UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ASKELADDEN L.L.C.,
Petitioner,

v.

LIBERTY PEAK VENTURES LLC,
Patent Owner.

_____

Case IPR2023-00421
Patent No. 7,837,100 B2

_____

PETITION FOR *INTER PARTES* REVIEW OF CLAIMS 1-17 OF U.S. PATENT NO. 7,837,100 B2

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a. [1PRE] 1. A method comprising: 22

b. [1A] authenticating, by a processing device, a transaction requested by a debit card against at least one of a demand deposit account associated with the debit card or an overdraft account associated with the debit card, wherein the authentication includes fraud assessment,..... 25

c. [1B] wherein the fraud assessment includes communication with data sources via a network; 32

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2. Independent Claims 12 and 15 are Anticipated by Gopinathan (Ground 1) and/or Rendered Obvious over Gopinathan in view of Hirka (Ground 2)..... 68

a. [12PRE] 12. A computer program product for performing a debit card authentication the computer program product comprising a tangible computer usable medium having control logic stored therein, said control logic comprising: 69

b. [15PRE] 15. A tangible computer-readable medium having stored thereon computer executable instructions that, if executed by a computing device, cause the computing device to perform a method comprising: 72

c. [12A/15A] … authenticating, through authorizing including fraud assessment, a transaction requested by the debit card against at least one of an [account/demand deposit account] that has been associated with the debit card or an overdraft

account that has been associated with the debit card,..... 72

d. [12B/15B] wherein the fraud assessment includes communication with information sources via a network; and 75

e. [12C/15C] … updating information regarding at least one of the [account/demand deposit account] or the overdraft account based on the transaction. 75

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EXHIBIT LIST*

EXHIBIT NO.	DESCRIPTION
Ex1001	U.S. Patent No. 7,837,100 B2 to Bonalle et al. ("**the '100 Patent**")
Ex1002	U.S. Patent No. 8,905,301 B2 to Bonalle et al. ("**the '301 Patent**")
Ex1003	Expert Declaration of Ivan Zatkovich in Support of Petition for *Inter Partes* Review of Claims 1-17 of U.S. Patent No. 7,837,100 B2 and Claims 1-20 of U.S. Patent No. 8,905,301 B2 ("**Zatkovich Decl.**")
Ex1004	*Curriculum Vitae* of Ivan Zatkovich
Ex1005	Prosecution History of the '100 Patent (U.S. App. No. 11/478,140) ("**the '140 Application**")
Ex1006	Prosecution History of the '301 Patent (U.S. App. No. 12/907,955) ("**the '955 Application**")
Ex1007	U.S. Pat. Pub. No. 2007/0198404 A1 to Hirka et al. ("**Hirka '404**")
Ex1008	U.S. Pat. Pub. No. 2004/0225604 A1 to Foss et al. ("**Foss**")
Ex1009	WIPO Pub. No. WO 02/21374 A1 to Hirka et al. ("**Hirka**")

EXHIBIT NO.	**DESCRIPTION**
Ex1010	U.S. Patent No. 6,330,546 B2 to Gopinathan et al. ("**Gopinathan**")
Ex1011	"Financial transaction card originated messages – Interchange message specifications – Part 1: Messages, data elements and code values", ISO 8583-1, First Edition (published June 15, 2005) ("**ISO Standard 8583-1**")
Ex1012	Declaration of Glenn J. Perry ("**Perry Decl.**")
Ex1013	Letter Agreement Between Glenn J. Perry and Askeladden L.L.C. dated May 20, 2020

* Petitioner Askeladden L.L.C. has filed simultaneously with this Petition, a related Petition for *inter partes* review for U.S. Patent No. 8,905,301 (Ex1002), which issued as a child of U.S. Patent No. 7,837,100 (Ex1001). Since exhibits and subject matter overlap, for the Board's convenience and the parties' convenience, the same exhibits, including a common Declaration of Ivan Zatkovich (Ex1003) and a common Declaration of Glenn J. Perry (Ex1012), are being submitted in both proceedings.

Pursuant to 35 U.S.C. §§311-319 and 37 C.F.R. §42, Askeladden L.L.C. ("**Petitioner**") respectfully petitions for *Inter Partes* Review ("**IPR**") of Claims 1-17 of U.S. Patent No. 7,837,100 B2 ("**the '100 Patent**," Ex1001), which is assigned to Liberty Peak Ventures, LLC ("**Liberty Peak**"). Petitioner also submits the Expert Declaration of Ivan Zatkovich (Ex1003) in support of this Petition. Since there is a reasonable likelihood that at least one of the challenged claims is unpatentable, Petitioner requests institution of an IPR under 37 C.F.R. §42.108.

I. MANDATORY NOTICES UNDER 37 C.F.R. §42.8(a)(1)

As set forth below and pursuant to 37 C.F.R. §42.8(a)(1), the following mandatory notices are provided as part of this Petition.

A. Real Party-In-Interest Under 37 C.F.R. §42.8(b)(1)

Pursuant to 37 C.F.R. §42.8(b)(1), Petitioner Askeladden L.L.C. certifies that it is the real party-in-interest in this proceeding. In support, Petitioner submits the Declaration of Glenn J. Perry in Support of Petition for *Inter Partes* Review of Claims 1-17 of U.S. Patent No. 7,837,100 B2 (this Petition) and Claims 1-20 of U.S. Patent No. 8,905,301 B2 (a distinct Petition) (Ex1012) and supporting exhibits (Ex1013). As demonstrated in the Perry Declaration and supporting exhibits, no other party is in privy with or exercises control or could exercise control over Petitioner's participation in this proceeding, the filing of this Petition, or the conduct of any ensuing trial. (Ex1012, ¶¶22-28; Ex1013).

B. Related Matters Under 37 C.F.R. §42.8(b)(2)

To date, Liberty Peak has filed no patent infringement lawsuits with respect to the ’100 Patent, and there have been no PTAB proceedings for the ’100 Patent.

Liberty Peak has filed four patent infringement lawsuits with respect to the ’301 Patent, which is based on a continuing application to the ’100 Patent and for which another Petition for IPR is being filed simultaneously:

- *Liberty Peak Ventures, LLC v. The Charles Schwab Corporation*, No. 2:22-cv-00376 (E.D. Tex.) (filed: Sep. 28, 2022; pending). Defendants’ answer and counterclaims have been filed.
- *Liberty Peak Ventures, LLC v. Zions Bancorporation, N.A*, No. 2:22-cv-00195 (E.D. Tex.) (filed: Jun. 08, 2022) (terminated: Oct. 4, 2022).
- *Liberty Peak Ventures, LLC v. Regions Fin. Corp.*, No. 2:21-cv-00417, (E.D. Tex.) (filed: Nov. 9, 2021) (terminated: Jun. 2, 2022).
- *Liberty Peak Ventures, LLC v. Citigroup Inc.*, No. 6:21-cv-00711 (W.D. Tex.) (filed: Jul. 08, 2021) (terminated Jan. 24, 2022).

There are no other lawsuits or PTAB proceedings Petitioner is aware of involving the ’100 Patent, or the ’301 Patent. To the best of Petitioner’s knowledge, none of the grounds set forth in this Petition have been previously considered by the USPTO or any court.

C. Lead and Back-Up Counsel Under 37 C.F.R. §42.8(b)(3)

Pursuant to 37 C.F.R. §§42.8(b)(3) and 42.10(a), Petitioner provides the following designation of lead and back-up counsel and related service information. Pursuant to 37 C.F.R. §42.10(b), a Power of Attorney accompanies this Petition.

Lead Counsel	Back-Up Counsel
Charles R. Macedo (Reg. No. 32,781) Amster, Rothstein & Ebenstein LLP 90 Park Avenue New York, NY 10016 Telephone: (212) 336-8074 Facsimile: (212) 336-8001 E-mail: cmacedo@arelaw.com	Keith Barkaus (Reg. No. 51,431) Amster, Rothstein & Ebenstein LLP 90 Park Avenue New York, NY 10016 Telephone: (212) 336-8043 Facsimile: (212) 336-8001 E-mail: kbarkaus@arelaw.com

D. Service Information Under 37 C.F.R. §42.8(b)(4)

Service information (by e-mail, postal mailing, or hand-delivery) for lead and back-up counsel is provided in the above designation of lead and back-up counsel. Petitioner also consents to electronic service by e-mail at PQI-LPV@arelaw.com, with a copy to cmacedo@arelaw.com and kbarkaus@arelaw.com.

II. PAYMENT OF FEES UNDER 37 C.F.R. §42.103

The undersigned hereby provides authorization to charge Deposit Account No. 01-1785 to cover the $41,500 fee for this Petition. 37 C.F.R. §42.15(a). If this amount is insufficient or excessive, the Commissioner is authorized to deduct any underpayment from, or credit any overpayment to, Account No. 01-1785.

III. GROUNDS FOR STANDING UNDER 37 C.F.R. §42.104(a)

Petitioner certifies that the '100 Patent is available for IPR, and the provisions of 35 U.S.C. §§315(a), 315(b), and 315(e)(1) do not bar or estop Petitioner from requesting IPR of Claims 1-17 on the grounds raised herein.

IV. IDENTIFICATION OF CHALLENGE UNDER 37 C.F.R. §42.104(b) AND RELIEF REQUESTED

A. Claims for Which IPR Is Requested (37 C.F.R. §42.104(b)(1))

Petitioner requests IPR of Claims 1-17 of the '100 Patent.

B. Art and Statutory Grounds on Which the Challenge Is Based (37 C.F.R. §42.104(b)(2))

This Petition for IPR is based on the following prior art:

(1) U.S. Patent No. 6,330,546, entitled "*Risk Determination and Management Using Predictive Modeling and Transaction Profiles for Individual Transaction Entities*," to Gopinathan et al. ("**Gopinathan**," Ex1010), which issued on December 11, 2001.

(2) WIPO Publication No. WO 02/21374 A1, entitled "*System and Method for Linked Account Having Sweep Feature*," to Hirka et al., filed as International Application Number PCT/US01/26930, and published on March 14, 2002 ("**Hirka**," Ex1009).

Petitioner requests cancellation of Claims 1-17 based on the following grounds:

Ground 1: Claims 1, 12 and 15 are unpatentable as anticipated by Gopinathan (Ex1010) under 35 U.S.C. §102(b)[1].

Ground 2: Claims 1-17 are rendered obvious over Gopinathan in view of Hirka (Ex1009) under 35 U.S.C. §103(a).

V. SUMMARY OF THE '100 PATENT (Ex1001)

The '100 Patent (Ex1001), entitled "*System, Method, and Computer Program Product For Issuing and Using Debit Cards*," was filed on June 30, 2006 as U.S. Serial No. 11/478,140 ("**the '140 Application**"), and issued on November 23, 2010. The '140 Application claimed priority to U.S. Provisional Appl. Ser. No. 60/695,855, filed on July 5, 2005. For purposes of this Petition, Petitioner is assuming that the earliest potential effective filing date is July 5, 2005 (i.e., the earliest claimed priority date of the '140 Application, which matured into the '100 Patent).

A. Specification

The '100 Patent, which "generally relates to debit cards" (Ex1001, 1:16), is directed towards providing "a system, method and computer program product for allowing companies that do not have the ability to offer consumers banking-type

[1] All citations to 35 U.S.C. §§102 and 103 are to pre-AIA versions.

deposit accounts to issue pre-paid/debit-type cards to their customers." (Ex1001, 1:30-34; Ex1003, ¶35).

It describes a "system, method, and computer program product…used to issue and track debit cards" which includes "an enrolling system that verifies an enrollee, associates an enrollee's **main** and **overdraft account**, and issues a debit card," as well as "an **authentication system** that receives **information** regarding a **requested transaction** of a debit card." (Ex1001, Abstract; Ex1003, ¶36) (marked up to show "overdraft accounts" in **red**, "main [account]" in **green**, "authentication system" in **blue**, "information" in **dark gold**, and "requested transaction" in **purple**).[2] The "**main** and **overdraft account**" are "associated with the debit card," and the system "accepts or rejects the requested transaction based thereon." (Ex1001, Abstract; Ex1003, ¶36).

Overdraft protection for transactions is provided, such that "in the event that the value of the purchase exceeds the **DDA** balance, the debit card 110 uses an overdraw feature." (Ex1001, 7:29-30; Ex1003, ¶37). Following an overdraft, "the purchase is then transferred to a **customer's existing credit or charge account** that

[2] For ease of reference, this color-coding scheme is used throughout to identify corresponding elements. Unless otherwise noted, colors and emphasis have been supplied.

has been **designated for use** as an **overdraft account**." (Ex1002, 7:30-32; Ex1003, ¶37).

Figure 12, which illustrates an "overall method 1200" (Ex1001, 10:40), depicts a high-level flowchart of the claimed invention, particularly in steps **1208** and **1210** (Ex1003, ¶38):

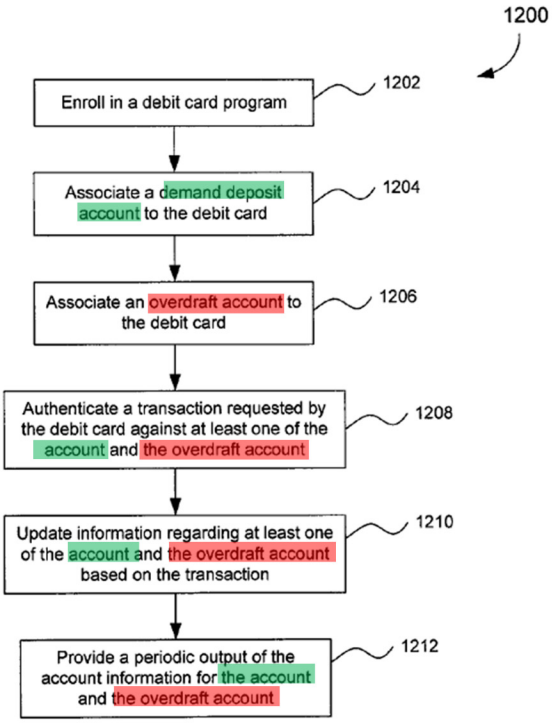


FIG. 12

(Ex1001, Fig. 12). The basic steps are:

- "In step 1202, a consumer enrolls into a debit card program and is issued a debit card.
- In step 1204, **a DDA** is associated with the debit card.
- In step 1206, an **overdraft account** is associated with the debit card.

- In step 1208, a **transaction requested** by the debit card is **authenticated** against at least one of the **account** and **the overdraft account**.
- In step 1210, **information** regarding at least one of the **account** **and** **the overdraft account** is **updated** based on the transaction.
- In step 1212, a periodic output of **the account information** for **the account and the overdraft account** is provided to the consumer."

(Ex1001, 10:40-52).

As depicted in system 100 in Figure 1, the '100 Patent discloses "an enrolling system, an authentication system, and a settlement system" (Ex1001, 1:54-55) which perform the basic steps as outlined in Figure 12 (Ex1001, 1:56-65; Ex1003, ¶39):

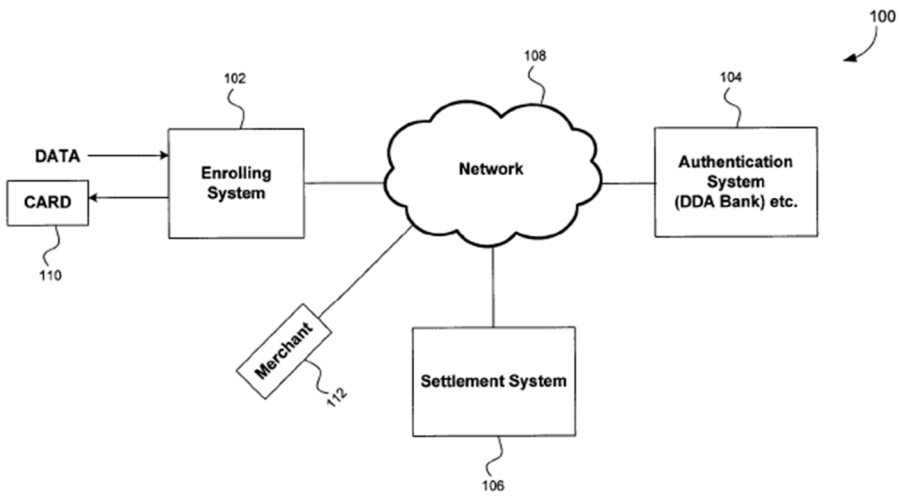


FIG. 1

(Ex1001, Fig. 1). As shown in Figure 1, information is transmitted to "authentication system 104" via "network 108" (Ex1001, 6:61-66; Ex1003, ¶41).

