

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GOOGLE LLC,  
Petitioner

v.

TELCOM VENTURES LLC,  
Patent Owner

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Patent No. 12,028,793

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**PETITION FOR *INTER PARTES* REVIEW  
OF U.S. PATENT NO. 12,028,793**

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## LIST OF EXHIBITS

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| EX1001            | U.S. Patent No. 12,028,793 to Karabinis et al. (“the ’793 patent”)                    |
| EX1002            | Declaration of Sandeep Chatterjee, Ph.D.                                              |
| EX1003            | Curriculum Vitae of Sandeep Chatterjee, Ph.D.                                         |
| EX1004            | Prosecution History of U.S. Patent App. No. 18/539,020                                |
| EX1005            | U.S. Patent Application Publication No. 2009/0170483 A1 to Barnett et al. (“Barnett”) |
| EX1006            | International Patent Publication No. WO 2006/087503 A1 to Waters et al. (“Waters”)    |
| EX1007            | U.S. Patent No. 7,434,723 to White et al. (“White”)                                   |
| EX1008            | International Patent Publication No. WO 2006/094048 A2 to Morrison (“Morrison”)       |
| EX1009            | U.S. Patent Application Publication No. 2002/0116345 A1 to Harrison (“Harrison”)      |
| EX1010            | U.S. Patent Application Publication No. 2003/0061111 A1 to Dutta et al. (“Dutta”)     |
| EX1011            | U.S. Patent Application Publication No. 2008/0140569 A1 to Handel (“Handel”)          |
| EX1012            | U.S. Patent Application Publication No. 2009/0070263 A1 to Davis et al. (“Davis”)     |
| EX1013            | U.S. Patent Application Publication No. 2010/0145850 A1 to Nagai et al. (“Nagai”)     |
| EX1014-<br>EX1017 | RESERVED                                                                              |
| EX1018            | International Patent Publication No. WO 02/09005 A1 to Smith et al. (“Smith”)         |

Petition for *Inter Partes* Review  
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|                   |                                                                                    |
|-------------------|------------------------------------------------------------------------------------|
| EX1019<br>-EX1026 | RESERVED                                                                           |
| EX1027            | International Patent Publication No. WO 00/64106 to Greenwood et al. (“Greenwood”) |
| EX1028            | U.S. Patent Application Publication No. 2007/0099668 A1 to Sadri et al. (“Sadri”)  |

## I. INTRODUCTION

Google LLC (“Petitioner”) respectfully requests *inter partes* review of claims 1-11 (“the challenged claims”) of U.S. Patent No. 12,028,793 (“the ’793 patent”) (EX1001) assigned to Telcom Ventures LLC (“Patent Owner”).

## II. MANDATORY NOTICES

Real Parties-in-Interest: Pursuant to 37 C.F.R. § 42.8(b)(1), Petitioner identifies Google LLC as the real party-in-interest.<sup>1</sup>

Related Matters: The ’793 patent is asserted in *Telcom Ventures LLC v. Samsung Electronics Co., Ltd.*, Case No. 2:24-cv-00691 (E.D. Tex.) and *Telcom Ventures LLC v. Apple Inc.*, Case No. 3:25-cv-05041 (N.D. Cal.).

The ’793 patent is also at issue in *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00978 (PTAB) and *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01239 (PTAB). Petitioner was not involved in any way with these earlier IPRs.

The ’793 patent originates from U.S. Patent Application No. 18/539,020, filed on December 13, 2023, which is a continuation of application No. 18/450,517,

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<sup>1</sup> Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

filed on August 16, 2023, which is a continuation of application No. 17/653,748, filed on March 7, 2022, now Patent No. 11,770,756 (“the ’756 patent”), which is a continuation of application No. 15/929,609, filed on May 12, 2020, now Patent No. 11,304,118, which is a continuation of application No. 16/012,513, filed on June 19, 2018, now Patent No. 10,660,015, which is a divisional of application No. 15/800,885, filed on November 1, 2017, now Patent No. 10,219,199 (“the ’199 patent”), which is a continuation of application No. 15/251,882, filed on August 30, 2016, now Patent No. 9,832,708 (“the ’708 patent”), which is a continuation of application No. 12/264,711, filed on November 4, 2008, now Patent No. 9,462,411. (EX1001, Cover.)

The ’756, ’199, and ’708 patents, as well as related U.S. Patent Nos. 10,674,432 (“the ’432 patent”), 11,924,743 (“the ’743 patent”), and 11,937,172 (“the ’172 patent”), are all also at issue in *Telcom Ventures LLC v. Samsung Electronics Co., Ltd.*, Case No. 2:24-cv-00691 (E.D. Tex.) and *Telcom Ventures LLC v. Apple Inc.*, Case No. 3:25-cv-05041 (N.D. Cal.).

Petitioner has filed IPR petitions challenging the ’743 and ’172 patents in *Google LLC v. Telcom Ventures LLC*, IPR2025-01349 (PTAB) and *Google LLC v. Telcom Ventures LLC*, IPR2025-01389 (PTAB).

Additionally, the ’756, ’199, ’708, ’432, ’743, and ’172 patents are at issue in *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00976

(PTAB); *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00977 (PTAB); *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00972 (PTAB); *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00974 (PTAB); *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00975 (PTAB); *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00957 (PTAB); *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01232 (PTAB); *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01233 (PTAB); *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01234 (PTAB); *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01235 (PTAB); *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01236 (PTAB); *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01237 (PTAB); and *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01238 (PTAB).  
Petitioner was not involved in any way with those earlier IPRs.

Counsel and Service Information: Lead counsel is Naveen Modi (Reg. No. 46,224). Backup counsel are Daniel Zeilberger (Reg. No. 65,349), Quadeer Ahmed (Reg. No. 60,835), Alexa Lowman (*pro hac vice* to be filed), and Maksim Mints (Reg. No. 78, 507). Service information is Paul Hastings LLP, 2050 M Street NW, Washington, D.C. 20036, Tel.: 202.551.1700, Fax: 202.551.1705, email: PH-Google-Telcom-IPR@paulhastings.com. Petitioner consents to electronic service.

### **III. PAYMENT OF FEES UNDER 37 C.F.R. §§ 42.15 AND 42.103**

The PTO is authorized to charge any fees due during this proceeding to Deposit Account No. 50-2613.

### **IV. GROUNDS FOR STANDING**

Petitioner certifies under 37 C.F.R. § 42.104(a) that the '793 patent is available for review and Petitioner is not barred or estopped from requesting review on the grounds identified herein.

### **V. PRECISE RELIEF REQUESTED AND GROUNDS RAISED**

Petitioner respectfully requests review of claims 1-11 of the '793 patent and cancellation of these claims as unpatentable. The challenged claims should be found unpatentable on the following grounds:

**Ground 1:** Claims 1, 2, 5, 6, and 8 are unpatentable under pre-AIA 35 U.S.C. § 103 as being obvious in view of Barnett (EX1005), Waters (EX1006), and White (EX1007).

**Ground 2:** Claims 3, 4, 7, and 9-11 are unpatentable under pre-AIA 35 U.S.C. § 103 as being obvious in view of Barnett, Waters, White, and Smith (EX1018).

The earliest possible priority date of the '793 patent is November 4, 2008.<sup>2</sup>

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<sup>2</sup> Petitioner does not concede that the '793 patent is entitled to a November 4, 2008, priority date.

Barnett published from an application filed December 28, 2007 (EX1005, Cover), and thus qualifies as prior art under at least § 102(e). Waters published on August 24, 2006 from an application filed February 15, 2005, and thus qualifies as prior art under at least §§ 102(a), (b), and (e). White issued on October 14, 2008 from an application filed May 26, 2005, and thus qualifies as prior art under at least §§ 102(a) and (e). Smith published on January 31, 2002 from an application filed on July 23, 2001, and thus qualifies as prior art under at least §§ 102(a), (b), and (e).

Barnett, Waters, White, and Smith were not considered by the Office during prosecution. (EX1001, Cover; *see also generally* EX1004.)

## **VI. LEVEL OF ORDINARY SKILL**

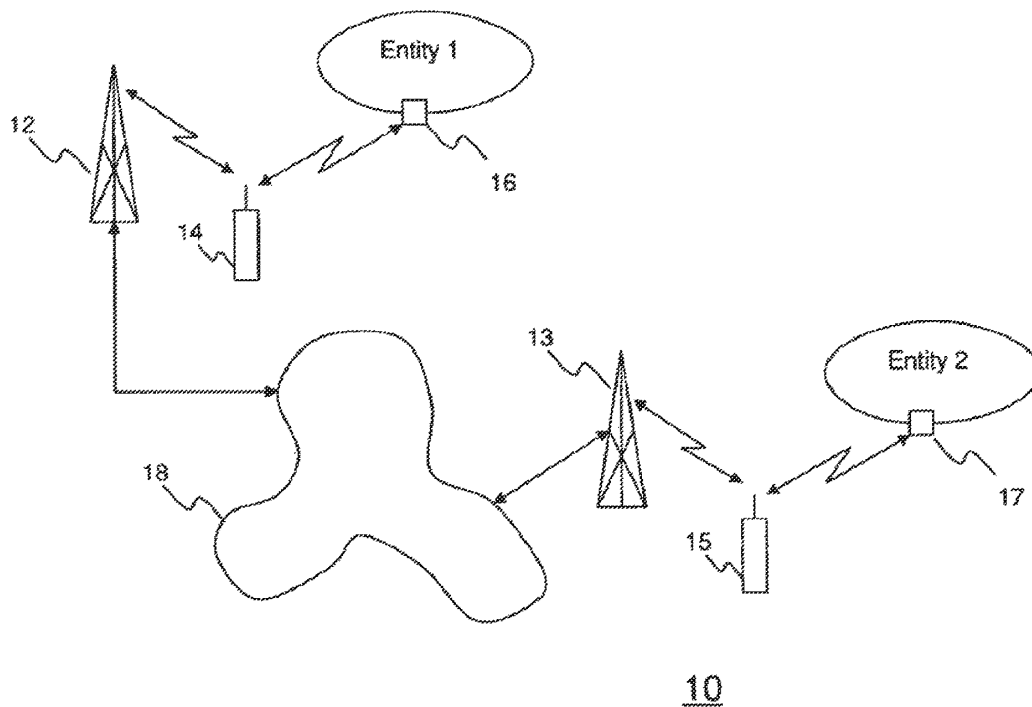
A person of ordinary skill in the art at the time of the alleged invention of the '793 patent ("POSITA") would have had an undergraduate degree in electrical engineering, computer engineering, computer science or a related field along with two years of work experience in the field of mobile communication applications. (EX1002, ¶¶20-21.)<sup>3</sup> More education can supplement practical experience and vice versa. (*Id.*)

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<sup>3</sup> Petitioner submits the declaration of Dr. Sandeep Chatterjee (EX1002), an expert in the field of the '793 patent. (EX1002, ¶¶1-19; EX1003.)

## VII. OVERVIEW OF THE '793 PATENT

The '793 patent describes “establishing a capability at a smartphone to be able to conduct a financial transaction and then using the established capability in performing the financial transaction by paying for a product.” (EX1001, Abstract; EX1002, ¶¶22-24.) With reference to Figure 1 below, the '793 patent explains that “a mobile subscriber device 14 linked to a communications system 18 via base station 12 can enable a function when the device 14 comes within a proximity of Entity 1 [e.g., a product for sale, a store, or a check-out counter].” (EX1001, 9:11-14; *see also id.*, 3:54-62.)



(*Id.*, FIG. 1.)

