

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.,
Petitioner

v.

TELCOM VENTURES LLC,
Patent Owner

Case No. IPR2025-01238
U.S. Patent No. 11,937,172

PATENT OWNER'S PRELIMINARY RESPONSE

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2001	Interim Processes for PTAB Workload Management, Acting Director Memorandum (March 26, 2025) (https://www.uspto.gov/sites/default/files/documents/InterimProcesses-PTABWorkloadMgmt-20250326.pdf)
2002	Third Amended Docket Control Order
2003	Standing Order for Civil Cases Before Judge Rita F. Lin
2004	Telcom Ventures' Proposed Case Schedule for the Apple Litigation
2005	<i>Telcom Ventures LLC v. Apple, Inc.</i> , No. 3:25-cv-05041-RFL, Dkt. 1 (Oct. 4, 2024)
2006	Declaration of Chuck Easttom
2007	<i>Curriculum Vitae</i> of Chuck Easttom
2008	Chiradeep BasuMallick, "What is NFC (Near Field Communication)? Definition, Working, and Examples" (Sept. 29, 2022), https://www.spiceworks.com/tech/networking/articles/what-is-near-field-communication/
2009	Liu et al., "Near-Field Communications: A Comprehensive Survey," IEEE (June 2025)
2010	"The Creation of the NFC Forum and its Vision" (2011) https://cs.stanford.edu/people/eroberts/courses/cs181/projects/2010-11/NFCChips/nfcforum.html
2011	McHugh & Yarmey, "Near Field Communication: Introduction and Implication," ERIC (2012)
2012	Coskun et al., "The Survey on Near Field Communication," Sensors (June 5, 2015)

TABLE OF CLAIMS

Reference	Claim Limitation
Claim 1	
1[pre]	A method of operating a smartphone in performing at least one financial transaction; the method including a two-step process in establishing and using a capability in order to perform said at least one financial transaction; the method comprising:
1[a]	responsive to sensing at least one parameter by at least one sensor of the smartphone and responsive to determining that the at least one parameter that is sensed satisfies a criterion, performing a first step of said two-step process by enabling a mode to communicate by the smartphone information requesting an authorization to establish said capability;
1[b]	while the mode is enabled, and as a precursor to performing a second step of said two-step process, transmitting by the smartphone first data to a first device requesting the authorization to establish said capability to perform said at least one financial transaction; and
1[c]	receiving by the smartphone second data from the first device, comprising the authorization, responsive to said transmitting by the smartphone the first data; then
1[d]	performing the second step of said two-step process comprising performing a first transaction of said at least one financial transaction, responsive to detecting by the smartphone that a proximity condition is satisfied and responsive to sensing the at least one parameter and determining that the at least one parameter sensed satisfies the criterion;
1[e]	wherein said performing the second step of said two-step process comprises sensing that the proximity condition is satisfied relative to an access point maintained by a vendor at a point of purchase counter, by detecting a short-range signal that is transmitted by the access point, determining that a value of the at least one parameter that is sensed satisfies the criterion and then, responsive to having sensed that the proximity condition is satisfied relative to the access point and having determined that the value of the at least one parameter sensed satisfies the criterion, paying for a product by selectively sending information to at least one device;

Reference	Claim Limitation
1[f]	wherein said paying for a product by selectively sending information to at least one device comprises selectively and wirelessly transmitting information to the at least one device using unlicensed frequencies; and
1[g]	wherein said at least one parameter comprises a signal, a number, a word, a code, a velocity, an acceleration, a time-of-day, a humidity, a temperature, a height, a level of brightness, a level of darkness, a blood pressure, a heart rate, a blood content, a physiological state and/or a psychological state.
Claim 2	
2[pre]	The method of claim 1,
2[a]	wherein said enabling a mode to communicate by the smartphone information requesting an authorization comprises enabling a first function of the smartphone while disabling a second function of the smartphone responsive to the at least one parameter having been sensed by the at least one sensor of the smartphone and further responsive to having determined that the at least one parameter that is sensed satisfies the criterion; and
2[b]	then selectively communicating with the first device by using a communications capability of the first function, selectively establishing a master-slave relationship with the first device, and selectively requesting from the first device the authorization to establish the capability to conduct said at least one financial transaction.
Claim 3	
3[pre]	The method of claim 2, further comprising:
3[a]	repeatedly sensing the at least one parameter and repeatedly deciding, based on comparing a value of the at least one parameter sensed to the criterion, whether or not to maintain enabled said first function while maintaining disabled said second function; and
3[b]	maintaining enabled said first function while maintaining disabled said second function responsive to deciding that said value of the at least one parameter continues to satisfy the criterion; or
3[c]	disabling said first function and enabling said second function responsive to deciding that the value of the at least one parameter no longer satisfies the criterion.
Claim 4	
4[pre]	The method of claim 1,

Reference	Claim Limitation
4[a]	wherein said transmitting by the smartphone first data to a first device is responsive to the at least one parameter having been sensed by the at least one sensor of the smartphone and is further responsive to having determined that the at least one parameter that is sensed satisfies the criterion; and
4[b]	wherein said receiving by the smartphone second data from the first device is responsive to said transmitting by the smartphone the first data and comprises receiving by the smartphone information relating to an acknowledgement and/or authorization to establish and use the capability to perform said at least one financial transaction.
Claim 5	
5[pre]	The method of claim 1, further comprising:
5[a]	responsive to performing a financial transaction, causing data to be transmitted selectively to at least one device and further causing data to be received selectively from at least one device.
Claim 6	
6[pre]	The method of claim 1,
6[a]	wherein said transmitting by the smartphone first data to a first device and receiving by the smartphone second data from the first device comprises wirelessly transmitting/receiving by the smartphone using unlicensed frequencies, licensed frequencies, a WiFi air interface protocol, an Orthogonal Frequency Division Multiplexing air interface protocol and/or an Orthogonal Frequency Division Multiple Access air interface protocol.
Claim 7	
7[pre]	The method of claim 1,
7[a]	wherein said paying for a product further comprises deducting/withdrawing an amount of money from an account.
Claim 8	
8[pre]	The method of claim 7,
8[a]	wherein said using unlicensed frequencies comprises using unlicensed frequencies in a Time Division Duplex operation;
8[b]	wherein said selectively sending information to at least one device comprises selectively, sending information to the access point maintained by the vendor at the point of purchase counter and to at least one other device that is predetermined; and/or

Reference	Claim Limitation
8[c]	wherein the method further comprises selectively receiving information from the access point maintained by the vendor at the point of purchase counter and from at least one other device that is predetermined.
Claim 9	
9[pre]	A smartphone that is configured to perform operations, comprising a two-step process, associated with establishing and using a capability in order to perform at least one financial transaction; the operations comprising:
9[a]	responsive to sensing at least one parameter by at least one sensor of the smartphone and responsive to determining that the at least one parameter that is sensed satisfies a criterion, performing a first step of said two-step process by enabling a mode to communicate information requesting an authorization to establish said capability;
9[b]	while the mode is enabled, and as a precursor to performing a second step of said two-step process, transmitting first data to a first device requesting the authorization to establish said capability to perform said at least one financial transaction; and
9[c]	receiving second data from the first device, comprising the authorization, responsive to said transmitting the first data; then
9[d]	performing the second step of said two-step process comprising performing a first financial transaction of said at least one financial transaction, responsive to detecting by the smartphone that a proximity condition is satisfied and responsive to sensing the at least one parameter and determining that the at least one parameter sensed satisfies the criterion;
9[e]	wherein said performing the second step of said two-step process comprises sensing that the proximity condition is satisfied relative to an access point maintained by a vendor at a point of purchase counter, by detecting a short-range signal that is transmitted by the access point, determining that a value of the at least one parameter that is sensed satisfies the criterion and then, responsive to having sensed that the proximity condition is satisfied relative to the access point and having determined that the value of the at least one parameter sensed satisfies the criterion, paying for a product by selectively sending information to at least one device;