The ’100 Patent also discloses that fraud can be detected by the system in various ways, including by using a “[neural]-network decision model” and/or “Predictive Scoring” (Ex1001, 8:65-9:14; Ex1003, ¶41).

In sum, the ’100 Patent describes features of debit card processing systems, where the debit card is also associated with an overdraft account and where transactions are authenticated at least in part using traditional fraud detection techniques. (*See* Ex1003, ¶¶34-59). As discussed herein, these, and other, features were well known in the prior art and not inventive at the time of the invention. (Ex1003, ¶59).

B. Claims

All four independent Claims 1, 6, 12 and 15, as well as their respective dependent Claims 2-5, 7-11, 13-14, and 16-17 are addressed by this Petition. (Each claim is reproduced in Appendix A; *see also* Ex1003, ¶¶64, Appendix A)

C. Prosecution History

The ’100 Patent claims direct priority to U.S. Provisional Appl. Ser. No. 60/695,855, filed on July 5, 2005. (Ex1001, cover page; Ex1003, ¶69).

During the prosecution of the ’100 Patent, the Examiner cited and rejected the pending claims over U.S. Patent Publication No. 2007/0198404 A1, to Hirka (Ex1007, “**Hirka ’404**”), a related disclosure to the prior art WIPO Publication WO 02/21374 to Hirka (Ex1009, “**Hirka**”) which is relied upon in proposed **Ground 2**

to render Claims 1-17 obvious in combination with Gopinathan. (Ex1005, at 99; Ex1003, ¶¶70-72). In initially rejecting the claims of the '100 Patent, the examiner noted that Hirka taught "linking **debit card**, **demand deposit account** and **an overdraft line**" together, authenticating debit card transaction concerning, and updating information regarding, the same, and all other elements of the claims of the '100 Patent then presented. (Ex1005, at 99-100, citing Hirka '404 pars. 0001, 0006, 0007, 0012, 0017, 0019, 0020, 0035, 0041, and 0042; Ex1003, ¶¶72-74).

Applicant amended the claims in response, adding in the element of "fraud assessment". (Ex1005, at 121-123; Ex1003, ¶75). In accompanying remarks, Applicant did not dispute the Examiner, and instead, admitting that "Hirka ['404] generally teaches of authorization of a transaction", but argued that it did not teach "authorization including fraud assessment" (Ex1005, at 125; Ex1003, ¶¶76-79). Following a subsequent rejection, Applicant amended the claims to further include "fraud assessment via a network" (admitting in doing so that "Hirka ['404] generally teaches a computer implemented method for facilitating electronic transactions") which was the basis for the Examiner's allowance over the examined prior art (Ex1005, 152-156, 176; Ex1003, ¶¶78-81).

In short, while the '100 Patent ultimately issued over the Hirka '404 prior art, the issuance was based on the distinction that Hirka, in combination with the prior art considered, did not teach fraud detection via a network. (Ex1003, ¶82). As will

be discussed below, this element is disclosed by Gopinathan (Ex1010). Significantly, the combination of Gopinathan with the admitted aspects of Hirka was not considered during prosecution. (Ex1003, ¶82).

VI. CLAIM CONSTRUCTION UNDER 37 C.F.R. §42.104(b)(3)

The claims should be construed "using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. §282(b)." 37 C.F.R. §42.100(b). Thus, each claim term should be given its ordinary and customary meaning as understood by a person with ordinary skill in the art as of the July 5, 2005, priority date of the '100 Patent ("**POSITA**"), in accordance with *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). Petitioner submits that, for purposes of this Petition only, the terms of Claims 1-17 are clear on their face and each claim term should be given its plain and ordinary meaning. (Ex1003, ¶94).

VII. APPLICATION OF THE PRIOR ART TO CLAIMS 1-17, FOR WHICH IPR IS REQUESTED UNDER 37 C.F.R. §42.104(b)(4)-(5)

A. Level of Ordinary Skill in the Art

As Mr. Zatkovich explains, for the purposes of the '100 Patent, a POSITA would have a bachelor's degree in computer science, computer engineering, data science, electrical engineering, or a related study, and would have at least one or two years of experience with payment processing systems, credit card and debit card

payment transactions, and industry practices and standards for processing purchase transactions and authenticating participants. (Ex1003, ¶¶159-161).

B. Claims 1-17 Are Invalid

As **Ground 1**, Gopinathan discloses, expressly or inherently, all elements of claims 1, 12, and 15. As **Ground 2**, to the extent any features, such as the use of an overdraft account, of these claims are not disclosed, modifying Gopinathan to include such elements are obvious in view of Hirka. In addition, also corresponding to **Ground 2**, Claims 2-11, 13-14, and 16-17 are obvious over Gopinathan in view of Hirka. (Ex1003, ¶162).

1. The Disclosure of Gopinathan (Ex1010)

U.S. Patent No. 6,330,546 B1 to Gopinathan ("**Gopinathan**," Ex1010), entitled "*Risk Determination and Management Using Predictive Modeling and Transaction Profiles for Individual Transacting Entities*," was filed on October 5, 1998 and issued as a patent on December 11, 2001 and thus is prior art under pre-AIA 35 U.S.C. §102(b). (Ex1003, ¶98). Gopinathan was not considered during the prosecution of the '100 and the '301 Patents (Ex1001; Ex1002; Ex1005; Ex1006; Ex1003, ¶99).

Gopinathan is directed towards an "automated system and method" for "the detection of fraudulent use of **customer accounts** and **account numbers**, including **for example credit card transactions**." (Ex1010, Abstract; 1:29-35). Gopinathan

"**detects fraudulent transactions** using a predictive model such as a neural network to evaluate individual customer accounts and identify potentially fraudulent transactions" (Ex1010, 2:29-31, 2:41-43; Ex1003, ¶100, 102).

While Gopinathan relates generally to "credit card" transactions, it discloses that the term 'credit card' applies "**to other types of customer accounts, such as charge card**" (Ex1010, 1:37-41). As Mr. Zatkovich explains, a POSITA would understand that Gopinathan's teachings would apply not merely to "credit cards", but to "debit cards" as well, which are a kind of "charge card" which uses similar networks to charge card accounts. (Ex1003, ¶101).

Gopinathan discloses using a **processing device**, "**System 100**", to authenticate **transactions** by performing a **fraud assessment** (e.g., "**determining the likelihood of fraud** for each **transaction**" (Ex1010, 5:4-5)). The "overall functional architecture of **system 100**" is shown by Figure 8:

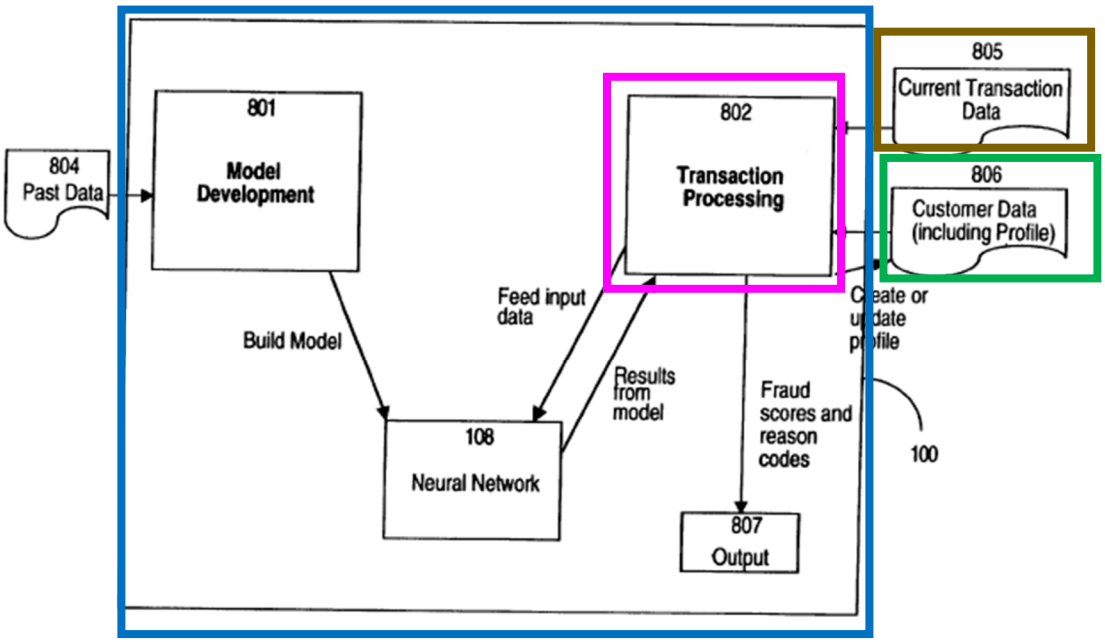


FIGURE 8

(Ex1010, Fig. 8; Ex1003, ¶103). **System 100** includes a "**transaction processing component 802**" that operates in the context of a "**conventional authorization** or posting system" (Ex1010, 24:34-37) and "performs three functions", encompassing the elements of Claim 1:

- "**1) it determines the likelihood of fraud for each transaction" by feeding data** from **various sources 805, 806** into neural network 108, obtaining results, and **outputting them 807**;
- 2) when applicable, it creates a record in a profile database 806 summarizing past transactional patterns of the customer; and
- 3) when applicable, it **updates** the appropriate record in profile database 806." (Ex1010, 5:4-10,24:37-43).; Ex1003, ¶¶104-105, 110).

Data used in the fraud assessment includes "[t]he **current transaction data** from **database 805**", such as "**transaction dollar amount**; **date**; **time**" and "**available credit (or balance)**" as well as "**customer data** from **database 806**", such as "general information on the customer" and a "profile record" of the customer. (Ex1010, 24:44-55; Ex1003, ¶¶106-107).

System 100, as shown by Figure 1, includes hardware such as "CPU 101" which is directed by "software program instructions, stored in program storage 107" to "perform the various functions of the system" (Ex1010, 3:49-59). Information is applied to the system **via data network 105** from a variety of sources (Ex1010, 3:51-56; Ex1003, ¶109):

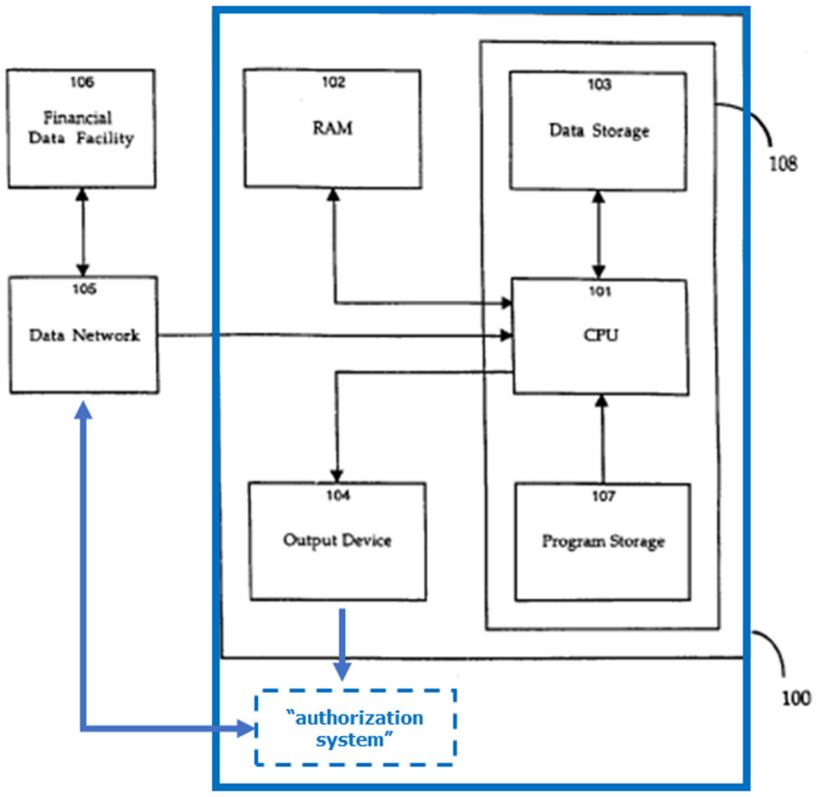
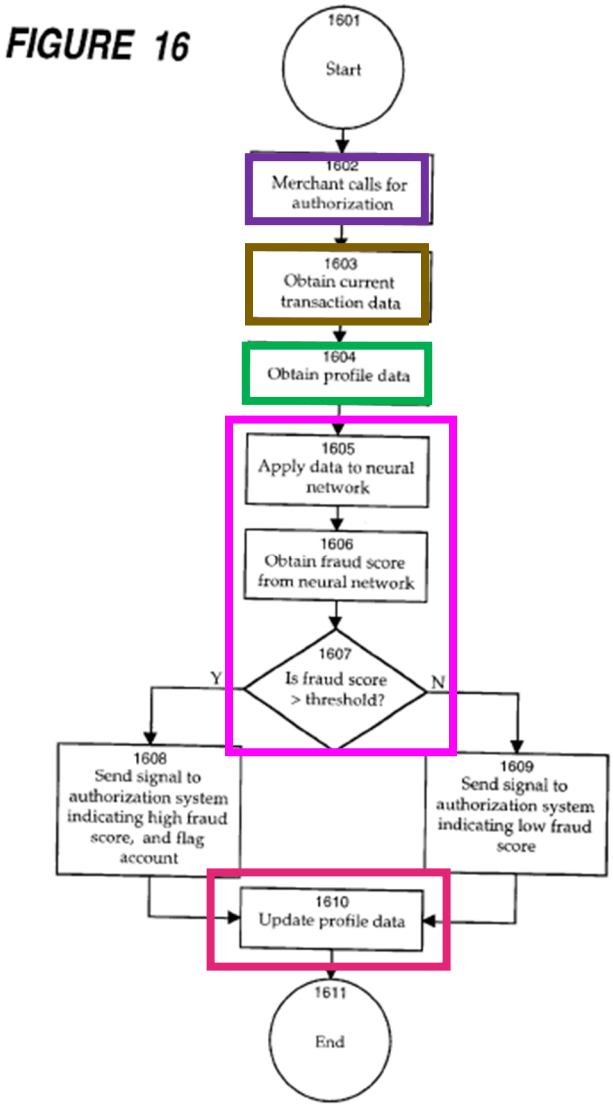


FIGURE 1

(Ex1010, Fig. 1; Ex1003, ¶108). In embodiments, following fraud assessment, "output device 104" sends a "signal dependent on the results to an **authorization system (not shown)** for further processing". (Ex1010, 4:11-13; Ex1003, ¶108).

Figure 16 depicts the specific steps used to make a "**fraud likelihood determination** before a transaction is authorized" (Ex1010, 25:28-29):



(Ex1010, Fig. 16). These steps include:

- **Step 1602** – The system receives "a merchant's request for authorization on a **transaction** 1602"
- **Step 1603 –** "the system **obtains data for the current transaction 1603**,"
- **Step 1604 –** the system obtains "**profile data** summarizing transactional patterns for the **customer 1604**."

- **Step 1605** – The system "then **applies this data to the stored neural network model 1605**"
- **Step 1606 – "A fraud score (representing the likelihood of fraud for the transaction) is obtained"**
- **Step 1607 -** The fraud score is **"compared to a threshold value 1607**."

(Ex1010, 25:45-52; Ex1003, ¶111).

This fraud score may then be used by the **authorization system** to accept or reject transactions (Ex1010, 25:45-58; Ex1003, ¶112). Afterwards, the "system then **updates** customer profile database 806 with the new transaction data". (Ex1010, 25:58-60; Ex1003, ¶113).

In sum Gopinathan discloses a system and method which, among other features, authenticates transactions with a fraud assessment involving communication with data sources via a network, and updates information following authentication (Ex1003, ¶¶98-113).

2. The Disclosure of Hirka (Ex1009)

To the extent Gopinathan does not expressly disclose any features required by the claims (for example, use of an overdraft account associated with a debit card), these features are taught by Hirka, as discussed herein and throughout this Petition.

WIPO Publication No. WO 02/21374 A1 to Hirka et al. ("**Hirka**," Ex1009), entitled "*System and Method for Linked Account Having Sweep Feature*," was filed

on August 31, 2001, and published on March 14, 2002 and is prior art to the '301 Patent under pre-AIA 35 U.S.C. §102(b). (Ex1003, ¶114).