“The function enabled can be a financial transaction, the transmission of communications, such as data, and/or some other function that may provision the mobile subscriber device 14 and/or the mobile subscriber device 15 with additional functionality not previously available/activated at the respective devices.” (*Id.*, 9:18-24; EX1002, ¶¶23-24.)

### **VIII. CLAIM CONSTRUCTION**

For IPR proceedings, the Board applies the claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*). See 83 Fed. Reg. 51,340-59 (Oct. 11, 2018). Under *Phillips*, claim terms are typically given their ordinary and customary meanings, as would have been understood by a POSITA, at the time of the invention, having taken into consideration the language of the claims, the specification, and the prosecution history of record. *Phillips*, 415 F.3d at 1313; *see also id.* at 1312-16.

The Board, however, only construes the claims when necessary to resolve the underlying controversy. *Toyota Motor Corp. v. Cellport Sys., Inc.*, IPR2015-00633, Paper No. 11 at 16 (P.T.A.B. Aug. 14, 2015) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). Here, given the correlation between the prior art references and the challenged claims of the ’793 patent, the

Board need not construe any terms of the challenged claims to resolve the underlying controversy, as any reasonable construction reads on the prior art. (EX1002, ¶44.)<sup>4</sup>

## **IX. DETAILED EXPLANATION OF GROUNDS**

As detailed below, each of the challenged claims are unpatentable. (EX1002, ¶¶25-149.)

### **A. Ground 1: Barnett, Waters, and White Render Obvious Claims 1, 2, 5, 6, and 8**

#### **1. Claim 1**

##### **i) [1.pre] “A method comprising:”**

To the extent the preamble is limiting, Barnett discloses the limitations therein. (EX1002, ¶¶46-52.)

Barnett discloses a “system and method of communicating shopping information between a consumer and a retailer,” including a “system for enabling a consumer to obtain shopping information from a retailer, and the retailer to obtain information from the consumer, using a communication device, such as a mobile phone.” (EX1005, ¶[0001].) Barnett explains that “a consumer may utilize...a portable communications device 14, such as a mobile phone” (*id.*, ¶[0011]), which

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<sup>4</sup> Petitioner reserves all rights to raise claim construction and other arguments in other venues.

is “adapted to communicate with a Near Field Communication (NFC) device, a wireless network, such as a Wi-Fi system, and a Bluetooth system, as well as a cellular phone system” (*id.*, ¶[0012]). Barnett describes that the “mobile phone 14 combines the functions of a Wi-Fi device, a contact-less credit card, and a cell phone.” (*Id.*, ¶[0012]; EX1002, ¶47.)

Barnett explains that a store may have “stand-alone NFC-enabled devices 34 [which] are used to identify products to NFC-enabled devices.” (EX1005, ¶[0023].) As shown in Figure 1 below, a consumer may place their “NFC-enabled mobile phone 14” (in red below) “proximate to the product identifier 34” (in yellow below) so that “information is extracted from the product identifier 34 and transmitted to, and stored within, the NFC-enabled mobile phone 14 in a manner similar to a bar code reader.” (*Id.*, ¶[0023].) For example, the consumer may “retrieve and store information” such as “the identity of the product” (*id.*, ¶[0033]), which may further include “the name of the produce and the price of the product, as well as technical information about the product, such as the specifications” (*id.*, ¶[0023]).

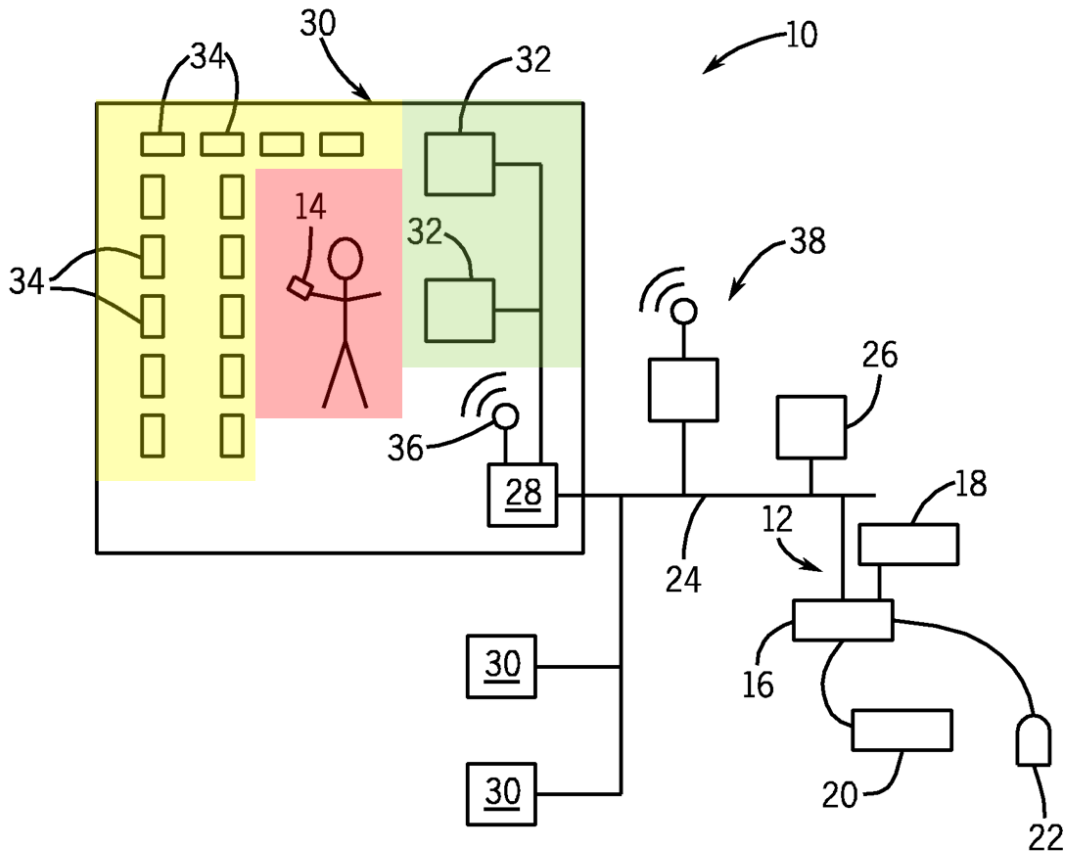


FIG. 1

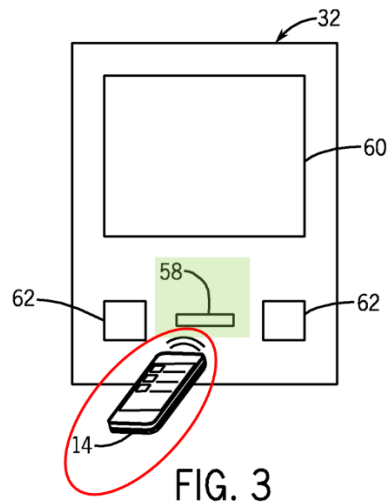
(*Id.*, FIG. 1 (annotated); EX1002, ¶48.)

Barnett also explains that “[w]ithin the store 30 are a series of displays 32 that are connected to the store computing system 28.” (EX1005, ¶[0021].) These “displays 32” (in green above) may be “NFC-enabled displays that can interact with a NFC-enabled mobile phone 14 using device-to-device communication.” (*Id.*) “Alternatively, the displays 32 may be Bluetooth-enabled communications devices” such that “when a Bluetooth-enabled mobile phone is located near the display 32,

information is transmitted between the Bluetooth-enabled mobile phone 14 and the display 32.” (*Id.*, ¶[0022]; EX1002, ¶49.)

Barnett explains that the NFC displays 32 have multiple purposes. (EX1002, ¶50.) First, Barnett discloses that after retrieving product identity information from devices 34, a “consumer may then place the mobile phone 14 proximate to a NFC-display 32 which reads the product identity information from the mobile phone 14 and retrieves additional information regarding the product to the consumer.” (EX1005, ¶[0033].) The NFC display 32 may also be used to enable Wi-Fi communication in a consumer’s mobile phone so that the consumer can obtain additional information from the retailer. (*Id.*, ¶¶[0016], [0026], [0035].)

Barnett explains that a display 32, as shown in Figure 3 below, may also “us[e] the NFC interface...to complete the transaction using the cell phone as a credit card, debit card, or electronic purse.” (*Id.*, ¶[0040]; *see also id.*, ¶[0037].) As shown in Figure 3 below, “[t]he NFC-enabled display 32 has an NFC interface 58” (in green) “that is adapted to transmit data between the mobile phone 14 and the display 32.” (*Id.*, ¶[0038].) For example, Barnett discloses that “the mobile phone 14 may be programmed to provide a specific credit card number when the mobile phone 14 is used in making purchases in a specific store.” (*Id.*, ¶[0032].)



(*Id.*, FIG. 3 (annotated); EX1002, ¶51.) Barnett discloses that transmission of data between the consumer’s phone (in red above) and the NFC display 32 via NFC interface 58 (in green above) may occur when devices are within “a short distance, such as a decimeter.” (EX1005, ¶[0013].)

For all of these reasons, and additionally for the reasons discussed below with respect to limitations [1.a]-[1.j], Barnett discloses “[a] method.” (EX1002, ¶52; *see infra* Sections IX.A.1.ii-x.)

**ii) [1.a] “sensing a physiological parameter; then”**

Barnett in view of Waters discloses and/or suggests this limitation. (EX1002, ¶¶53-62.)

A POSITA would have been motivated to modify the Barnett system/method in view of Waters such that it determines that the method that involves “sensing a

physiological parameter” in order to enable the NFC capabilities in the user’s phone.  
(EX1002, ¶54.)

Like Barnett, Waters discloses a system/method of performing a financial transaction using an NFC-enabled mobile device. (*Id.*, ¶55.) For example, Waters discloses a “mobile terminal 1” such as a “handheld mobile telephone” (EX1006, 4), which includes a “near field or RFID tag 41” (*id.*, 8). Waters discloses that the near field tag of the mobile terminal may be used to conduct various transactions, such as paying for public transport, making a toll fee payment, or paying for a school lunch. (*Id.*, 1, 11.) Waters discloses that the near field tag is able to “exchange information with a tag reader when the two are brought into close proximity.” (*Id.*, 9.) Thus, Waters is similar to Barnett, which discloses a system/method of purchasing products in a store at an NFC-enabled display/register using an NFC-enabled mobile device. (*See* Section IX.A.1.i.) In other words, both Barnett and Waters relate to conducting financial transactions using a mobile device based at least in part on proximity of the mobile device to a point-of-sale device. A POSITA would have therefore been motivated to consider the teachings of Waters when implementing Barnett’s system/method. (EX1002, ¶55.)

Waters additionally discloses that “the mobile telecommunication device is operable to selectively enable the near field communication device.” (EX1006, 4.) Waters explains that “[t]he near field tag 41 may be selectively enabled and disabled

in order to reduce the opportunity to obtain information from the near field tag 41 by an unauthorised reader.” (*Id.*, 13.) For example, Waters discloses various types of sensors that can be used to activate the near field/RF tag, such as a pressure sensor (in combination with a fingerprint or skin resistance sensor) or heat sensor. (*Id.*, 15-16; EX1002, ¶56.) Waters provides this functionality to enhance the device’s security features for conducting financial transactions. (EX1002, ¶56; EX1006, Title (“Improved Security for Wireless Communication”), Abstract, 2 (“The present invention, in one aspect, seeks to provide additional or improved security.”), 4, 13-16.)