Reference	Claim Limitation
9[f]	wherein said paying for a product by selectively sending information to at least one device comprises selectively and wirelessly transmitting information to the at least one device using unlicensed frequencies; and
9[g]	wherein said at least one parameter comprises a signal, a number, a word, a code, a velocity, an acceleration, a time-of-day, a humidity, a temperature, a height, a level of brightness, a level of darkness, a blood pressure, a heart rate, a blood content, a physiological state and/or a psychological state.
Claim 10	
10[pre]	The smartphone of claim 9,
10[a]	wherein said enabling a mode to communicate by the smartphone information requesting an authorization comprises enabling a first function of the smartphone while disabling a second function of the smartphone responsive to the at least one parameter having been sensed by the at least one sensor of the smartphone and further responsive to having determined that the at least one parameter that is sensed satisfies the criterion; and
10[b]	then selectively communicating with the first device by using a communications capability of the first function, selectively establishing a master-slave relationship with the first device, and selectively requesting from the first device the authorization to establish the capability to conduct said at least one financial transaction.
Claim 11	
11[pre]	The smartphone of claim 10, wherein the operations further comprise:
11[a]	repeatedly sensing the at least one parameter and repeatedly deciding, based on comparing a value of the at least one parameter sensed to the criterion, whether or not to maintain enabled said first function while maintaining disabled said second function; and
11[b]	maintaining enabled said first function while maintaining disabled said second function responsive to deciding that said value of the at least one parameter continues to satisfy the criterion; or
11[c]	disabling said first function and enabling said second function responsive to deciding that the value of the at least one parameter no longer satisfies the criterion.
Claim 12	
12[pre]	The smartphone of claim 9,

Reference	Claim Limitation
12[a]	wherein said transmitting first data to a first device is responsive to the at least one parameter having been sensed by the at least one sensor of the smartphone and is further responsive to having determined that the at least one parameter that is sensed satisfies the criterion; and
12[b]	wherein said receiving by the smartphone second data from the first device is responsive to said transmitting by the smartphone the first data and comprises receiving by the smartphone information relating to an acknowledgement and/or authorization to establish and use t [sic] capability to perform said at least one financial transaction.
Claim 13	
13[pre]	The smartphone of claim 9, wherein the operations further comprise:
13[a]	responsive to performing a financial transaction, causing data to be transmitted selectively to at least one device and further causing data to be received selectively from at least one device.
Claim 14	
14[pre]	The smartphone of claim 9,
14[a]	wherein said transmitting first data to a first device and said receiving second data from the first device comprises wirelessly transmitting/receiving by the smartphone using unlicensed frequencies, licensed frequencies, a WiFi air interface protocol, an Orthogonal Frequency Division Multiplexing air interface protocol and/or an Orthogonal Frequency Division Multiple Access air interface protocol.
Claim 15	
15[pre]	The smartphone of claim 9,
15[a]	wherein said paying for a product further comprises deducting/withdrawing an amount of money from an account.
Claim 16	
16[pre]	The smartphone of claim 9,
16[a]	wherein said using unlicensed frequencies comprises using unlicensed frequencies in a Time Division Duplex operation;
16[b]	wherein said selectively sending information to at least one device comprises selectively sending information to the access point maintained by the vendor at the point of purchase counter and to at least one other device that is predetermined; and/or

Reference	Claim Limitation
16[c]	wherein the operations further comprise selectively receiving information from the access point maintained by the vendor at the point of purchase counter and from at least one other device that is predetermined.

I. INTRODUCTION

Telcom Ventures LLC (“Telcom Ventures” or “Patent Owner”) respectfully submits this Preliminary Response (“POPR”) requesting that the Director deny institution of the Petition for *inter partes* review (Paper 1, “Petition,” or “Pet.”) filed by Petitioner Apple Inc. (“Apple” or “Petitioner”).

The Petition seeks *inter partes* review (“IPR”) of claims 1-16 (the “Challenged Claims”) of U.S. Patent No. 11,937,172 (the “’172 Patent,” Ex. 1001). While the Petition sets forth eight Grounds, Petitioner relies on U.S. Patent No. 8,229,852 to *Carlson* (“*Carlson*,” Ex. 1005) in combination with other references in each of these Grounds. Indeed, the Petition relies heavily on multi-reference combinations in an attempt to cobble together a system that allegedly meets the claimed inventions of the ’172 Patent.

Petitioner’s combinations fail for several reasons. First, across all six Grounds, the Petition fails to show that “information requesting an authorization” is taught or rendered obvious by the prior art. Petitioner relies only on *Carlson*’s alleged request for a pseudo primary account identifier (“PPAI”) as information requesting an authorization to perform a particular transaction. Pet. 20, 27-30 (Grounds 1-3), 72-73 (incorporating analysis of Grounds 1-3 into Grounds 4-6). But *Carlson*’s request for PPAI is not a request for authorization for a particular transaction, nor would *Carlson*’s disclosure render this limitation obvious to a

person of ordinary skill in the art (“POSITA”). Instead, *Carlson*’s request for PPAI is simply a communication, based on already authorized and stored customer account information, for an identifier that is used as a proxy to protect the consumer’s real account information during a transaction. *Carlson*’s request for PPAI is not and cannot be information requesting an authorization because *Carlson*’s transaction may go forward without the device requesting or receiving the PPAI at all. Moreover, *Carlson* itself undercuts Petitioner’s theory because in *Carlson*’s system, authorization of particular transactions is achieved by a different “authorization request message” that is transmitted by the merchant—not by any part of *Carlson*’s system.

Second, in Grounds 1-3, Petitioner fails to show that a POSITA would have been motivated to combine *Carlson*’s device with *Holloway*’s fingerprint scanner to render obvious “responsive to sensing a parameter . . . enabling a mode to communicate by the smartphone information requesting an authorization” because neither *Carlson* nor *Holloway* suggest using biometrics to enable a mode to communicate the PPAI request. Specifically, Petitioner’s expert, Mr. Lipoff, fails to demonstrate that a POSITA would have used *Holloway*’s fingerprint scanner to enable *Carlson*’s request for PPAI, which, as admitted by Petitioner, is required to meet the claims. Indeed, even in the embodiments relied on by Peititioner, *Carlson* teaches that the request for a PPAI “need not occur only after” a user has unlocked

the device. *See Carlson*, 7:7-11. Thus, *Carlson*'s device is always capable of requesting and receiving a PPAI, and a mode to communicate a request for PPAI is not necessarily enabled responsive to sensing a parameter. Worse still, *Holloway* is silent on the use of biometrics for the purposes of requesting account identifiers, especially "fake" ones. Instead, *Holloway* relates to biometrics and/or user verification before funds can be transferred. Petitioner has not demonstrated and cannot demonstrate that the added burden of the biometrics of *Holloway* would have benefitted a request for PPAI. Lastly, *Carlson* teaches away from using slow and complex biometric authentication for its request for PPAI, because *Carlson* teaches using a request that is transparent to the user and does not cause any delay.

Finally, in Grounds 4-6, like in Grounds 1-3, Petitioner again fails to show that a POSITA would have been motivated to combine *Carlson*'s device with *Murakami*'s biometric authentication device to render obvious "responsive to sensing a parameter . . . enabling a mode to communicate by the smartphone information requesting an authorization." As with Grounds 1-3, *Carlson* itself does not suggest using biometrics to enable a mode to communicate a PPAI request. And like the *Holloway* combination, the additional biometrics in the form of a heartbeat sensor of *Murakami* would defy *Carlson*'s stated goal of having the request for PPAI be instantaneous and not result in delays. *Murakami* itself acknowledges that its own

biometric sensor can be “impractical” because of the time it takes to capture a good sample. *See Murakami*, 33:4-6.

Accordingly, the Petition fails to establish that any Ground would have rendered the Challenged Claims obvious. Petitioner has failed to meet its burden to show a reasonable likelihood of unpatentability of any of the Challenged Claims. *See* 37 CFR § 42.108(c). Accordingly, Patent Owner requests that the Director deny institution of *inter partes* review.

II. LEGAL STANDARD

The Petition must both “clearly point out the differences between the claimed invention and [the prior art]” and “explain why a person of ordinary skill in the art would have found the claimed subject matter obvious in spite of those differences.” *Synopsys, Inc. v. Mentor Graphics Corp.*, IPR2012-00041, Paper 16 at 14 (P.T.A.B. Feb. 22, 2013). The Petition must recite where the challenged limitation is found in the reference(s) and explain why a POSITA would have modified the primary reference with the recited limitation from the secondary reference(s). *Microsoft Corp. v. Secure Web Conf. Corp.*, IPR2014-00745, Paper 12 at 11-13 (P.T.A.B. Sept. 29, 2014). The Petition must establish, ***with particularity***, the grounds and evidence that support invalidating the challenged claims. 35 U.S.C. § 312(a)(3). In addition, the Director institutes based on what the Petition ***actually presents*** and not what it could have reasonably contained. *In re Magnum Oil Tools Int’l, Ltd.*, 829

F.3d 1364, 1381 (Fed. Cir. 2016). The Director cannot “deviate from the grounds in the petition and raise its own” theories of invalidity. *Sirona Dental Sys. GmbH v. Institut Straumann AH*, 892 F.3d 1349, 1356 (Fed. Cir. 2018).

