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Paper 9
Entered: April 11, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BJ'S WHOLESALE CLUB HOLDINGS, INC.,
Petitioner,

v.

WALMART APOLLO, LLC,
Patent Owner.

IPR2022-01564
Patent 10,803,435 B2

Before PATRICK R. SCANLON, NEIL T. POWELL, and MITCHELL G. WEATHERLY, *Administrative Patent Judges*.

SCANLON, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

BJ's Wholesale Club Holdings, Inc. ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting an *inter partes* review of claims 1–14 of U.S. Patent No. 10,803,435 B2 ("the '435 patent," Ex. 1001). Walmart Apollo, LLC ("Patent Owner") filed a Preliminary Response (Paper 8, "Prelim. Resp."). Petitioner filed a Notice of Ranking Petitions for *Inter Partes* Review of U.S. Patent No. 10,803,435.[1] Paper 5 ("Not."). Patent Owner presents its counter ranking of the petitions in its Preliminary Response. Prelim. Resp. 5–7.

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2021). To institute an *inter partes* review, we must determine that the information presented in the Petition shows "a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). For the reasons set forth below, we determine that the information presented in the Petition establishes a reasonable likelihood that Petitioner will prevail with respect to at least one challenged claim. We institute an *inter partes* review of claims 1–14 based on the grounds set forth in the Petition.

A. Related Matters

The parties identify the following proceedings as related matters involving the '435 patent: *Sam's West, Inc. v. BJ's Wholesale Club*

[1] Petitioner filed, on the same day as the Petition, three other petitions challenging claims of the '435 patent. *See* IPR2022-01528, IPR2022-01561, and IPR2022-01563.

Holdings, Inc., Case No. 6:22-cv-00587 (M.D. Fla. Mar. 22, 2022). Pet. 1 (citing Ex. 1016); Paper 3, 1.

The parties also identify three other petitions challenging claims of the '435 patent: IPR2022-01528, IPR2022-01561, and IPR2022-01563. Pet. 1; Paper 3, 1.

B. Real Parties in Interest

Petitioner and Patent Owner each identifies itself and no others as a real party in interest. Pet. 1; Paper 3, 1.

C. The '435 Patent

The '435 patent is titled "Method for Self-Checkout with a Mobile Device" and relates to methods, systems, and computer program products for purchasing an item using a mobile device. Ex. 1001, code (54), 1:53–2:31. Figures 2A and 2B are illustrative and reproduced below.

