

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

TELCOM VENTURES LLC,
Patent Owner

Patent No. 10,674,432

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,674,432**

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I. INTRODUCTION

Google LLC (“Petitioner”) respectfully requests *inter partes* review of claims 1-17 (“the challenged claims”) of U.S. Patent No. 10,674,432 (“the ’432 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.¹

Related Matters: The ’432 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 ’432 patent is also at issue in *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00974 (PTAB) and *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01235 (PTAB). Petitioner has had no involvement in any way with these earlier IPRs.

The ’432 patent originates from U.S. Patent Application No. 16/251,834, filed on January 18, 2019, which is a continuation of application No. 15/800,885, filed on

¹ 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.

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 (“the ’411 patent”). (EX1001, Cover.)

The ’199, ’708, and ’411 patents, as well as related U.S. Patent Nos. 11,770,756 (“the ’756 patent”), 11,924,743 (“the ’743 patent”), 11,937,172 (“the ’172 patent”), and 12,028,793 (“the ’793 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, ’172, ’793, ’708, ’756, and ’199 patents in *Google LLC v. Telcom Ventures LLC*, IPR2025-01349 (PTAB); *Google LLC v. Telcom Ventures LLC*, IPR2025-01389 (PTAB); *Google LLC v. Telcom Ventures LLC*, IPR2025-01401 (PTAB); *Google LLC v. Telcom Ventures LLC*, IPR2025-01408 (PTAB); *Google LLC v. Telcom Ventures LLC*, IPR2025-01409 (PTAB); and *Google LLC v. Telcom Ventures LLC*, IPR2025-01419 (PTAB).

Additionally, the ’411, ’743, ’756, ’199, ’708, ’172, and ’793 patents are at issue in *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00973 (PTAB); *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*, IPR2025-00975 (PTAB); *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00957 (PTAB); *Samsung Electronics America, Inc. v. Telcom Ventures LLC*, IPR2025-00978 (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*, IPR2025-01236 (PTAB); *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01237 (PTAB); *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01238 (PTAB); and *Apple Inc. v. Telcom Ventures LLC*, IPR2025-01239 (PTAB). Petitioner has had no involvement 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 '432 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 1-17 of the '432 patent and cancellation of these claims as unpatentable. The challenged claims should be found unpatentable on the following grounds:

Ground 1: Claims 1-7 and 9-16 are unpatentable under pre-AIA 35 U.S.C. § 103 as being obvious in view of U.S. Patent Application Publication No. 2009/0170483 A1 to Barnett et al. ("Barnett") (EX1005), International Patent Publication No. WO 2006/087503 A1 to Waters et al. ("Waters") (EX1006), and U.S. Patent No. 7,434,723 to White et al. ("White") (EX1007).

Ground 2: Claims 8 and 17 are unpatentable under pre-AIA 35 U.S.C. § 103 as being obvious in view of Barnett, Waters, White, and International Patent Publication No. WO 02/09005 A1 to Smith et al. ("Smith") (EX1018).

The earliest possible priority date of the '432 patent is November 4, 2008.² 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 (EX1006, Cover), 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 (EX1007, Cover), 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 (EX1018, Cover), 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 '432 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.

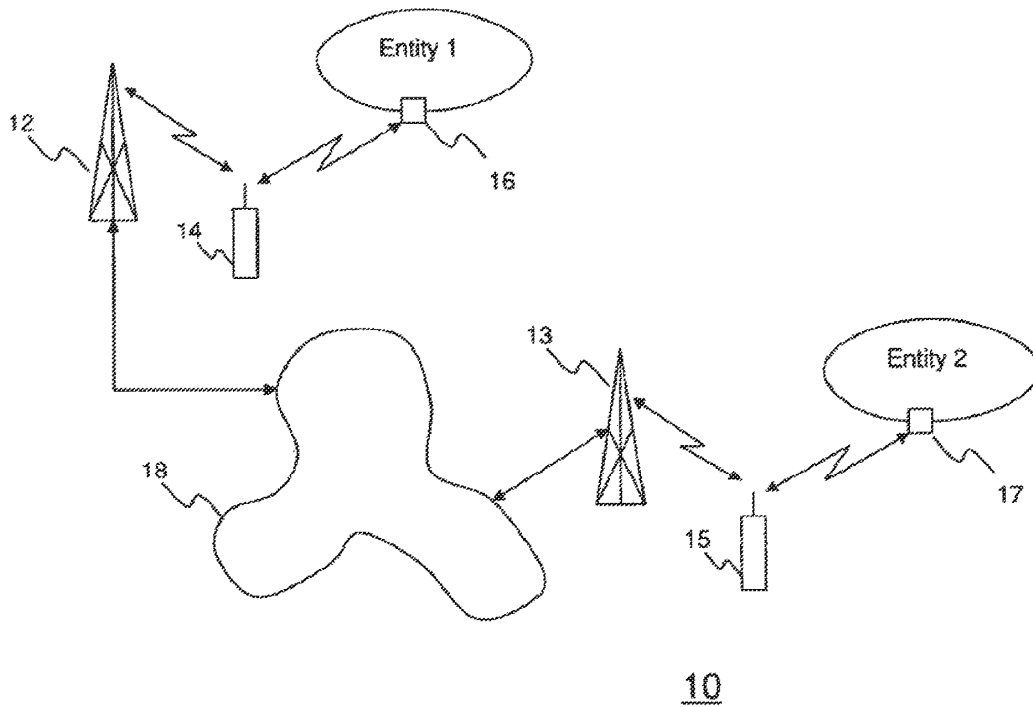
² Petitioner does not concede that the '432 patent is entitled to a November 4, 2008, priority date.

(EX1002, ¶¶20-21.)³ More education can supplement practical experience and vice versa. (*Id.*)

VII. OVERVIEW OF THE '432 PATENT

The '432 patent describes, with reference to Figure 1 below, a system in which “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.*, 3:47-55; EX1002, ¶¶22-24.) “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.) The claims of the '432 patent focus on one embodiment in which “[t]he function enabled...[is] a financial transaction.” (*Id.*, 9:18-19; *see also id.*, claims 1-17.)

³ Petitioner submits the declaration of Dr. Sandeep Chatterjee (EX1002), an expert in the field of the '432 patent. (EX1002, ¶¶1-19; EX1003.)



(*Id.*, FIG. 1.)

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 '432 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, ¶49.)⁴

IX. DETAILED EXPLANATION OF GROUNDS

As detailed below, each of the challenged claims are unpatentable. (EX1002, ¶¶50-145; *see also id.*, ¶¶25-48.)

A. Ground 1: Barnett, Waters, and White Render Obvious Claims 1-7 and 9-16

1. Claim 1

- i) [1.pre] “A method of operating a smartphone in performing a plurality of financial transactions, the method comprising:”**

To the extent the preamble is limiting, Barnett discloses the limitations therein. (EX1002, ¶¶51-59.)

Barnett discloses a “system and method of communicating shopping information between a consumer and a retailer,” including a “system for enabling a

⁴ Petitioner reserves all rights to raise claim construction and other arguments in other venues.

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].) “[A] consumer may utilize...a portable communications device 14, such as a mobile phone” (“smartphone”) (*id.*, ¶[0011]), which 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]). The mobile phone 14 not only operates as a cellular phone using a cellular network (*id.*, ¶¶[0005], [0012], [0027]), but also “combines the functions of a Wi-Fi device, a contact-less credit card, and a cell phone” (*id.*, ¶[0012]), and thus operates as a “smartphone” because it has advanced features beyond the standard calling and texting features of a cellular phone. (EX1002, ¶52.)

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” (red below) “proximate to the product identifier 34” (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 product and the price of the product, as well as technical information about the product, such as the specifications” (*id.*, ¶[0023]).