Waters discloses that a “pressure sensor on the casing of mobile terminal 1” may “act[] as a switch,” where the near field/“RF tag 41 is *only enabled* when the user physically presses the pressure sensor,” and is otherwise disabled (e.g., when in a case or user’s pocket). (EX1006, 15.) Such a “pressure sensor may be combined with [a] fingerprint scanner 45” so that “[t]he combined sensor detects, not only that pressure is applied, but also that an authorized person is pressing the sensor.” (*Id.*; *see also id.*, 14; EX1002, ¶57.)

“Alternatively, the pressure sensor could be combined with an electrical resistance meter and used to detect that it is a human hand pressing the pressure sensor, rather than some other object.” (EX1006, 15.) For example, Waters explains that “a skin resistance sensor may be provided on the casing of the mobile terminal

1 in dependence of the presence of the pressure sensor described above.” (*Id.*, 16.)

“The near field tag 41 will ***only be operated*** when an appropriate resistance, capacitance or inductance is detected, indicating that the user’s hand is touching the sensor.” (*Id.*; EX1002, ¶58.)

“Heat sensors” can similarly be “incorporated in an appropriate position on the casing of the mobile terminal 1” and “configured to detect that the mobile terminal is in a user’s hand by detecting the heat from the hand, and ***only enabling*** the near field tag 41 when heat from the hand is so detected.” (EX1006, 15-16; EX1002, ¶59.)

Accordingly, Waters discloses “sensing a physiological parameter” (e.g., a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat from the user’s hand is actively being applied) by a sensor of a smartphone (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) and only enabling the near field tag while that value is satisfied. (EX1002, ¶60.)

A POSITA would have been motivated to incorporate such a sensing mechanism, similar to that disclosed by Waters, to selectively enable/disable the NFC tag in Barnett’s device. (*Id.*, ¶61.) Waters explains that the selective enablement/disablement of the near field tag is intended to improve the security of

the tag to prevent unauthorized access (e.g., by an unauthorized reader). (EX1006, 9, 13.) There would have been a benefit of such a security measure in the context of Barnett's system/method, which as discussed above, involves a user interacting with many NFC readers/displays in the same store. (EX1002, ¶61.) Barnett explains that these NFC readers are largely unmonitored by retail workers, since the goal of the invention is to reduce the number of higher cost human employees in the store. (EX1005, ¶[0043].) The presence of employees provides a security benefit to a store by deterring theft or other unauthorized access to merchandise and store technology. (EX1002, ¶61.) For example, in a store with more employees, a bad actor may be less likely to install a card skimming device or similar unauthorized NFC reader to gain access to customer credit/debit card information. (*Id.*) A POSITA would have thus recognized the importance of implementing security features at each user's mobile phone in an environment with fewer employees, so as to reduce the risk of unauthorized access by an unauthorized NFC reader. (*Id.*) Barnett also emphasizes that security is an important feature of mobile phone communication technologies by explaining, for example, the benefits of authentication mechanisms for accessing wireless internet (EX1005 ¶¶[0005], [0012]) and "secure" Bluetooth technologies (*id.*, ¶[0017]). A POSITA would have thus recognized that communication security is important to the mobile phone and would have been motivated to implement security improvements to the mobile phone's NFC technology, e.g., by selectively

enabling/disabling the NFC tag to prevent access by an unauthorized reader. (EX1002, ¶61.) Selectively enabling and disabling the NFC tag of a mobile phone would have numerous user experience benefits as well, such as preventing unintended financial transactions or other unintended use of the NFC tag, and helping preserve mobile phone battery. (*Id.*)

A POSITA would have also had a reasonable expectation of success combining the teachings of Barnett and Waters. (EX1002, ¶62.) As discussed above, both references are in the same field of art. Moreover, Barnett suggests that its system/method is flexible and modifications to the NFC-enabled mobile phone are contemplated. (EX1005, ¶[0044].) A POSITA would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known system/method for performing financial transactions using an NFC-enabled mobile phone (Barnett)) according to known methods (e.g., known methods of selectively enabling and disabling NFC tags in mobile phones for use in financial transactions (Waters)) to yield the predictable result of a modified Barnett-Waters system/method that implements a sensing mechanism in each user's phone to selectively enable and disable the phone's NFC tag such that sensing a value of the physiological parameter and determining that it meets some criterion is required in order to activate the NFC

tag used to conduct financial transactions in the store. (EX1002, ¶62.) *KSR Int'l. Co. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

**iii) [1.b] “determining whether or not the physiological parameter sensed satisfies a criterion; then”**

The Barnett-Waters combination discloses and/or suggests this limitation. (EX1002, ¶63.) As discussed for limitation [1.a], in the Barnett-Waters combination, the consumer’s mobile phone determines whether a value of a sensed physiological parameter of a user of the mobile phone meets some criterion (e.g., the phone user’s fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat from the user’s hand is actively being applied) (“determining whether or not the physiological parameter sensed satisfies a criterion”), and only enables the NFC capabilities in the user’s phone if the criterion is met. (*See* Section IX.A.1.ii.)

- iv) **[1.c] “responsive to the physiological parameter sensed satisfying the criterion, enabling at least one first function; then”**

**[1.d] “while said at least one first function is enabled, responsive to having sensed the physiological parameter and responsive to having determined that the physiological parameter sensed satisfies the criterion, requesting an authorization to establish a function to conduct a financial transaction; then”**

Barnett in view of Waters and White discloses and/or suggests these limitations. (EX1002, ¶¶64-80.)

As discussed for limitation [1.a], in the Barnett-Waters combination, the consumer’s mobile phone determines whether a value of a sensed physiological parameter of a user of the mobile phone meets some criterion (e.g., the phone user’s fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat from the user’s hand is actively being applied), and if the criterion is met (“responsive to the physiological parameter sensed satisfying the criterion”), the NFC capabilities in the user’s phone are enabled. (*See* Section IX.A.1.ii.) While the enablement of the NFC capabilities may be considered some first function, the Barnett-Waters combination does not disclose and/or suggest requesting authorization to conduct a transaction while the NFC capabilities are enabled. (EX1002, ¶65.) However, a POSITA would have been motivated to further modify the Barnett-Waters system/method in view of White such that “responsive

to the physiological parameter sensed satisfying the criterion, enabling at least one first function; then while said at least one first function is enabled, responsive to having sensed the physiological parameter and responsive to having determined that the physiological parameter sensed satisfies the criterion, requesting an authorization to establish a function to conduct a financial transaction.” (*Id.*)

Like Barnett and Waters, White discloses a system/method of using a mobile device to perform a financial transaction at a point-of-sale device. (*Id.*, ¶66.) White describes a “system and method of completing a pending purchase.” (EX1007, Abstract.) “The system and method include one or more communication devices, wherein a first communication device participates in a transaction with a point-of-sale [device].” (*Id.*, 3:21-23.) White discloses that the consumer’s device (the first communications device) may be a mobile phone. (*Id.*, 3:35-36, 4:15-17.) The “point-of-sale (POS) device...records sales and mediates payments for products or services.” (*Id.*, 3:46-56.) For example, “[i]n credit card transactions, the POS device 102 may communicate with a credit card payment system to obtain payment or payment authorization.” (*Id.*, 3:56-58.) “The POS device 102 may mediate payment from an electronic purse, a debit card, or other payment methods.” (*Id.*, 3:58-60.) White explains that “[t]he POS device 102 communicates with the first communication device 120 to provide purchase information and to receive...payment information, such as credit card numbers.” (*Id.*, 3:60-65.) The

user's mobile device (the first communication device) "may include one or more adapters for communicating with the POS device 102," such as a "contactless chip operable to provide a communication link with a compatible device using contactless communication." (*Id.*, 5:6-10.) Thus, White is similar to both Barnett and Waters, which both disclose systems/methods of purchasing products in a store at a point-of-sale terminal using a chip-enabled mobile phone (e.g., NFC, which is implemented via a chip/tag in the mobile phone). (*See* Sections IX.A.1.i, IX.A.1.ii.(1); EX1002, ¶66.) A POSITA would have therefore been motivated to consider the teachings of White when implementing the Barnett-Waters system/method. (EX1002, ¶66.)

White additionally discloses that its system/method may be used for "mobile payment approval." (EX1007, 1:23-25.) White discloses that the "system 100 for subscriber payment approval" is shown in Figure 1 below and "includes a point-of-sale (POS) device 102" (in green below), "a network 110, a first communication device 120" (in red below), "a second communication device 130" (in blue below), "and a proxy subscriber approval server 140." (*Id.*, 3:46-50.) Like the first communication device (in red below), the second communication device (in blue below) may be a computer-based entity such as a mobile phone. (*Id.*, 4:11-15.) Communication between the first and second communication devices occurs "through the network 110" (*id.*, 4:17-19), which may include "the Internet, a

telecommunication wired/wireless network, and/or other computer-based networked systems” (*id.*, 4:5-7).

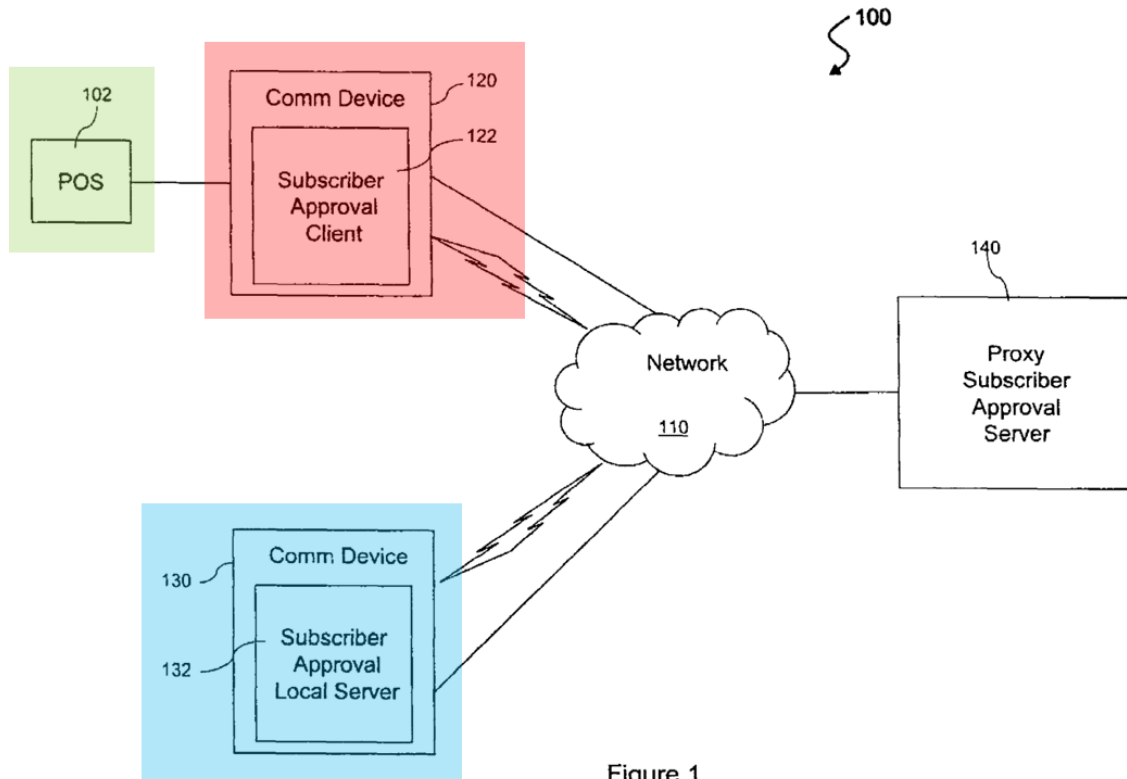


Figure 1

(*Id.*, FIG. 1 (annotated); EX1002, ¶67.)