III. BACKGROUND

A. The ’172 Patent

Applicants filed U.S. Patent Application No. 18/523,863 on November 29, 2023, which issued as U.S. Patent No. 11,937,172 on March 19, 2024. ’172 Patent at 1. The ’172 Patent claims the benefit of U.S. Patent Application No. 12/264,711—later issued as U.S. Patent No. 9,462,411—which has a filing date of November 4, 2008. *Id.* at 2.

The ’172 Patent describes mobile wireless devices and methods of using a mobile wireless device to perform financial transactions, but only when certain conditions or criteria are met, such as the satisfaction of a proximity condition and a criterion for the value of a parameter, e.g., a physiological parameter. ’172 Patent, 1:30-35; 6:17-27; *see also* Ex. 2006 ¶61. In the prior art, mobile wireless devices were rigidly configured to perform a predetermined number of functions. ’172 Patent, 1:44-49; *see also* Ex. 2006 ¶61. To overcome this rigidity, the ’172 Patent describes devices and methods that “may be used to enable adaptively one or more modes/functions of a device” based upon satisfying certain criteria. ’172 Patent, 1:54-59; *see also* Ex. 2006 ¶61. The ’172 Patent explains that the invention

advantageously allows “a mobile wireless device [to] act as a ‘wallet’ (over and above other functions) only when it is time to pay for an item and not act as a wallet when there is no need to do so.” ’172 Patent, 1:49-52; *see also* Ex. 2006 ¶61.

The ’172 Patent also describes estimating “a value of at least one other parameter that may be associated with the wireless communications device . . . and/or an entity (living or otherwise) that is associated with and/or is proximate to the wireless communications device.” ’172 Patent, 6:19-23; *see also* Ex. 2006 ¶62. Such parameters include “velocity, acceleration, ToD, ToM, ToY, humidity, temperature, height, level of brightness, level of darkness, a blood pressure, a heart rate, a blood content, a physiological state, a psychological state, etc.” ’172 Patent, 6:25-28; *see also* Ex. 2006 ¶62. These parameters can be estimated using “sensors that may, according to some embodiments, be device-based and/or network assisted/based means and/or sensors.” ’172 Patent, 6:32-34; *see also* Ex. 2006 ¶62. The disclosed wireless communications devices may be “configured to selectively enable the first communications mode/function” responsive to a value of such a parameter. ’172 Patent, 6:45-49; *see also* Ex. 2006 ¶62.

During prosecution, the Examiner did not issue a rejection. Ex. 1002. In the Notice of Allowance, the Examiner explained that the closest prior art of record, U.S. Patent Application Publication No. 2009/0058637, failed to teach or suggest

“receiving by the smartphone second data from the first device, comprising the authorization” and other limitations of claims 1 and 9. *Id.* at 348-49.

B. *Carlson* (Ex. 1005)

U.S. Patent No. 8,229,852 to *Carlson* is titled “Secure Mobile Payment System.” *Carlson* describes portable wireless devices that are used to conduct contactless payment transactions in a “secure manner.” *Carlson*, 1:16-20.

Carlson explains that “[d]ue to the wireless nature of the contactless reader, it is possible that the contactless reader may be used for surreptitious interrogation of the portable wireless device by intercepting the portable wireless device’s communication.” *Carlson*, 1:64-2:1. *Carlson* further explains that “it is conceivable that a contactless reader may be developed or modified to enhance its power and sensitivity and thereby increase its ability to interrogate with and intercept signals from the portable wireless device from a greater distance than specified in standards used for contactless readers.” *Carlson*, 2:1-6.

Carlson describes “[t]heft of sensitive information, such as an account number, using wireless interrogation or interception of communications from portable wireless device” as a “major concern for consumers and businesses alike.” *Carlson*, 2:7-10. *Carlson* notes that wireless interrogation can “occur at virtually any time and place,” and “[o]nce the victim of the wireless interrogation discovers that they had sensitive information stolen, it is often too late to discover where the theft

took place.” *Carlson*, 2:10-16. As a result, “[t]he victim must then deal with the consequences and hassle of correcting the unauthorized access and possible uses of the information.” *Carlson*, 2:16-18.

Carlson describes other “safeguards for protecting purchases from fraudulent attacks,” including employing encryption technologies to encrypt the payment account number and other data associated with account transactions. *Carlson*, 2:19-23. *Carlson* explains that many merchants avoid implementing or upgrading to the latest encryption technology “[d]ue to the cost, time, and risk of potential business interruption (e.g., loss of sales).” *Carlson*, 2:27-35.

Carlson’s solution describes the use of “pseudo primary account identifiers” or “PPAI.” *Carlson*, 2:62-63. According to *Carlson*, “[p]seudo primary account identifiers may include identifiers that are similar in format to a consumer’s real account identifier.” *Carlson*, 5:30-32. “These account identifiers may include account numbers or any other alphanumeric sequence.” *Carlson*, 2:66-3:1. *Carlson* also describes the PPAI as “bogus, fake, decoy, substitute, or the like.” *Carlson*, 5:42-43.

Carlson describes “a method for conducting a transaction that includes receiving a pseudo account identifier that corresponds to a consumer’s account identifier.” *Carlson*, 3:3-6. In some embodiments of *Carlson*, “the pseudo primary account identifier may not be requested at all, but rather is pushed to the portable

wireless device at any time, such as when the device is turned on, when the device is idle, periodically, or through any other such criteria.” *Carlson*, 7:4-7, 12:67-13:3. *Carlson* also explains that “the pseudo primary account identifier may not be requested by the portable wireless device at all” and “[t]he portable wireless device may generate the pseudo primary account identifier.” *Carlson*, 7:15-19.

C. *Holloway* (Ex. 1032)

International Patent Application Publication No. WO 02/49322 to *Holloway* is directed to a mobile telephone that “includes a device (15) for checking the identity of a user in connection with various transactions.” *Holloway*, Abstract.

Holloway proposes using a “means for checking the identity of a user of the unit” to solve the problem of identity verification. *Holloway*, 2:1-5. *Holloway* explains that “the means for telephonic communication includes a display, a microphone and a keypad and said means for checking identity is arranged to show a photograph of the user on said display, and/or means for recognizing the voice of the user and/or a password spoken by the user when the user speaks into said microphone, and/or incorporates means for identifying a PIN number entered by a user on said keypad.” *Holloway*, 2:14-18.

D. *Jazayeri* (Ex. 1007)

U.S. Patent Application Publication No. 2008/0155268 to *Jazayeri* is directed to “[a]n architecture . . . that controls access to secure data via biometric

verification.” *Jazayeri*, Abstract. *Jazayeri* discloses a “memory module that communicates with biometric data to establish a heightened level of security for controlling access to data stored in the non-volatile memory.” *Id.* “Specifically, biometric data is input and communicated to the security processor, then compared against the existing biometric templates stored in the non-volatile memory. If the data matches, verification is sent to the external processor and the user is granted access to the secure assets.” *Id.*

Jazayeri requires a security processor. *Jazayeri*, ¶[0006] (“As the security processor controls access to the entire non-volatile memory space and monitors all traffic to and from the non-volatile memory components, the security processor is able to manage access to the secure assets stored in the non-volatile memory.”); *see also Jazayeri*, ¶¶[0024], [0025], [0027], [0028], [0030], Figs. 1, 2; Ex. 2006, ¶75. *Jazayeri* explains that “[o]nly the security processor 104 accesses the security software from the nonvolatile memory 102 and performs security functions based on the specific security software being executed.” *Jazayeri*, ¶[0027].

Figure 3 of *Jazayeri* illustrates a block diagram of *Jazayeri*’s security processor.