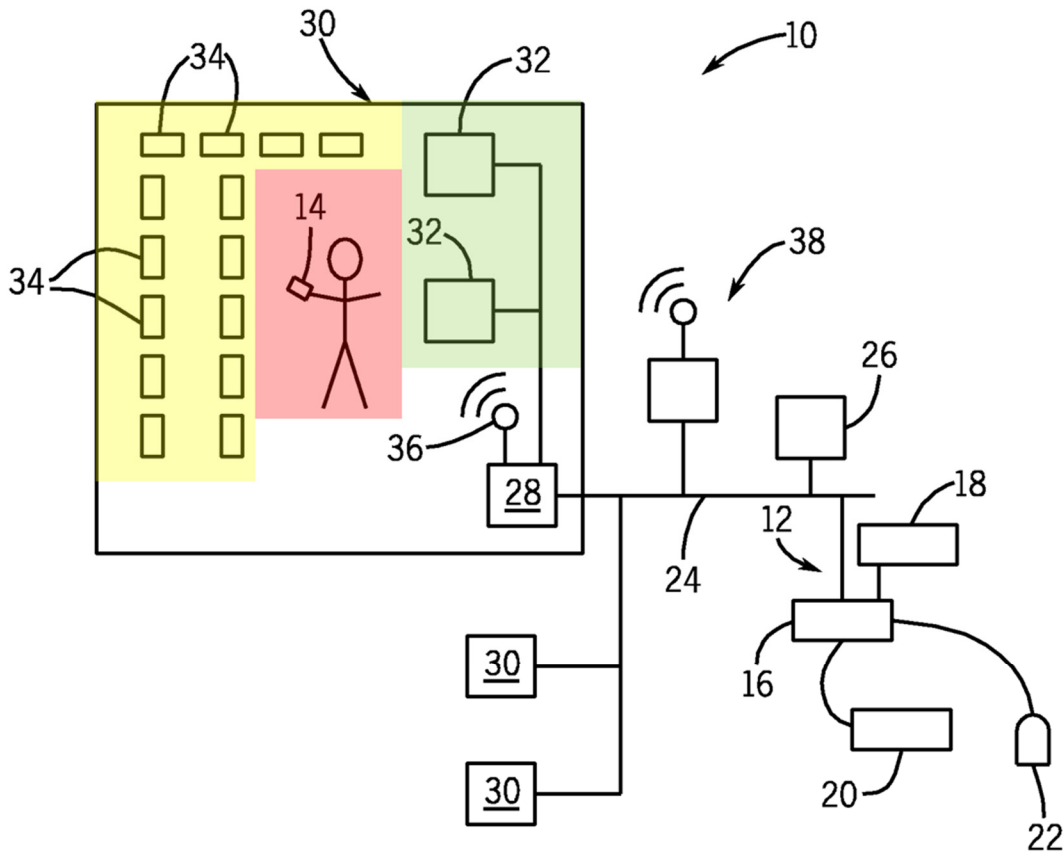


FIG. 1

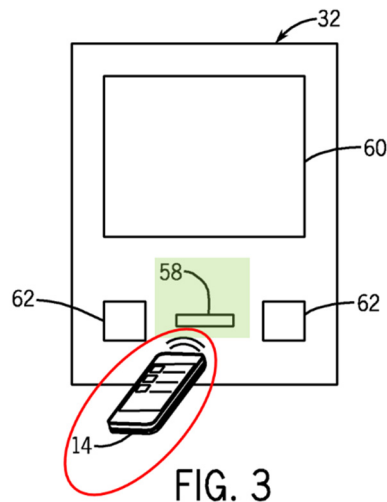
(*Id.*, FIG. 1 (annotated); EX1002, ¶[53].)

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” (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, ¶54.)

Barnett explains that the NFC displays 32 have multiple purposes. (EX1002, ¶55.) First, 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 phone so that the consumer can obtain additional information from the retailer via the Internet. (*Id.*, ¶¶[0015], [0016], [0026], [0035], [0041].)

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, ¶56.) Transmission of data between the consumer’s phone (red above) and the NFC display 32 via NFC interface 58 (green above) may occur when devices are within “a short distance, such as a decimeter.” (EX1005, ¶[0013].) The NFC-enabled mobile phone must be brought within a short distance of the NFC-enabled display 32’s NFC interface in order for the phone to enable transmission of data between the phone and NFC display 32 to allow the phone to complete a purchase/transaction at the display. (EX1002, ¶57.)

Barnett discloses operating the phone to perform a plurality of financial transactions because “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.*) “[O]nce 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, ¶58.)

For all of these reasons, and additionally for the reasons discussed below with respect to limitations [1.a]-[1.f], Barnett discloses “[a] method of operating a smartphone in performing a plurality of financial transactions.” (EX1002, ¶59.)

- ii) **[1.a] “responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization;”**

Barnett in view of Waters and White discloses and/or suggests this limitation. (EX1002, ¶¶60-86.) A POSITA would have been motivated and found it obvious to implement such features in the Barnett system/method in view of Waters and White. (EX1002, ¶60.) In particular, as discussed below in Section IX.A.1.ii.(1), a POSITA would have been motivated and found it obvious to modify the Barnett

system/method in view of Waters such that the combined system determines that “at least one physiological parameter having been sensed by at least one sensor of the smartphone.” (*Id.*) And as discussed below in Section IX.A.1.ii.(2), a POSITA would have been motivated and found it obvious to further modify the Barnett-Waters system/method in view of White such that the combined system performs the following bolded/italicized features: “***responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization.***” (*Id.*)

(1) Barnett-Waters Combination

First, a POSITA would have been motivated to modify the Barnett system/method in view of Waters such that it determines that “at least one physiological parameter having been sensed by at least one sensor of the smartphone” in order to enable the NFC capabilities in the user’s phone. (EX1002, ¶¶61-70.)

Like Barnett, Waters discloses a system/method of performing a financial transaction using an NFC-enabled mobile device. (*Id.*, ¶62.) 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). The near field tag of Waters’ mobile terminal may be used to conduct various transactions, such as paying for

public transport, toll fees, or school lunch. (*Id.*, 1, 11, 11.) 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. (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, ¶62.)

Waters additionally discloses that “the mobile telecommunication device is operable to selectively enable the near field communication device.” (EX1006, 4.) “The 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, various types of sensors 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.) Waters provides this functionality to enhance the device’s security features for conducting financial transactions. (EX1002, ¶63; 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, ¶64.)

“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, “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, ¶65.)

“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, ¶66.)

Accordingly, Waters discloses “at least one physiological parameter having been sensed” (e.g., a fingerprint/pressure combination, a skin resistance/pressure combination, or heat) “by at least one sensor of the smartphone” (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) and only enabling the near field tag while a value of the 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 from the user’s hand is actively being applied). (EX1002, ¶67.)

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.*, ¶68.) 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.) Such a security measure would have been beneficial 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, ¶68.) Barnett explains that these NFC readers are largely unmonitored by retail workers, since Barnett’s invention aims 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, ¶68.) 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 the importance of mobile communication security and would have been motivated to implement security improvements to the phone's NFC technology, e.g., by selectively enabling/disabling the NFC tag to prevent access by an unauthorized reader. (EX1002, ¶69.) 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 by disabling the NFC tag when it is not needed. (*Id.*)

A POSITA would have also had a reasonable expectation of success combining the teachings of Barnett and Waters. (*Id.*, ¶70.) 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 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, ¶70.) *KSR Int’l. Co. Teleflex Inc.*, 550 U.S. 398, 416 (2007).

(2) Barnett-Waters-White Combination

Second, a POSITA would have been motivated to further modify the Barnett-Waters system/method in view of White such that it performs the following bolded/italicized features: “***responsive to at least one physiological parameter***”

having been sensed by at least one sensor of the smartphone, *enabling a mode to communicate by the smartphone information requesting an authorization.*”

(EX1002, ¶¶71-86.)