White discloses that when initiating a transaction, a consumer’s first communication device 120 is first “presented to the POS device 102.” (EX1007, 4:43-44.) “The POS device 102 communicates purchasing information to the first communication device 120 that may include purchase price, identity of the purchased item, identity of the vendor and/or location of the POS device 102.” (*Id.*,

4:44-48.) Upon receiving the purchasing information from the POS terminal/device, the first communication device then initiates a subscriber payment approval process in which the first device transmits a subscriber approval request (containing the purchasing information) to the second communication device, which is responsible for approving the pending purchase. (*Id.*, 1:41-44, 4:48-52.) The second communication device 130 communicates approval of the transaction via a subscriber approval response sent to the first communication device 120. (*Id.*, 1:45-48, 4:52-54; EX1002, ¶68.)

If the second communication device 130 does not acknowledge the communication of the first communication device 120, the first communication device 120 may either interpret the lack of response as a rejection or may direct the approval request to the proxy subscriber approval server 140, a computer-based entity (e.g., a general purpose computer) which can decide whether to approve the transaction based on certain rules. (EX1007, 3:26-31, 4:59-5:5, 7:4-7; EX1002, ¶69.)

White explains that while communicating with the proxy subscriber approval server may be a fall-back procedure, it may also be used to apply approval rules without communicating with a second communication device (e.g., a parent). (*Id.*, 5:30-44, 6:27-39, FIG. 2B (depicting at blocks 212 and 214 that the proxy subscriber

approval server may be initially chosen as the approval entity), 7:53-8:3 (describing FIG. 2B); *see also id.*, 5:30-44; EX1002, ¶70.)

If, however, the transaction is approved (e.g., by the second communication device or the proxy subscriber approval server), the consumer's "first communication device 120 then provides credit card information, debit card information, or electronic purse information to the POS device 102 to complete the payment transaction." (EX1007, 4:55-58.) The POS device then sends that payment information to an authorization entity, such as a financial institution, which returns a completion response upon authorization, thereby completing the payment approval process. (*Id.*, 3:31-39, 3:56-58, 7:40-44; EX1002, ¶71.)

White discloses that the above steps performed by the first communication device 120 may be performed by the first device's "subscriber approval client 122...enabled as a software program, an application, or a function," where the subscriber approval client 122 "operate[s] to collect pending purchase information from the POS device 102," "includes information for completing the pending purchase," and "may also operate to communicate with the second communication device 130 and/or the proxy subscriber approval server 140 through the network 110." (EX1007, 5:30-44.) Similarly, White discloses that the above steps performed by the second communication device 130 may be performed by the second device's "subscriber approval local server" which "include[s] one or more payment

information associated with a credit card number, a debit card number, and/or other monetary account information,” as well as “rules established within the subscriber local approval server” which may be “appl[ied]...to approve payment via the subscriber approval client 122.” (*Id.*, 6:9-39; EX1002, ¶72.)

White discloses that the above payment approval process is applicable to a variety of different scenarios, such that the second communication device to approve the transaction is selected based on the context. (EX1002, ¶73.) For example, an owner of a credit card or debit card may be required to remotely authorize (e.g., from a second, remotely located device) transactions performed by an authorized user of the credit card (e.g., using a first device). (EX1007, 3:7-21, 4:38-42, 4:43-58.) In other remote authorization scenarios, “the operation of the system 100 for subscriber payment approval may be employed for parental control of child spending at the POS device 102,” where the parent’s “second communication device 130 may be alerted through voice, video, and/or text messaging” and the “parent may have the option of approving or rejecting the pending purchase.” (*Id.*, 6:9-64.) Alternatively, “a user of the second communication device 130 may include an employer (i.e., a boss or manager of a business) while, the first communication device 120 may be operated by an employee,” where “[t]he employer may in real-time control the pending purchase(s) made on behalf of the employee.” (*Id.*, 6:65-7:3.) In other words, White discloses that the second communication device that is sent a

subscriber approval request by the first communication device may be chosen based on the card used and the relationship between users (i.e., the request is sent to a remotely located device operated by the owner of a specific card used by the authorized user, or by the parent or boss of that authorized user) or based on various approval rules (i.e., the rules determine whether the request may be initially sent to the proxy subscriber approval server). (EX1002, ¶73.)

Accordingly, White discloses that the consumer's phone (first communication device) engages in a transaction approval process to conduct a financial transaction, where the consumer's phone sending a subscriber approval request ("requesting an authorization") from the first communication device to a second communication device (e.g., a device corresponding to the owner of the card used for the transaction, or a proxy subscriber approval server) to request authorization to perform the transaction ("establish a function to conduct a financial transaction"). (*Id.*, ¶74.)

A POSITA would have been motivated to further modify the Barnett-Waters system/method to incorporate such an authorization feature, similar to that disclosed by White, to send an authorization request to a second communications device in response to the presentation of the consumer's mobile device in proximity to an NFC-enabled payment terminal. (*Id.*, ¶75.) It was well known at the time of the alleged invention that authorization rules could be established such that one individual (or their device) could remotely authorize transactions performed by

another individual using a mobile phone. (*Id.*) For example, Waters discloses a parent may set times during which their child is able to use a near field/RF tag enabled device to make payments, e.g., for school lunch. (EX1006, 6; *see also* EX1009, ¶¶[0004], [0022], [0028] (describing transaction approval by the device of an “authorizer”); EX1010, FIG. 1, ¶[0016] (authorizing party may approve e-transactions of a proposing party); EX1011, FIG. 2, Abstract, ¶¶[0011]-[0012] (a third party authorizer/approver (e.g., parent or legal guardian of a child) may approve the purchaser’s e-commerce transactions according to certain authorization rules); EX1012, ¶¶[0027], [0050]-[0059] (describing approval of a transaction/funds transfer by a third party, such as a parent); EX1013, Abstract, ¶¶[0174]-[0200] (parent may use their own mobile phone to authorize charges requested by a child’s mobile phone).) Thus, a POSITA would have been motivated to consider various authorization methods in order to allow for purchase approval in the Barnett-Waters system/method. (EX1002, ¶75.)

White discloses that its authorization method is beneficial because, unlike other prior art authorization methods, it allows for an owner of a card/payment method to remotely approve transactions on a purchase-by-purchase basis. (EX1007, 3:7-21, 6:9-64, 6:65-7:30.) Thus, White’s authorization method would have allowed for enhanced flexibility, while still offering the security benefits of an authorization process that allows a card owner to approve transactions performed by

authorized users. (EX1002, ¶76.) White's authorization method would have also improved security by increasing oversight of transactions and reducing the risk of unauthorized or inappropriate transactions, consistent with both Barnett's and Waters' security goals. (*Id.*; EX1005, ¶¶[0005], [0012], [0017]; EX1006, 9, 13.)

A POSITA would have also had a reasonable expectation of success combining the teachings of Barnett, Waters, and White. (EX1002, ¶77.) As discussed above, all three references are in the same field of art. Moreover, Barnett suggests that its system/method is flexible and modifications to the NFC-enabled mobile phone are contemplated. (EX1005, ¶[0044].) White's authorization method would have been easily implemented in the Barnett-Waters system/method because Barnett and White use similar technologies. (EX1002, ¶77.) Thus, a POSITA would have recognized that it would be straightforward to modify the Barnett-Waters system/method to include a feature similar to that disclosed by White, in which the first mobile device uses the store's Wi-Fi network to communicate with a remote second mobile device in response to the first device being presented in proximity to an NFC-enabled display/payment terminal. (EX1002, ¶77.)

A POSITA would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known systems/methods for performing financial transactions using an NFC-enabled mobile phone (Barnett, Waters))

according to known methods (e.g., known approval mechanisms for authorizing purchases in mobile phone payment systems (White)) to yield the predictable result of a modified Barnett-Waters-White system/method that further implements a process in which, in response to a user presenting their mobile device in proximity to a POS terminal and receiving purchase information in return, an authorization request is sent via Wi-Fi from the mobile device to a second communication device responsible for approving the transaction. (EX1002, ¶78.) *KSR*, 550 U.S. at 416.

Consistent with the above and in such a combined system, for example, a consumer shopping in a store and using an NFC-enabled mobile phone as a credit/debit card to perform a financial transaction (as taught by Barnett) would have first enabled the NFC tag in the phone by providing a sustained input via, e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor (as taught by Waters). (EX1002, ¶79.) For example, if the mobile device had a combination fingerprint/pressure sensor, the user would hold their fingerprint on a sensor included in the device; if the device had a combination skin resistance/pressure sensor, the user would press a sensor using their hand; and if the device had a heat sensor, the user would hold the device to provide heat to the sensor. (*Id.*) Consistent with Waters' disclosure, the NFC tag of the mobile phone would only be enabled while the mobile device detects that a value of the sensor parameter satisfies some criterion (e.g., a fingerprint matches a certain user and the pressure is actively being

applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat is actively being applied) (“responsive to the physiological parameter sensed satisfying the criterion” (limitation [1.c]) and “responsive to having sensed the physiological parameter and responsive to having determined that the physiological parameter sensed satisfies the criterion” (limitation [1.d])). (*Id.*) Thus, in the combined system/method, a user would simultaneously (i.e., while providing sensor input) bring the mobile device in proximity of one of the store’s NFC-enabled displays/payment terminals to perform the transaction. (*Id.*)

Then, consistent with White’s disclosure, the POS terminal would return purchase information (e.g., price) to the consumer’s mobile device if both the sensed value of the parameter satisfies some criterion (“responsive to the physiological parameter sensed satisfying the criterion” (limitation [1.c]) and “responsive to having sensed the physiological parameter and responsive to having determined that the physiological parameter sensed satisfies the criterion” (limitation [1.d])) and if the consumer’s mobile device is in close enough proximity to the NFC-enabled POS terminal (i.e., if both conditions for NFC activation and transmission are satisfied) (see Sections IX.A.1.i, IX.A.1.iv, IX.A.1.vii (further discussing the proximity condition)). (EX1002, ¶80.) This would trigger the consumer’s mobile device to enable a transaction authorization/approval process/function (“enabling at least one

first function”)<sup>5</sup> in which, while the approval process/function is ongoing/enabled (“while said at least one first function is enabled”), the mobile device sends a subscriber approval request to a specific approver’s device (e.g., the device of an owner of the specific card for which the consumer is an authorized user, or a proxy subscriber approval server), upon which the approver’s device is able to authorize the transaction by returning to the consumer’s mobile device a subscriber approval response (“requesting an authorization to establish a function to conduct a financial

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<sup>5</sup> This communication “function” (i.e., the transaction approval function) is consistent with those described in the ’793 patent, which describes “functions” broadly as encompassing an “ever-increasing suite” of features/tasks, including communication functions. (EX1001, 1:38-42, 6:17-8:12 (enabling a communications function), 9:14-24 (describing a “function” broadly as “any number of functions at the mobile subscriber device 14 or even at the mobile subscriber device 15” (i.e., at first or second mobile device), and explaining that the “function enabled can be a financial transaction, the transmission of communications, such as data, and/or some other function that may provision the mobile subscriber device 14 and/or the mobile subscriber device 15 with additional functionality not previously available/activated at the respective devices”).)

transaction”). (EX1002, ¶80.) Upon approval/authorization, the consumer’s mobile phone is able to perform the financial transaction (“authorization to establish a function to conduct a financial transaction”) by transmitting payment information to the NFC-enabled POS terminal to complete the transaction. (*Id.*) Consistent with White’s disclosure, the POS terminal sends that payment information to an authorization entity (e.g., financial institution), which returns a response upon authorization, thereby completing the purchasing/approval process. (*Id.*)

v) **[1.e] “responsive to the requesting, receiving the authorization to establish the function to conduct the financial transaction; then”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶81.) As discussed for limitations [1.c]-[1.d], in the Barnett-Waters-White system/method, a consumer’s mobile device requests authorization for a transaction based on the card used (e.g., requests authorization from the card owner’s device) or approval rules in place (e.g., requests authorization from the proxy subscriber approval server) by sending a subscriber approval request to the approving device (e.g., card owner’s second mobile device or proxy subscriber approval server). (*See* Section IX.A.1.iv.) As further discussed, in response to this request (“responsive to the requesting”), the approving device may authorize the transaction by returning to the consumer’s mobile phone a subscriber approval response, which provides the consumer’s phone with the capability to conduct the

financial transaction (“receiving the authorization to establish the function to conduct the transaction”). (*Id.*)

- vi) **[1.f] “responsive to receiving the authorization, establishing the function to conduct the financial transaction; and then”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶82.) As discussed for limitations [1.c]-[1.d], in the Barnett-Waters-White system/method, if the consumer’s phone receives a subscriber approval response from the approving device authorizing the transaction (“responsive to receiving the authorization”), the consumer’s phone is granted the capability to conduct the financial transaction (“establishing the function to conduct the financial transaction”). (*See* Section IX.A.1.iv.)