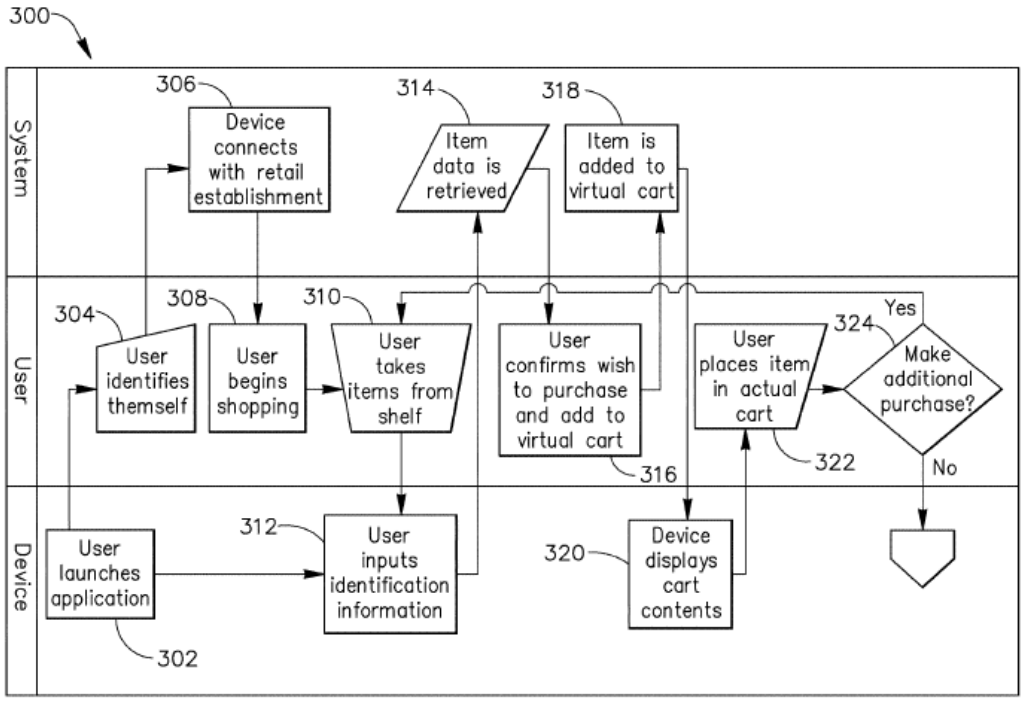


Fig. 2A

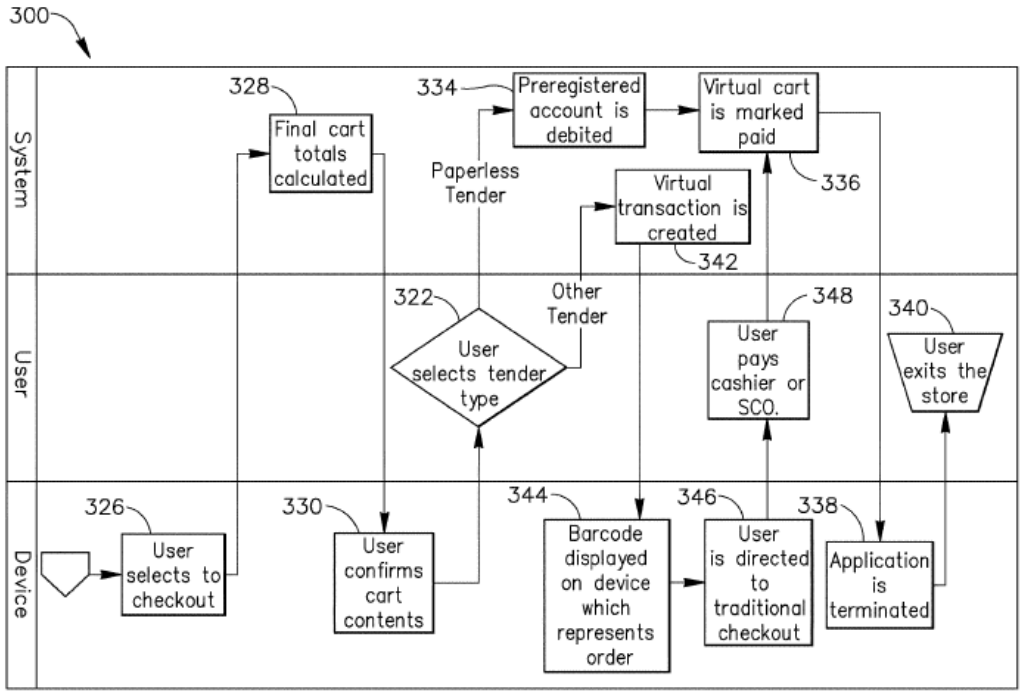


Fig.2B

Figures 2A and 2B of the '435 patent "depict flowchart illustrations of methods, apparatus (systems) and computer program products, in accordance with one embodiment." *Id.* at 2:52–54, Figs 2A, 2B. As shown, Figures 2A and 2B depict method 300 including a series of steps for self-checkout with mobile device 200 that has been brought into a retail establishment. *Id.* at 5:58–61. For example, at block 302, mobile self-checkout application 400 may be launched within mobile device 200. *Id.* at 5:61–63. After identifying the user (block 304), mobile device 200 may be connected with remote server 240 at the retail establishment via network 226 (block 306). *Id.* at 6:15–18. The user may then begin to shop by walking around the retail establishment and looking for items 220 to purchase (block 308). *Id.* at 6:20–22. Within mobile application 400, home screen 402 may be presented to the user including begin shopping button

406, which, upon selection, presents the user with shopping screen 418. *Id.* at 6:26–32, Figs. 3–4.

Figures 4 and 5 of the '435 patent are illustrative of shopping screen 418 and scan items screen 420, respectively, and are reproduced below.