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.*, ¶72.) 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 (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 (i.e., NFC, which is implemented via a chip/tag in the mobile phone). (Sections IX.A.1.i, IX.A.1.ii.(1); EX1002, ¶72.) A POSITA would have therefore been motivated to consider the teachings of White when implementing the Barnett-Waters system/method. (EX1002, ¶72.)

White additionally discloses that its system/method may be used for “mobile payment approval.” (EX1007, 1:23-25.) White’s “system 100 for subscriber payment approval” is shown in Figure 1 below and “includes a point-of-sale (POS) device 102” (green below), “a network 110, a first communication device 120” (red below), “a second communication device 130” (blue below), “and a proxy subscriber approval server 140.” (*Id.*, 3:46-50.) Like the first communication device (red below), the second communication device (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). For example, “the first communication device 120 and the second communication device 130 may

communicate through voice-based telephony, video conferencing, internet protocol, multimedia messaging service (MMS), short messaging service (SMS), email, instant text messaging, and/or other means of communication.” (*Id.*, 4:20-25.)

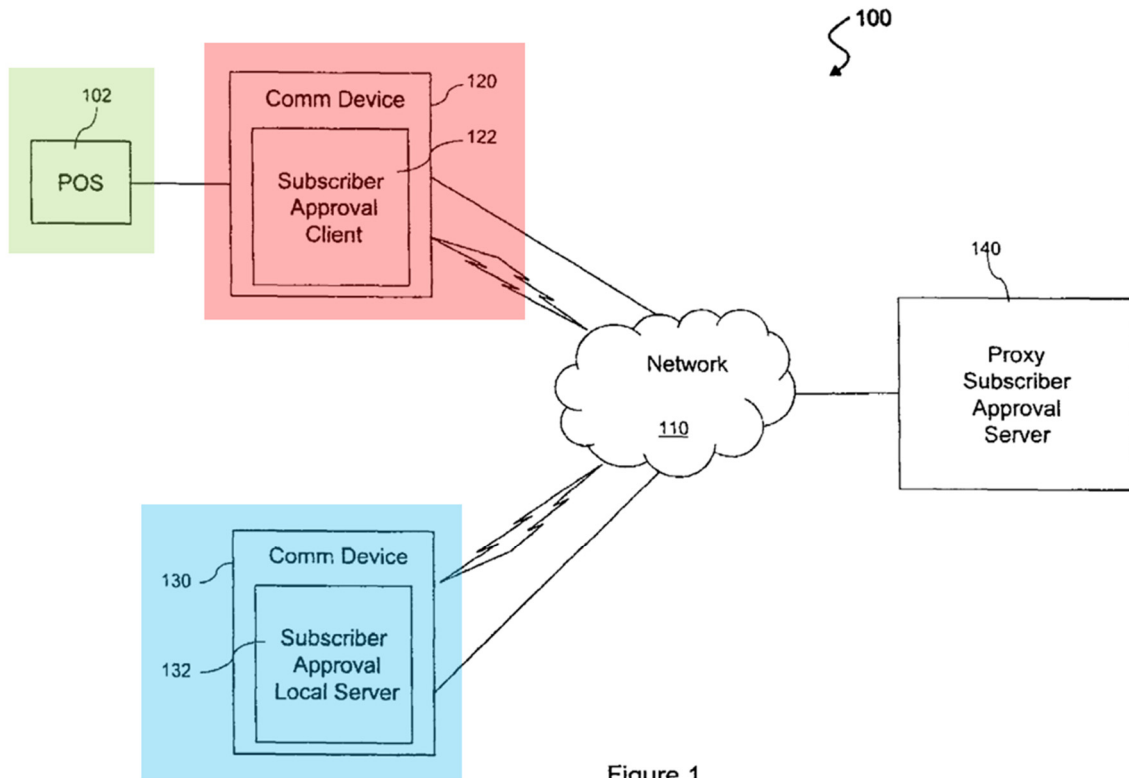


Figure 1

(*Id.*, FIG. 1 (annotated); EX1002, ¶73.)

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 initiates a subscriber payment approval process by transmitting 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, ¶74.)

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., 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.) 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, ¶76.)

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 response upon authorization, thereby completing the payment approval process. (*Id.*, 3:31-39, 3:56-58, 7:40-44; EX1002, ¶77.)

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" which "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, 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, ¶78.)

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, ¶79.) For example, a credit/debit card owner may be required to remotely authorize (e.g., from a second, remotely located device) transactions performed by an authorized user of the 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.) Thus, the second communication device that is sent a subscriber approval request by the first communication device may be selectively 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). (EX1002, ¶79.)

Accordingly, White discloses that the consumer's phone (first communication device) has a "mode to communicate by the smartphone information requesting an authorization" to conduct a financial transaction, where the communication mode involves the consumer's phone sending a subscriber approval request ("information 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). (*Id.*, ¶80.)

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 enable the authorization communication mode and send an authorization request to a second communications device in response to the presentation of the consumer's device in proximity to an NFC-enabled payment terminal. (EX1002, ¶81.) 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];

EX1010, FIG. 1, ¶[0016]; EX1011, FIG. 2, Abstract, ¶¶[0011]-[0012]; EX1012, ¶¶[0027], [0050]-[0059]; EX1013, Abstract, ¶¶[0174]-[0200].) 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, ¶81.)

White's authorization method is beneficial because unlike other prior art authorization methods, an owner of a card/payment method may remotely approve transactions on a more flexible and frequent basis with real-time control. (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, ¶82.) White's authorization method would have 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, ¶83.) 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].) A POSITA would have understood that White's authorization method would have been easily implemented

in the Barnett-Waters system/method because Barnett and White use similar technologies. (EX1002, ¶83.) For example, White discloses that the first mobile device may communicate with a second mobile device via wireless network communication such as Internet, voice-based telephony, SMS/MMS, etc. (EX1007, 4:3-25), and Barnett similarly discloses that the consumer's phone can communicate over a cellular network or Wi-Fi system (EX1005, ¶¶[0005], [0012], [0016], [0026], [0027], [0035]). Thus, it would have been straightforward to modify the Barnett-Waters system/method to include a feature similar to that disclosed by White, in which the first mobile device communicates (e.g., via cellular or Wi-Fi network) with a remote second mobile device in response to the first device being presented in proximity to an NFC-enabled display/payment terminal. (EX1002, ¶83.)

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 cellular/Wi-Fi from the mobile device to a second communication device responsible for approving the transaction. (EX1002, ¶84.) *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, ¶85.) For example, if the 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 senses at least one physiological parameter (e.g., a fingerprint/pressure combination, a skin resistance/pressure combination, or heat) (“at least one physiological parameter having been sensed”) using a phone sensor (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) (“by at least one sensor of the smartphone”) and the phone detects that a value of the 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). (*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.*)

Consistent with White's disclosure, the POS terminal would return purchase information (e.g., price) to the consumer's device if the physiological parameter is sensed ("responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone") and the value of the parameter meets a specific criterion, and if the consumer's 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 also* Sections IX.A.1.i-ii, IX.A.1.v.(1) (further discussing the proximity condition)). (EX1002, ¶86.) This would trigger the consumer's device to begin an authorization/approval process by sending a subscriber approval request to a specific approver's device (e.g., the owner of the specific card for which the consumer is an authorized user), ("enabling a mode to communicate by the smartphone information requesting an authorization"). (EX1002, ¶86.) Upon approval, the consumer's phone may transmit 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.*)

- iii) **[1.b] “while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶¶87-91.) As discussed for limitation [1.a], in the Barnett-Waters-White system/method, while communication between a consumer’s mobile device (“smartphone”) and an approver’s device (e.g., card owner’s device) (“first device”) is enabled (“while the mode is enabled”), a consumer’s device requests authorization for a transaction by sending a subscriber approval request to the approver’s device (“transmitting by the smartphone first data to a first device”), upon which a subscriber approval response is returned if the transaction is authorized. (Section IX.A.1.ii.) The subscriber approval request seeks approval for, and thus is related to, a certain financial transaction (“the first data relating to a...financial transaction[] to be conducted”). (*Id.*)

While White does not explicitly disclose that its subscriber approval request relates to multiple transactions (“the first data *relating to a plurality of financial transactions* to be conducted”), a POSITA would have been motivated and found it

obvious to implement the combined system in view of Barnett and White such that a single authorization (requested via subscriber approval request and received via subscriber approval response) is valid for multiple transactions. (EX1002, ¶88.)