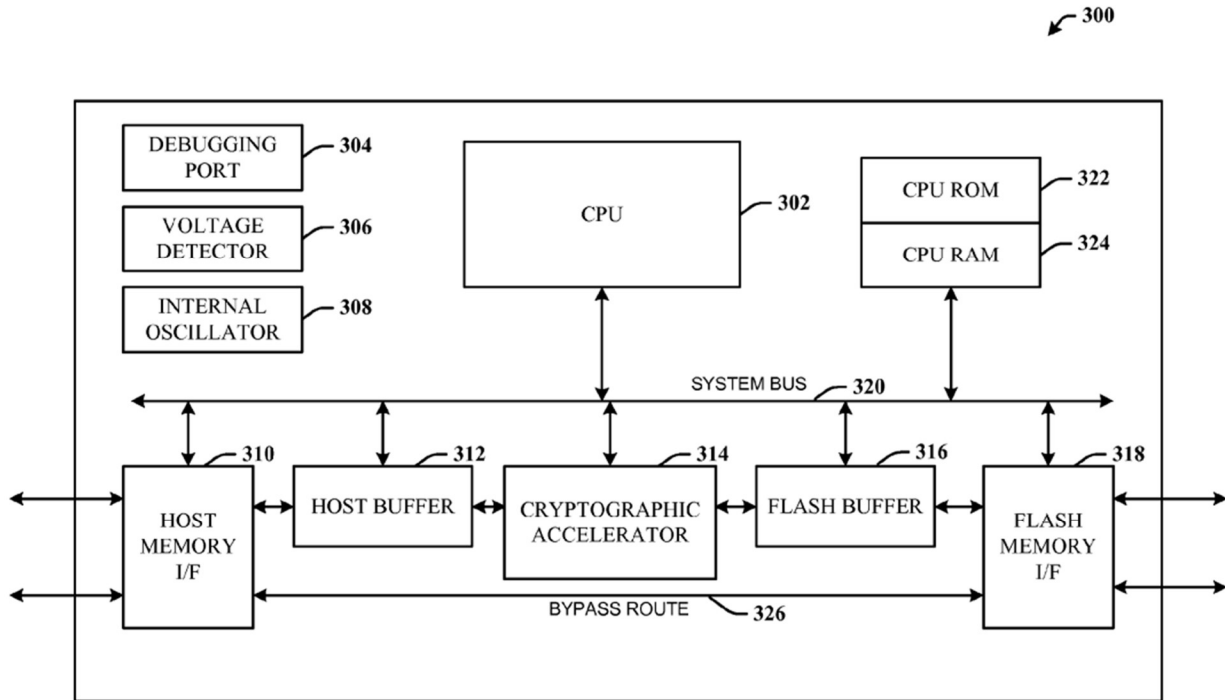


FIG. 3

Jazayeri, Fig. 3

Jazayeri's security processor comprises sophisticated hardware. *Jazayeri* explains that "[a] cryptographic accelerator 314 . . . performs all the cryptographic algorithms, symmetric and a-symmetric needed by the system." *Jazayeri*, ¶[0033].

E. ISO-14443 (Ex. 1016)

Petitioner relies on the first edition of *ISO-14443* that Petitioner alleges was published in 2000 and 2002. Pet., 13 (citing Ex. 1033, Munford Declaration). The ISO/IEC 14443 standard has four parts. Ex. 2006 ¶77. *ISO-14443* "is one of a series of International Standards describing the parameters for identification cards as defined in ISO/IEC 7810 and the use of such cards for international interchange." *ISO-14443*, 4; Ex. 2006 ¶78.

F. *Murakami* (Ex. 1009)

International Patent Application Publication No. WO 01/95246 to *Murakami* is directed to “a method and device for biometric authentication using a signal transmitter (20), a signal receiver (22), a memory module, and a processing module.” *Murakami*, Abstract. Specifically, *Murakami* “employ[s] histological and physiological biometric markers that are substantially unique to an individual in order to permit an individual to activate a device, participate in a transaction, or identify him or herself.” *Murakami*, 1:10-13.

G. Other Asserted References (Exs. 1008, 1031)

Patent Owner’s expert Dr. Easttom provides an overview of the remaining asserted secondary references, including U.S. Patent Application Publication No. 2002/0095586 to Doyle et al. (“*Doyle*,” Ex. 1008) and U.S. Patent. No. 7,213,742 to Birch et al. (“*Birch*,” Ex. 1031). Ex. 2006, ¶¶79-80.

IV. CLAIM CONSTRUCTION

Claim terms should be given their plain and ordinary meaning to a POSITA as of the earliest effective filing date. *See, e.g., Eon Corp. IP Holdings LLC v. Silver Spring Networks, Inc.*, 815 F.3d 1314, 1320 (Fed. Cir. 2016). “The ordinary meaning of a claim term is not ‘the meaning of the term in the abstract.’ Instead, ‘the “ordinary meaning” of a claim term is its meaning to the ordinary artisan after reading the entire patent.’” *Id.* (quoting *Philips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc)). With the sole exception described below, Petitioner contends that

“no constructions are necessary to resolve the proposed grounds.” Pet., 4. Patent Owner agrees that the Board should apply the plain and ordinary meaning of the terms in the Challenged Claims. Patent Owner does not waive its right to raise additional issues of claim construction in any litigation, nor does it waive any argument that claim terms are not indefinite or are otherwise valid. The failure of the Petition to render obvious the Challenged Claims is clear in view of the arguments below without construing any specific claim term.

In Grounds 1-3, the Petition relies on a fingerprint to satisfy the claimed “parameter” and “physiological state” limitations. Pet., 6. The Petition then relies on *Murakami*’s biometric sensor for the “parameter” and “physiological state” limitations in Grounds 4-6. Pet., 6. Because the Grounds fail regardless of the physiological parameter that the Petition relies on, a construction is not necessary for the purposes of institution. *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms that . . . are in controversy only, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))). Patent Owner reserves the right to address “parameter” and “physiological state” if this case is instituted.

V. LEVEL OF ORDINARY SKILL IN THE ART

Each of the arguments below is considered from the standpoint of a POSITA in the field of the '172 Patent at the time of the invention. Patent Owner contends that a POSITA would have had at least a bachelor's degree in electrical engineering, computer engineering, or a related field, with about two years of experience in wireless communications. Ex. 2006 ¶47. This is different from Petitioner's proposal, which calls for "a bachelor's degree in computer science, electrical engineering, computer engineering or equivalent from an accredited academic program with a year of work experience with mobile payment systems or wireless communication systems." Pet., 6; Ex. 1003 ¶52. Petitioner also requires "a working knowledge of short-range communication technologies in portable wireless devices." Pet. 6. Patent Owner disagrees that "a working knowledge of short-range communication technologies" is necessary. Regardless, Petitioner fails to meet its burden under either POSITA definition.

VI. THE DIRECTOR SHOULD NOT INSTITUTE *INTER PARTES* REVIEW

All of Petitioner's Grounds fail. As described below, Petitioner's combinations fail to render obvious all elements of any of the Challenged Claims. Petitioner's proposed combinations are as follows:

Ground	Claims	Proposed Ground of Unpatentability
1	1-2, 4, 6-10, and 12-16	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Carlson</i> ¹ in view of <i>Holloway</i> , ² <i>Jazayeri</i> , ³ and <i>ISO-14443</i> ⁴
2	3 and 11	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Carlson</i> in view of <i>Holloway</i> , <i>Jazayeri</i> , <i>ISO-14443</i> , and <i>Doyle</i> ⁵
3	5 and 8	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Carlson</i> in view of <i>Holloway</i> , <i>Jazayeri</i> , <i>ISO-14443</i> , and <i>Birch</i> ⁶
4	1-2, 4, 6-10, and 12-16	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Carlson</i> in view of <i>Jazayeri</i> , <i>ISO-14443</i> , and <i>Murakami</i> ⁷
5	3 and 11	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Carlson</i> in view of <i>Jazayeri</i> , <i>ISO-14443</i> , <i>Doyle</i> , and <i>Murakami</i>
6	5 and 8	Obvious under pre-AIA 35 U.S.C. § 103 over <i>Carlson</i> in view of <i>Jazayeri</i> , <i>ISO-14443</i> , <i>Birch</i> , and <i>Murakami</i>

¹ U.S. Patent No. 8,229,852 (“*Carlson*,” Ex. 1005).

² WIPO International Patent Application Publication No. WO 02/49322 (“*Holloway*,” Ex. 1032).

³ U.S. Patent Application Publication No. 2008/0155268 (“*Jazayeri*,” Ex. 1007).

⁴ ISO/IEC 14443 (“*ISO-14443*,” Ex. 1016).

⁵ U.S. Patent Application Publication No. 2002/0095586 (“*Doyle*,” Ex. 1008).

⁶ U.S. Patent No. 7,213,742 (“*Birch*,” Ex. 1031).

⁷ WIPO International Application Publication No. WO 01/95246 (“*Murakami*,” Ex. 1009).

A. Petitioner Has Failed to Establish a Reasonable Likelihood that the Challenged Claims Would Have Been Obvious in View of *Carlson* in Combination with *Holloway* and/or *Murakami* (Grounds 1–8).