- vii) **[1.g] “responsive to satisfying a proximity condition relative to an entity and responsive to sensing the physiological parameter and determining that the physiological parameter sensed satisfies the criterion, using the function that has been established to conduct the financial transaction and conducting the financial transaction by paying for a product;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶83.) As discussed for limitations [1.c]-[1.d], in the Barnett-Waters-White combination, the consumer initiates a transaction by bringing their mobile device within proximity of the NFC-enabled POS terminal (“satisfying a proximity condition relative to an entity”) and providing some physiological sensor

input to the phone (that satisfies a specified criterion for a fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) to simultaneously activate the phone's NFC tag ("sensing the physiological parameter and determining that the physiological parameter sensed satisfies the criterion"). (See Section IX.A.1.iv.) If the user's smartphone detects that both of these conditions are met ("responsive to satisfying a proximity condition relative to an entity and responsive to sensing the physiological parameter and determining that the physiological parameter sensed satisfies the criterion"), then the consumer's mobile phone will request/receive approval from a second device to establish the capability to perform the transaction ("function that has been established to conduct the financial transaction"), and then subsequently use that approval to actually conduct the transaction ("using the function that has been established to conduct the financial transaction") by sending payment information to the POS terminal via NFC to complete purchase of a product ("conducting the financial transaction by paying for a product"). (*Id.*)

- viii) [1.h] “wherein said paying for a product 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 the physiological parameter 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 physiological parameter sensed satisfies the criterion, paying for the product by selectively sending information to at least one device;”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶¶84-86.)

As discussed for limitations [1.c]-[1.d], in the Barnett-Waters-White system/method, paying for a product requires that the consumer’s NFC-enabled mobile phone be brought within proximity (“paying for a product comprises that the proximity condition is satisfied”) of the NFC-enabled POS terminal maintained by a retailer in a store (“relative to an access point maintained by a vendor at a point of purchase counter”). (See Section IX.A.1.iv.) Indeed, as discussed for limitation [1.pre], Barnett discloses that transmission of data between the phone and the NFC-enabled POS terminal occurs only when the two devices are within a short distance (e.g., a decimeter). (EX1005, ¶[0013]; Section IX.A.1.i.) In the payment context, where the mobile phone sends information via NFC to the NFC-enabled POS terminal (“access point”), the phone would establish NFC communication by sensing that the POS terminal (“access point”) is emitting a short-range RF signal

(“by detecting a short-range signal that is transmitted by the access point”). (See, e.g., EX1005, ¶[0014]; EX1006, 9; EX1002, ¶85.)

As further discussed for limitations [1.c]-[1.d], in the Barnett-Waters-White system/method, paying for a product also requires that the NFC capability of the mobile phone be enabled, which occurs by sensing a value of a physiological parameter (e.g., a fingerprint/pressure combination, a skin resistance/pressure combination or heat) and determining whether it satisfies a criterion (e.g., a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat is actively being applied) (“determining that the physiological parameter sensed satisfies the criterion”). (See Section IX.A.1.iv.) As further discussed for limitations [1.c]-[1.d], if both conditions are satisfied (“responsive to having sensed that the proximity condition is satisfied relative to the access point and having determined that the physiological parameter sensed satisfies the criterion”), the consumer’s mobile phone may request/receive approval from a second device to conduct the transaction, and then ultimately conduct the transaction by sending payment information (e.g., credit/debit card information) to the POS terminal via NFC (“paying for the product by selectively sending information to at least one device”). (*Id.*; EX1005, ¶¶[0032], [0037], [0038], [0040]; EX1007, 1:45-48; EX1002, ¶86.)

- ix) [1.i] **“wherein said paying for the 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;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶87.) As an initial matter, the term “unlicensed frequencies” should not be given patentable weight because it is directed to non-functional descriptive material. *See, e.g., Praxair Distrib. v. Mallinckrodt Hosp. Prods. IP*, 890 F.3d 1024, 1032 (Fed. Cir. 2018). Regardless, transmitting payment information to at least the POS terminal (“wherein said paying for the product by selectively sending information to at least one device”) via NFC would have been wireless and would have used unlicensed frequencies (“comprises selectively and wirelessly transmitting information to the at least one device using unlicensed frequencies”), as those were standard features of near field communication. (*See, e.g.,* EX1006, 8-9; EX1002, ¶87.)

- x) [1.j] **“wherein said paying for a product further comprises deducting/withdrawing an amount of money from an account.”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶88.) In particular, Barnett explains that the consumer may complete a transaction by using the mobile phone as a debit card, which is used to pay for products by withdrawing money from an account (“wherein said paying for

a product further comprises deducting/withdrawing an amount of money from an account”). (EX1005, ¶¶[0013], [0040]; EX1002, ¶88.)

## 2. Claim 2

- i) [2.pre] **“The method of claim 1, wherein said enabling at least one first function comprises enabling the at least one first function and disabling a second function; and wherein the method further comprises:”**

The Barnett-Waters-White combination discloses and/or suggests these limitations. (EX1002, ¶¶89-93.)

A POSITA would have further been motivated to implement the Barnett-Waters-White combination in view of Barnett such that when the transaction approval process (“first function”) is enabled (i.e., in response to the proximity and sensor conditions being satisfied), some “second function” of the mobile phone is disabled. (*Id.*, ¶90.)

Barnett discloses that “the mobile phone 14 may be programmed with a plurality of different credit card numbers” and “to provide a specific credit card number when the mobile phone 14 is used in making purchases in a specific store.” (EX1005, ¶[0032].) In particular, “the mobile phone 14 may be programmed to provide a first credit card number when the consumer is in a first store and provide a second credit card number when the consumer is in a second store.” (*Id.*) Barnett discloses that “once this information is initially programmed into the mobile phone

14, the configuration of the mobile phone 14 as a credit card is done automatically simply by placing the mobile phone 14 proximate to the NFC-enabled display 32 so that the desired information may be exchanged between the two.” (*Id.*) In other words, the credit card used for a particular transaction is selected at the time of the transaction so that the “consumer does not have to scroll through menus or follow any other time consuming process simply to configure the mobile phone 14 each time they make a purchase.” (*Id.*; EX1002, ¶91.)

It would have been beneficial to implement the Barnett-Waters-White system/method such that when the transaction approval process (“first function”) is enabled, the phone’s function allowing for the selection of one of several credit cards (“second function”) would have been disabled.<sup>6</sup> (EX1002, ¶92.) Such an implementation would have provided increased security by limiting the potential exposure of credit card information. (*Id.*) Limiting exposure of the other credit cards not currently being used for a transaction would have been beneficial in order

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<sup>6</sup> Just as the communication “first function” is consistent with the functions described in the ’793 patent (*see* Section IX.A.1.iv), this payment “second function” (i.e., the credit card selection function) is also consistent with the functions described in the ’793 patent.

to reduce the risk of unauthorized access to that credit card information. (*Id.*) Disabling the ability to select other credit cards when the mobile phone's NFC capability associated with a first credit card is enabled would have also reduced the risk of accidental charges to a different credit card, and would have streamlined the implementation of the approval process at the consumer's mobile phone. (*Id.*)

A POSITA would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known systems/methods for performing financial transactions using an NFC- or chip-enabled mobile phone (Barnett, Waters, White)) according to known methods (e.g., known methods for selecting certain credit cards for a transaction (Barnett)) to yield the predictable result of a modified Barnett-Waters-White system/method that disables the credit card selection capability when the mobile phone's transaction approval process associated with a first card is enabled ("wherein said enabling at least one first function comprises enabling the at least one first function and disabling a second function") in response to the proximity and sensor conditions being satisfied, as discussed above. (EX1002, ¶93.) *KSR*, 550 U.S. at 416.

- ii) **[2.a] “repeatedly sensing the physiological parameter and repeatedly deciding, based on comparing the physiological parameter sensed to the criterion, whether or not to maintain enabled said at least one first function while maintaining disabled said second function; and”**  
**[2.b] “maintaining enabled said at least one first function while maintaining disabled said second function responsive to deciding that the physiological parameter sensed satisfies the criterion; or”**  
**[2.c] “disabling said at least one first function and enabling said second function responsive to deciding that the physiological parameter sensed no longer satisfies the criterion.”**

The Barnett-Waters-White combination discloses and/or suggests these limitations. (EX1002, ¶¶94-99.)

As discussed for limitations [1.c]-[1.d], in the Barnett-Waters-White system/method, a value of a physiological parameter (e.g., a fingerprint/pressure combination, a skin resistance/pressure combination, or heat) is continuously/repeatedly sensed (“repeatedly sensing the physiological parameter”) and the NFC capability of the mobile device is *only enabled* so long as the value continues to satisfy some criterion (e.g., a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat is actively being applied) (“comparing the physiological parameter sensed to the criterion”). (See Section IX.A.1.iv; see also EX1006, 15-16.) Indeed, because

Waters explains that the NFC capability is **only enabled/operated** when a sensor is actively detecting the fingerprint/pressure, skin resistance/pressure, or heat (depending on the sensor implementation), the phone must continuously/repeatedly sense a value of the parameter (“repeatedly sensing the physiological parameter”) and determine whether the value of the parameter satisfies the criterion (“comparing the physiological parameter sensed to the criterion”) in order to allow the NFC capability to be enabled **only** when the sensed value of the parameter actively meets the appropriate criterion. (*See, e.g.*, EX1006, 15 (“the RF tag 41 is **only enabled** when the mobile terminal 1 is exposed to light”), 15 (“RF tag 41 is **only enabled** when the user physically presses the pressure sensor”), 15 (“[t]he combined sensor detects, not only that pressure is applied, but also that an authorized person is pressing the sensor”), 15 (“configured to detect that the mobile terminal is in a user’s hand by detecting the heat from the hand, and **only enabling** the near field tag 41 when heat from the hand is so detected”), 16 (“The near field tag 41 will **only be operated** when an appropriate resistance, capacitance or inductance is detected, indicating that the user’s hand is touching the sensor.”); EX1002, ¶95.)