Barnett discloses that once payment information is “initially programmed into the mobile phone 14, the configuration of the mobile phone 14...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.” (EX1005, ¶[0032].) Barnett explains that an initial configuration is advantageous because “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.*) Allowing an approver to authorize a user to perform multiple transactions with just one authorization (e.g., multiple transactions in various stores within a certain geographical area, time period, credit/fund limit, etc.) would have been beneficial because it would have improved user experience and efficiency by reducing the time and complexity to make a purchase after the first authorization is received. (EX1002, ¶89.)

A POSITA would have also been motivated in view of White to allow an approver to authorize multiple transactions at once. (*Id.*, ¶90.) White discloses that the subscriber approval request can be approved (e.g., by returning a subscriber approval response) based on various rules. (EX1007, 4:38-42, 5:52-6:64.) These

rules may be “resident in the second communication device and/or the first communication device” (*id.*, 3:33-35), and “determine approval of transactions with a point-of-sale on behalf of the first communication device” (*id.*, 3:29-31). The rules can be “based upon a description of a product and/or service, unit value, total cost of pending purchase, and/or other information.” (*Id.*, 5:35-38.) In another example, “a parent having the second communication device 130 may establish one or more rules for limiting the available funds of a child having the first communication device 120.” (*Id.*, 6:10-64.) Because White distinguishes between the “total cost of pending purchase” and “the available funds of a child,” a POSITA would have understood “the available funds” to refer to a total sum of funds available, which may be greater than the cost of a single pending purchase and could potentially be allocated for use over multiple future transactions (e.g., allotting a child \$10 in available funds for use over multiple smaller transactions). (EX1002, ¶90.) Thus, White suggests that a rule for limiting available funds may be applicable to multiple future transactions. (*Id.*) Implementing these rules such that one authorization is valid for a certain amount of available funds (potentially relating to multiple transactions until the total authorized funds are spent) would have improved efficiency (e.g., fewer transmissions) and user experience (e.g., reducing the number of requests/approvals, thus simplifying the transaction approval process for both parties), while still offering the security benefits of White’s authorization procedure,

since the extent of future transactions (e.g., the amount of money that could be spent) would be limited upfront. (*Id.*) Such an implementation would have been consistent with White's goals because White discusses various procedures for allowing parental spending control without requiring the parent to approve each and every transaction (e.g., by implementing fall-back procedures if parental approval is attempted but cannot be obtained, or in alternate scenarios, by allowing for immediate approval based on certain rules). (*Id.*; EX1007, 6:25-39.)

A POSITA would have also had a reasonable expectation of success in implementing the Barnett-Waters-White system/method in this manner. (EX1002, ¶91.) Barnett suggests that its system/method is flexible and modifications to the NFC-enabled mobile phone are contemplated. (EX1005, ¶[0044].) And as discussed above, White discloses that its authorization methods are flexible enough to be modified to accommodate different rules, approval scenarios, fall-back procedures, etc. (EX1002, ¶91.) 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, White)) according to known methods (e.g., known mechanisms for configuring payment in advance (Barnett) and 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 such that, while communication between a consumer's device and an approver's device is enabled ("while the mode is enabled"), a consumer's device requests authorization for multiple financial transactions (e.g., corresponding to an amount of available funds) by sending a subscriber approval request to the approver's device ("transmitting by the smartphone first data to a first device"), where the subscriber approval request seeks approval for, and thus is related to, the multiple financial transactions ("the first data relating to a plurality of financial transactions to be conducted"), and where the authorization for the multiple transactions is returned via the subscriber approval response. (*Id.*) *KSR*, 550 U.S. at 416.

- iv) **[1.c] “receiving by the smartphone second data from the first device responsive to said transmitting by the smartphone the first data, the second data relating to the plurality of financial transactions to be conducted and differing from the first data;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶¶92-93.) As discussed for limitation [1.a], in the Barnett-Waters-White system/method, the approving device ("first device") may authorize the transaction by returning a subscriber approval response to the consumer's device ("receiving by the smartphone second data from the first device") in response to receiving the subscriber approval request from the consumer's device ("responsive to said transmitting by the smartphone the first data"). (Section IX.A.1.ii.) As

discussed for limitation [1.b], in the Barnett-Waters-White combination, the consumer's device receives the subscriber approval response ("second data") from the approving device which provides authorization for multiple future transactions ("the second data relating to the plurality of financial transactions to be conducted") based on certain authorization rules. (EX1002, ¶92; Section IX.A.1.iii.)

As further discussed for limitation [1.b], in the Barnett-Waters-White combination, both the subscriber approval request ("first data") seeks approval for, and thus is related to, the multiple transactions. (Section IX.A.1.iii.) The subscriber approval response ("second data") authorizing the multiple transactions thus also relates to the multiple transactions ("relating to the plurality of financial transactions") for the same reasons. (EX1002, ¶93.) The subscriber approval request transmitted by the consumer's device is different from the subscriber approval response transmitted by the approver's device ("the second data ...differing from the first data") because the transmissions themselves are different. (EX1007, 1:41-48, 4:48-55, 6:40-64.)

v) **[1.d] "performing a first transaction of the plurality of financial transactions by:"**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶94.) As discussed for limitations [1.a], in the Barnett-Waters-White combination, if the transaction is approved, the consumer's device conducts a transaction ("a first transaction"). (Section IX.A.1.ii.) As discussed for limitations

[1.b]-[1.c], in the Barnett-Waters-White combination, the consumer's device can conduct a transaction after being approved for multiple transactions ("a first transaction of the plurality of financial transactions"). (Sections IX.A.1.iii-iv.)

- (1) **[1.d.i] “detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity, wherein the first entity is distinct from the first device;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶95.) As discussed for limitation [1.a], in the Barnett-Waters-White combination, the consumer initiates a transaction by bringing their mobile device within a certain proximity (e.g., a decimeter) of the NFC-enabled POS terminal ("detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity"). (Section IX.A.1.ii.) The NFC-enabled POS terminal ("the first entity") is distinct from the approver's device ("the first entity is distinct from the first device"). (*Id.*)

- (2) **[1.d.ii] “establishing, using a first air interface, a wireless short-range communications link between the smartphone and the first entity, in response to the proximity condition having been satisfied between the smartphone and the first entity;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶¶96-97.) As discussed for limitation [1.a], in the Barnett-Waters-White system/method, conducting a transaction requires that the consumer's

NFC-enabled mobile phone communicate using NFC (“first air interface”) to establish an NFC link with the NFC-enabled POS terminal (“establishing, using a first air interface, a wireless short-range communications link between the smartphone and the first entity”) maintained by a retailer in a store. (Section IX.A.1.ii.) Barnett explains that the “NFC-enabled display 32 has an NFC interface 58 that is adapted to transmit data between the mobile phone 14 and the display 32.” (EX1005, ¶[0038]; *see also id.*, ¶¶[0013], [0037]; *see also* EX1006, 8-9 (disclosing establishing communications based on “Near Field Communication Interface and Protocol (NFCIP-I)”)).

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) (“in response to the proximity condition having been satisfied between the smartphone and the first entity”). (Section IX.A.1.i.) Barnett describes the NFC link as “short-range high frequency wireless communication...which enables the exchange of data between devices over about a short distance, such as a decimeter” (“wireless short-range communications link between the smartphone and the first entity”). (EX1005, ¶[0013].) Barnett explains that “a connection through a NFC link indicates that the two devices are in close physical proximity to each other.” (*Id.*, ¶[0025], *see also id.*, ¶¶[0031], [0032]; EX1002, ¶97.)