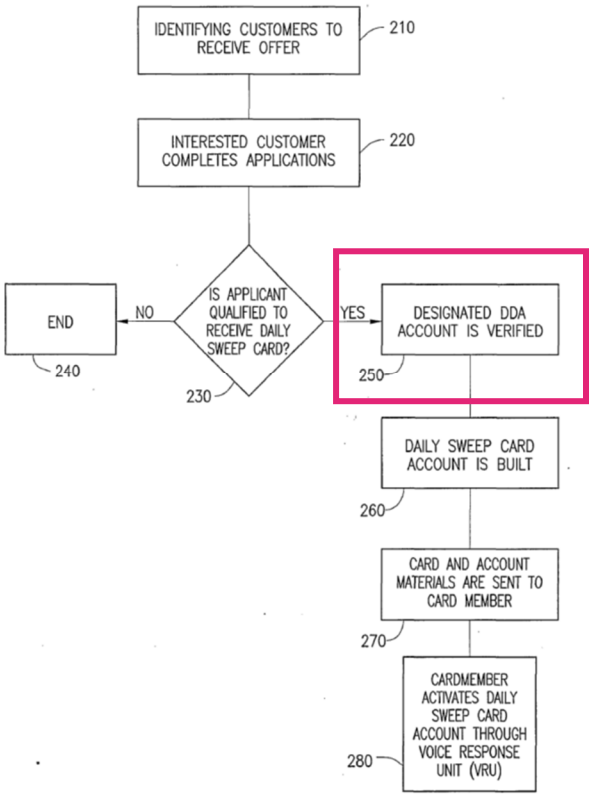
As Mr. Zatkovich notes, Hirka (Ex1009) corresponds to the Hirka '404 (Ex1007), which was considered during the prosecution of the '100 Patent. (Ex1003, ¶115). As discussed in Section V.C, and as Mr. Zatkovich explains, while the '100 Patent ultimately issued over Hirka '404, the issuance was based on the distinction that Hirka '404 and the other art considered by the examiner did not teach **fraud detection** **via a network**, which is not pertinent to the proposed use of Hirka in the present Petition. (Ex1005, Ex1003, ¶116). Instead, the Examiner's analysis confirms that Hirka teaches the other features of the invention unrelated to fraud detection, such as authenticating transactions including both demand deposit and overdraft accounts, linking a debit card to demand deposit and overdraft accounts, using enrollment systems, and using computer code. (Ex1005, at 100; Ex1003, ¶116). Additionally, Applicant failed to disagree with these interpretations in initial remarks and in fact expressly admitted that "Hirka ['404] generally teaches of authorization of a transaction" and "a computer implemented method for facilitating electronic transactions." (Ex1005, at 125, 155; Ex1003, ¶¶117).

Hirka relates to a "linked account card" which is "linked to a **cash account**, such as **a demand deposit account (DDA)**" and a "linked **credit account**", and is used in **transactions** (Ex1009, 2:29-30, 3:15-20). As Mr. Zatkovich explains, the

linked account card essentially functions as a **debit card**, "enabling individuals to purchase goods from a merchant using a **cash account** backed by a **credit account**", which is "a designated **credit or other account to handle overdrafts**" (Ex1009, 2:25-29, 7:10-12; Ex1003, ¶¶119-20).

As Mr. Zatkovich explains, the accounts are associated during an enrollment process, depicted in Figure 2, as required by several of the dependent claims:

FIG. 2



(Ex1009, Fig 2; Ex1003, ¶121). After completing an application in step 220, enrollees are verified in step 230. (Ex1009, 6:29-7:3; Ex1003, ¶122).

In one embodiment, following the initial examination of a potential cardholder's application, in **step 250**, both the "**demand deposit account**" and the "**overdraft account**" are associated with the linked account card, which is then issued (Ex1009, 7:4-17; Ex1003, ¶¶123-24). As Mr. Zatkovich confirms, the linked account card may then be used in transactions. (Ex1003, ¶125).

In sum, Hirka teaches associating an "**overdraft account**" as well as "a **demand deposit account**" with a debit card (e.g., a "linked account card" (Ex1009, 7:4-15)). (Ex1003, ¶¶131-157).

3. Gopinathan and Hirka are Analogous Art

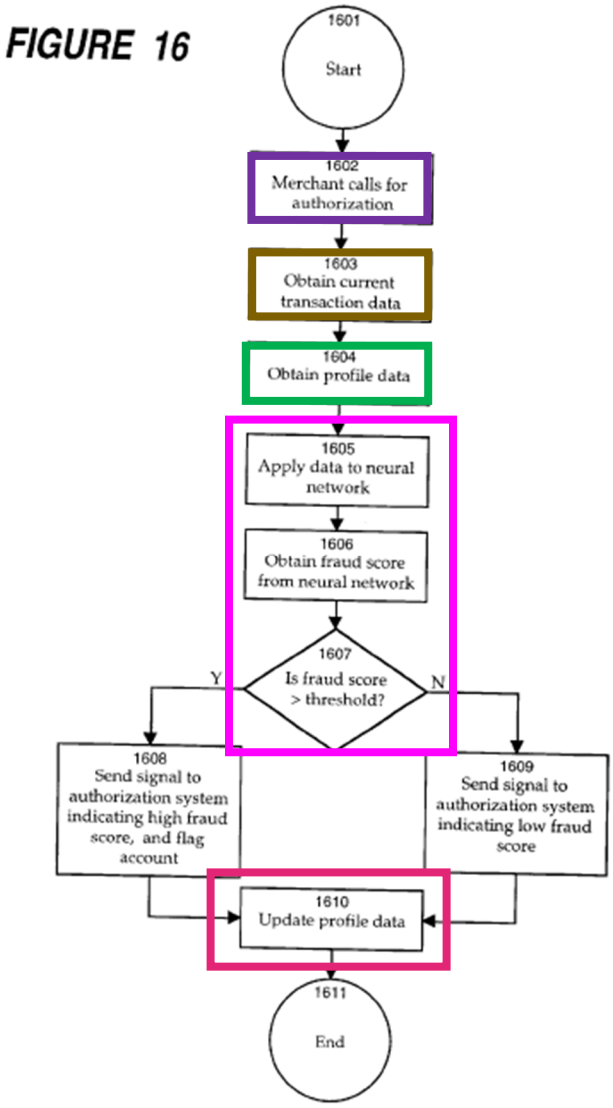
As a preliminary matter, Gopinathan and Hirka are analogous art and in the same field of endeavor (e.g., debit card and financial transaction instrument systems). (Ex1003, ¶163). Gopinathan provides a **fraud detection** component which detects "**credit card**", "charge card" and "**bank automated teller machine card**" fraud in the "context of a **conventional authorization or posting system**" and Hirka provides a "**linked account instrument**" (e.g., a "**plastic card similar to a credit card or ATM card")**, with card transactions authorized by "an **authorization server 130**" (Ex1010, 1:29-41, 5:18-19, 24:34-36; Ex1009, 5:22-29; Ex1003, ¶163). As Mr. Zatkovich explains, both relate to and modify conventional authorization systems for payment transaction instruments. (Ex1003, ¶164). The two are therefore in the same field of endeavor and analogous art. (Ex1003, ¶165).

4. Independent Claim 1 is Anticipated by Gopinathan (Ground 1) and/or Rendered Obvious over Gopinathan in view of Hirka (Ground 2)

As **Ground 1,** as Mr. Zatkovich explains, each and every element of Claim 1 is expressly or inherently taught by Gopinathan (Ex1010). (Ex1003, ¶166). In the alternative, as **Ground 2**, to the extent that the claims are interpreted as requiring an **overdraft account** in addition **main account** or **demand deposit account** or other features not expressly stated, such element(s) is/are at least obvious over Gopinathan in view of Hirka (Ex1009). (Ex1003, ¶¶166-205).

a. [1PRE] 1. A method comprising:

As Mr. Zatkovich explains, Figure 16 of Gopinathan discloses a method which contains all elements required by Claim 1 (Ex1010, 25:44-45, 1:29-35; Ex1003, ¶168):



(Ex1010, Fig. 16). This method, discussed in greater detail below with respect to each of the elements of Claim 1, is used for "**credit card transactions**" (Ex1010, 1:29-35; Ex1003, ¶167).

Gopinathan explains that "the term 'credit card'" is "used for illustrative purposes; however, the **techniques and principles** discussed herein **apply to other types of customer accounts, such as charge cards, bank automated teller**

machine cards and telephone calling cards." (Ex1010, 1:37-41). As Mr. Zatkovich explains, a POSITA would understand that Gopinathan's teachings apply not merely to "credit cards", but to "**debit cards"** also, which is a kind of "**charge card**" which uses the same networks and payment transaction types as charge card accounts. (Ex1003, ¶169).

As Mr. Zatkovich explains, the Background of the Invention of Hirka confirms that, like credit cards, "debit cards" are used for "retail, Internet and other purposes." (Ex1009, p.1; Ex1003, ¶170). In line with Hirka's explanation, Mr. Zatkovich explains that while linked to a "**consumers cash account**" such as a "**demand deposit account**", the transaction process is similar in both. (Ex1009, p. 1; Ex1003, ¶170). Additionally, as the prosecution history shows, both the Examiner and Applicant understood that the prior art (e.g., Hirka '404) taught authenticating a debit card against a "demand deposit account". (Ex1005, at 99, citing Ex1007; Ex1005, 124-126; Ex1003, ¶171).

In the alternative for Claim 1, as **Ground 2**, as Mr. Zatkovich explains, to the extent that Gopinathan does not expressly state it is applicable to "debit cards" as a kind of "charge card", it would have been obvious to a POSITA to use the "techniques and principles" of fraud detection processes taught by Gopinathan with a "debit card" system as taught in Hirka, since debit cards use the same standardized transaction requests as credit cards. (Ex1003, ¶172; Ex1010, 1:38-39; Ex1009, p.1).

As Mr. Zatkovich explains, a POSITA would have been motivated to use Gopinathan's "techniques and principles" (Ex1010, 1:38-39) of transaction fraud detection with debit cards in light of Hirka's explanation of the wide variety of charge cards (or "transaction cards") used by "Millions of Americans" as including not only "traditional bank-sponsored credit cards", but also "debit cards" and "stored value cards" as well as a "combination of those instruments" (Ex1009, p.1), as well as for all the reasons discussed in Gopinathan. (*See* Ex1009, 1:26-2:39; Ex1003, ¶¶173-174). Additionally, a POSITA would have found it easy to adapt the transaction authorization system to concern debit cards, as such cards bear substantial similarity in design and form with credit cards and are processed using very similar transaction authorization systems. (Ex1003, ¶175).

As Mr. Zatkovich explains, in the alternative, to the extent any additional of the elements of Claim 1 are not expressly disclosed, as **Ground 2** and discussed below, it would have been obvious to modify the method of FIG. 16 of Gopinathan to include such missing elements in view of Hirka. (Ex1003, ¶176).

Accordingly, a POSITA would understand that each and every feature of element [**1PRE**] is disclosed in Gopinathan (**Ground 1**) and in the alternative would be rendered obvious over Gopinthan in view of Hirka (**Ground 2**). (Ex1003, ¶177).

b. [1A] authenticating, by a processing device, a transaction requested by a debit card against at least one of a demand deposit account associated with the

debit card or an overdraft account associated with the debit card, wherein the authentication includes fraud assessment,

Gopinathan teaches authenticating, by a **processing device** (e.g., "**System 100**" (Ex1010, 3:50)) **a debit card** (e.g., a "charge card[]" and "bank automated teller machine card" (Ex1010, 3:40-41) as discussed in [**1PRE**]) against at least one of a **demand deposit account** associated with the debit card, wherein the authentication process includes fraud **assessment** (e.g., "**determining the likelihood of fraud** for each transaction" (Ex1010, 5:4-5)). (Ex1003, ¶178).

As Mr. Zatkovich explains, this limitation may be met regardless of if an "**overdraft account**" has been associated with a debit card. (Ex1003, ¶178). However, as discussed below and by Mr. Zatkovich, in the event an "overdraft account" is deemed necessary to be associated with the debit card for purpose of Claim 1, it would in any event be obvious to modify Gopinathan in view of Hirka (as set forth as **Ground 2**). (Ex1003, ¶178).

As Mr. Zatkovich explains, a processing device, "**System 100**", performs the disclosed invention (Ex1010, 3:50, 4:3-7; Ex1003, ¶179). **System 100** includes a "CPU 101" which is directed by "software program instructions" to "perform the various functions of the system" (Ex1010, 3:56-59):

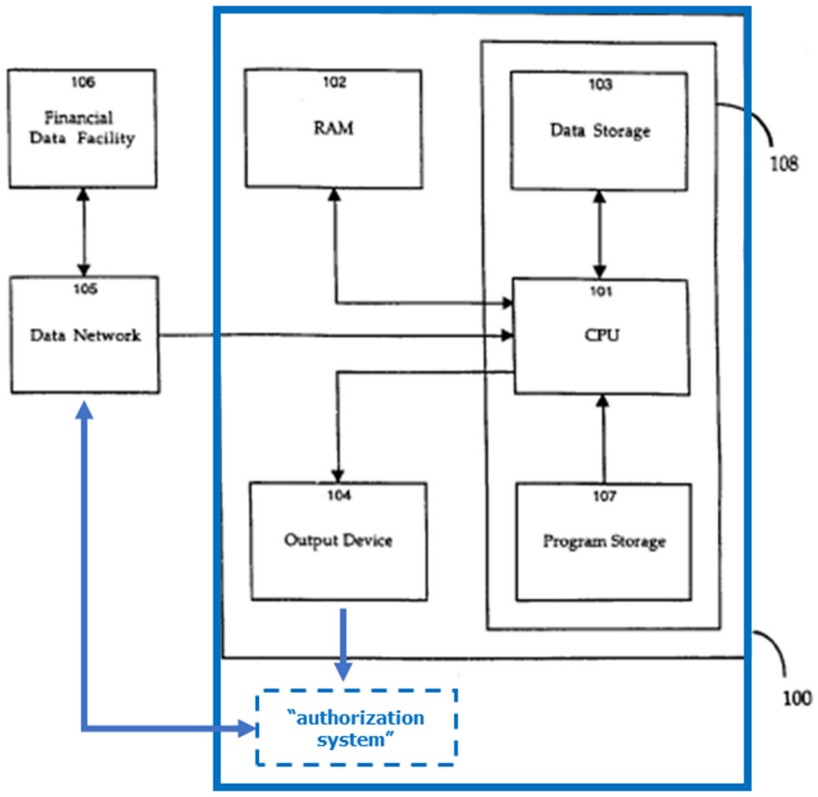


FIGURE 1

(Ex1010, Fig. 1). In embodiments, the CPU 101, may send, through "output device 104", a signal dependent on the results to an **authorization system (not shown)** for further processing". (Ex1010, 4:11-13). The **authorization system (not shown)** has been added to FIG. 1 above to show how it is described in Gopinathan. (Ex1003, ¶179).