In Ground 1, Petitioner asserts that certain of the Challenged Claims, including independent claims 1 and 9, would have been obvious over *Carlson* in view of *Holloway*. Pet., 18-19. In Grounds 2-3, Petitioner adds additional secondary references in an attempt to show that certain dependent claims would have been obvious. Pet., 17. In Grounds 4-6, Petitioner replaces *Holloway* with *Murakami*. Pet., 72-73. In view of the deficiencies discussed below, Petitioner has failed to demonstrate a reasonable likelihood of prevailing on any of Grounds 1-6.

1. *Carlson*’s Request for PPAI Does Not Disclose and Would Not Have Rendered Obvious “information requesting an authorization” (Grounds 1-6).

Carlson does not disclose and would not have rendered obvious “enabling a mode to communicate [by the smartphone] information requesting an authorization” of independent claims 1[a] and 9[a]. *See* Ex. 2006 ¶¶87-101. All dependent claims depend from one of these two independent claims and thus include this same requirement.

Petitioner’s only argument as to this limitation is that *Carlson*’s request for PPAI is “information requesting an authorization to establish said capability to perform [a] particular transaction or particular limited set of transactions in *Carlson*’s system.” Pet., 27-30 (Grounds 1-3); *see also* Pet., 72-73 (incorporating

analysis of *Carlson* into Grounds 4-6).⁸ That is, Petitioner equates a PPAI to an authorization to perform a particular transaction or particular limited set of transactions.⁹ However, for at least three key reasons, a POSITA would not have understood *Carlson*'s request for PPAI to be the claimed "information requesting an authorization" to perform a particular transaction.

First, the request for PPAI in *Carlson* is not "information requesting an authorization" to perform a particular transaction, as the Petition alleges, and *Carlson*'s disclosure of a request for PPAI would not have rendered this limitation obvious to a POSITA. Ex. 2006, ¶89. *Carlson*'s request for PPAI is not "information requesting an authorization"—or any type of authorization of a transaction—as it is simply a request for an identifier that can be used as a proxy for the consumer's account identifier during a transaction. In fact, *Carlson* never describes or even suggests that the PPAI is an authorization to perform a transaction. Ex. 2006, ¶89.

⁸ The Petition solely relies on *Carlson* and, thus, does not rely on *Holloway* in Grounds 1-3 nor *Murakami* in Grounds 4-6 for this part of the limitation.

⁹ For the purposes of this IPR, Petitioner interprets the "authorization" of claim limitations 1[a] and 9[a] to be an authorization to establish a capability to perform a particular transaction or a set of transactions. *See* Pet., 27-30 (Grounds 1-3); *see also* Pet., 72-73 (incorporating analysis of *Carlson* into Grounds 4-6).

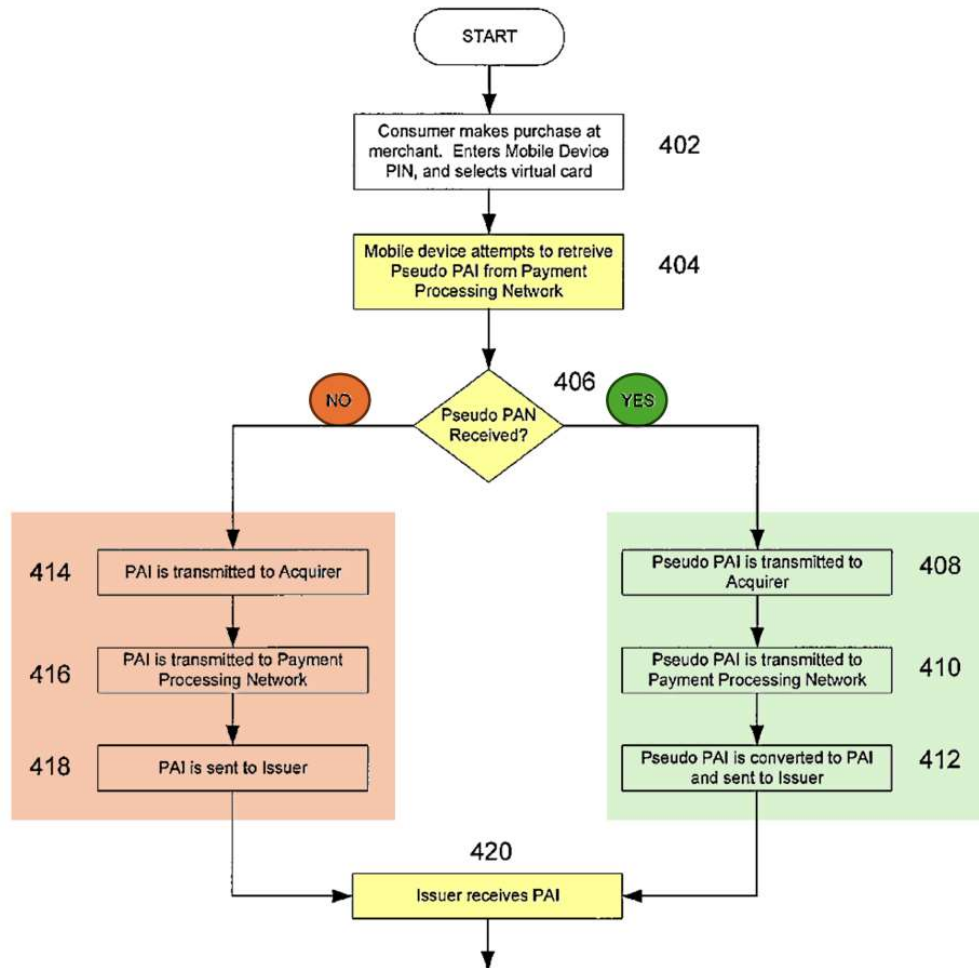
Instead, *Carlson* explains that a PPAI is used during a financial transaction, instead of the user's real account identifier, to protect the user from "[t]heft of sensitive information . . . using wireless interrogation or interception of communications from portable wireless device." *Carlson*, 2:7-10. According to *Carlson*, "[p]seudo primary account identifiers may include identifiers that are similar in format to a consumer's real account identifier." *Carlson*, 5:30-32, 2:66-3:1. *Carlson* also describes the PPAI as "bogus, fake, decoy, substitute, or the like." *Carlson*, 5:42-43. Just like a real account number that can be denied by a merchant, the PPAI can likewise be denied when used during a particular transaction. As a result, the PPAI is not and cannot be "an authorization" to perform a transaction, as the Petition alleges. Ex. 2006, ¶90.

Second, it follows that because the PPAI of *Carlson* is not an authorization, a **request** for PPAI is not information requesting an authorization. Ex. 2006, ¶91. Petitioner is relying on an embodiment of *Carlson* wherein the wireless device requests PPAI from the payment processing network. Pet. 27-30. According to the Petition, because *Carlson*'s financial transaction "**requires** requesting and receiving the PPAI before the process may proceed" (Pet., 29 (emphasis added)), then the request for PPAI is necessarily information requesting an authorization for a particular transaction. But Petitioner is wrong. The mere fact that this embodiment

discloses *requesting* the PPAI does not transform the request for PPAI into information requesting *an authorization*. Ex. 2006, ¶91.

The purpose of requesting a PPAI in *Carlson* is so that *Carlson*'s wireless device and the payment processing network can both associate the same PPAI with a user's real account information. See *Carlson*, 3:3-6, 6:48-50, 7:21-24. The user's authorized real account information is already on *Carlson*'s wireless device at the time of requesting a PPAI. *Carlson*, 12:25-37 ("The user then may select which virtual card they wish to use to conduct the transaction 214. A virtual card corresponds to an account that the user has with an issuer and may be identified by the issuer through the use of a primary account identifier. . . . In this exemplary embodiment, the portable wireless device 202 may then request a pseudo primary account identifier that corresponds with a primary account identifier from the payment processing network 210."). Indeed, a financial transaction will proceed in *Carlson* regardless of whether a PPAI is received in response to a request for PPAI. For example, if a PPAI is *not* received in response to *Carlson*'s request for PPAI, the particular transaction will *still* proceed using, for example, the primary account identifier—because a PPAI is not a necessary part of any particular financial transaction. Ex. 2006, ¶92. In *Carlson*'s Figure 4, when the PPAI is not received in response to *Carlson*'s request for PPAI, the transaction still continues with the user's

real account identifier (orange, below), instead of proceeding with a received PPAI (green, below). *Carlson*, 14:24-33; Ex. 2006, ¶92.



