner's argument is at best a challenge to the sufficiency or weight to be given to the document, which is not proper in a motion to exclude.

Patent Owner also argues that many of the theories included in the Neuman Reply Declaration were presented for the first time in the Petitioner Reply as Patent Owner identified during the March 30, 2015 telephone conference. *Id.* Although a Motion to Exclude may raise issues related to admissibility of evidence, it is not a mechanism to argue that a Reply contains new arguments. *Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.*, Case CBM2013-00004, slip op. at 62 (PTAB Mar. 13, 2014).

Nonetheless, as discuss above, we find that the arguments in the Petitioner's Reply identified by Patent Owner as new arguments are arguments presented in response and in rebuttal to arguments first raised in

the Patent Owner Response, and, therefore, are properly raised as part of the Petitioner's Reply.

Accordingly, Patent Owner's Motion to Exclude the Neuman Reply Declaration is DENIED.

H. Motion for Observation

Patent Owner's observations are directed to the cross-examination testimony of Dr. Neuman (Ex. 2026), who was cross-examined after Petitioner filed its Petitioner Reply. We have considered Patent Owner's observations and Petitioner's responses in rendering our decision, and have accorded the testimony the appropriate weight as explained above. *See* Obs. 1–12; Obs. Resp. 1–13.

III. CONCLUSION

Petitioner has met its burden of proof, by a preponderance of the evidence, in showing that claims 1, 2, 4–6, 8, 10, and 11 of the '011 patent are unpatentable based on the following grounds of unpatentability:

A. Claims 1, 2, 4–6, 8, 10, and 11 under 35 U.S.C. § 103(a) as obvious over Teramura and the APA NetCash System;

B. Claims 1, 2, 4–6, 8, 10, and 11 under 35 U.S.C. § 103(a) as obvious over Bernstein and the APA NetCash System; and

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 2, 4–6, 8, 10, and 11 of the '011 patent are *unpatentable*; and

FURTHER ORDERED that Patent Owner's Motion to Exclude is *denied*.

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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