Gopinathan further teaches that **System 100** performs **authentication** of a **transaction** associated against an account by performing a **fraud assessment** (e.g., "**determining the likelihood of fraud** for each **transaction**" (Ex1010, 5:4-5)). The "overall functional architecture of system 100" is shown by Figure 8, which includes

a "**transaction processing component 802**" that "**determines the likelihood of fraud** for **each transaction** by feeding them from various sources 805, 806 and feeding them into neural network 108, obtaining results, and outputting them" (Ex1010, 4:79-83, 5:4-7):

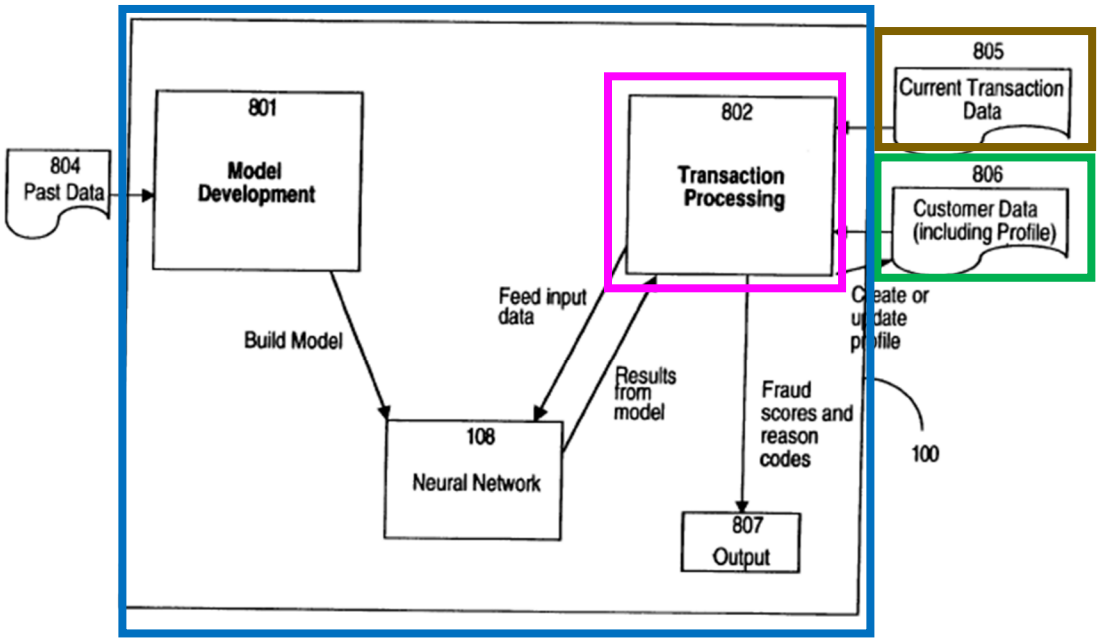
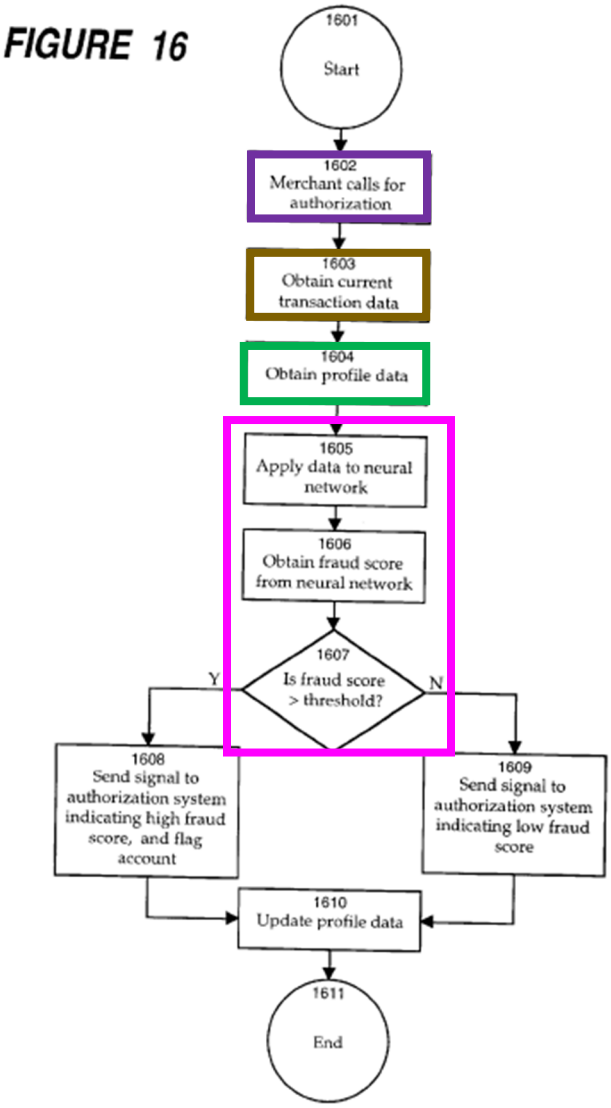


FIGURE 8

(Ex1010, Fig. 8; Ex1003, ¶180). Information associated with the **transaction** (e.g., "**current transaction data** from **database 805**" (Ex1010, 24:44)) and a customer's **account** (e.g., "**Customer data** from **database 805**" (Ex1010, 24:50-60)) is fed into "neural network 108", which authenticates transactions based upon "the learned relationships" between the various forms of information (Ex1010, 24:62-67). As Mr. Zatkovich explains, data related to the account is thus used to authorize the transaction (Ex1003, ¶181, Ex1010, 24:44-62).

Figure 16, described above with respect to element [**1PRE**] shows this same process as a flowchart. (Ex1003, ¶182). The neural network produces a "fraud score (representing the likelihood of fraud for the transaction)" in steps 1605-1607 based on "**data for the current transaction, 1603**, as well **profile data** summarizing transactional patterns for the customer 1604":



(Ex1010, Fig. 16; 25:50-52). The fraud score is sent to an authorization system, which uses the fraud score to make an authorization decision. (Ex1010, 24:53-58; Ex1003, ¶182).

As Mr. Zatkovich explains, a POSITA would thus understand that Gopinathan authenticates the card **transaction** against the account used by **determining the likelihood of fraud**. A lower fraud score would be authenticated, and a higher fraud score would be rejected as not authenticated, or fraudulent. (Ex1010, 25:50-58; Ex1003, ¶183).

As discussed with respect to [**1PRE**] and as Mr. Zatkovich further explains, Gopinathan teaches the transaction authenticated is from a "**charge card**", which would include "**debit cards"**, or, in the alternative, it would have been obvious to a POSITA to use the "methods and techniques" of Gopinathan with "debit cards" as a kind of "charge card" in view of Hirka. (Ex1003, ¶184; Ex1010, 1:28-29; Ex1009, p.1). As also discussed, this charge card, consistent with Mr. Zatkovich's experience in the industry, would be "linked to a consumer's cash account, **such as a demand deposit account (DDA), typically a checking account**." (Ex1007, [0004] (Hirka '404); Ex1009, p.1; Ex1003, ¶185). As such, at least in some embodiments, Gopinathan's authentication would be against the **customer's DDA or checking account**.

As Mr. Zatkovich explains, as **Ground 2**, to the extent that element [**1A**] requires authentication against an **overdraft account** in addition to the **demand deposit account**, it would have been obvious to a POSITA to do so in view of Hirka (Ex1009) teaching of authenticating a transaction against an **overdraft account**. (Ex1003, ¶186).

During the prosecution of the '100 Patent, the Examiner asserted (and met no pushback from Applicant) that Hirka '404 discloses "authenticating a transaction requested by a debit card against at [least] [one] of the demand deposit account and **overdraft account** (*see* par. 006, 0012, 0017, 0019, 0020)." (Ex1005, at 99, citing Ex1007), a conclusion with which Mr. Zatkovich agrees. (Ex1003, ¶187-188). As Mr. Zatkovich details, both Hirka and Hirka '404 demonstrate that a debit card used in the transaction in embodiments is associated with both a **demand deposit account** (e.g., "**cash account**") and an **overdraft account** (e.g., an "**account to supply the overdraft protection**") (Ex1007, [0019] and [0020] (Hirka '404); Ex1009, 3:30-4:7; Ex1003, ¶189).

As Mr. Zatkovich explains, a POSITA would understand that it would be obvious and desirable to additionally link the charge card (e.g., a debit card) to an **overdraft account**, as taught in Hirka (Ex1010, 1:38-39; Ex1009, p.1, 3:30-4:7) and well known at the time with respect to debit cards in general. (Ex1003, ¶189). Transactions conducted using such a debit card would result in authentication

against the **overdraft account** using the systems and methods disclosed by Gopinathan. (Ex1003, ¶189). As Mr. Zatkovich further explains, given that Gopinathan is configured to use credit cards (Ex1009, 7:10-12), which may be used as overdraft accounts, a POSITA would understand that the system of Gopinathan would be easily configured to authenticate transactions involving cards associated with overdraft accounts. (Ex1010, 1:29-31; 24:44-47; Ex1003, ¶190). A POSITA would have been motivated to modify Gopinathan to include authentication against an **overdraft account** because doing so would have protected cardholders and card issuing systems from fraud associated with debit cards with overdraft protection. (Ex1003, ¶191).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of element [**1A**] is disclosed in Gopinathan (**Ground 1**) and in the alternative would be rendered obvious over Gopinthan in view of Hirka (**Ground 2**). (Ex1003, ¶192).

c. [1B] wherein the fraud assessment includes communication with data sources via a network;

Gopinathan teaches that the **fraud assessment** (e.g., making a "**fraud likelihood determination**" (Ex1010, 25:28-29)) includes communication with **data sources** (**"various sources 805, 806"**) (Ex1010, 5:6)) **via a network** (e.g. "**data network 105**"). This is the feature that Applicant successfully argued during

prosecution of the '100 Patent was missing in Hirka '404 to distinguish the claimed invention from the cited prior art. (Ex1005, at 155). As discussed herein, and as Mr. Zatkovich confirms, Gopinathan teaches this limitation in full. (Ex1003, ¶193).

As **Ground 1**, and as discussed in element [**1A**] and by Mr. Zatkovich, Gopinathan discloses that the transactional processing component 802 of System 100 "**determines the likelihood of fraud** for each transaction by feeding **data** from **various sources 805, 806** into neural network 108, obtaining results, and outputting them." (Ex1010, 5:5-8; Ex1003, ¶194). As Mr. Zatkovich explains, a POSITA would understand that these "various sources 805, 806" are "**data sources**". (Ex1003, ¶195).

As shown in Figure 1, "**Transaction information**" is obtained via "**data network 105**, which is connected to a conventional **financial data facility 106** collecting transaction information from **conventional sources**" (Ex1010, 3:51-53):

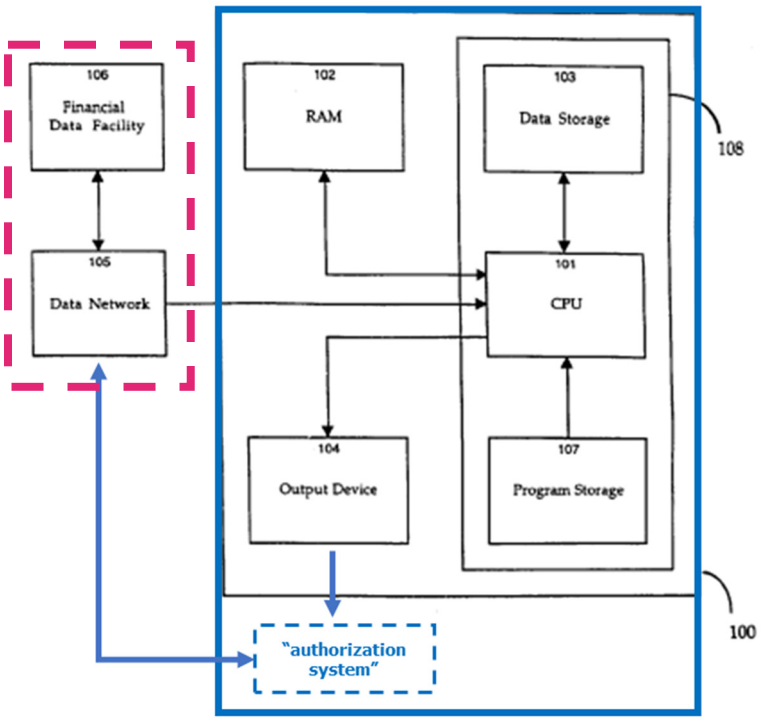


FIGURE 1

(Ex1010, Fig. 1). These conventional sources include "human-operated credit-card authorization terminals and automated teller machines (not shown)." (Ex1001, 10:55-56). As Mr. Zatkovich explains, a POSITA would understand these conventional sources are data sources that are remotely located from **System 100** and thus would necessarily communicate via a network. (Ex1003, ¶195).

Thus, as Mr. Zatkovich explains, a POSITA would understand that in Fig.1 of Gopinathan "**sources 805**, **806**" would be located at the "financial data facility 106" and communicated via "data network 106" (Ex1010, 3:51-53; Ex1003, ¶196). Additionally, a network would be used to communicate with "**conventional sources"** associated with transactions, as discussed above. (Ex1003, ¶196). A

POSITA would thus understand that Gopinathan teaches that the **fraud assessment** includes communication with **data sources** via a **network.** (Ex1003, ¶196).

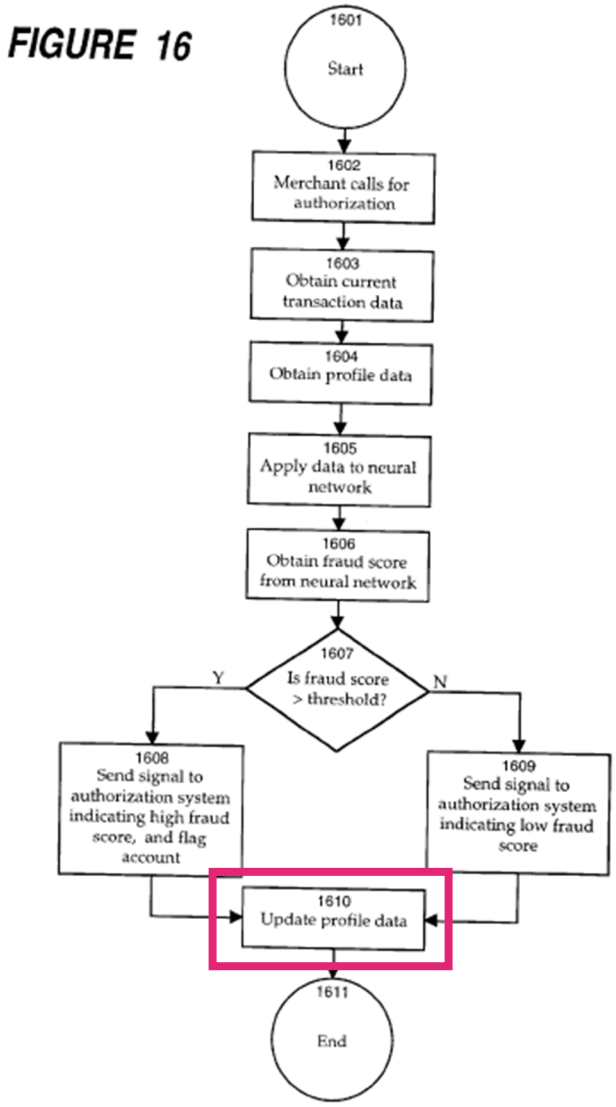
Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of element [**1B**] is disclosed in Gopinathan (**Ground 1**) and/or rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶197).

d. [1C] And updating, by the processing device, information regarding at least one of the demand deposit account and the overdraft account based on the transaction.

Element [**1C**] requires "**updating**, by the **processing device**, information regarding at least one of the **demand deposit account** and the **overdraft account** based on the **transaction**" (Ex1001, 13:4-6).

This element is satisfied if information regarding the **demand deposit account** is updated. (Ex1003, ¶198). As Mr. Zatkovich explains and as discussed below, however, if information regarding an "**overdraft account**" is deemed necessary to be updated for the purposes of element [**1C**], it would in any event be obvious to modify Gopinathan in view of Hirka (as set forth as **Ground 2, Petition 1**). (Ex1003, ¶198).

Gopinathan discloses that following the fraud assessment (as discussed in element [**1A**]), "the system then **updates customer profile database 806** with the **new transaction data 1610**" (Ex1010, 25:58-60):



(Ex1010, Fig. 16). This data is "**updated** after each **transaction**" (Ex1010, 25:37-38). As Mr. Zatkovich explains, a POSITA would thus understand that the **processing device updates** information regarding each of the accounts associated

with the charge card (e.g., the debit card) being authenticated by Gopinathan. (Ex1003, ¶199).

Further, as Mr. Zatkovich explains, and as previously discussed with respect to element [**1PRE**], Gopinathan teaches the transaction is from a "charge card", which, as **Ground 1**, would include "**debit cards"** or, as **Ground 2**, would have been understood by a POSITA to be obvious in view of Hirka. (Ex1003, ¶200).

As discussed in [**1A**] and by Mr. Zatkovich, and consistent with Gopinathan, a debit card is linked to a cash account such as "a **demand deposit account (DDA)**" (Ex1007, [0004] (Hirka '404); Ex1009, p.1; Ex1010, 3:56; Ex1003, ¶201). The debit card authentication is performed against this account. (Ex1003, ¶201). Similarly, as Mr. Zatkovich confirms, Gopithan's **update** would contain **information** regarding the **DDA or checking account**. (Ex1003, ¶201). Additionally, as Hirka confirms, a "debit card" would after processing pay the merchant using funds "**deducted from the cardholders checking account"**, thus further confirming the need to update the cardholder's balance in the checking account. (Ex1007, [0004] (Hirka '404); Ex1009, p.1; Ex1003, ¶201).