(3) [1.d.iii] “receiving, using the first air interface, a short-range signal from the first entity; and”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶98.) A POSITA would have understood that in the payment context, where the mobile phone sends information via NFC to the NFC-enabled POS terminal, the phone would establish NFC communication (e.g., to send payment information) in response to receiving, via NFC interface, a short-range RF signal from the NFC-enabled POS terminal (“receiving, using the first air interface, a short-range signal from the first entity”). (See, e.g., EX1005, ¶[0014]; EX1006, 9; Section IX.A.1.ii; EX1002, ¶98.)

(4) [1.d.iv] “responsive to receiving the short-range signal from the first entity, sending by the smartphone to the first entity over the first air interface, information associated with the second data received from the first device; and”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶¶99-100.) As discussed for limitation [1.d.iii], for the consumer’s to provide payment information, the consumer’s device establishes communications with the NFC-enabled POS terminal in response to receiving a short-range RF signal from the NFC-enabled POS terminal (“responsive to receiving the short-range signal from the first entity”). (Section IX.A.1.v.(3).) As discussed further for limitation [1.a], in the Barnett-Waters-White system/method, the consumer’s phone transmits payment information (e.g., credit/debit card or

electronic purse information) to the NFC-enabled POS terminal to complete the transaction (“sending by the smartphone to the first entity over the first air interface information”). (Section IX.A.1.ii; *see also* EX1005, ¶[0032]; EX1007, 3:26-31, 4:55-58.)

A POSITA would have understood that the payment information sent from the consumer’s phone to the POS terminal is associated with the subscriber approval response received from the approver’s device (“information associated with the second data received from the first device”). (EX1002, ¶100.) White discloses that the POS terminal initially provides the consumer’s device with purchase information relating to the transaction. (EX1007, 1:39-41, 4:43-48, 7:16-24.) The consumer’s device then sends the approver’s device a subscriber approval request that includes purchase information. (*Id.*, 1:41-44, 4:48-52, 7:16-24.) The consumer’s device receives a subscriber approval response (“second data”) and completes the purchase by providing payment information (“information”) to the POS terminal based on the approval (“associated with the second data received from the first device”). (*Id.*, 1:45-48, 4:52-57, 7:25-45.) Indeed, payment information provided based on the approval response is associated with the approval response (“associated with the second data received from the first device”) because the payment information is only sent if the transaction is authorized (i.e., if the approval response is transmitted to the consumer’s phone). (EX1002, ¶100.)

- vi) [1.e] **“independent of performing said first transaction, receiving by the smartphone a communications service from a wireless network, using a second air interface that differs from the first air interface,”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶¶101-102.) As discussed for limitations [1.pre]-[1.a], in the Barnett-Waters-White combination, the consumer’s phone can perform a transaction via NFC (“first air interface”), and as discussed for limitation [1.pre], the consumer’s phone can separately (“independent of performing said first transaction”) receive wireless communications/Internet services from a store Wi-Fi network (“receiving by the smartphone a communications service from a wireless network”) by using a Wi-Fi interface (“using a second air interface that differs from the first air interface”). (Sections IX.A.1.i-ii; *see also* EX1005, ¶¶[0015], [0016], [0041].)

The Wi-Fi communications service is received independently of a transaction (“independent of performing said first transaction”) because the ability for a consumer phone to use the Wi-Fi network does not depend on whether a transaction has taken place. (EX1002, ¶102.) As described for limitation [1.pre], Barnett’s NFC-enabled display 32 can be used for multiple purposes, including providing assistance with initial Wi-Fi configuration, as well as serving as a check-out counter for completing a transaction. (Section IX.A.1.i.) A POSITA would have nevertheless understood that the phone’s Wi-Fi connection is independent from any

transaction because the NFC-enabled display 32 is used only to provide configuration information for one of several automatically and independently detected Wi-Fi networks in a store, and this configuration is not only separate from a transaction but is only required the first time a user visits the store. (EX1005, ¶[0035]; EX1002, ¶102.) Moreover, Barnett explains that a consumer's phone can use the Wi-Fi network to perform tasks entirely separate from a transaction, including retrieving information about products (e.g., based on the NFC-enabled product identifier tag 34), accessing store or other websites, or for general entertainment purposes. (EX1005, ¶¶[0026], [0036].)

- vii) [1.f] “wherein said transmitting by the smartphone first data and said receiving by the smartphone second data are performed over an air interface⁵ that differs from the first air interface.”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶103.) As discussed for limitation [1.a], in the Barnett-Waters-White system/method, a consumer’s device sends a subscriber approval request to the approver’s device (e.g., card owner’s device) (“said transmitting by the smartphone first data”) and receives approval via a subscriber approval response (“said receiving by the smartphone second data”) by transmitting and receiving information over an Internet network, which can be over Wi-Fi (e.g., in the store) or

⁵ Petitioner assumes that “an air interface that differs from the first air interface” is the same “air interface” as the “second interface that differs from the first air interface” recited in limitation [1.e], because without this assumption, it is unclear which “air interface” is being referred to in limitation [7.c], which recites “the air interface that differs from the first air interface.” (*See infra* Section IX.A.7.iii.) This assumption is also consistent with the ’432 patent specification, which only describes two possible air interfaces. (EX1001, 6:51-7:46.) However, to the extent this limitation requires some third “air interface,” Petitioner shows how this limitation is met by both a second (Wi-Fi) and third (cellular) air interface.

cellular interfaces (“performed over an air interface that differs from the first air interface”). (EX1005, ¶¶[0005], [0012], [0015], [0016], [0027], [0030], [0041]; EX1007, 3:46-54, 4:3-42; *see also* Section IX.A.1.ii, vi.)

2. **Claim 2: “The method of claim 1, wherein establishing the wireless short-range communications link between the smartphone and the first entity is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone.”**

The Barnett-Waters-White combination discloses and/or suggests these limitations. (EX1002, ¶104.) As discussed for limitations [1.a] and [1.d.ii], in the Barnett-Waters-White system/method, the NFC link between the mobile device and the NFC-enabled POS terminal is established (“establishing the wireless short-range communications link between the smartphone and the first entity”) if two conditions for activation/transmission are satisfied: if a physiological parameter (e.g., a fingerprint/pressure combination, skin resistance/pressure combination, or heat) is sensed by a phone’s sensor (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, heat sensor) (“responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone”) and the value of the parameter 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 from the user’s hand is actively being applied), and if the consumer’s device is in close

enough proximity to the NFC-enabled POS terminal. (Sections IX.A.1.ii, IX.A.1.v.(2).)

3. **Claim 3: “The method of claim 1, wherein sending by the smartphone to the first entity, information associated with the second data, is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone.”**

The Barnett-Waters-White combination discloses and/or suggests these limitations. (EX1002, ¶105.) As discussed for limitations [1.a] and [1.d.iv], in the Barnett-Waters-White system/method, the mobile device transmits payment information to the POS terminal (“sending by the smartphone to the first entity”) and the payment information is associated with the approval received by the consumer’s phone (“information associated with the second data”). (Sections IX.A.1.ii, IX.A.1.v.(4).) As discussed for limitation [1.a], the mobile device transmits the payment information to conduct the transaction if several conditions are satisfied: if a physiological parameter (e.g., a fingerprint/pressure combination, skin resistance/pressure combination, or heat) is sensed by a phone’s sensor (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) (“responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone”) and the value of the parameter 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 from the user's hand is actively being applied); if the consumer's device is in close enough proximity to the NFC-enabled POS terminal; and if an approval ("second data") from the approving device ("first entity") is sent to the consumer's phone, thereby authorizing the transaction. (Section IX.A.1.ii.)