As further discussed, while providing sensor input, a consumer simultaneously brings the mobile phone within proximity of the NFC-enabled POS terminal, and if both the proximity criterion is satisfied and the sensed value of the device parameter satisfies the parameter criterion, then the consumer’s mobile

device enables a transaction approval function (“first function”). (See Section IX.A.1.iv.) The sensed parameter value is repeatedly sensed and compared to the parameter criterion (“comparing the physiological parameter sensed to the criterion” (limitation [2.a]) and “deciding that the physiological parameter sensed satisfies the criterion” (limitation [2.b])), and provided the criterion continues to be met (and the mobile device is within proximity of the NFC-enabled POS terminal), the mobile device’s transaction approval function continues to be enabled until the transaction is complete (“repeatedly deciding, based on comparing the physiological parameter sensed to the criterion, whether or not to maintain enabled said at least one first function” (limitation [2.a]) and “maintaining enabled said at least one first function...responsive to deciding that the physiological parameter sensed satisfies the criterion” (limitation [2.b])). (See Section IX.A.1.iv.) As further discussed for limitations [1.c]-[1.d], the NFC capability is maintained so long as the value of the sensor parameter continues to meet the criterion, but the NFC capability is disabled (and thus the connection between the mobile phone and NFC-enabled POS terminal breaks, disabling the phone’s ongoing transaction approval function/process (“first function”)) if the criterion is no longer satisfied (“disabling said at least one first function...responsive to deciding that the physiological parameter sensed no longer satisfies the criterion”). (See Section IX.A.1.iv; EX1002, ¶96.)

As discussed for limitation [2.pre], a POSITA would have been motivated to implement the Barnett-Waters-White combination in view of Barnett such that when the transaction approval process (“first function”) is enabled (i.e., in response to the mobile device being in proximity to the NFC-enabled POS terminal and in response to sensing that a value of a parameter satisfies some criterion), the mobile phone’s capability to select other credit cards (“second function”) is disabled. (See Section IX.A.2.i.) For similar reasons, a POSITA would have also been motivated to implement the Barnett-Waters-White combination in view of Barnett such that the ability to select other credit cards (“second function”) remains disabled for the entire time the mobile phone is engaged in the transaction approval process for a first credit card (i.e., the time in which the “first function” is enabled), and similarly, so that the ability to select other credit cards (“second function”) is enabled again when the mobile phone’s transaction approval process associated with a first card (“first function”) is disabled. (EX1002, ¶97.) This implementation would have been consistent with the security benefits discussed for limitations [1.c]-[1.d] and [2.pre]. (*Id.*; see also Sections IX.A.1.iv, IX.A.2.i.) Reenabling the ability to select a different credit card as soon as the transaction approval is complete (i.e., when the first function is disabled) would have also enhanced efficiency and flexibility. (EX1002, ¶97.)

A POSITA would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known systems/methods for performing financial transactions using an NFC- or chip-enabled mobile phone (Barnett, Waters, White)) according to known methods (e.g., known methods for selecting certain credit cards for a transaction (Barnett)) to yield the predictable result of a modified Barnett-Waters-White system/method that disables the credit card selection capability when the mobile phone's transaction approval process associated with a first card is enabled, and enables the credit card selection capability again when the transaction approval process associated with the first card is disabled. (*Id.*, ¶98.) *KSR*, 550 U.S. at 416.

Consistent with the above and in such a combined system, for example, a consumer would provide a sensor input to activate the NFC capability and would simultaneously bring the phone in proximity of the NFC-enabled POS terminal to initiate the transaction, thus triggering the transaction approval function of the phone ("first function"). (EX1002, ¶99.) The value of a physiological parameter (e.g., a fingerprint/pressure combination, a skin resistance/pressure combination, or heat) would be repeatedly sensed ("repeatedly sensing the physiological parameter") and the NFC capability of the mobile device would only be enabled so long as the value continues to satisfy some criterion (e.g., the light is sustained and of a certain

type/frequency, a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat is actively being applied) (“comparing the physiological parameter sensed to the criterion”). (*Id.*) The sensed parameter would be repeatedly sensed and compared to the parameter criterion, and provided the criterion continues to be met (and the mobile device remains within proximity of the NFC-enabled POS terminal), the mobile device’s transaction approval function would remain enabled until the transaction is complete (“repeatedly deciding, based on comparing the physiological parameter sensed to the criterion, whether or not to maintain enabled said at least one first function”). (*Id.*) While the transaction approval function is still enabled (i.e., while the value of the parameter still satisfies the criterion and while the proximity criterion is met), the ability to select another credit card for a transaction would be disabled (i.e., because the transaction approval is in progress) (“while maintaining disabled said second function”). (*Id.*) The transaction approval capability would remain enabled so long as the sensed parameter continues to satisfy the parameter criterion and the mobile device satisfies the proximity criterion, and similarly the ability to select a different credit card would also remain disabled during that time (“maintaining enabled said at least one first function while maintaining disabled said second function responsive to deciding that the physiological parameter sensed satisfies the criterion”). (*Id.*) However, if

the sensed parameter no longer satisfies the criterion (i.e., indicating that the transaction approval is no longer taking place), the transaction approval function would end (i.e., be disabled) and the ability to select a different credit card would be enabled again (e.g., so that another transaction may take place) (“disabling said at least one first function and enabling said second function responsive to deciding that the physiological parameter sensed no longer satisfies the criterion”). (*Id.*)

### 3. Claim 5

- i) **[5.pre] “A wireless device that comprises a smartphone and a sensor; wherein the wireless device is configured to perform operations comprising:”**

To the extent the preamble is limiting, Barnett in view of Waters discloses and/or suggests the limitations therein. (EX1002, ¶100.) As discussed for limitation [1.pre], Barnett discloses a mobile phone (“wireless device that comprises a smartphone”) capable of performing wireless communication functions of a Wi-Fi device, a contact-less credit/debit card, and a cell phone. (*See* Section IX.A.1.i.) A consumer’s mobile phone operates as a “smartphone” because it has advanced features beyond the standard calling and texting features of a cellular phone. (EX1002, ¶100.) As discussed for limitation [1.a], a POSITA would have found it obvious to modify the Barnett system/method in view of Waters such that the mobile phone incorporates a physiological sensor. (*See* Section IX.A.1.ii.) The mobile phone (“wireless device”) is “configured to perform operations comprising” the

operates recited in limitations [5.a]-[5.j] for the reasons discussed below. (*See infra* Sections IX.A.3.ii-xi.)

**ii) [5.a] “sensing, by the sensor, a physiological parameter of a user of the wireless device; then”**

The Barnett-Waters combination discloses and/or suggests this limitation. (EX1002, ¶101.) As discussed for limitation [1.a], in the Barnett-Waters combination, the consumer’s mobile phone senses, using a physiological sensor (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) (“sensing, by the sensor”) whether a value of a sensed physiological parameter of a user of the mobile phone meets some criterion (“a physiological parameter of a user of the wireless device”), and only enables the NFC capabilities in the user’s phone if the criterion is met. (*See* Section IX.A.1.ii.)

**iii) [5.b] “determining whether or not the physiological parameter sensed satisfies a criterion; then”**

The Barnett-Waters combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [1.b]. (EX1002, ¶102; *see* Section IX.A.1.iii.)

- iv) **[5.c] “responsive to the physiological parameter sensed satisfying the criterion, enabling at least one first function of the wireless device; then”**

**[5.d] “while said at least one function is enabled, responsive to having sensed the physiological parameter and responsive to having determined that the physiological parameter sensed satisfies the criterion, requesting from a second device an authorization to establish a function to conduct a financial transaction; then”**

The Barnett-Waters-White combination discloses and/or suggests these limitations for at least the same reasons as discussed for limitations [1.c]-[1.d]. (See Section IX.A.1.iv; EX1002, ¶103 (explaining the “first function of the wireless device” corresponds to a transaction authorization/approval process/function of the mobile device and the “second device” corresponds to the approver’s device).

- v) **[5.e] “responsive to the requesting, receiving from the second device the authorization to establish the function to conduct the financial transaction; then”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for at least the same reasons as discussed for limitation [1.e]. (See Section IX.A.1.v; EX1002, ¶104.)

- vi) **[5.f] “responsive to receiving the authorization, establishing at the wireless device the function to conduct the financial transaction; and then”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for at least the same reasons as discussed for limitation [1.f]. (*See* Section IX.A.1.vi; EX1002, ¶105.)

- vii) **[5.g] “responsive to the wireless device satisfying a proximity condition relative to an entity and responsive to the wireless device sensing the physiological parameter and determining that the physiological parameter sensed satisfies the criterion, using the function that has been established at the wireless device to conduct the financial transaction and conducting the financial transaction by paying for a product;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for at least the same reasons as discussed for limitation [1.g]. (*See* Section IX.A.1.vii; EX1002, ¶106.)

- viii) **[5.h] “wherein said paying for a product 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 the physiological parameter 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 physiological parameter sensed satisfies the criterion, paying for the product by selectively sending information to at least one device;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [1.h]. (EX1002, ¶107; *see* Section IX.A.1.viii.)

- ix) **[5.i] “wherein said paying for the 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”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [1.i]. (EX1002, ¶108; *see* Section IX.A.1.ix.)

- x) **[5.j] “wherein said paying for a product further comprises deducting/withdrawing an amount of money from an account.”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [1.j]. (EX1002, ¶109; *see* Section IX.A.1.x.)

4. Claim 6

- i) **[6.pre] “The wireless device of claim 5, wherein said enabling at least one first function of the wireless device comprises enabling the at least one first function of the wireless device and disabling a second function of the wireless device; and wherein the operations further comprise:”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for at least the same reasons as discussed for limitation [2.pre]. (EX1002, ¶110; *see* Section IX.A.2.i.)

- ii) **[6.a] “repeatedly sensing the physiological parameter and repeatedly deciding, based on comparing the physiological parameter sensed to the criterion, whether or not to maintain enabled said at least one first function while maintaining disabled said second function; and”**

**[6.b] “maintaining enabled said at least one first function while maintaining disabled said second function responsive to deciding that the physiological parameter sensed satisfies the criterion; or”**

**[6.c] “disabling said at least one first function and enabling said second function responsive to deciding that the physiological parameter sensed no longer satisfies the criterion.”**

The Barnett-Waters-White combination discloses and/or suggests these limitations for the same reasons as discussed for limitations [2.a]-[2.c]. (EX1002, ¶111; *see* Section IX.A.2.ii.)

**5. Claim 8**

- i) [8.pre] **“The wireless device of claim 5, wherein said requesting from a second device an authorization to establish a function to conduct a financial transaction and/or said receiving from the second device the authorization to establish the function to conduct the financial transaction comprises:”**

**[8.a] “establishing by the wireless device a link with the second device, said link comprising a wireless link;”**

The Barnett-Waters-White combination discloses and/or suggests these limitations. (EX1002, ¶112.) As discussed for limitations [1.c]-[1.d] and [5.c]-[5.e], a consumer’s mobile device is Wi-Fi enabled and sends a subscriber approval request to the approver’s device (e.g., the card owner’s device or proxy subscriber approval server) (“requesting from a second device an authorization to establish a function to conduct a financial transaction”) and receives approval via a subscriber approval response (“receiving from the second device the authorization to establish the function to conduct the financial transaction”) by wirelessly transmitting and receiving information over the store’s Wi-Fi network. (See Sections IX.A.1.iv, IX.A.3.iv-v.) When a consumer’s phone (“wireless device”) uses a store’s Wi-Fi network to communicate with a remote approving device (“second device”), a wireless link is established allowing for wireless communication between the two devices (“establishing by the wireless device a link with the second device, said link comprising a wireless link”). (EX1002, ¶112.)

ii) **[8.b] “wirelessly transmitting information to the second device over said wireless link using unlicensed and/or licensed frequencies; and”**

**[8.c] “wirelessly receiving information from the second device over said wireless link using unlicensed and/or licensed frequencies;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶113.) As an initial matter, the terms “unlicensed...frequencies” and “licensed frequencies” should not be given patentable weight because they are directed to non-functional descriptive material. *See, e.g., Praxair Distrib.*, 890 F.3d at 1032. Moreover, because all wireless communication uses unlicensed or licensed frequencies, the term “unlicensed and/or licensed frequencies” does not limit the claim language in any way. (EX1002, ¶113.) Regardless, wirelessly transmitting a subscriber approval request to the approving device (“wirelessly transmitting information to the second device”) and wirelessly receiving a subscriber approval request from the approving device (“wirelessly receiving information from the second device”), using a Wi-Fi connection (“over said wireless link”), would have involved “using unlicensed...frequencies” because the use of unlicensed frequencies was a standard feature of Wi-Fi. (*See, e.g.,* EX1005, ¶[0015]; EX1027, Abstract; EX1028, ¶[0004].)