As Mr. Zatkovich explains, since element [**1C**] discusses the "**demand deposit account**" in the alternative to an "**overdraft account**", as **Ground 1**, the claim would be expressly met by Gopinathan's teaching with respect to "charge cards". (Ex1003, ¶202).

To the extent that element [**1C**] requires the information **update** to concern an **overdraft account** in addition to the **demand deposit account**, as **Ground 2**, as discussed with respect to element [**1A**], it would have been obvious to authenticate a debit card transaction against a **demand deposit** and **overdraft accounts**. (Ex1003, ¶203). In such an embodiment, as Mr. Zatkovich explains, a POSITA would be motivated to further update the profile information associated with both types of accounts, as doing so would have been trivial to implement and would insure that a cardholder's accounts remain up-to-date. (Ex1003, ¶204).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of element [**1C**] is disclosed in Gopinathan (**Ground 1**) and/or rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶205).

5. Dependent Claims 2-5 Are Rendered Obvious over Gopinathan in view of Hirka (Ground 2)

Claims 2-5 depend from Claim 1. For the same reasons as discussed above and by Mr. Zatkovich (Ex1003, ¶¶ 167-205), as **Ground 1**, Claim 1 is anticipated by Gopinathan and in the alternative, as **Ground 2**, Claim 1 is rendered obvious over Gopinathan in view of Hirka. The remaining limitations of these claims are further taught by Hirka and thus rendered obvious over Gopinathan in view over Hirka (**Ground 2**), as discussed herein and by Mr. Zatkovich (Ex.1003, ¶¶206-246).

a. Claim 2

Claim 2 limits the method of Claim 1 by further requiring that the "**overdraft account** is a transaction account" (Ex1001, 13:10-11).

As Mr. Zatkovich explains, according to the '100 Patent, a "**transaction account**" includes traditional credit card accounts. (Ex1001, 4:35-37, 4:60-5:2; Ex1003, ¶208). Thus, the limitation of Claim 2 may be met if the **overdraft account** is another **credit card like account**.

As was previously discussed with respect to element [**1A**], it would have been obvious to modify Gopinathan in view of Hirka to modify the authentication system of Gopinathan to associate an "**overdraft account**" (e.g., an "account to supply the **overdraft protection**" (Ex1009, 4:6-7)) with the "charge card" (such as a debit card) as taught in Hirka (Ex1003, ¶209; Ex1010, 1:38-39; Ex1009, p.1).

Hirka further teaches that, in embodiments, the "**designated credit or other account to handle overdrafts**" for a linked debit card is a "**credit card**" account (Ex1009, 7:10-15; Ex1003, ¶210).

As Mr. Zatkovich explains, a POSITA would be motivated to use an existing line of credit like a credit card as an overdraft facility because it would give the customer some protection against overdrafts within the existing credit parameters established by the issuing institution. (Ex1003, ¶211). Further, as Hirka teaches, and as discussed with respect to the compatibility of Gopinathan with credit cards in

[**1PRE**], and by Mr. Zatkovich, because the system of Gopinathan is designed to use credit cards, such a modification would be easy to implement. (Ex1003, ¶212).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 2, including those of Claim 1 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶213).

b. Claim 3

Claim 3 limits the method of Claim 1 by further requiring that the "**overdraft account** is a bank account" (Ex1002, 13:10-11).

As discussed above in [**1PRE**], Gopinathan (Ex1010) discloses that its "techniques and principles" of fraud assessment apply to accounts associated with "**credit cards**" and "to other types of customer accounts, such as **charge cards**, bank automated teller machine cards and telephone calling cards." (Ex1010, 1:37-41; Ex1003, ¶215).

As was previously discussed with respect to element [**1A**], it would have been obvious to modify the authentication system disclosed by Gopinathan in view of Hirka to associate an "**overdraft account**" (e.g., an "account to supply the **overdraft protection**" (Ex1009, 4:6-7)) with the "charge card" (such as a debit card) as taught in Hirka. (Ex1003, ¶216).

As Mr. Zatkovich explains, it would be obvious to further modify Gopinathan to include a **bank account** as **the overdraft account**, as Hirka further teaches that

in at least some embodiments, the **overdraft account** disclosed is a bank account (e.g., a second of the "**more than one cash account**" which may be "**held at a bank**" (Ex1009, 7:4-9)). (Ex1003, ¶217).

Hirka discloses that "**more than one cash account may be selected to provide the cash or cash equivalent** for transaction processing." (Ex1007, [0041]; *see also* Ex1009, 7:4-9). As Mr. Zatkovich explains, in certain embodiments, other cash accounts operate to provide overdraft protection, providing funds should the designated cash account not have "sufficient funds" (Ex1009, 12:18-20; Ex1003, ¶217-219). Furthermore, like the designated cash account, a POSITA would understand the "multiple cash accounts" used to provide overdraft protection would be "**held at a bank**". (Ex1009, 7:7, Ex1003, ¶220)

Additionally, Hirka explains that the "**overdraft account**" in at least some embodiments is an "**other** account **used to handle overdrafts**" (Ex1007, [0042]; *see also* Ex1009, 7:10-15; Ex1003, ¶221). As Mr. Zatkovich explains, and consistent with the Examiner's understanding, a POSITA would understand that an "other account" would include any other type of suitable account, which would include, for example, "a checking account, a savings account or other account **held at a bank** or other institution". (Ex1005, p. 100, p.142; Ex1009, 7:6-7; Ex1003, ¶¶222-223).

As Mr. Zatkovich explains, a POSITA would be motivated to use a second bank account as an **overdraft account** because it would give customers some

protection against overdrafts regardless of their ability to obtain a line of credit. (Ex1003, ¶224). Further, as Hirka teaches, and as discussed with respect to the compatibility of Gopinathan with automated bank teller machine cards in element [**1PRE**], such a modification would be easy to implement. (Ex1003, ¶225).

Accordingly, as Mr. Zatkovich, a POSITA would understand that all of the elements of Claim 3, including those of Claim 1 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶226).

c. Claim 4

Claim 4 limits the method of Claim 1 by further requiring the step of "before the authenticating, **enrolling** in a **debit card program** during which the associating of the **demand deposit account** and **the overdraft account** are performed." (Ex1002, 13:10-11).

As Mr. Zatkovich notes, that unlike the authentication step of element [**1A**], this step does not need to be performed by the **processing device**. (Ex1003, ¶228).

As previously discussed in element [**1A**], Gopinathan, either alone (**Ground 1**) or in combination with Hirka (**Ground 2**) discloses authenticating a transaction of a **debit card** (e.g., a "**charge card**" and "bank automated teller machine card" (Ex1010, 3:40-41)), which involves authenticating (e.g., "**determining the likelihood of fraud** for each **transaction**" (Ex1010, 5:4-5)) the card against any associated accounts, which as previously discussed in element [**1PRE**] and in

element [**1A**], may include both "a consumer's cash account, **such as a demand deposit account (DDA), typically a checking account**" (Ex1009, p.1) as well as an "account to supply the **overdraft protection**" (Ex1009, 4:6-7)). (Ex1003, ¶229).

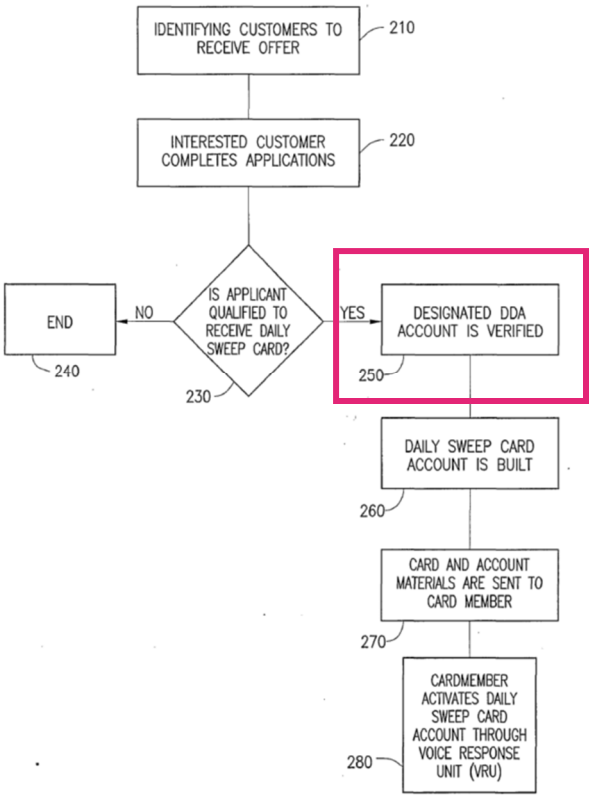
Gopinathan teaches that the data used to authenticate transactions against these accounts includes the "account open date". (Ex1010, 24:57). (Ex1003, ¶230).

As Mr. Zatkovich explains, a POSITA would understand that a necessary preceding step of authenticating a transaction by a card with information regarding the "**account open date**" would be opening the account as well as associating the account with the debit card used, which would require enrolling a cardholder in a debit card program. (Ex1003, ¶231).

Moreover, to the extent enrollment in a card program is not expressly taught by Gopinathan, as Mr. Zatkovich explains, it would be obvious to further modify the method taught by Gopinathan in view of Hirka to include the enrollment process of Hirka for both accounts (e.g., "steps that may be followed when establishing a linked account card", including "**step 250**" (Ex1009, 6:23-24, 7:16)). (Ex1003, ¶232).

Figure 2 of Hirka depicts enrollment process "steps that may be followed when establishing a linked account card account according to one embodiment of the invention". (Ex1009, 6:23-24). Among these steps includes "**step 250**", which associates both the "**demand deposit**" and "**overdraft**" accounts:

FIG. 2



(Ex1009, Fig 2, 7:4-15; Ex1003, ¶233). As Mr. Zatkovich explains, and in line with the Examiner's analysis of Hirka (Ex1005, p. 100, p.142), a POSITA would thus understand that Figure 2 depicts enrollment in a debit card program, during which a **demand deposit account** and an **overdraft account** are associated with the debit card (e.g. the "linked account card" (Ex1009, 7:15)), and must take place *before* the debit card transaction authentication, as **step 250** occurs "before the linked account card account is established in step 260" (Ex1009, 7:14-15). (Ex1003, ¶¶234-235).

As Mr. Zatkovich explains, a POSITA would be motivated to include the feature of enrolling in a debit card program before the debit card is used as doing so

would allow funds to be withdrawn from the appropriate accounts during a transaction. Moreover, doing so would have been easy to implement, as shown by Hirka. (Ex1003, ¶236).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 4, including those of Claim 1 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶237).

d. Claim 5

Claim 5 limits the method of Claim 1 by further requiring the step of "providing a **periodic output** of the account information for the **demand deposit account** and **the overdraft account**." (Ex1002, 13:10-11).

As Mr. Zatkovich notes, like the step of claim 4, and unlike the authentication step of element [**1A**], this step does not need to be performed by the **processing device**. (Ex1003, ¶239).

As previously discussed in element [**1A**], Gopinathan, either alone (**Ground 1**) or in combination with Hirka (**Ground 2**) discloses authenticating a transaction of a **debit card** (e.g., a "**charge card**" and "bank automated teller machine card" (Ex1010, 3:40-41)), which involves authenticating (e.g., "**determining the likelihood of fraud** for each **transaction**" (Ex1010, 5:4-5)) the card against any associated accounts, which as previously discussed in element [**1PRE**] and in element [**1A**], may include both "a consumer's cash account, **such as a demand**

deposit account (DDA), typically a checking account" (Ex1009, p.1) as well as an "account to supply the **overdraft protection**" (Ex1009, 4:6-7)). (Ex1003, ¶240).

As Mr. Zatkovich explains was a common feature at the time in the industry, Gopinathan teaches that information concerning an **account** is disclosed periodically by enabling the cardholder to notice if "an unfamiliar transaction" is on "his or her next monthly statement". (Ex1010, 1:51-63; Ex1003, ¶¶241-242). Gopinathan further teaches, as was discussed with respect to element [**1C**] and by Mr. Zatkovich (Ex1003, ¶199), that the customer profile is **updated**, which would be outputting the account information. (Ex1003, ¶242).

In any event, to the extent that Gopinathan does not expressly disclose providing a periodic output of the account information, as Mr. Zatkovich explains, it would be obvious to modify Gopinathan to provide statements of linked card activity on a regular basis in view of Hirka, which discloses providing a periodic output of the account information by sending a "**statement of linked account card activity**" "on a **regular basis**" (Ex1009, 14:12-18; Ex1003, ¶243).

As Mr. Zatkovich explains, a POSITA would understand that "Statements of linked card activity" includes information concerning the accounts used by the "linked account card", which would include the **demand deposit account** and the **overdraft account**, as taught by Hirka. (Ex1003, ¶¶244-245). A POSITA would have been motivated to include this information as doing so would allow consumers

to use the statements to confirm the status of their accounts, and notify the cardholder of any potential fraud. (Ex1003, ¶245). As Hirka demonstrates, this feature would have been easy to implement. (Ex1003, ¶245).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 5 are rendered obvious over Gopinathan in view of Hirka. (Ex1003, ¶246).

6. Independent Claim 6 is Rendered Obvious over Gopinathan in view of Hirka (Ground 2)

As Mr. Zatkovich explains, as **Ground 2**, a POSITA would understand that Claim 6 is rendered obvious over Gopinathan in view of Hirka. (Ex1003, ¶¶247-277)

a. [6PRE] 6. A system, comprising: an authentication system configured to:

As Mr. Zatkovich explains, to the extent element [**6PRE**] is considered a limitation, a POSITA would have understood that Gopinathan teaches a system which includes **an authentication system** (e.g., "**System 100**" in communication with a "**conventional authorization or posting system**" (Ex1010, 3:56-59, 24:34-37) configured to perform the elements of Claim 6 which, similar to the elements of Claim 1, relate to receiving information and authorizing a **transaction**. (Ex1003, ¶¶248-49)

As discussed with respect to element [**1A**], Gopinathan teaches a "**System 100**" which is configured to perform authentication including **fraud assessment**. (Ex1010, Fig. 1; 3:56-59). As further discussed with respect to element [**1A**], **System 100** as taught by Gopinathan in view of Hirka (**Ground 2**) receives information regarding transactions and associated accounts via a "data network 105" (Ex1010, 3:51-52). (Ex1003, ¶250).