Carlson, Fig. 4 (cropped and annotated); Ex. 2006, ¶92.

Additionally, *Carlson* is clear that the PPAI “*may not be requested at all.*” *Carlson*, 7:4 (emphasis added). This further undercuts Petitioner’s argument that the request for PPAI is required for a particular transaction because there is no embodiment in *Carlson* that *requires* a request for PPAI prior to a particular transaction. Ex. 2006, ¶93. For example, the PPAI may be “pushed to the portable

wireless device at any time, such as when the device is turned on, when the device is idle, periodically, or through any other such criteria.” *Carlson*, 7:4-7, 12:67-13:3. As another example, *Carlson* discloses that “[t]he portable wireless device may generate the pseudo primary account identifier.” *Carlson*, 7:15-19. In embodiments where the PPAI is pushed or generated, the PPAI cannot act as an authorization for a particular transaction because the PPAI is unrelated to any particular transaction. Ex. 2006, ¶93.

Third, *Carlson* itself undercuts Petitioner’s theory that a request for a PPAI by *Carlson*’s device is “information requesting an authorization” sent by *Carlson*’s device. *Carlson* discloses a different message, an “authorization request message” sent by the merchant rather than *Carlson*’s wireless device, as a function for requesting an authorization of a particular transaction. Thus, the authorization of a transaction in *Carlson* depends on the “authorization request message” and not the call-and-response of an optional request for PPAI. As a result, a transaction authorization is agnostic to whether the PPAI is received, or if the PPAI request is even made. Ex. 2006, ¶94. *Carlson* discloses that, “[a]fter receiving the [PPAI] from the contactless device, the merchant may then use that identifier, as well as additional information to form an authorization request message.” *Carlson*, 8:10-13. “An authorization request message can include a request for authorization to conduct an electronic payment transaction or some other type of activity.” *Carlson*, 8:13-15.

“The payment processing network may then process the authorization message and return a response that indicates if the transaction is authorized or not.” *Carlson*, Abstract. As a result, it is the “authorization request message” sent by the merchant, not the request for PPAI sent by *Carlson*’s device, that drives authorization in the *Carlson* system. Ex. 2006, ¶94.

To be sure, even if the Petition had identified *Carlson*’s “authorization request message” instead of *Carlson*’s request for PPAI as the claimed “information requesting an authorization,” the mapping would still fail. Ex. 2006, ¶95. The claims require “enabling a mode to communicate *by the smartphone* information requesting authorization.” Ex. 1001, cl. 1 (emphasis added); *see also id.* cl. 9 (claiming “[a] smartphone that is configured to perform operations” including “enabling a mode to communicate information requesting an authorization”). Because *Carlson*’s “authorization request message” is sent *by the merchant*, the “authorization request message” cannot be the claimed “information requesting an authorization.” *Carlson* explains that the “authorization request message” is sent by the merchant—not by *Carlson*’s device—over a different logical network than the one used by *Carlson*’s device to request a PPAI. *Carlson*, 13:18-20, 13:23-27; *see also* Pet., 19 (arguing that *Carlson*’s device is the smartphone of the claims). *Carlson* further discloses that having the merchant send the authorization request message is an advantage because the PPAI is able to be sent over a different communication network than the one

used to conduct the authorization for the transaction. *Carlson*, 15:50-53, 11:17-34,

Fig. 1.

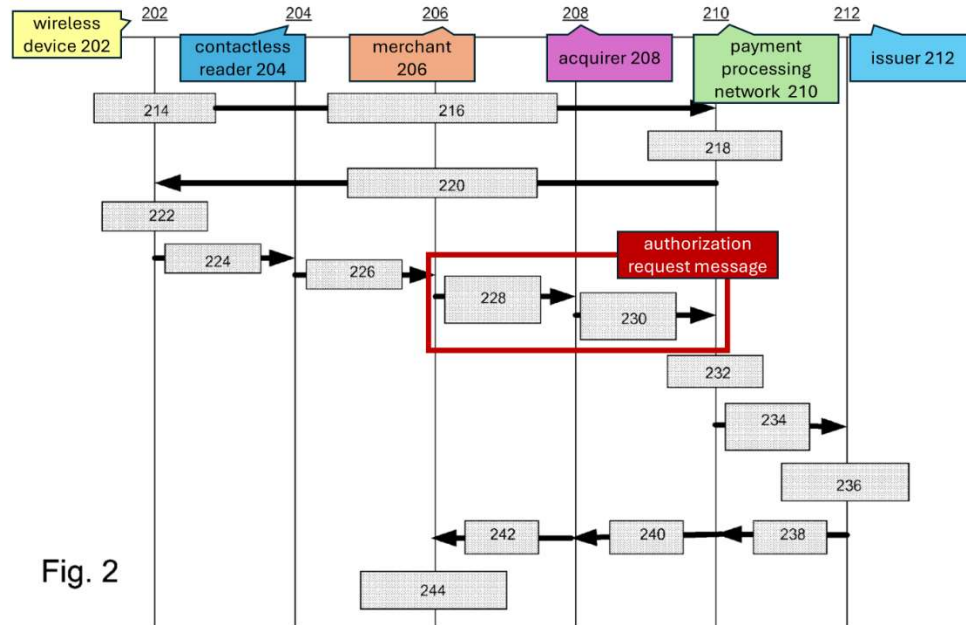


Fig. 2

Carlson, Fig. 2 (annotated); Ex. 2006, ¶95.

Having the “authorization request message” sent by the merchant instead of by *Carlson*’s device is also consistent with *Carlson*’s Figure 4, which shows an authorization step (purple, below) separate from *Carlson*’s device requesting and potentially receiving the PPAI (yellow).¹⁰

¹⁰ Notably, the Petition excerpts *Carlson*’s Figure 4 in a way that excludes the authorization step in purple below. See Pet., 32; but see Pet., 46 (annotating Figure 4 and highlighting the authorization step).