4. **Claim 4: "The method of claim 1, wherein sending by the smartphone to the first entity, information associated with the second data, is performed responsive to a value of at least one parameter associated with the smartphone."**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶106.) As discussed for limitations [1.a] and [1.d.iv], in the Barnett-Waters-White system/method, the mobile device transmits payment information to the POS terminal ("sending by the smartphone to the first entity") and the information is associated with the approval received by the consumer's phone ("information associated with the second data"). (Sections IX.A.1.ii, IX.A.1.v.(4).) As discussed for limitation [1.a], the mobile device transmits payment information to conduct the transaction if several conditions are satisfied: if a physiological parameter (e.g., a fingerprint/pressure combination, skin resistance/pressure combination, or heat) is sensed by one of the sensors (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) and a value of the parameter 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 from the user's hand is actively being applied) ("responsive to a value of at least one parameter associated with the smartphone"); if the consumer's device is in close enough proximity (e.g., within a decimeter) to the NFC-enabled POS terminal ("responsive to a value of at least one parameter associated with the smartphone"); and if an approval from the approving device is sent to the consumer's phone, thereby authorizing the transaction.. (Sections IX.A.1.ii.) A value of a physiological parameter is "associated with the smartphone" because as discussed for limitation [1.a], the parameter value measures the user's interaction with the smartphone itself (e.g., a fingerprint matches a certain user and the pressure is actively being applied to the phone, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the phone, or heat from the user's hand is actively being applied to the phone). (*Id.*; EX1002, ¶106.) The distance (i.e., proximity) between the phone and POS terminal is a value of a distance parameter and also "associated with the smartphone" because the distance between the phone and POS terminal depends on and is therefore associated with the position of the smartphone itself. (EX1002, ¶106.)

5. Claim 5

i) [5.pre] “The method of claim 1, wherein the method further comprises:”

[5.a] “performing a second transaction of the plurality of financial transactions by”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶107.) As discussed for limitation [1.b], in the Barnett-Waters-White combination, the mobile device can conduct multiple transactions, such as at different stores for using up available funds (“performing a second transaction of the plurality of financial transactions”). (Section IX.A.1.ii.) A POSITA would have understood that after the consumer’s device conducted a first transaction, the consumer’s device could attempt to conduct a second transaction. (EX1002, ¶107.) As discussed for limitation [1.b], rules for approving transactions can be stored on the consumer’s device and may allow for immediate approval of a transaction. (Section IX.A.1.ii.) Thus, in the Barnett-Waters-White combination, rules stored on the consumer’s device could be used to automatically approve transactions if funds remained available (based on the initial authorization for the first transaction) to conduct a second transaction. (EX1002, ¶107.)

- (1) **[5.a.i] “detecting by the smartphone that a proximity condition is satisfied between the smartphone and a second entity, wherein the second entity is distinct from the first entity and is further distinct from the first device;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶108.) As discussed for limitation [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 (“detecting by the smartphone that a proximity condition is satisfied between the smartphone and a second entity”). (Section IX.A.1.v.) As the consumer can use their mobile device to conduct transactions at different stores, the NFC-enabled POS terminal at one store is distinct from the terminal at another store (“the second entity is distinct from the first entity”) and from the approver’s device (“the second entity...is further distinct from the first device”). (*Id.*; EX1002, ¶108.)

- (2) **[5.a.ii] “establishing, using the first air interface, a wireless short-range communications link between the smartphone and the second entity, in response to the proximity condition having been satisfied between the smartphone and the second entity;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶109.) As discussed for limitation [1.d.ii], in the Barnett-Waters-White combination, performing a transaction involves establishing, using the NFC interface, an NFC link between the mobile phone and an NFC-enabled POS

terminal (“establishing, using the first air interface, a wireless short-range communications link between the smartphone and the second entity”) in response to the phone being brought within a certain proximity (e.g., a decimeter) of the POS terminal (“in response to the proximity condition having been satisfied between the smartphone and the second entity”). (Section IX.A.1.v.(2).) A POSITA would have understood that this establishment of a link occurs in the same way for some second POS terminal (“second entity”) as it does for the first POS terminal (“first entity”) in limitation [1.d.ii]. (EX1002, ¶109.)

(3) [5.a.iii] “receiving, using the first air interface, a short-range signal from the second entity; and”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶110.) As discussed for limitation [1.d.iii], in the Barnett-Waters-White combination, the NFC-enabled mobile phone would receive, using the NFC interface, an NFC signal from the NFC-enabled POS terminal (“receiving, using the first air interface, a short-range signal from the second entity”) before payment information can be provided. (Section IX.A.1.v.(3).) A POSITA would have understood that some second POS terminal (“second entity”) sends the NFC signal in the same way the first POS terminal (“first entity”) sends the signal in limitation [1.d.iii]. (EX1002, ¶110.)

- (4) **[5.a.iv] “responsive to receiving the short-range signal from the second entity, sending by the smartphone to the second entity over the first air interface, information associated with the second data received from the first device.”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶111.) As discussed for limitation [1.d.iv], in the Barnett-Waters-White combination, after receiving the RF signal from the NFC-enabled POS terminal (“responsive to receiving the short-range signal from the second entity”), the mobile device would transmit payment information to the POS terminal via NFC interface (“sending by the smartphone to the second entity over the first air interface”), where the payment information would be associated with the subscriber approval response received from the approver’s device (“information associated with the second data received from the first device”) by the consumer’s phone. (Section IX.A.1.v.(4).) A POSITA would have understood that the phone would receive a RF signal from some second POS terminal (“second entity”) in the same way as it receives a RF signal from the first POS terminal (“first entity”) in limitation [1.d.iv]. (EX1002, ¶111.)

6. Claim 6

i) [6.pre] “The method of claim 1,”

[6.a] “wherein said transmitting by the smartphone first data to a first device includes transmitting by the smartphone data relating to a request to pay for a transaction; and”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶112.) As discussed for limitation [1.a], in the Barnett-Waters-White system/method, a consumer’s device sends a subscriber approval request to the approver’s device (“transmitting by the smartphone first data to a first device”) that includes purchasing information to request approval of the purchase (“transmitting by the smartphone data relating to a request to pay for a transaction”). (Section IX.A.1.ii.)

ii) [6.b] “wherein said receiving by the smartphone second data from the first device includes receiving by the smartphone data relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a transaction.”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶113.) As discussed for limitation [1.a], the approving device (“first device”) may authorize the transaction by returning a subscriber approval response (“second data”) to the consumer’s device (“wherein said receiving by the smartphone second data from the first device”). (Section IX.A.1.ii.) As discussed, this approval response provides the consumer’s phone with the authorization which

allows/enables the phone to pay for a transaction (“receiving by the smartphone data relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a transaction”).⁶ (*Id.*) The receipt of the subscriber approval response also serves as an acknowledgment to the subscriber approval request. (EX1002, ¶113.) Thus, receipt of the subscriber approval response by the mobile device in the Barnett-Waters-White system includes receiving data “relating to an acknowledgement and/or authorization” to enable the capability to pay for a transaction. (*Id.*)

7. Claim 7

i) [7.pre] “The method of claim 1, comprising:”

[7.a] “transmitting by the smartphone third data to a second device; the second device being distinct from the first device and further being distinct from the first entity; and”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶114.) As discussed for limitation [1.a], in the Barnett-Waters-

⁶ The capability to pay for a transaction is a “function” to pay for a transaction, consistent with the “functions” described in the ’432 patent, which describes “functions” broadly as encompassing an “ever-increasing suite” of features/tasks, including payment functions. (EX1001, 1:32-36, 4:34-6:10, 8:12-62, 9:14-24.)

White system/method, the consumer's mobile device requests authorization for a transaction by sending a subscriber approval request. (Section IX.A.1.ii.) As further discussed for limitation [1.a], White further discloses that "the first communication device 120 may direct an approval request to the proxy subscriber approval server 140" ("transmitting by the smartphone third data to a second device"). (EX1007, 4:59-63; Section IX.A.1.ii.) "The proxy subscriber approval server 140 performs the approval that otherwise the second communication device 130 would provide" ("the second device being distinct from the first device"). (EX1007, 4:63-66; *see also id.*, 4:66-5:53, 6:27-39; Section IX.A.1.ii.) The proxy subscriber approval server 140 is also distinct from the POS terminal ("and further being distinct from the first entity"). (EX1007, 3:46-54, 5:23-29, 5:57-60; EX1002, ¶114.)