As Mr. Zatkovich explains, Gopinathan discloses that "transaction processing component 802 of **system 100** runs in the context of a **conventional authorization** or posting **system** for customer transactions" (Ex1003, ¶251):

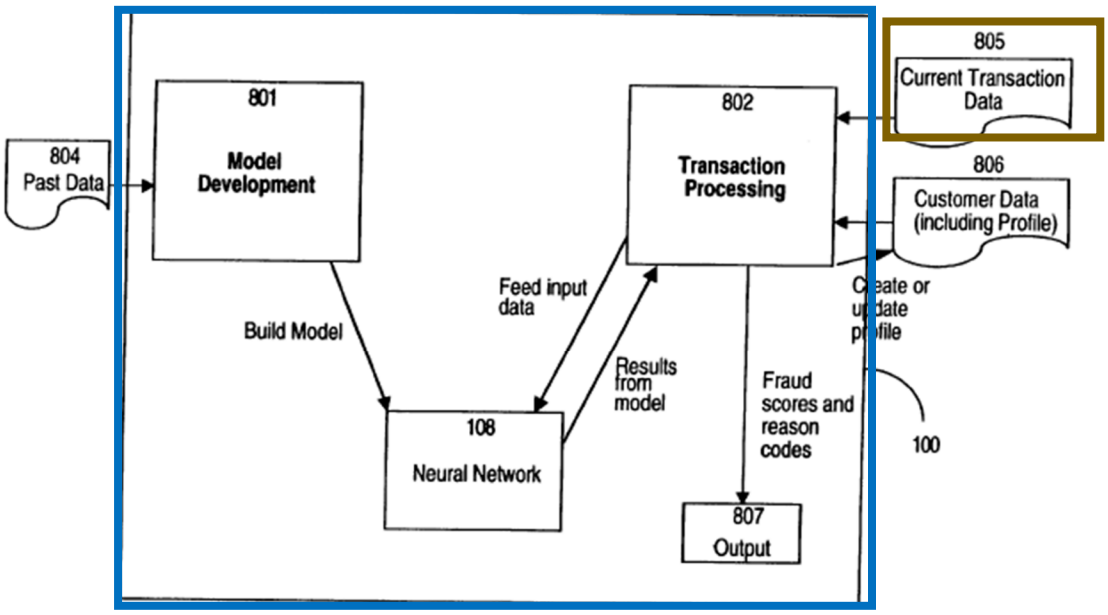


FIGURE 8

(Ex1010, Fig. 8). Gopinathan further discloses that **System 100** communicates, via "Output Device 104", with the "**authorization system** (not shown) for further processing" of the transaction (Ex1010, 4:4-13):

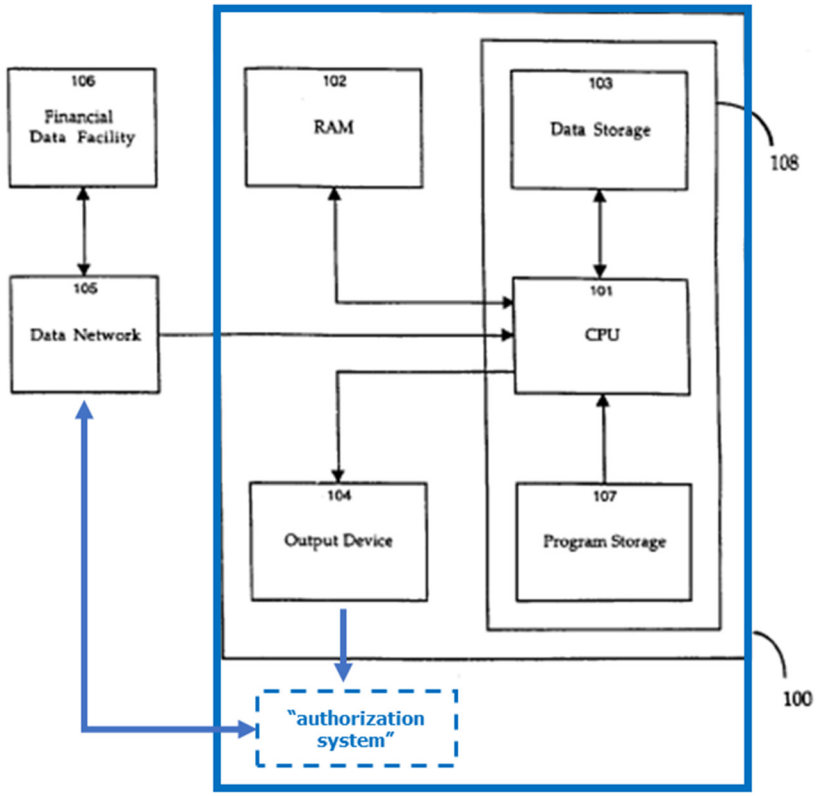


FIGURE 1

(Ex1010, Fig. 1; Ex1003, ¶252). As Mr. Zatkovich explains, a POSITA would understand "transaction processing component 802" (shown in Fig. 8) to operate as a part of the "**conventional authorization system**", which corresponds to the "authorization system (not shown)" in FIG. 1 and which would necessarily be configured to authorize transactions. (Ex1003, ¶253). As Mr. Zatkovich explains, a POSITA would therefore understand that for purposes of Claim 6, the

"**authentication system**" would include "**System 100**" including transaction processing component 802/authorization system. (Ex1003, ¶253).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of element [**6PRE**] is rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶254).

b. [6A] receive information regarding a requested transaction of a debit card,

Element [**6A**] requires that the authentication system be configured to "receive information regarding a **requested transaction** of a **debit card**". (Ex1001, 13:21-22).

As discussed with respect to element [**1A**], Gopinathan discloses receiving **information** regarding a **requested transaction**. For example, as shown in Figure 8, "**Current Transaction Data**", which includes information regarding the **transaction** (e.g., "**transaction dollar amount**" (Ex1010, 23:45)), is transmitted to **System 100**:

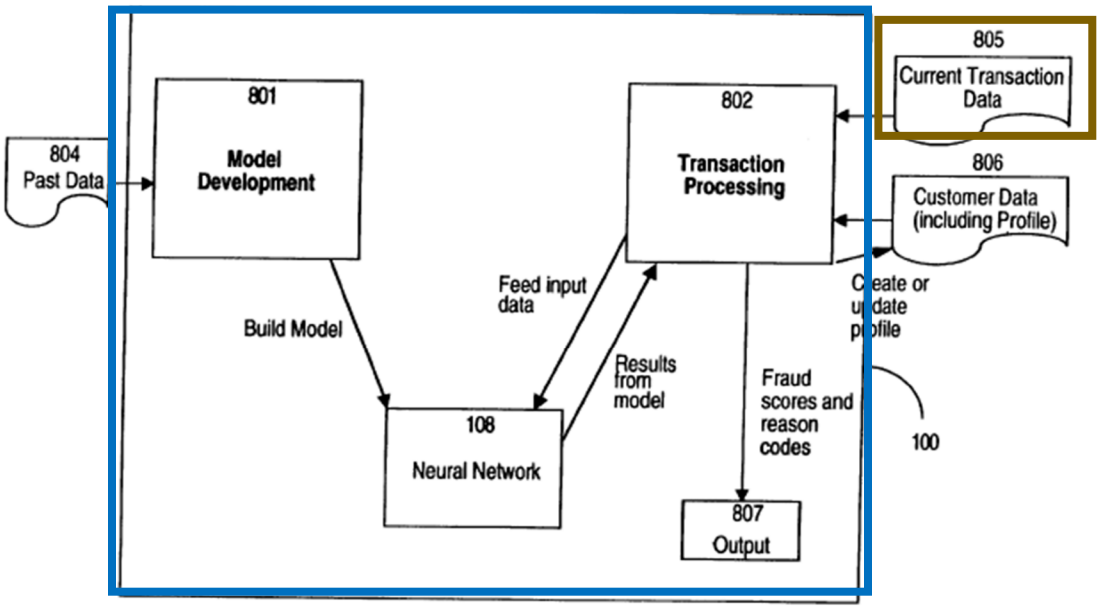


FIGURE 8

(Ex1010, Fig. 8; Ex1003, ¶256).

Further, as discussed with respect to element [**1PRE**] and [**1A**] and by Mr. Zatkovich, Gopinathan teaches the transaction is from a "charge card" would include "**debit cards"** and in any event would be obvious to perform the "methods and techniques" of Gopinathan, including authenticating transactions, with "debit cards" as a kind of "charge card" in view of Hirka. (Ex1003, ¶257-58).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of element [**6A**] is rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶259).

c. [6B] receive information regarding a main account that has been associated with the debit card and an

overdraft account that has been associated with the debit card, and

Element [**6B**] requires that the **authentication system** be configured to "receive information regarding a **main account** that has been associated with the debit card and an **overdraft account** that has been associated with the debit card". (Ex1001, 13:22-25).

Gopinathan teaches that **System 100** is configured to receive information concerning an account associated with a charge card (e.g., account information from "database 805" and "database 806"). (Ex1003, ¶261). The "database 805" contains transaction information such as "**available credit (or balance)**" as well as the customer's "**credit line**" (Ex1010, 24:47-48) and "database 806" includes other data regarding the customer's accounts such as "general information on the customer" and a "profile record". (Ex1010, 24:50-62; Ex1003, ¶262). As Mr. Zatkovich explains, a POSITA would understand that these forms of information would be related to any account linked to the "charge card" used in transactions. (Ex1003, ¶263).

Further, as discussed with respect to element [**1PRE**] and [**1A**] and by Mr. Zatkovich, Gopinathan teaches the transaction is from a "charge card" would include "**debit cards"** and in any event would be obvious to perform the "methods and techniques" of Gopinathan, including authenticating transactions, with "debit cards"

as a kind of "charge card" in view of Hirka. (Ex1003, ¶264; Ex1010, 1:28-29; Ex1009, p.1).

As previously discussed, Hirka further confirms "a **debit card** is a card … linked to a consumer's cash account, **such as a demand deposit account (DDA), typically a checking account**." (Ex1007, [0004] (Hirka '404); Ex1009, p.1). As such, a POSITA would understand that information received would include information about a **main account** linked with a **debit card** (e.g., "available credit (or balance)" (Ex1010, 24:47-48)). (Ex1003, ¶265).

Additionally, as Mr. Zatkovich explains, and as discussed with respect to element [**1A**], to the extent Gopinathan does not expressly teach that the "charge card" is linked to an **overdraft account**, it would have been obvious for the "charge card" to be linked with an "**overdraft account**" as taught by Hirka. (Ex1003, ¶266). In such a modification, the system would be configured to receive information associated with the overdraft account. (Ex1003, ¶266).

As Mr. Zatkovich explains, a POSITA would have been motivated to modify Gopinathan to include receiving information associated with an **overdraft account** because doing so would have protected cardholders and card issuing systems from fraud associated with overdraft accounts, and would increase the predictive power of the neural network employed by Gopinathan, leading to a more accurate fraud assessment. (Ex1003, ¶ 267). It would have been trivial to configure receiving and

incorporating this information, as Gopinathan, as discussed in element [**1A**] is configured to receive credit card information, and in any event explicitly recognizes that "other variables might be used in both the model development and transaction processing components" (Ex1010, 29:26-28). (Ex1003, ¶ 267).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of element [**6B**] is rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶268).

d. [6C] accept or reject the requested transaction based on an authorization including a fraud assessment,

Element [**6C**] requires that the **authentication system** be configured to "**accept or reject** the **requested transaction** based on an **authorization** including **a fraud assessment**". (Ex1001, 13:22-25).

As discussed with respect to element [**1A**], Gopinathan teaches performing a **fraud assessment**. (Ex1003, ¶270).

Gopinathan further teaches that the **authentication system** is configured to accept or reject transactions. Gopinathan teaches that "transaction processing component 802 of system 100 runs in the context of a **conventional authorization or posting system** for customer transactions". (Ex1010, 24:34-47; Ex1003, ¶272). As discussed in [**1A**], Gopinathan also discloses sending a fraud score to the

"**authorization system** (not shown) for further processing" of the transaction (Ex1010, 4:4-13):

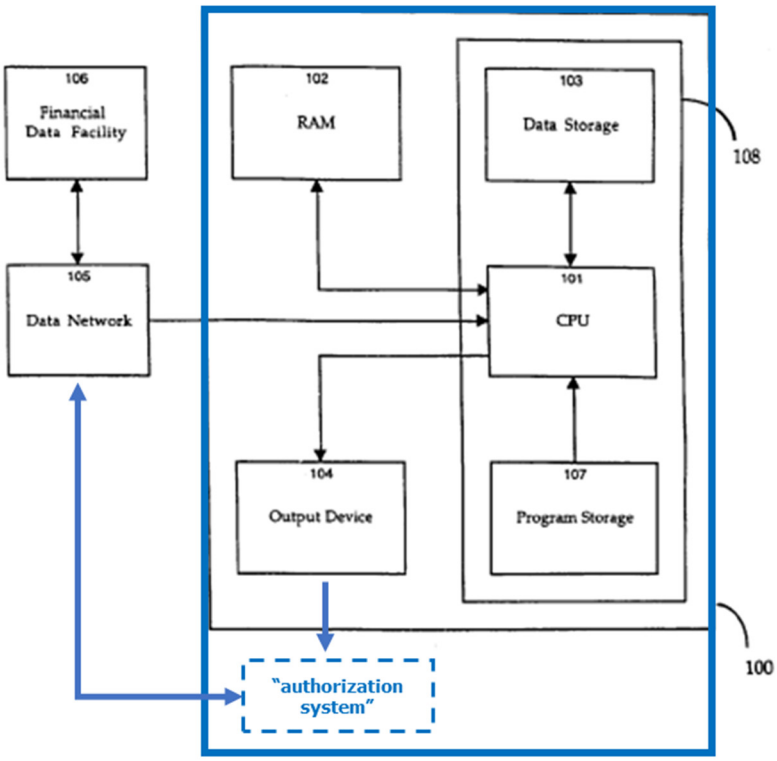


FIGURE 1

(Ex1010, Figure 1; Ex1003, ¶271). As Mr. Zatkovich details, Gopinathan teaches that the "further processing" of the **fraud assessment** results in the "**transaction is authorized**" by the authorization system (Ex1010, 25:53-56; Ex1003, ¶273).

As Mr. Zatkovich explains, a POSITA would thus understand that at the time of the invention, the further processing of the "**authorization system**" referenced would include accepting or rejecting the transaction based at least in part on the **fraud assessment** (e.g., a "low fraud score" which results in authorization or a score

where "the threshold is exceeded" which results in the authorization being "blocked" or rejected (Ex1010, 25:53-56)). (Ex1003, ¶274).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of element [**6C**] is rendered obvious over Gopinathan in view of Hirka (**Ground 2**, **Petition 1**). (Ex1003, ¶275).

1. Dependent Claims 7-11 Are Rendered Obvious over Gopinathan in view of Hirka (Ground 2)

Claims 7-11 depend from Claim 6. For the same reasons as discussed above, as **Ground 2**, Claim 6 is rendered obvious over Gopinathan in view of Hirka. The remaining limitations of Claim 7-11 are likewise rendered obvious over Gopinathan in view of Hirka (**Ground 2**), as discussed herein and by Mr. Zatkovich. (Ex1003, ¶¶278-324).

As Mr. Zatkovich, Claims 8 and 11 concern similar limitations as Dependent Claims 4 and 5 and are rendered obvious for similar reasons. (Ex1003, ¶279).

Additionally, Claims 9 and 10 depend from Claim 8. The additional limitations embodied in these claims concern similar limitations relating to **overdraft accounts** as required by Dependent Claims 2 and 3 and are rendered obvious for similar reasons. (Ex1003, ¶280).

a. Claim 7

Claim 7 limits the system of Claim 6 by further requiring that "the **main account** and the **overdraft account** are held at unrelated financial institutions**."** (Ex1001, 13:10-11).

As discussed by Mr. Zatkovich and with respect to claim element [**6B**], as **Ground 2**, it would be obvious to modify Gopinathan in view of Hirka to use both a **main account** as taught by Gopinathan (e.g., an **account** associated with a "charge card", a kind of debit card used in transactions (Ex1010, 1:37-41), which in at least some embodiments is a **debit account**) and an **overdraft account** as taught by Hirka (e.g., a card linked to an account configured to "**supply the overdraft protection**" (Ex1009, 4:6-7)). (Ex1003, ¶282).

As Mr. Zatkovich explains, it would be obvious to a POSITA to further modify Gopinathan in view of Hirka, to have **the main account** and **the overdraft account** at different institutions (e.g., a "**bank**" and an "**institution that is issuing the linked account card**" (Ex1009, 7:4-7, 10-14)). (Ex1003, ¶283). In one embodiment, the **main account** is "**held at a bank**" and the **overdraft account** is an "existing credit card account" which would be operated by a "**card issuer**". (Ex1010, [0041] and [0042], *see also* Ex1009, 7:4-7, 10-14; Ex1003, ¶284).

As Mr. Zatkovich explains, a POSITA would thus understand that the **overdraft account** and the **demand deposit account** in at least some embodiments

is held by different financial institutions which are not related to one another, which matches the Examiner's understanding. (Ex1005, at 100, 141; Ex1003, ¶285) As Mr. Zatkovich further explains, a POSITA would have been motivated to make this modification as doing so would expand the base of customers who would be able to use the card. (Ex1003, ¶286). Additionally, as shown by Hirka, doing so would have been easy to implement. (Ex1003, ¶286).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 7, including those of Claim 6 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶287).

b. Claim 8

Claim 8 limits the system of Claim 6 by further requiring there be an "**enrolling system**" which is [**8-1**] "configured to **verify** the enrollee, [**8-2**] to perform the **associating** of the **main** and **overdraft accounts** of the enrollee with the **debit card**, and [**8-3**] to **issue** the debit card**"** (Ex1001, 13:10-11).

As Mr. Zatkovich explains, that this element describes an enrolling system which is not necessarily the same system as the **authentication system** discussed in element [**6PRE**]. (Ex1003, ¶289).