- iii) **[8.d] “wherein said wirelessly transmitting information to the second device and/or said wirelessly receiving information from the second device comprises using a WiFi air interface protocol, an orthogonal frequency division multiplexing air interface protocol and/or an orthogonal frequency division multiple access air interface protocol; and”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶114.) As discussed for limitations [8.pre]-[8.a], a consumer’s mobile device is Wi-Fi enabled and sends a subscriber approval request to the approver’s device (“wirelessly transmitting information to the second device”), and receives approval via a subscriber approval response (“wirelessly receiving information from the second device”) by wirelessly transmitting and receiving information over the store’s Wi-Fi network (“comprises using a WiFi air interface protocol”).<sup>7</sup> (See Section IX.A.5.i.)

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<sup>7</sup> This claim limitation recites several options in the alternative. By teaching “wirelessly transmitting...and/or...wirelessly receiving...using a WiFi air interface protocol,” the remaining options are not required.

- iv) **[8.e] “wherein said establishing by the wireless device a link with the second device comprises establishing the link with the second device responsive to the wireless device sensing the physiological parameter and determining that the physiological parameter sensed satisfies the criterion.”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶115.) As discussed for limitations [1.c]-[1.d], the transaction approval process, which involves a consumer’s mobile phone using a Wi-Fi connection to communicate with a remote approver’s device (“wherein said establishing by the wireless device a link with the second device comprises establishing the link with the second device”), where the communication occurs in response to the consumer’s phone detecting that the phone is within a certain proximity to the POS terminal, and detecting that a physiological parameter sensed by the phone meets a specified criterion (“responsive to the wireless device sensing the physiological parameter and determining that the physiological parameter sensed satisfies the criterion”). (See Section IX.A.1.iv.)

**B. Ground 2: Barnett, Waters, White, and Smith Render Obvious Claims 3, 4, 7, and 9-11**

- 1. **Claim 3: “The method of claim 1, wherein said paying for a product further comprises wirelessly receiving information from at least one device using unlicensed frequencies.”**

Barnett in view of Waters, White, and Smith discloses and/or suggests this limitation. (EX1002, ¶¶116-129.)

As discussed for limitations [1.c]-[1.d], when a mobile phone completes a financial transaction, the phone sends payment information to both the POS terminal device and to a financial institution's device, since the POS terminal forwards the payment information to an authorization entity such as a financial institution. (*See* Section IX.A.1.iv; EX1002, ¶117.)

While the Barnett-Waters-White combination does not explicitly disclose and/or suggest “wherein said paying for a product further comprises wirelessly receiving information from at least one device using unlicensed frequencies,” a POSITA would have been motivated to further modify the Barnett-Waters-White combination in view of Smith such that receipt information from the POS terminal and financial institution's device is wirelessly received at the user's phone using NFC (i.e., unlicensed frequencies). (EX1002, ¶118; *see also* Section IX.A.1.ix (explaining that NFC uses unlicensed frequencies).)

As discussed for limitations [1.c]-[1.d], White discloses that after the consumer's mobile phone sends payment information to the POS device, the POS device sends the payment information to an authorization entity (e.g., a device of a predetermined financial institution), which returns a response upon authorization to complete the payment approval process. (Section IX.A.1.iv; EX1007, 3:31-39, 3:56-58, 7:40-44.) However, White does not disclose what the authorization response is used for, or which devices receive the response. A POSITA would have thus had

good reason to consider Smith’s implementation, which as discussed below, discloses that the response returned by the authorization entity is used by the point-of-sale terminal to generate and transmit a receipt to the consumer’s phone. (EX1002, ¶119.)

Like Barnett, Waters, and White, Smith discloses a system/method of using a mobile device to perform a financial transaction at a point-of-sale device. (*Id.*, ¶120.) Smith relates to “[e]lectronic transactions involving the transfer of money,” including those involving “[g]oods and services...purchased...using credit or debit accounts with electronic authorization.” (EX1018, 1:17-20.) Smith describes electronic transactions occurring between a “purchaser device” (e.g., a “wireless purchasing device (WPD)”) and a “vendor device at a point-of-sale.” (*Id.*, 4:5-21.) The wireless purchaser device “may take the form of a personal digital assistant (PDA), a wireless phone or some other wireless communication device.” (*Id.*, 4:19-21.) Smith explains that the wireless purchaser device and the vendor point-of-sale device may operate in a wireless system using, e.g., various short-range wireless networking technologies. (*Id.*, 4:22-26, 6:12-20, 6:30-7:6.) Thus, Smith is similar to Barnett, Waters, and White, which also disclose systems/methods of purchasing products at a point-of-sale terminal using short-range wireless communication technologies (e.g., NFC). (*See* Sections IX.A.1.ii, IX.A.1.iv; EX1002, ¶120.) A

POSITA would have therefore been motivated to consider the teachings of Smith when implementing the Barnett-Waters-White system/method. (EX1002, ¶120.)

Smith additionally discloses that its system/method allows for the vendor point-of-sale device to transmit electronic receipts to the purchaser device after a transaction is authorized and completed. (*Id.*, ¶121.) Smith explains that “[t]ransactions involving a credit or debit account require authorization from the organization who issues the card,” where “authorization is generally obtained at the point-of-sale by a vendor through electronic communications channels.” (EX1018, 1:26-28.) Smith discloses that purchase/account information is transmitted to a card issuer or authorization provider, and the vendor may in return receive an authorization code if the transaction is successful (i.e., if the account has sufficient credit/funds to cover the transaction). (*Id.*, 1:28-34, 2:2-5, 9:4-30.)

Following authorization by the card issuer or authorization processor, Smith discloses that “an electronic receipt will be generated by a vendor device at a point-of-sale.” (*Id.*, 4:5-6.) “When a transaction takes place, an electronic receipt may be transmitted from the vendor device to a purchaser device where the receipt may be stored for further processing within the device or for further transmission to other devices and systems.” (*Id.*, 4:6-8; *see also id.*, 4:15-17, 4:23-24, 6:16-17, 7:6-8; EX1002, ¶122.)

Smith discloses that the receipt generated at the point-of-sale device may include “authorization information,” as well as other “purchase transaction information including, but not limited to, total purchase price, vendor ID, purchaser ID, item descriptions, itemized pricing, purchase date, purchase time, discount information, creditor information, ..., receipt management information and other transaction information.” (EX1018, 7:34-8:3; *see also id.*, 3:33-4:2.) Smith also discloses that the purchaser device may “transfer...receipt information...to [a] secondary computing device 30 for further processing, storage, archiving and other functions.” (*Id.*, 8:12-14.) The secondary computing device 30 may be a “web server 42” or various other computing devices that can “compile[] receipt information including itemized and categorized purchase and budget information” and later “transmit compiled information 48 back to purchaser device 2 for display and reference.” (*Id.*, 8:15-23; *see also id.*, 7:10-23.) Smith explains that the purchaser device may communicate with the secondary computing device via the same short range communication device used to communicate with the point-of-sale device. (*Compare id.*, 7:20-23, *with id.*, 6:12-14; EX1002, ¶123.)

Thus, Smith discloses that after paying for a product, a consumer’s phone may receive a receipt from the vendor point-of-sale device used in the transaction, where the receipt received by the consumer’s phone may also include authorization information from an authorization entity/device. (EX1002, ¶124.) In addition, the

consumer's phone may also receive compiled receipt information from a secondary computing device. (*Id.*) In other words, Smith discloses that after a purchase is complete, information may be selectively received (e.g., based on the credit card and POS terminal used) from at least three devices, including the vendor point-of-sale device, an authorization entity/device, and a secondary computing device ("wherein said paying for a product further comprises wirelessly receiving information from at least one device"). (*Id.*)

This information may be received "using unlicensed frequencies." (*Id.*, ¶125.) Smith describes the receipt and authorization information as being received via various short-range communications (EX1018, 4:22-26, 6:12-20, 6:30-7:6), and describes compiled receipt information as being received via the same communication means (*id.*, 6:12-14, 7:20-23), and explains that the short-range communications may include technologies such as Bluetooth (*id.*, 3:13-24, 4:23-24, 6:18-20, 6:34-35), which uses unlicensed frequencies. (*See, e.g.*, EX1005, ¶[0017].) Thus, "wirelessly receiving information from at least one device" is compatible with various short-range communication technologies that use unlicensed frequencies. (EX1002, ¶126.)

A POSITA would have been motivated to modify the Barnett-Waters-White combination to use the response returned by the authorization entity to provide a receipt, similar to that disclosed by Smith, so that after completing a transaction, a

consumer's phone may receive the receipt for the transaction, as well as compiled information relating to multiple transactions. (*Id.*, ¶127.) Providing a receipt to a consumer would have offered numerous benefits. (*Id.*) In addition, allowing a consumer to later retrieve compiled receipt information from a secondary computing device (e.g., web server), similar to that disclosed by Smith, would have had organizational and efficiency benefits as well. (*Id.*, ¶127; EX1018, 8:18-20.)

A POSITA would have also had a reasonable expectation of success combining the teachings of Barnett, Waters, White, and Smith. (EX1002, ¶128.) As discussed above, both references are in the same field of art. Moreover, Barnett suggests that its system/method is flexible and modifications to the NFC-enabled mobile phone are contemplated. (EX1005, ¶[0044].) Smith similarly discloses that its receipt feature can be adapted to a variety of short-range wireless communication methods, including those that use unlicensed frequencies. (EX1018, 4:22-26, 6:12-20, 6:30-7:6; EX1002, ¶128.) Thus, it would have been straightforward to modify the NFC-based system of the Barnett-Waters-White combination to include an NFC-based receipt feature similar to that disclosed by Smith. (EX1002, ¶128; *see also* Section IX.A.1.ix.)

A POSITA would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known system/method for performing

financial transactions using an NFC-enabled mobile phone (Barnett, Waters, and White)) according to known methods (e.g., known methods of transmitting receipt information from a POS terminal and secondary computing device (Smith)) to yield the predictable result of a modified Barnett-Waters-White-Smith system/method that implements a receipt feature in which a user's phone may receive receipt information from a POS terminal and compiled receipt information from a secondary computing device/server ("wherein said paying for a product further comprises wirelessly receiving information from at least one device"), where information may be received using NFC, which as explained for limitation [1.i] "us[es] unlicensed frequencies." (EX1002, ¶129; Section IX.A.1.ix.) *KSR*, 550 U.S. at 416.

## 2. Claim 4

### i) [4.pre] "The method of claim 3,"

**[4.a] "wherein said wirelessly transmitting information to the at least one device using unlicensed frequencies and said wirelessly receiving information from at least one device using unlicensed frequencies comprises using unlicensed frequencies over a short-range link in a Time Division Duplex operation; and"**

The Barnett-Waters-White-Smith combination discloses and/or suggests these limitations. (EX1002, ¶¶130-135.)