- ii) **[7.b] "receiving by the smartphone fourth data from the second device relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a financial transaction,"**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶115.) As discussed for limitation [1.a], in the Barnett-Waters-White system/method, the approving device, which can be another device such as a proxy subscriber approval server ("second device") in lieu of an approver's (e.g., parent's) device, may authorize the transaction by returning a subscriber approval response to the consumer's device ("receiving by the smartphone fourth data from the second device"). (Section IX.A.1.ii.) As discussed, this approval response

provides the consumer's phone with the authorization to enable the capability to pay for a transaction ("relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a financial transaction"). (*Id.*) The receipt of the subscriber approval response also serves as an acknowledgment to the subscriber approval request. (EX1002, ¶115.) Thus, receipt of the subscriber approval response by the mobile device in the Barnett-Waters-White system includes receiving data "relating to an acknowledgement and/or authorization" to enable the capability to pay for a financial transaction, as claimed. (*Id.*)

- iii) [7.c] "**wherein said transmitting by the smartphone third data to a second device and said receiving by the smartphone fourth data from the second device are performed over the air interface⁷ that differs from the first air interface.**"

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶116.) As discussed for limitation [1.a], in the Barnett-Waters-

⁷ As discussed in the footnote for limitation [1.f], Petitioner assumes "the air interface that differs from the first air interface" recited in limitation [7.c] is the same "air interface" as the "second interface that differs from the first air interface" recited in limitation [1.e], rather than some third "air interface," but to the extent this limitation requires some third "air interface," Petitioner shows how this limitation is met by both a second (Wi-Fi) and third (cellular) air interface. (Section IX.A.1.vii.)

White system/method, a consumer's device sends a subscriber approval request to the server device (“wherein said transmitting by the smartphone third data to a second device”) and receives approval via a subscriber approval response (“said receiving by the smartphone fourth data from the second device”) by wirelessly transmitting and receiving information over Wi-Fi (e.g., store's Wi-Fi network) or cellular interfaces that are different from NFC (“performed over the air interface that differs from the first air interface”). (Section IX.A.1.vii.)

8. Claim 9: “The method of claim 1, wherein the second air interface comprises an Orthogonal Frequency Division Multiplexed and/or an Orthogonal Frequency Division Multiple Access (OFDM/OFDMA) technology.”

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶117.) As discussed for limitation [1.e], Barnett discloses that the consumer's device can operate over a Wi-Fi interface (“second air interface”). (Section IX.A.1.vi.) Barnett explains that the consumer's phone is adapted to access the Wi-Fi system in accordance with IEEE 802.11 standards. (EX1005, ¶¶[0005], [0015].) At the time of the alleged invention, the IEEE 802.11 family standards specified that Wi-Fi interfaces used OFDM technology. (EX1019, ¶[0002]; EX1020, ¶[0008]; *see also* EX1021 (IEEE Std 802.11a-1999, part of the IEEE 802.11 family); EX1002, ¶117.) Accordingly, in the Barnett-Waters-White combination, the consumer phone's Wi-Fi interface comprises OFDM technology (“the second air interface comprises an Orthogonal Frequency Division Multiplexed

and/or an Orthogonal Frequency Division Multiple Access (OFDM/OFDMA) technology”). (EX1002, ¶117.)

9. Claim 10

- i) [10.pre] “A smartphone that is configured to perform operations associated with a plurality of financial transactions; the operations comprising:”**

To the extent the preamble is limiting, Barnett discloses the limitations therein. (EX1002, ¶¶118-119.) As discussed for limitation [1.pre], Barnett discloses a mobile phone (“smartphone”) with “smart” features to perform the functions of a Wi-Fi device, a contact-less credit/debit card, and a cell phone. (Section IX.A.1.i.) As further discussed, the phone is configured such that, in response to a consumer bringing the phone within a short distance of the NFC interface of the NFC-enabled display 32 (serving as a payment register) at various locations/stores, the phone enables NFC transmission between the phone and display, thus allowing the phone to perform a purchase/transaction at the display. (*Id.*) Because the phone is programmed with a plurality of credit card numbers and can automatically use the appropriate one in each store, the phone is configured to perform a plurality of transactions (“configured to perform operations associated with a plurality of financial transactions”). (*Id.*; EX1002, ¶119.)

- ii) **[10.a] “responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization;”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [1.a]. (EX1002, ¶120; Section IX.A.1.ii.)

- iii) **[10.b] “while the mode is enabled, transmitting first data to a first device as a precursor to performing the plurality of financial transactions; and”**

The Barnett-Waters-White combination discloses and/or suggests this limitation. (EX1002, ¶121.) As discussed for limitation [1.b], while communication between a consumer’s device and an approver’s device (e.g., card owner’s device) is enabled (“while the mode is enabled”), a consumer’s device requests authorization for a transaction by sending a subscriber approval request to the approver’s device (“transmitting first data to a first device”). (Section IX.A.1.iii.) As further discussed, the subscriber approval response authorizing the transaction that is returned to the consumer’s phone may be valid for multiple transactions (“plurality of financial transactions”). (*Id.*) The subscriber approval request must also be transmitted to the approving device (“transmitting first data to a first device”) before the smartphone is approved to perform multiple transactions (“as a precursor to performing the plurality of financial transactions”). (*Id.*) For example, after

transmitting the approval request, the requesting device can obtain authorization to perform multiple transactions until the total authorized funds are spent to avoid having to obtain authorization for each individual transaction. (*Id.*; EX1002, ¶121.)

iv) [10.c] “receiving second data from the first device responsive to said transmitting the first data;”

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [1.c]. (EX1002, ¶122; Section IX.A.1.iv.)

v) **[10.d] “performing a first financial transaction of the plurality of financial transactions by:**

[10.d.i] detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity, wherein the first entity is distinct from the first device;

[10.d.ii] establishing, using a first air interface, a wireless short-range communications link between the smartphone and the first entity, in response to the proximity condition having been satisfied between the smartphone and the first entity;

[10.d.iii] receiving, using the first air interface, a short-range signal from the first entity; and

[10.d.iv] responsive to receiving the short-range signal from the first entity, sending to the first entity over the first air interface, information based on the second data received from the first device; and”

The Barnett-Waters-White combination discloses and/or suggests these limitations for the same reasons as discussed for limitations [1.d] and [1.d.i]-[1.d.iv]. (EX1002, ¶123; Section IX.A.1.v.)

vi) **[10.e] “independent of performing a transaction to pay for one or more items, receiving by the smartphone a communications service from a wireless network, using a second air interface that differs from the first air interface,”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [1.e]. (EX1002, ¶124; Section IX.A.1.vi.)

- vii) **[10.f] “wherein said transmitting first data and said receiving second data are performed over an air interface that differs from the first air interface.”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitation [1.f]. (EX1002, ¶125; Section IX.A.1.vii.)

- 10. Claim 11: “The smartphone of claim 10, wherein establishing the wireless short-range communications link between the smartphone and the first entity is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone.”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for claim 2. (EX1002, ¶126; Section IX.A.2.)

- 11. Claim 12: “The smartphone of claim 10, wherein sending by the smartphone to the first entity, information based on the second data, is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone.”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for claim 3. (EX1002, ¶127; Section IX.A.3.)

12. **Claim 13: “The smartphone of claim 10, wherein sending by the smartphone to the first entity, information based on the second data, is performed responsive to a value of at least one parameter associated with the smartphone.”**

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for claim 4. (EX1002, ¶128; Section IX.A.4.)