As a preliminary matter, as discussed with respect to Claim 4, as Mr. Zatkovich explains, a POSITA would understand that Gopinathan recognizes that its system is used in conjunction with some sort of enrollment process (which would be

presumably performed by an enrollment system), and it would be obvious to further modify the method (or system) of Gopinathan to include the enrollment process (and by extension enrollment system) from Hirka. (Ex1003, ¶290).

i. [8-1] Verifying an enrollee

As discussed in Claim 4 and by Mr. Zatkovich, Gopinathan contemplates an enrollment process, including an "**account open date**", and, in any event, it would be obvious to modify the system of Gopinathan to include the enrollment system from Hirka. (Ex1003, ¶291). The enrollment system in Hirka is configured to first verify the enrollee. (Ex1003, ¶291).

Hirka teaches verifying an enrollee in two ways: by first determining the "applicant's eligibility" (Ex1009, 6:30-31) and then by "verif[ying] any identified accounts before establishing the linked account card" (Ex1009, 7:14-15). (Ex1003, ¶292).

As Mr. Zatkovich explains, Hirka teaches in at least one embodiment that issuing a "linked account card" first requires the applicant to provide information, which is used to determine an "applicant's eligibility" in "step 230" of the enrollment process (Ex1009, 6:26-7:3). (Ex1003, ¶293). Further, Hirka goes on to explain that in step 260 it verifies an enrollee as follows: "these accounts have been identified, they may be **verified before the linked account card account** is established in **step 260**". (Ex1009, 7:14-15). (Ex1003, ¶294).

Thus, as Mr. Zatkovich explains, a POSITA would understand that when the enrollment system of Hirka is used in conjunction with the authentication system of Gopinathan, the enrollment system would be configured to verify information associated with the enrollee. (Ex1003, ¶295).

As Mr. Zatkovich explains, in addition to the reasons discussed with respect to Claim 4, a POSITA would have been motivated to verify an enrollee, as taught in Hirka, in order to reduce enrollment fraud as well as to make sure that an enrollee has provided actual and correct information to the system. (Ex1003, ¶296). Additionally, this feature would have been easy to implement, as shown by Hirka. (Ex1003, ¶296).

ii. [8-2] Associating the main and overdraft accounts of the enrollee with the debit card

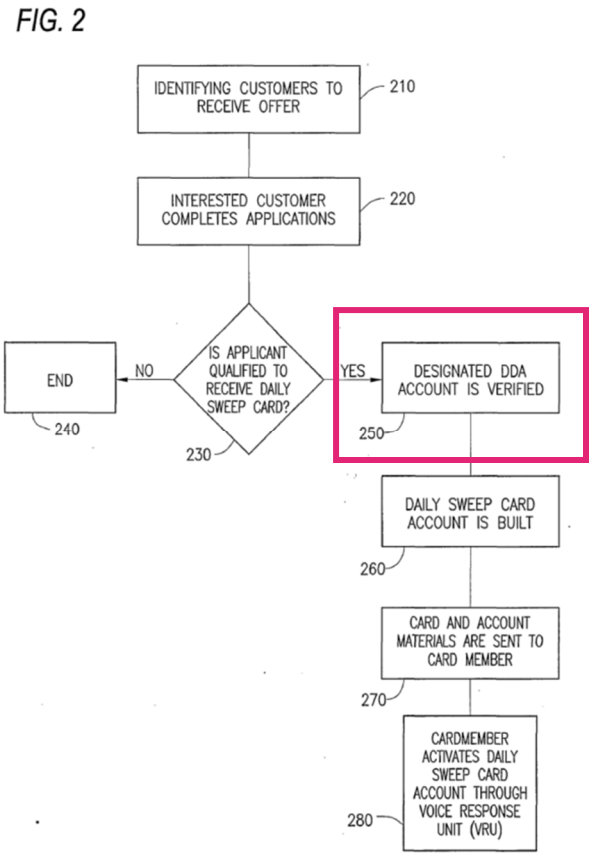
As discussed in Claim 4 and by Mr. Zatkovich, Gopinathan contemplates an enrollment process, including an "**account open date**", and, in any event, it would be obvious to modify the system of Gopinathan to include the enrollment system from Hirka, which is also configured to first associate the main and overdraft accounts of the enrollee with the debit card. (Ex1003, ¶297).

As discussed by Mr. Zatkovich and with respect to element [**6B**], the system of Gopinthan as modified by Hirka would be configured for a "charge card", which is a debit card, to be tied to a "**checking account**" such as a "**demand deposit**

account" and to an "**overdraft account**", as taught in Hirka. (Ex1009, p.1, 3:30-4:7; Ex1003, ¶298). Hirka further teaches "a **debit card** is a card … linked to a consumer's cash account, **such as a demand deposit account (DDA), typically a checking account**." (Ex1007, [0004] (Hirka '404); Ex1009, p.1; Ex1003, ¶299). As such, as Mr. Zatkovich explains, a POSITA would understand that information received would include information about a **main account** linked with a **debit card** (e.g., "available credit (or balance)" (Ex1010, 24:47-48; Ex1003, ¶299).

For the same reasons discussed with respect to Claim 4, and by Mr. Zatkovitch (Ex1003, ¶¶229-231), a POSITA would understand, as a necessary step prior to any transaction involving a card associated with a **main** and **overdraft account**, associating the accounts with a card in a card enrollment program. (Ex1003, ¶300).

Moreover, for the same reasons, it would be obvious to combine Gopinathan with Hirka, as previously discussed, to include associating the accounts in an enrollment process (Ex1009, 6:23-24):



(Ex1009, Fig 2). As Mr. Zatkovich explains, Hirka teaches in **step 250** that both a "**demand deposit account (DDA)**" and a "**designated credit or other account to handle overdrafts**" are associated with a linked account card. (Ex1009, 7:4-15; Ex1003, ¶301).

As Mr. Zatkovich explains, a POSITA would be motivated to include the feature of associating a debit card account as doing so would allow funds to be withdrawn from the appropriate accounts during a transaction. (Ex1003, ¶302). Moreover, doing so would have been easy to implement, as shown by Hirka (Ex1009). (Ex1003, ¶302).

iii. [8-3] Issuing the debit card

As discussed in Claim 4 and by Mr. Zatkovich, Gopinathan contemplates an enrollment process, including an "**account open date**", and, in any event, it would be obvious to modify the system of Gopinathan to include the enrollment system from Hirka, which is also configured to issue a debit card. (Ex1003, ¶303).

Hirka teaches as "step 270" of the enrolling process issuing a debit card by "mail[ing]" it to "the new cardholder". (Ex1009, 7:4-14; Ex1003, ¶304). As Mr. Zatkovich explains, a POSITA would have been motivated to issue a debit card so would enable the user to use the debit card. (Ex1003, ¶305). Furthermore, this modification would have been trivial to perform, as debit cards were frequently issued at the time of invention. (Ex1003, ¶305).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 8, including those of Claim 6 from which it depends, are rendered obvious over Gopinathan in view of Hirka. (Ex1003, ¶306).

c. Claim 9

Claim 9 further limits the system of Claim 8 by requiring that "the enrolling system is configured to use a **transaction account** as the **overdraft account**." (Ex1001, 13:38-40).

As discussed with respect to Claim 8, as Mr. Zatkovich explains, a POSITA would understand that Gopinathan recognizes that its system is used in conjunction

with some sort of enrollment process, which would presumably be performed by an enrollment system. (Ex1003, ¶308). Moreover, it would be obvious to further modify the method (or system) of Gopinathan to include the enrollment process (and by extension enrollment system) from Hirka. (Ex1003, ¶308).

Further, as discussed with respect to Claim 8, as explained by Mr. Zatkovich, a POSITA would understand, as obvious over Gopinathan in view of Hirka, that an **overdraft account** is associated with a debit card by an enrolling system (e.g., as "**Step 250**" indicates providing "a **designated credit or other account to handle overdrafts**" (Ex1009)). (Ex1003, ¶309).

For the same reasons as discussed in Claim 2, as Mr. Zatkovich explains, a POSITA would have understood that the **overdraft account**, in embodiments, as taught by Hirka, is a **transaction account** (e.g., an account associated with "credit cards" (Ex1009, 1:37) and "**a credit card … account**" (Ex1010, 7:12)). (Ex1003, ¶310).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 9, including those of Claim 8 from which it depends, are rendered obvious over Gopinathan (Ex1010) in view of Hirka (Ex1009) (**Ground 2**). (Ex1003, ¶311).

d. Claim 10

Claim 10 further limits the system of Claim 8 by requiring that "**the enrolling system** is configured to use a banking account as the **overdraft account**." (Ex1001, 13:41-42).

As discussed with respect to Claim 8, as Mr. Zatkovich explains, a POSITA would understand that Gopinathan recognizes that its system is used in conjunction with some sort of enrollment process, which would presumably be performed by an enrollment system. (Ex1003, ¶313). Moreover, it would be obvious to further modify the method (or system) of Gopinathan to include the enrollment process (and by extension enrollment system) from Hirka. (Ex1003, ¶313).

Further, as discussed with respect to Claim 8, as explained by Mr. Zatkovich, a POSITA would understand, as obvious over Gopinathan in view of Hirka, that an **overdraft account** is associated with a debit card by an enrolling system (e.g., as "**Step 250**" indicates providing "a **designated credit or other account to handle overdrafts**" (Ex1009)). (Ex1003, ¶314).

For the same reasons as discussed in Claim 3, as Mr. Zatkovich explains, it would have been obvious to a POSITA, as taught by Hirka, for the **overdraft account** to be a **banking account** (e.g., a second of the "**more than one cash account**" which in at least some embodiments is "**held at a bank**" (Ex1009, 7:4-9)). (Ex1003, ¶315).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 10, including those of Claim 8 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶316).

e. Claim 11

Claim 11 further limits the system of Claim 6 by requiring the system to comprise a "**settlement system** configured to generate a **periodic report** of at least one of the **transactions**, the **main account**, and the **overdraft account**". (Ex1001, 13:43-46).

As Mr. Zatkovich notes, this claim limitation is met if the report contains information concerning any *one* of **transactions** or the **main account** or the **overdraft account**. (Ex1003, ¶318). Additionally, Claim 11 describes a settlement system, which is not necessarily the same system as the **authentication system** discussed in element [**6PRE**]. (Ex1003, ¶319).

As discussed with respect to Claim 5, Gopinathan teaches, either alone or combination with Hirka, providing a periodic output of **transaction** information (e.g. a "**monthly statement**" which may contain "**an unfamiliar transaction**" (Ex1010, 1:59-60) and/or a "**statement** of linked account card activity" which is "sent on **a regular basis detailing each card transaction**" (Ex1009, 14:13-14)). As Mr. Zatkovich explains, a POSITA would understand these periodic statements to be "**periodic reports**" concerning **transactions**. (Ex1003, ¶320).

As Mr. Zatkovich further explains, a POSITA would understand that a computer system would perform the generation of these periodic reports to consumers. (Ex1003, ¶321). Applicant admitted that Hirka '404 "**generally teaches a computer implemented method for facilitating electronic commerce transactions**" (Ex1010, at 155) and Hirka discloses that it is directed towards a "system and method for a linked account having a sweep feature" (Ex1009, 2:25-26). As Mr. Zatkovich explains, a POSITA would therefore understand the generation of settlements, as taught by Hirka, would be performed by a system. (Ex1003, ¶321).

Additionally, because the transactions are necessarily reported following settlement (e.g., after a transaction occurs), a POSITA would understand any reporting system would be part of a "settlement system" as claimed by the '100 Patent. (Ex1003, ¶322).

As a result, as Mr. Zatkovich explains, a POSITA would have found it obvious to modify Gopinathan to include the statement generation as taught by Hirka, and would have been motivated to provide periodic statements to allow for customers to confirm the status of their accounts, which, as demonstrated by Gopinathan, would have been easy to implement. (Ex1003, ¶323).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 10, including those of Claim 8 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶324).

f. [6D] wherein the fraud assessment includes communication with data sources via a network.

Element [**6D**], which is identical to element [**1B**], requires that "the **fraud assessment includes** communication with data sources via a network". (Ex1001, 13:22-25). (Ex1003, ¶276).

For the same reasons discussed with respect to [**1B**], as Mr. Zatkovich explains, a POSITA would understand that all of the features of element [**6D**] rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶277).

2. Independent Claims 12 and 15 are Anticipated by Gopinathan (Ground 1) and/or Rendered Obvious over Gopinathan in view of Hirka (Ground 2)

Claims 12 and 15 correspond very closely to Claim 1, except that Claims 12 is directed to a "**computer program product**" including "a **tangible computer-readable medium**" containing "**control logic**" which can use "**program code means**" to perform the method claimed, and Claim 15 is directed to a "**tangible computer-readable medium**" which uses "**computer executable instructions**" to perform the method claimed. (Ex1003, ¶325)

Additionally, elements [**12A/15A**] differ in that they call for "authenticating, through **authorization** including **fraud assessment**" instead of "authenticating… wherein the authentication includes **fraud assessment**". Authorization, as discussed with respect to Claim 6, is amply disclosed by Gopinathan and/or by Gopinathan in view of Hirka. (Ex1003, ¶325)

As **Ground 1,** as Mr. Zatkovich explains, each and every element of Claims 12 and 15 is expressly or inherently taught by Gopinathan. (Ex1003, ¶326). In the alternative, as **Ground 2**, to the extent any of the elements of Claims 12 and 15 are not expressly or inherently disclosed in Gopinathan, such element(s) is/are at least obvious over Gopinathan in view of Hirka. (Ex1003, ¶¶326-347).

a. [12PRE] 12. A computer program product for performing a debit card authentication the computer program product comprising a tangible computer usable medium having control logic stored therein, said control logic comprising:

Element [**12PRE**] includes the requirement of a "**computer program product**" "comprising a **tangible computer usable medium** **having control logic stored therein**" to perform debit card authentication. (Ex1010, 13:47-14:2). The control logic "comprises … computer readable **program code means**" which describe the claimed invention. (Ex1010, 14:2-14:13). In other words, **executable software** capable of performing a "debit card authentication" must be stored in **computer-accessible memory**. (Ex1003, ¶327).

As discussed with respect to elements [**1PRE**] and [**1A**], Gopinathan teaches, either alone (**Ground 1**) or in combination with Hirka and the prior art (**Ground 2**) performing a debit card authentication using a "**System 100**". (Ex1003, ¶328).

As **Ground 1** of **Petition 1**, Gopinathan discloses that "**System 100**" stores "**software program instructions**" "**in program storage 107**" (Ex1010, 3:56-60):

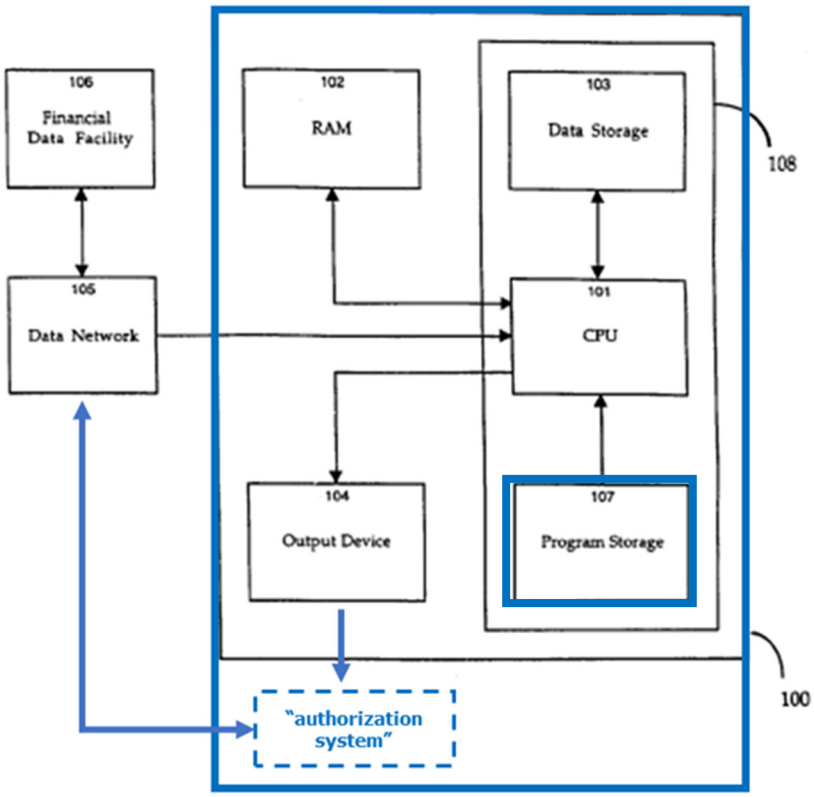


FIGURE 1

(Ex1010, Fig. 1). Gopinathan further discloses that discloses that the "**software program instructions**" cause the operations of the methods disclosed by Gopinathan to be performed by "CPU 101". (Ex1010, 3:56-67; Ex1003, ¶329).