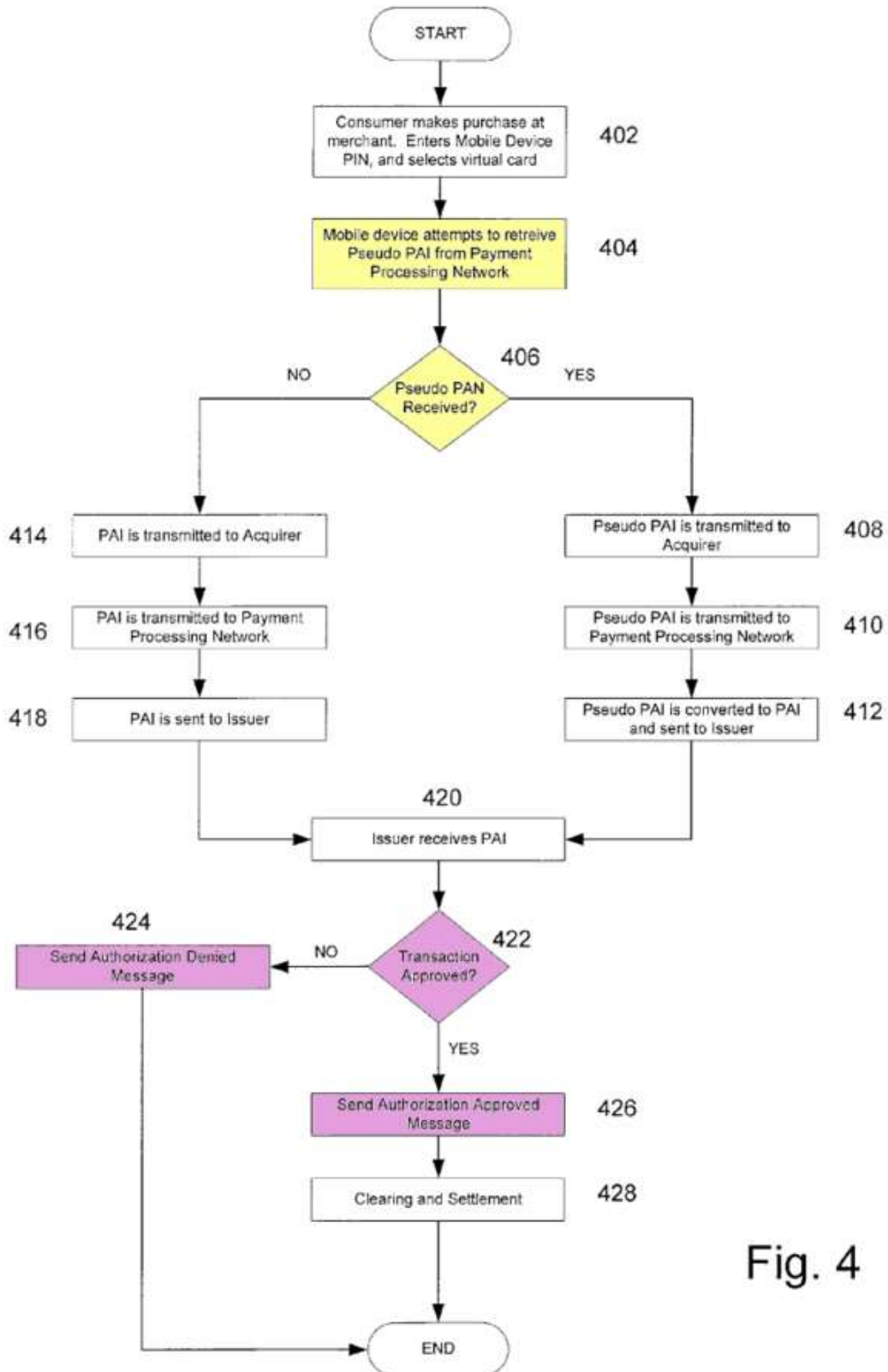


Fig. 4

Carlson, Fig. 4 (annotated); Ex. 2006, ¶96. *Carlson* then discloses that “the issuer receives the transaction request that contains the primary account identifier,” and that “[u]sing any number of criteria, such as the account specified by the primary account identifier being in good standing, having sufficient funds available, having sufficient credit available, etc., the issuer makes a decision at step 422 to either approve or deny the transaction.” *Carlson*, 14:34-40.

Petitioner acknowledges that *Carlson* does not actually require receiving a PPAI to conduct a financial transaction but only addresses this major flaw in its argument in a footnote. Petitioner’s footnote states that, because “[t]he proposed grounds rely on the PPAI-based financial transaction,” then “in the context of the proposed grounds, [the failure to receive the PPAI] serves as an indication that the function to conduct the PPAI-based financial transaction has **not** been established.” Pet., 66 n.5 (emphasis in original). The Petition then states that “[w]hile it may still be possible in *Carlson*’s system to conduct a different financial transaction (e.g., a less secure process that uses a PAN, rather than PPAI), the function relied upon in the Proposed Grounds is not established absent a PPAI.” *Id.* However, the Petition invents these two distinct secure and less secure transactions. *Carlson* contemplates just one exchange—one where, regardless of whether a PPAI is received in response to a request for the PPAI, the exact same financial account is debited for the exact same amount for the exact same purchase. *Carlson*, 14:34-46 (referring to Figure 4

showing that, regardless of whether a PPAI is received, “settlement and clearing processes occur at step 428 to actually transfer funds from the account held at the issuer to the merchant”); Ex. 2006, ¶97. Further, Petitioner continues to fail to appreciate that a PPAI-based financial transaction is still possible in *Carlson* without a response to a request for PPAI.¹¹ Ex. 2006, ¶97. Because a PPAI-based financial transaction is still possible in *Carlson*, a request for PPAI is not information requesting an authorization to perform a PPAI-based financial transaction.

Even if Petitioner were correct that *Carlson* could be limited to a PPAI-based transaction, as described above, it is not true that a PPAI-based transaction requires ***requesting and receiving*** a PPAI before a PPAI-based transaction may proceed. Ex. 2006, ¶98. For example, the particular transaction may still (1) go forward without a response to the device’s request for PPAI, as set forth in Figure 4; or (2) go forward without any request at all, either because the PPAI was (i) pushed to the device independent of any request (*Carlson*, 7:3-15) or (ii) generated by the device itself (*Carlson*, 7:16-19). There is no embodiment in *Carlson* where the “particular transaction or particular limited set of transactions” “requires requesting and receiving the PPAI” as the Petition suggests. *See* Pet., 29. The request for PPAI

¹¹ Petitioner’s error stems from its erroneous belief that the PPAI must be requested.

therefore does not disclose “information requesting an authorization” to perform a particular financial transaction. Ex. 2006, ¶98.

Additionally, a specific PPAI-based transaction may be authorized or unauthorized regardless of any use of the PPAI because *Carlson*’s “authorization request message”—sent by the merchant—is the functionality that actually authorizes a particular transaction. *Carlson*, 13:18-20. *Carlson* explains that authorization for a particular transaction in response to the “authorization request message” can be based on whether “the consumer conducting the transaction has sufficient funds or credit to conduct the transaction.” *Carlson*, 9:11-25. Therefore, a POSITA would not have understood *Carlson*’s request for PPAI to be “information requesting an authorization.” Ex. 2006, ¶99.

For at least these reasons, both *Carlson* in view of *Holloway* and *Carlson* in view of *Murakami* fail to disclose or render obvious “enabling a mode to communicate [by the smartphone] information requesting an authorization” of independent claims 1 and 9, and thus all dependent claims as well. Ex. 2006, ¶¶100-101.

2. A POSITA Would Not Have Been Motivated to Combine *Carlson*'s Device with *Holloway*'s Fingerprint Scanner to Render Obvious “responsive to sensing a parameter . . . enabling a mode to communicate by the smartphone information requesting an authorization” (Grounds 1-3).

Claim limitations 1[a] and 9[a] state “responsive to sensing a parameter . . . enabling a mode to communicate [by the smartphone] information requesting an authorization.” The Petition states that when *Carlson*'s device is unlocked, “a user is allowed to proceed with establishing a capability in order to perform a financial transaction.” Pet., 27-28. At the same time, the Petition relies on a single embodiment in *Carlson* where the PPAI is requested by *Carlson*'s device, and the Petition identifies *Carlson*'s request for PPAI as the “information requesting an authorization.” Pet., 27-30. The Petition fails to show that a POSITA would have been motivated to combine *Carlson* and *Holloway* such that *Holloway*'s fingerprint scanner would be used to enable a mode to communicate *Carlson*'s PPAI request, because neither *Holloway* nor *Carlson* suggest using biometrics to enable a mode to communicate the PPAI request. Ex. 2006, ¶¶102-110.

In the very embodiment on which Petitioner relies, *Carlson* emphasizes that the device does not need to be unlocked for *Carlson*'s device to request a PPAI. *Carlson*, 7:7-11 (“[A] request for a [PPAI] need not occur only after a user has enabled the device and selected an account.”). Specifically, *Carlson* explains that “[a] request for a [PPAI] may occur *at any time*, such as when the device is turned

on, when the device is idle, periodically, or through any other such criteria.” *Carlson*, 7:10-14 (emphasis added); *see also Carlson*, 6:59-61 (explaining that a PPAI can “expire after a certain number of transactions or after a certain time period”). A POSITA would therefore understand that *Carlson*’s device is always capable of requesting or receiving a PPAI—or at the very least, capable without *Carlson*’s device being unlocked. Thus, *Carlson*’s request for PPAI is **not** necessarily enabled responsive to unlocking the device. Ex. 2006, ¶104. This furthers *Carlson*’s stated objective of creating a “transparent” user experience such that the user “need not know that the pseudo account identifier is ever retrieved.” *Carlson*, 15:63-16:3; *see also* Ex. 2006, ¶104.

Additionally, and as described above, there are many other ways a PPAI could be received or generated without any request from the device itself, and thus without unlocking the device. Specifically, *Carlson* teaches that the PPAI may never be requested but instead may be either pushed to the device by the network (*Carlson*, 7:3-6), or even generated by the device itself (*Carlson*, 7:17-18). These alternative embodiments do not require unlocking the device, nor do they require enabling a mode to communicate a request for PPAI. *See Carlson*, 7:3-6 (“The pseudo account identifier may not be requested at all, but rather is pushed to the portable wireless device **at any time**, such as when the device is turned on, when the device is idle, periodically, or through other such criteria.” (emphasis added)). *Carlson* therefore

does not disclose, nor would it have rendered obvious, the use of a security measure such as a physiological parameter to enable a mode to communicate a PPAI request. Ex. 2006, ¶105.