A POSITA would have further been motivated to implement the Barnett-Waters-White-Smith combination in view of Barnett and Smith such that the communication between a consumer's mobile phone and the POS terminal occurs,

and between the phone and any secondary computing device (which as discussed for claim 3, involves the same short-range communication technology), via Bluetooth instead of NFC. (EX1002, ¶131.) Bluetooth “us[es] unlicensed frequencies over a short-range link in a Time Division Duplex operation” as these were standard features of Bluetooth communication. (EX1005, ¶[0017]; EX1008, 48:5-6.)<sup>8</sup>

In particular, Barnett explains that a consumer’s mobile phone may also be “adapted to communicate with...a Bluetooth system” in addition to NFC. (EX1005, ¶[0012].) Barnett discloses that instead of the displays 32 (used as POS terminals) being NFC-enabled displays, “[a]lternatively, the displays 32 may be Bluetooth-enabled communications devices” such that “when a Bluetooth-enabled mobile phone is located near the display 32, information is transmitted between the Bluetooth-enabled mobile phone 14 and the display 32.” (*Id.*, ¶[0022]; EX1002, ¶132.) Barnett discloses that Bluetooth is beneficial because it “provide[s] low-rate mesh networking, allowing low-cost devices to form networks within the retail environment.” (EX1005, ¶[0017].)

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<sup>8</sup> As noted above for claim limitation [3.c], the term “unlicensed frequencies” should also not receive patentable weight.

Moreover, as further discussed for claim 3, Smith explains that the short-range communications device used to communicate with a POS terminal and a secondary computing device may be a Bluetooth transceiver. (EX1018, 6:18-20, 6:34-35, 7:20-22; *see also* Section IX.B.1.) Smith also explains that Bluetooth is a “viable and economical networking solution for interconnection of cell phones, computers, printers, modems, computer peripherals, fax machines and other communications and computing devices,” and is beneficial because “[t]he size of the Bluetooth® transceiver makes it usable in devices as small as palm computers and cell phones,” and the “range of about 10 meters...may be extended to about 100 meters by increasing transmitter power.” (EX1018, 3:18-24; EX1002, ¶133.)

A POSITA would have thus been motivated to consider Bluetooth instead of or in addition to NFC when implementing the communication features between a mobile phone and POS terminal in the Barnett-Waters-White-Smith system/method. (EX1002, ¶134.) Bluetooth would have been beneficial in stores where a longer communication range is desired (e.g., up to 10 meters), or where faster data transfer speeds are desired. (*Id.*) Bluetooth would have also been ideally suited to the mobile device applications of the Barnett-Waters-White-Smith system/method. (*Id.*)

A POSITA would have also had a reasonable expectation of success in implementing the Barnett-Waters-White-Smith system/method in view of Barnett and Smith in this manner because it would have involved an implementation that

Barnett and Smith already suggest is feasible—using Bluetooth instead of NFC to perform transactions using mobile phones at POS terminals. (*Id.*, ¶135.) A POSITA would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known systems/methods for performing financial transactions) according to known methods (e.g., known methods of using Bluetooth instead of NFC for transactions) to yield the predictable result of a modified Barnett-Waters-White-Smith system/method that further uses Bluetooth communication instead of NFC. (EX1002, ¶135.) *KSR*, 550 U.S. at 416.

- ii) **[4.b] “wherein said selectively and wirelessly transmitting information to the at least one device further comprises selectively and wirelessly transmitting 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 further comprises wirelessly 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.”**

The Barnett-Waters-White-Smith combination discloses and/or suggests this limitation. (EX1002, ¶¶136-138.)

As discussed for limitations [1.c]-[1.d], a mobile phone wirelessly sending payment information to the POS terminal (“wherein said selectively and wirelessly transmitting information to the at least one device further comprises selectively and

wirelessly transmitting information to the access point maintained by the vendor at the point of purchase counter”) also involves sending that information to a financial institution’s device (“selectively and wirelessly transmitting information...to at least one other device that is predetermined”), since the POS terminal forwards the payment information to an authorization entity such as a financial institution. (See Section IX.A.1.iv.) This financial institution device would have corresponded to the issuer of the card used for the transaction, and thus would have been a “predetermined” device. (EX1002, ¶137.)

As discussed for claim 3, in the Barnett-Waters-White-Smith combination, after a purchase is complete, receipt/authorization/compiled receipt information may be wirelessly received from at least three devices, including the vendor point-of-sale device (“further comprises wirelessly receiving information from the access point maintained by the vendor at the point of purchase counter”), an authorization entity/device, and a secondary computing device (a predetermined device for storing compiled receipts) (“and from at least one other device that is predetermined”). (See Section IX.B.1; EX1002, ¶138.)

**3. Claim 7**

- i) **[7.pre] “The wireless device of claim 5, wherein said conducting the financial transaction by paying for a product comprises:”**

**[7.a] “establishing by the wireless device a short-range wireless link with the entity;”**

The Barnett-Waters-White combination discloses and/or suggests these limitations. (EX1002, ¶139.) As discussed for limitations [1.c]-[1.d], paying for a product involves the consumer’s phone (“wireless device”) establishing an NFC connection with a POS terminal (“entity”) to transmit payment information from the consumer’s phone to the POS terminal via NFC. (See Section IX.A.1.iv.) Barnett describes this established “NFC link” (EX1005, ¶[0025]) as “short-range high frequency wireless communication...which enables the exchange of data between devices over about a short distance, such as a decimeter” (*id.*, ¶[0013]) (“establishing by the wireless device a short-range wireless link with the entity”).

- ii) **[7.b] “wirelessly transmitting information to the entity using unlicensed frequencies; and”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶140.) As an initial matter, the term “unlicensed frequencies” should not be given patentable weight because it is directed to non-functional descriptive material. See, e.g., *Praxair Distrib.*, 890 F.3d at 1032. Regardless, as discussed for limitation [1.i], transmitting payment information to the POS terminal

via NFC would have been done wirelessly using unlicensed frequencies (“wirelessly transmitting information to the entity using unlicensed frequencies”). (See Section IX.A.1.ix.)

**iii) [7.c] “wirelessly receiving information from the entity using unlicensed frequencies;”**

The Barnett-Waters-White-Smith combination discloses and/or suggests this limitation. (EX1002, ¶141.) As discussed for claim 3, in the Barnett-Waters-White-Smith combination, the consumer’s phone may wirelessly receive receipt information from the POS terminal using NFC, which uses unlicensed frequencies (“wirelessly receiving information from the entity using unlicensed frequencies”). (See Section IX.B.1.)

**iv) [7.d] “wherein said wirelessly transmitting information to the entity and said wirelessly receiving information from the entity comprises using unlicensed frequencies in a time division duplex operation; and”**

The Barnett-Waters-White-Smith combination discloses and/or suggests this limitation. (EX1002, ¶142.) As discussed for limitations [4.pre]-[4.a], a POSITA would have found it obvious to further modify the Barnett-Waters-White-Smith system/method so that the short-range wireless link uses Bluetooth communication (which “us[e]s unlicensed frequencies over a short-range link in a time division duplex operation”) instead of NFC when wirelessly transmitting/receiving information to/from the POS terminal (“said wirelessly transmitting information to

the entity and said wirelessly receiving information from the entity”). (See Section IX.B.2.i.)

- v) [7.e] **“wherein said establishing by the wireless device a short-range wireless link with the entity comprises establishing the short-range wireless link with the entity responsive to the wireless device satisfying the proximity condition relative to the entity and responsive to the wireless device sensing the physiological parameter and determining that the physiological parameter sensed satisfies the criterion.”**

The Barnett-Waters-White-Smith combination discloses and/or suggests this limitation. (EX1002, ¶143.) As discussed for limitations [1.c]-[1.d], the NFC link between the consumer’s phone and the POS terminal is established (“wherein said establishing by the wireless device a short-range wireless link with the entity comprises establishing the short-range wireless link with the entity”) in response to the phone detecting that it is within a certain proximity to the POS terminal (“responsive to the wireless device satisfying the proximity condition relative to the entity”) and in response to a physiological parameter meeting a specific criterion (“responsive to the wireless device sensing the physiological parameter and determining that the physiological parameter sensed satisfies the criterion”). (See Section IX.A.1.iv.)

4. Claim 9

i) [9.pre] “The wireless device of claim 5,”

**[9.a] “wherein said using unlicensed frequencies comprises using unlicensed frequencies over a short-range link in a Time Division Duplex operation; and”**

The Barnett-Waters-White combination discloses and/or suggests these limitations. (EX1002, ¶144.) A POSITA would have found it obvious to further modify the Barnett-Waters-White system/method in view of Barnett for the same reasons as discussed for limitations [4.pre]-[4.a] so that the short-range wireless link uses Bluetooth communication (which “us[e]s unlicensed frequencies over a short-range link in a Time Division Duplex operation”) instead of NFC when wirelessly transmitting/receiving information to/from the POS terminal. (See Section IX.B.2.i.)

ii) **[9.b] “wherein said selectively sending information to at least one device further 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 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.”**

The Barnett-Waters-White-Smith combination discloses and/or suggests this limitation for at least the same reasons as those for limitation [4.b]. (See Section IX.B.2.ii; EX1002, ¶145.)

5. **Claim 10: “The wireless device of claim 5, wherein said paying for a product further comprises wirelessly receiving information from at least one device using unlicensed frequencies.”**

The Barnett-Waters-White-Smith combination discloses and/or suggests these limitations for the same reasons as discussed for claim 3. (EX1002, ¶146; *see* Section IX.B.1.)

6. **Claim 11**

- i) [11.pre] **“The wireless device of claim 10,”**

**[11.a] “wherein said wirelessly transmitting information to the at least one device using unlicensed frequencies and said wirelessly receiving information from at least one device using unlicensed frequencies comprises using unlicensed frequencies over a short-range link in a Time Division Duplex operation; and”**

The Barnett-Waters-White-Smith combination discloses and/or suggests these limitations for the same reasons as discussed for limitations [4.pre]-[4.a]. (EX1002, ¶147; *see* Section IX.B.2.i.)

- ii) **[11.b] “wherein said selectively and wirelessly transmitting information to the at least one device further comprises selectively and wirelessly transmitting 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 further comprises wirelessly 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.”**

The Barnett-Waters-White-Smith combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [4.b]. (EX1002, ¶148; *see* Section IX.B.1.ii.)

#### **X. DISCRETIONARY DENIAL IS NOT APPROPRIATE**

In view of the Patent Office’s interim process regarding discretionary denial, Petitioner will substantively address this issue during discretionary denial briefing.

#### **XI. CONCLUSION**

Petitioner requests institution of IPR for claims 1-11 of the ’793 patent based on the grounds specified in this petition.

Respectfully submitted,

Dated: August 8, 2025

By: /Naveen Modi/  
Naveen Modi (Reg. No. 46,224)  
Counsel for Petitioner

**CERTIFICATE OF COMPLIANCE**

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that the foregoing  
Petition for *Inter Partes* Review of U.S. Patent No. 12,028,793 contains, as  
measured by the word-processing system used to prepare this paper, 13,937 words.  
This word count does not include the items excluded by 37 C.F.R. § 42.24 as not  
counting towards the word limit.

Respectfully submitted,

Dated: August 8, 2025

By: /Naveen Modi/  
Naveen Modi (Reg. No. 46,224)  
Counsel for Petitioner

**CERTIFICATE OF SERVICE**

I hereby certify that on August 8, 2025, I caused a true and correct copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 12,028,793 and supporting exhibits to be served via express mail on the Patent Owner at the following correspondence address of record as listed on Patent Center:

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