In any event, as **Ground 2**, to the extent Gopinathan does not expressly disclose that **program storage 107** contains a particular piece of **executable software**, as Mr. Zatkovich explains, it would be obvious to a POSITA modify the system disclosed to do so in light of Hirka (Ex1003, ¶330).

Hirka discloses that it is directed towards a "system and method for a linked account having a sweep feature" (Ex1009, 2:25-26). As discussed with respect to the prosecution history, Applicant admitted that Hirka '404 (Ex1007) "**generally teaches a computer implemented method for facilitating electronic commerce transactions**" (Ex1010, at 155). As Mr. Zatkovich explains, in accordance with his experience at the time, a POSITA would understand that "**computer implemented**" methods of similar complexity and scale as the methods described by Hirka and Hirka '404 would necessarily be implemented using **executable software** stored on **system memory**. (Ex1003, ¶331).

Furthermore, as Mr. Zatkovich explains, a POSITA would be motivated to implement the features taught by Gopinathan, or by Gopinathan in view of Hirka, using **executable software** stored on system memory because software provides a high degree of efficiency, flexibility and cost savings compared to the alternative modes of performing method, and using such software was common at the time and would have been trivial to implement. (Ex1003, ¶332).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of element [**12PRE**] is disclosed in Gopinathan (**Ground 1**) and in the alternative would be rendered obvious over Gopinthan in view of Hirka (**Ground 2**). (Ex1003, ¶333).

b. [15PRE] 15. A tangible computer-readable medium having stored thereon computer executable instructions that, if executed by a computing device, cause the computing device to perform a method comprising:

Element [**'100-15PRE**] requires a "A **tangible computer-readable medium having stored thereon computer executable instructions that**, if executed by a **computing device**, **cause the computing device** to perform a method" of authenticating a transaction. (Ex1010, 14:27-30). In other words, as Mr. Zatkovich discusses, like the claim element of [**'100-12PRE**], the method must be stored in **accessible memory** as **executable software**. (Ex1003, ¶334).

For the same reasons discussed with respect to **[12PRE]**, as Mr. Zatkovich explains, a POSITA would understand that all of the features of element [**15PRE**] are disclosed in Gopinathan (**Ground 1**) and/or rendered obvious over Gopinathan in view of Hirka (**Ground 2**).

c. [12A/15A] … authenticating, through authorizing including fraud assessment, a transaction requested by the debit card against at least one of an [account/demand deposit account] that has been

associated with the debit card or an overdraft account that has been associated with the debit card,

Claim element [**12A**] requires that the control logic comprise "first computer readable program code means for **authenticating**, through **authorizing including fraud assessment**, a **transaction** requested by the debit card against at least one of an **account** that has been associated with the debit card or an **overdraft account** that has been associated with the debit card". (Ex1001, 14:3-8). Claim element [**15A**] requires "**authenticating**, through **authorizing including fraud assessment**, a **transaction** requested by the debit card against at least one of an **demand deposit account** that has been associated with the debit card or an **overdraft account** that has been associated with the debit card". (Ex1001, 14:31-35). As Mr. Zatkovich discusses, Claim element [**15A**] differs from claim element [**12A**] principally in that it requires a "**demand deposit account**" as opposed to just an "**account**", and a "**demand deposit account**" would meet the limitation of an "**account"** in [**12A**]. (Ex1003, ¶336).

Furthermore, as Mr. Zatkovich notes, this limitation may be met regardless of if an "**overdraft account**" has been associated with a debit card. (Ex1003, ¶337). However, as discussed with respect to element [**1A**] in the event an "overdraft account" is deemed necessary to be associated with the debit card for the purposes

of elements [**12A/15A**], it would in any event be obvious in view of Hirka (as set forth as **Ground 2, Petition 1**). (Ex1003, ¶337).

As discussed with respect to element [**1A**] and by Mr. Zatkovich, Gopinathan teaches, either alone (**Ground 1**) or in combination with Hirka (**Ground 2**) authenticating a **transaction** against a **demand deposit account associated** with a debit card (e.g., by using learned relationships to compare "**current transaction data** from **database 805**" (Ex1010, 24:44) with "**Customer data** from **database 805**" (Ex1010, 24:50-60)), wherein the authentication includes a **fraud assessment** (e.g., "**determining the likelihood of fraud** for each **transaction**" (Ex1010, 5:4-5)). (Ex1003, ¶338).

Furthermore, as discussed with respect to element [**6C**] and by Mr. Zatkovich, Gopianthan teaches, either alone (**Ground 1**) or in combination with Hirka (**Ground 2**), an **authorization** including a **fraud assessment** (e.g., "**Steps 1601 through 1607**" of the fraud assessment which leads to the result that the "**transaction is authorized**" (Ex1010, 25:50-52)). (Ex1003, ¶339).

Accordingly, as Mr. Zatkovich explains, a POSITA would understand that each and every feature of elements [**12A/15A**] is disclosed in Gopinathan (**Ground 1**) and in the alternative would be rendered obvious over Gopinthan in view of Hirka (**Ground 2**). (Ex1003, ¶340).

d. [12B/15B] wherein the fraud assessment includes communication with information sources via a network; and

Claim elements [**12B**/**15B**] both further require that "**the fraud assessment** includes communication with **information sources** via a **network**" (Ex1001, 14:8-10, 14:35-37).

For the same reasons discussed with respect to [**1B**], as Mr. Zatkovich explains, a POSITA would understand that all of the features of elements [**12B/15B**] are disclosed in Gopinathan (**Ground 1**) and/or rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶342).

e. [12C/15C] … updating information regarding at least one of the [account/demand deposit account] or the overdraft account based on the transaction.

Claim element [**12C**] requires that the control logic comprise "second computer readable program code means for **updating** information regarding at least one of the **account** or **the overdraft account** based on the transaction." (Ex1001, 14:11-13). Claim elements [**15C**] require "**updating** information regarding at least one of the **account** or the overdraft account based on the transaction." (Ex1001, 14:11-13, 14:38-40). As Mr. Zatkovich explains, element [**12C**] differs from element [**15C**] principally in that it requires a "**demand deposit account**" as opposed to just an "**account**", and "**demand deposit account**" would meet the limitation of an "**account**" in element [**12C**]. (Ex1003, ¶343).

Additionally, as Mr. Zatkovich explains, this limitation may be met regardless of if an "**overdraft account**" is **updated**. (Ex1003, ¶344). However, as discussed with respect element [**1C**], in the event an "**overdraft account**" is deemed necessary to be updated for the purposes of element [**12C/15C**], it would in any event be obvious in view of Hirka (as set forth as **Ground 2, Petition 1**). (Ex1003, ¶344).

The limitations of claim elements [**12C/15C**] are nearly identical to claim element [**1C**], except that claim element [**1C**] uses "**and**" instead of "**or**". As Mr. Zatkovich explains, the same analysis in [**1C**] regarding **updating** the **demand deposit account** applies equally to elements [**'100-12C/15C**], and Gopinathan teaches, either alone (**Ground 1**) or in combination with Hirka (**Ground 2**), **updating** information regarding an "**account**" and a "**demand deposit account**", respectively (e.g., "the system then **updates customer profile database 806** with the **new transaction data 1610**" (Ex1010, 25:58-60)). (Ex1003, ¶345).

Accordingly, for the same reasons discussed with respect to [**1C**], as Mr. Zatkovich explains, a POSITA would understand that all of the features of elements [**12C/15C**] are disclosed in Gopinathan (**Ground 1**) and/or rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶346).

3. Dependent Claims 13-14 and 16-17 Are Rendered Obvious over Gopinathan in view of Hirka (Ground 2)

Claims 13 and 14 depend from Claim 12 and Claims 16 and 17 depend from Claim 15. For the same reasons as discussed above, as **Ground 1**, Claims 12 and 15 are anticipated by Gopinathan, and in the alternative, as **Ground 2**, Claim 12 and 15 are rendered obvious over Gopinathan in view of Hirka. (Ex1003, ¶347).

The remaining limitations of Claims 13 and 16 like Claim 4, relate to enrolling a potential cardholder and the remaining limitations of Claims 14 and 17, like Claim 5, relate to providing a periodic output of associated information. (Ex1003, ¶348). As earlier discussed, both Claims 12 and 15 require only the association of either a **main/demand deposit account** *or* an **overdraft account**. However, these claims require both types of accounts. (Ex1003, ¶348). As a result, as Mr. Zatkovich explains, the remaining limitations of Claims 13-14 and 16-17 are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶¶347-356).

a. Claim 13

Claim 13 further limits the computer program product of Claim 12 by requiring that the computer program product further comprise "third" "fourth" and "fifth computer readable means" for "**enrolling** into a debit card program; associating the **account** to the debit card; and associating the **overdraft account** to the debit card", respectively. (Ex1001, 14:14-21).

As Mr. Zatkovich explains, these limitations are essentially the same as the enrollment steps in Claim 4 and would be performed by the enrollment system discussed in Claim 8. (Ex1003, ¶349). Additionally, for the same reasons as discussed in [**12PRE]**, as Mr. Zatkovich explains, a POSITA would have understood that these features would be implemented using software stored on system memory. (Ex1003, ¶349).

Accordingly, as Mr. Zatkovich explains, for the same reasons as discussed in claim 4, a POSITA would understand that all of the elements of Claim 13, including those of Claim 12 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶350).

b. Claim 16

Claim 16 further limits the computer program product of Claim 15 by requiring that the method performed by the stored instructions further comprise "before the authenticating, enrolling in a debit card program during which the associating of the **demand deposit account** and the **overdraft account** are performed." (Ex1001, 14:41-44).

As Mr. Zatkovich explains, the limitation of Claim 16 is identical to the limitation of Claim 4 and a POSITA would understand that this method would be performed by software, as discussed in elements [**12PRE/15PRE**] and Claim 13. (Ex1003, ¶351).

Accordingly, for the same reasons discussed in Claim 4, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 16, including those of Claim 15 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶352).

c. Claim 14

Claim 14 further limits the computer program product of Claim 12 by requiring that the computer program product further comprise "third computer readable program code means for providing a periodic output of the account information for the account and the overdraft account." (Ex1001, 14:22-26).

As Mr. Zatkovich explains, the limitation of Claim 14 is identical to the limitation of Claim 5 except that it applies to an "**account**" instead of "**demand deposit account**" (a trivial difference as a "**demand deposit account**" is an "**account**") and calls for "third computer readable code means". (Ex1003, ¶352). As discussed in element [**12PRE**] and by Mr. Zatkovich, a POSITA would have understood that these features would be implemented using software stored on system memory. (Ex1003, ¶353).

Accordingly, for the same reasons discussed in Claim 5, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 14, including those of Claim 12 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶354).

d. Claim 17

Claim 17 further limits the computer program product of Claim 15 by requiring that the method performed by the stored instructions further comprise "providing a **periodic output** of the **account information** for the demand deposit account and the overdraft account." (Ex1001, 14:45-47).

As Mr. Zatkovich explains, the limitation of Claim 17 is identical to the limitation of Claim 5, and a POSITA would also understand that this method would be performed by software, as discussed in elements [**12PRE**/**15PRE**] and Claim 16. (Ex1003, ¶355).

Accordingly, for the same reasons discussed in Claim 5, as Mr. Zatkovich explains, a POSITA would understand that all of the elements of Claim 17, including those of Claim 15 from which it depends, are rendered obvious over Gopinathan in view of Hirka (**Ground 2**). (Ex1003, ¶356).

VIII. Conclusion

Since Petitioner has established a reasonable likelihood that it will prevail, this Petition should be granted, IPR should be instituted, and Claims 1-17 should be found unpatentable and cancelled by the Board.

Respectfully submitted,

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New York, New York

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APPENDIX A

LISTING OF CLAIMS 1-17 OF THE '100 PATENT

1. A method comprising:

authenticating, by a processing device, a transaction requested by a debit card against at least one of a demand deposit account associated with the debit card or an overdraft account associated with the debit card, wherein the authentication includes fraud assessment, and wherein the fraud assessment includes communication with data sources via a network; and

updating, by the processing device, information regarding at least one of the demand deposit account and the overdraft account based on the transaction.

2. The method of claim 1, wherein the overdraft account is a transaction account.

3. The method of claim 1, wherein the overdraft account is a bank account.

4. The method of claim 1, further comprising, before the authenticating, enrolling in a debit card program during which the associating of the demand deposit account and the overdraft account are performed.

5. The method of claim 1, further comprising:

providing a periodic output of the account information for the demand deposit account and the overdraft account.

6. A system, comprising:

an authentication system configured to:

receive information regarding a requested transaction of a debit card,

receive information regarding a main account that has been associated with the debit card and an overdraft account that has been associated with the debit card, and

accept or reject the requested transaction based on an authorization including a fraud assessment, wherein the fraud assessment includes communication with data sources via a network.

7. The system of claim 6, wherein the main account and the overdraft account are held at unrelated financial institutions.

8. The system of claim 6, further comprising:

an enrolling system that is configured to verify an enrollee, to perform the associating of the main and overdraft accounts of the enrollee with the debit card, and to issue the debit card.

9. The system of claim 8, wherein the enrolling system is configured to use a transaction account as the overdraft account.

10. The system of claim 8, wherein the enrolling system is configured to use a banking account as the overdraft account.

11. The system of claim 6, further comprising: a settlement system configured to generate a periodic report of at least one of the transactions, the main account, and the overdraft account.

12. A computer program product for performing a debit card authentication the computer program product

comprising a tangible computer usable medium having control logic stored therein, said control logic comprising:

first computer readable program code means for authenticating, through authorizing including fraud assessment, a transaction requested by the debit card against at least one of an account that has been associated with the debit card or an overdraft account that has been associated with the debit card, wherein the fraud assessment includes communication with information sources via a network; and

second computer readable program code means for updating information regarding at least one of the account or the overdraft account based on the transaction.

13. The computer program product of claim 12, further comprising:

third computer readable program code means for enrolling into a debit card program;

fourth computer readable program code means for associating the account to the debit card; and

fifth computer readable program code means for associating the overdraft account to the debit card.

14. The computer program product of claim 12, further comprising:

third computer readable program code means for providing a periodic output of the account information for the account and the overdraft account.

15. A tangible computer-readable medium having stored thereon computer executable instructions that, if

executed by a computing device, cause the computing device to perform a method comprising:

authenticating, through authorizing including fraud assessment, a transaction requested by a debit card against at least one of a demand deposit account that has been associated with the debit card and an overdraft account that has been associated with the debit card, wherein the fraud assessment includes communication with information sources via a network; and

updating information regarding at least one of the demand deposit account and the overdraft account based on the transaction.

16. The method of claim 15, further comprising, before the authenticating, enrolling in a debit card program during which the associating of the demand deposit account and the overdraft account are performed.

17. The method of claim 15, further comprising:

providing a periodic output of the account information for the demand deposit account and the overdraft account.

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. §42.24(d), I hereby certify that the foregoing **PETITION FOR *INTER PARTES* REVIEW OF CLAIMS 1-17 OF U.S. PATENT NO. 7,837,100 B2** contains 13,561 words, excluding the parts of the petition exempted by 37 C.F.R. §42.24(a), as measured by the word-processing system used to prepare this paper.

Dated: December 29, 2022
New York, New York

By: */Charles R. Macedo/*

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§42.6(e) and 42.105, I hereby certify that on this 29th day of December 2022, a true copy of the foregoing **PETITION FOR *INTER PARTES* REVIEW OF CLAIMS 1-17 OF U.S. PATENT NO. 7,837,100 B2**, together with Petitioner's Power of Attorney, Petitioner's Exhibit List, Exhibit Nos. 1001-1013, was served via Priority Mail Express® on the patent owner at the following correspondence address of record for the subject patent:

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In addition, service is also made at the following "address known to the petitioner as likely to effect service" pursuant to 37 C.F.R. §42.105(a):

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