Further, a POSITA would not have been motivated to combine *Holloway* and *Carlson* to render obvious “responsive to sensing a parameter . . . enabling a mode to communicate by the smartphone information requesting an authorization.” *Holloway* itself is silent on the use of biometrics for the purpose of requesting an account identifier, especially fake ones used to avoid the transmission of sensitive information. Instead, *Holloway* is directed to using biometrics for loading funds directly into a device so that the device may then be used like an RFID smart card. *Holloway*, 6:13-17, 6:22-26. It is the transfer of actual funds to the device that calls for the additional security measures by the operator of *Holloway*’s device during the transaction. Ex. 2006, ¶106. Once transferred, a user cannot claw back the funds, and the user has no remedial action. *Id.*

On the other hand, *Carlson*’s request for PPAI does not require “increased security” (Pet., 22) because *Carlson*’s request for PPAI does not involve the immediate and irreversible transfer of funds. Ex. 2006, ¶107. First, *Carlson* teaches that transmitting the PPAI over a communications network (e.g., during the request for PPAI) is relatively safer than transmitting sensitive information using short range communication because of the ability to use “highly effective” encryption

techniques. *Carlson*, 2:19-27, 9:45-50. Indeed, even if intercepted, *Carlson* notes that the PPAI will likely have expired before it could be used by a bad actor. *See Carlson*, 6:59-65. Therefore, a POSITA would not have been motivated to implement a slow, complex biometric authentication method. Ex. 2006, ¶107.

Second, *Carlson* fully embraces that sensitive information may be “intercepted while the user is making a legitimate purchase.” *Carlson*, 2:1-6, 2:46-48. *Carlson* is directed to ***minimizing the impacts*** of having a signal intercepted by a bad actor—not to ***preventing*** theft of information. Ex. 2006, ¶108. *Carlson* solves this problem by using the PPAI to avoid sending sensitive information in the first place. *Carlson*, 2:49-53, 2:59-61. To further this objective, *Carlson* explains that “the pseudo primary account number may be set to expire after a certain number of transactions or after a certain time period” and “[d]oing so can help to ensure that if for some reason a pseudo primary account number is revealed to anyone other than an authorized user, the amount of damage that can be done is limited due to the limited lifetime of the pseudo primary account number.” *Carlson*, 6:59-65. Thus, *Carlson* teaches that even if the PPAI is intercepted, the effects are limited. *Carlson* further teaches that its “authorization request message” is intended to protect the user in the event the user’s information is reported as stolen. *Carlson*, 9:13-17. A POSITA therefore would not have been motivated to implement additional security techniques that delay the financial transaction in *Carlson*, which would be contrary

to *Carlson*'s stated objectives. *Carlson*, 16:63-67 (stating that the user should not "experience any delay in conducting the purchase" due to requesting the PPAI); *see also* Ex. 2006, ¶108.

The disclosure in *Carlson* of a request for a temporary, replaceable, and limited-use PPAI is in sharp contrast to *Holloway*'s direct transfer of funds at a device over the internet. While the transfer of funds in *Holloway* might have called for user verification, such a verification is only necessary because the very access to such information is necessarily dangerous because it results in immediate and irreversible transfer of electronic funds. Ex. 2006, ¶109. That is not so for *Carlson*'s request for PPAI, because (1) the request for PPAI can be protected using encryption, (2) *Carlson*'s PPAI is set to expire to minimize the effects of the interception of the PPAI, and (3) *Carlson*'s financial transactions include other safeguards, like the "authorization request message." Therefore, a POSITA would not have been motivated to implement *Holloway*'s fingerprint sensor to "enabl[e] a mode to communicate by the smartphone" a request for PPAI. *Id.*

For at least these reasons, a POSITA would not have been motivated to combine *Carlson* and *Holloway* to render obvious "responsive to sensing a parameter . . . enabling a mode to communicate by the smartphone information requesting an authorization." Therefore, claim limitation 1[a] and 9[a] of independent claims 1 and 9 are not disclosed in or rendered obvious by the asserted

prior art, and thus all dependent claims are also not disclosed in or rendered obvious by the asserted art. Ex. 2006, ¶110.

3. A POSITA Would Not Have Been Motivated to Combine *Carlson*'s Device with the Biometric Authentication Device of *Murakami* to Render Obvious “responsive to sensing a parameter . . . enabling a mode to communicate by the smartphone information requesting an authorization” (Grounds 4-6).

The Petition states that “[i]n Grounds 4-6, in place of *Holloway-Jazayeri*, the proposed combination involves modifying *Carlson* pursuant to *Murakami*'s biometric sensor and authentication process.” Pet., 72. For the same reasons a POSITA would not have combined *Carlson* with *Holloway*, a POSITA would not have been motivated to combine *Carlson* with *Murakami* to render obvious “responsive to sensing a parameter . . . enabling a mode to communicate by the smartphone information requesting an authorization.” See *supra* Section VI.A.2; Ex. 2006, ¶¶111-116.

The Petition argues that “*Carlson* modified to unlock its device pursuant to the biometric authentication process described by *Murakami* teaches the claimed limitation of a parameter comprising a heart rate and/or physiological state.” Pet., 75 (citing Ex. 1003, ¶220). However, as discussed above, *Carlson* does not require that its device be unlocked to enable its request for PPAI. *Carlson*, 7:7-11 (“[A] request for a [PPAI] need not occur only after a user has enabled the device and selected an account.”). Because *Carlson*'s wireless device is always capable of

requesting a PPAI, *Carlson*'s request for a PPAI is ***not*** necessarily enabled responsively to unlocking the device. Thus, unlocking the device using the biometric authentication process described by *Murakami* does not render obvious "responsive to sensing a parameter . . . enabling a mode to communicate by the smartphone information requesting an authorization." Ex. 2006, ¶113.

Additionally, *Murakami* (in place of *Holloway*) does not overcome the deficiencies of the *Carlson-Holloway* combination. Ex. 2006, ¶114. Petitioner relies on *Murakami*'s sensor "used to measure a heartbeat waveform, a dynamic variable determined by measuring a user's heartbeat." Pet., 72 (citing *Murakami* 32:30-33:6). Specifically, the Petition relies on an embodiment wherein a waveform is monitored, and "25 features are extracted out of a waveform to create a list of 25 parameters, each parameter requesting a different unique feature for a particular person's heartbeat waveform." *Murakami*, 32:20-22. *Murakami* teaches "tak[ing] more than one reading of the biometric for purposes of individualization." *Murakami*, 32:31-33:1. "In one preferred embodiment 30 heartbeats were taken and monitored to do the individualization for each person being identified. In another preferred embodiment, a hundred heartbeats were used. In capturing a good sample, it is preferred to take as many samples as is possible." *Murakami*, 33:1-4. *Murakami* even acknowledges that "taking a large number of sample waveforms takes time and using an extended period of time to individualize the waveform may be impractical."

Murakami, 33:4-6. As a result, a POSITA would have understood that *Murakami*'s biometric sensor provides updated security but at the expense of a significant amount of the user's time. Ex. 2006, ¶114. A POSITA would not have been motivated to implement *Murakami*'s biometric sensor for everyday use or for functionalities that require little or no delay. Ex. 2006, ¶114.

The PPAI request in *Carlson* is supposed to be "transparent" to the user. *Carlson*, 15:67-16:3. Therefore, a POSITA would have understood that *Carlson* teaches away from using *Murakami*'s biometric sensor for its PPAI request because the *Murakami* sensor would be inconvenient and cause unwanted delay. Ex. 2006, ¶115. A POSITA would have understood that the added security from the heartbeat sensor of *Murakami* would not be beneficial in *Carlson*'s system because *Carlson* emphasizes that the user should not "experience any delay in conducting [a] purchase." *Carlson*, 15:63-67. Therefore, a POSITA would not have been motivated to implement *Murakami*'s biometric sensor in *Carlson*'s device because of the delay introduced. Ex. 2006, ¶115.

For at least these reasons, a POSITA would not have been motivated to combine *Carlson* with *Murakami*, and this claim limitation is not disclosed in or rendered obvious by the asserted prior art. Ex. 2006, ¶116.

VII. CONCLUSION

For the foregoing reasons, institution should be denied.

Dated: November 7, 2025

Respectfully submitted,

By: / Christopher TL Douglas /
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CERTIFICATION UNDER 37 C.F.R. §42.24(d)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response to Petition totals 7,324 which is less than the 14,000 allowed under 37 CFR § 42.24(b)(1).

Dated: November 7, 2025

By: / Christopher TL Douglas / _____
Christopher TL Douglas

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §42.6(e), the undersigned hereby certifies that true and correct copies of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE and Exhibits 2006 – 2012** were served in their entirety on November 7, 2025 via filing through the Patent Trial and Appeal Case Tracking System (P-TACTS) and electronic mail on the following counsel of record for Petitioner:

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