13. Claim 14

i) [14.pre] “The smartphone of claim 10, wherein the operations further comprise:”

[14.a] “performing a second financial transaction of the plurality of financial transactions by:”

[14.a.1] “detecting by the smartphone that a proximity condition is satisfied between the smartphone and a second entity; wherein the second entity is distinct from the first entity and is further distinct from the first device.”

[14.a.2] “establishing, using the first air interface, a wireless short-range communications link between the smartphone and the second entity, in response to the proximity condition having been satisfied between the smartphone and the second entity;”

[14.a.3] “receiving, using the first air interface, a short-range signal from the second entity; and”

[14.a.4] “responsive to receiving the short-range signal from the second entity, sending by the smartphone to the second entity over the first air interface; information associated with the second data received from the first device.”

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitations [5.pre]-[5.a]. (EX1002, ¶129; Section IX.A.5.i.)

14. Claim 15

i) [15.pre] “The smartphone of claim 10,”

[15.a] “wherein said transmitting by the smartphone first data to a first device includes transmitting by the smartphone data relating to a request to pay for a transaction; and”

[15.b] “wherein said receiving by the smartphone second data from the first device includes receiving by the smartphone data relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a transaction.”

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitations [6.pre]-[6.b]. (EX1002, ¶130; Sections IX.A.6.i-ii.)

15. Claim 16

i) [16.pre] “The smartphome of claim 10, wherein said operations further comprise:”

[16.a] “transmitting third data to a second device; the second device being distinct from the first device and further being distinct from the first entity; and”

[16.b] “receiving by the smartphone fourth data from the second device relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a financial transaction;”

[16.c] “wherein said transmitting by the smartphone third data to a second device and said receiving by the smartphone fourth data from the second device are performed over the air interface that differs from the first air interface.”

The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as discussed for limitations [7.pre]-[7.c]. (EX1002, ¶131; Sections IX.A.7.i-iii.)

**B. Ground 2: Barnett, Waters, White, and Smith Render Obvious
Claims 8 and 17**

1. Claim 8

- i) [8.pre] “The method of claim 1, wherein said operations further comprise:”

[8.a] “responsive to performing a financial transaction, causing data to be transmitted selectively to a plurality of predetermined devices and further causing data to be received selectively from said plurality of predetermined devices.”

Barnett in view of Waters, White, and Smith discloses and/or suggests this limitation. (EX1002, ¶¶132-144.)

As discussed for limitation [1.a], in the Barnett-Waters-White combination, after a mobile phone performs a financial transaction (“responsive to performing a financial transaction”), e.g., by sending payment information to the POS terminal device (*see* Sections IX.A.1.v.(1)-(4) (describing steps of performing a transaction)), the payment information is further sent to a financial institution’s device (“causing data to be transmitted selectively to a...predetermined device[]”), since the POS terminal forwards the payment information to an authorization entity such as a financial institution. (Section IX.A.1.ii.) This financial institution device would have corresponded to the issuer of the card used for the transaction, and thus payment information would have been transmitted “selectively” to a “predetermined”

financial institution's device based on the card used for the transaction. (EX1002, ¶133.)

While the Barnett-Waters-White combination does not explicitly disclose and/or suggest “responsive to performing a financial transaction, causing data to be transmitted selectively to *a plurality* of predetermined devices and *further causing data to be received selectively from said plurality of predetermined devices,*” the Barnett-Waters-White combination further in view of Smith discloses and/or suggests these bolded/italicized features. (*Id.*, ¶134.)

As discussed for limitation [1.a], White discloses that after the consumer's 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.ii.(2); 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, ¶135.)

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.*,

¶136.) 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.) The wireless purchaser device and the vendor point-of-sale device may operate in a wireless system, where communication between the two devices may occur through 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). (Sections IX.A.1.i, IX.A.1.ii.(1)-(2); EX1002, ¶136.) A POSITA would have therefore been motivated to consider the teachings of Smith when implementing the Barnett-Waters-White system/method. (EX1002, ¶136.)

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.*, ¶137.) 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.) 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.) The receipt is transmitted from the point-of-sale device to the purchaser device using the short-range wireless connection. (*Id.*, 4:23-24, 6:16-17, 7:6-8; EX1002, ¶138.)

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.) 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” 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; EX1002, ¶139.)

Thus, Smith discloses that after a consumer’s phone performs a transaction (“responsive to performing a financial transaction”), e.g., by sending payment information to the POS terminal device (*see* Sections IX.A.1.v.(1)-(4) (describing steps of performing a transaction)), the payment information may be selectively transmitted (e.g., based on the credit card used) to a device of a predetermined financial institution (“causing data to be transmitted selectively to a...predetermined device[]”), and the 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 selectively received from an authorization entity/device (e.g., based on the credit card used) (“further causing data to be received selectively from said...predetermined device[]”). (EX1002, ¶140.) As further discussed above, after a consumer’s phone performs a transaction (“responsive to performing a financial transaction”), the consumer’s phone may transmit receipt to a predetermined secondary computing device used for compiling

receipt information (“causing data to be transmitted selectively to...a predetermined device[]”), and may further receive compiled receipt information from that same secondary computing device after the transaction is complete (“further causing data to be received selection from said...predetermined device[]”). (*Id.*) In other words, Smith discloses that after a transaction is performed, information is selectively transmitted to and received from both a device of a predetermined financial institution and a predetermined secondary computing device (“responsive to performing a financial transaction, causing data to be transmitted selectively to a plurality of predetermined devices and further causing data to be received selectively from said plurality of predetermined devices”). (*Id.*)

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 transaction receipt, as well as compiled information relating to multiple transactions. (*Id.*, ¶141.) Providing a receipt to a consumer would have offered numerous benefits, including providing proof of purchase, the amount of the purchase, and a record of the transaction for tracking purposes, as well as providing a means for consumers to later make a return or exchange of the purchased goods. (*Id.*)

In addition, a POSITA would have understood that 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, as it would have allowed a user to more effectively track purchases and manage/budget their finances. (*Id.*, ¶142.) Indeed, Smith discloses that “[w]eb server 42 may further provide banking, automated bill payment, tax preparation and other financial services in connection with receipt information management.” (EX1018, 8:18-20.) These financial planning/management tasks would have been enhanced by the ability for a consumer’s phone to receive receipt information, including individual receipts from a point-of-sale terminal and compiled receipts from a secondary computing device/server. (EX1002, ¶142.)

A POSITA would have also had a reasonable expectation of success combining the teachings of Barnett, Waters, White, and Smith. (EX1002, ¶143.) 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. (EX1018, 4:22-26, 6:12-20, 6:30-7:6.) Thus, it would have been straightforward to modify the NFC-based system of the Barnett-Waters-White

combination to include a receipt feature similar to that disclosed by Smith.
(EX1002, ¶143.)

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/receiving receipt information between a POS terminal, financial institution device, 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 payment information is forwarded to an authorization entity, receipt information is received by the phone from a POS terminal (including authorization information from an authorization entity), and compiled receipt information is sent to and received from a secondary computing device/server. (*Id.*, ¶144.) *KSR*, 550 U.S. at 416.

2. Claim 17

i) [17.pre] “The smartphome of claim 10, wherein said operations further comprise:”

[17.a] “responsive to performing a financial transaction, causing data to be transmitted selectively to a plurality of predetermined devices and further causing data to be received selectively from said plurality of predetermined devices.”

The Barnett-Waters-White-Smith combination discloses and/or suggests this limitation for the same reasons as discussed for limitations [8.pre]-[8.a]. (EX1002, ¶¶145; Sections IX.B.1.i.)

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 1-17 of the '432 patent based on the grounds specified in this petition.

Respectfully submitted,

Dated: August 14, 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. 10,674,432 contains, as measured by the word-processing system used to prepare this paper, 13,991 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 14, 2025

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

CERTIFICATE OF SERVICE

I hereby certify that on August 14, 2025, I caused a true and correct copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 10,674,432 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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