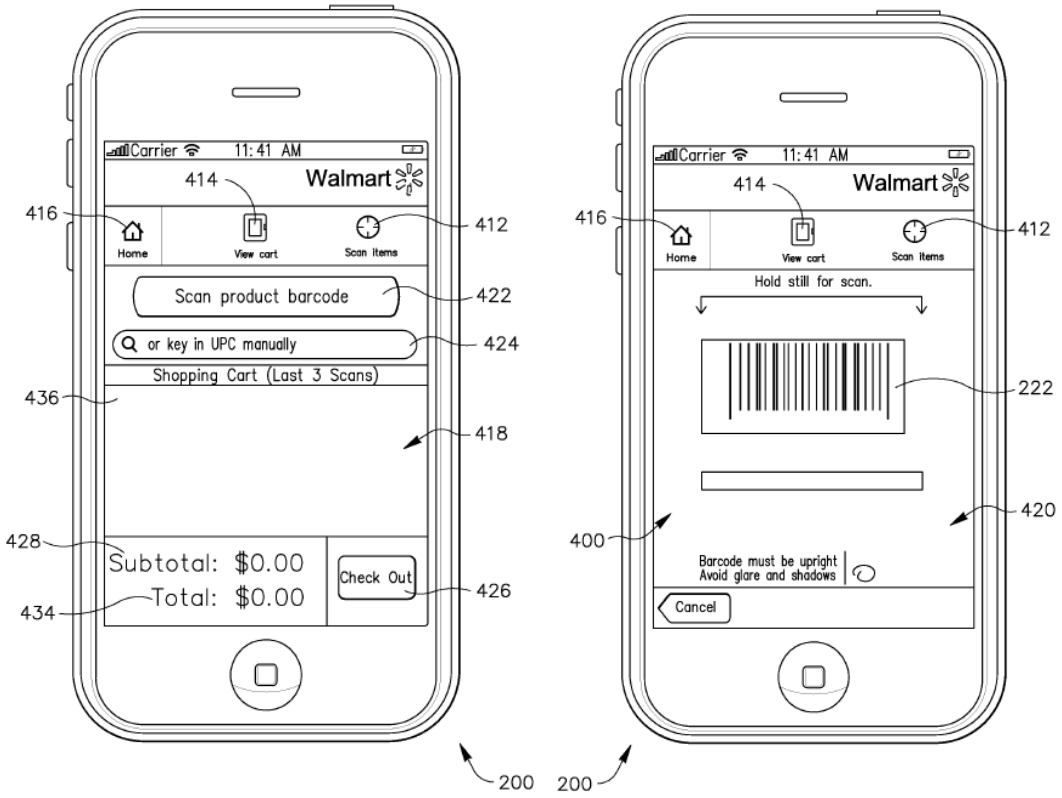


Fig.4 Fig.5

Figure 4 (left) of the '435 patent depicts shopping screen 418 on mobile self-checkout application 400 of mobile device 200, and Figure 5 (right) depicts scan items screen 420. Ex. 1001, 7:17–26. Returning to Figure 2A, upon spotting an item to purchase, the user removes item 220 from a shelf or stand within the retail establishment (block 310) and "inputs identification information 222 into the mobile device 200 which identifies the item 220 for purchase" (block 312). *Id.* at 7:48–53. For example, the user can press the shopping screen's scan items button 412 or scan product code button 422

shown in Figure 4, either of which activates scanning module 202 and presents the user with scan items screen 420, as shown in Figure 5. *Id.* at 7:59–64; *see also id.* at 7:23–26. "At scan items screen 420, the user initiates scanning module 202 which then receives identification information 222 from an item 220 and converts the identification information 222 into a format" readable and processable by processor 201, such as a digital image. *Id.* at 7:64–8:2; *see also id.* at 4:61–64. "Upon inputting identification information 222 into the mobile device 200, the identification information 222 is transmitted to the remote server 240 via communications device 208 and received by the remote server 240" (Fig. 2A, block 314), which retrieves item information 432 representing the item 220 using the identification information 222 received from the mobile device 200. Ex. 1001, 8:7–14; *see also id.* at 7:30–35. "[T]he remote server 240 may then transmit the retrieved item information 432 to the mobile device" for presentation to the user on item information screen 440. *Id.* at 8:20–22, Fig. 6. The user may then be prompted to confirm his or her intent to purchase the item 220 identified by item identification information 222, for example, with add to shopping cart button 442. *Id.* at 8:27–30, Figs. 2A (block 316), 6 (button 442).

"If the user confirms his/her intent to purchase item [220], a virtual shopping cart 433 containing item information 432 representing the item 220" may then be generated by mobile device 200 and transmitted to remote server 240 (Fig. 2A, block 318). Ex. 1001, 8:63–9:1. A user can view the contents of virtual shopping cart 433 on shopping cart screen 430 by selecting view cart button 414. *Id.* at 6:58–62, Fig. 8 (button 414, screen 430). A user can check out by selecting check out button 426 on the

display screen, in response to which the user is presented with checkout screen 450 comprising the total contents of virtual shopping cart 433 and an option to confirm the user's intent to purchase those contents. *Id.* at 7:36–40, Figs. 2B (block 326), 4 (button 426), 9 (screen 450); *see also id.* at 10:25–56 (describing alternate check out button 439 and confirm button 454), Figs. 8 (button 439), 9 (button 454).

"Upon selecting the option to checkout, a total amount for all the contents of the virtual shopping cart 433 is calculated and an order 452 is generated for the item 220 identified by the identification information 222, listed in the virtual shopping cart 433." Ex. 1001, 10:37–41, Fig. 2B, (block 328). "The user . . . has the choice of payment method, either transmitting payment via the mobile device 200 using mobile self-checkout application 400 or providing payment at either a traditional cashier or self-checkout station." Ex. 1001, 10:67–11:4, Fig. 2B (blocks 322, 334, 342, 346, 348). "If the user decides to provide payment for order 452 using a traditional cashier or self-checkout station, . . . then a virtual transaction is created . . . and an optical machine-readable representation 460 of the order 452 . . . is generated and displayed on the display 206 of the mobile device 200." *Id.* at 11:5–11, Fig. 2B (blocks 342, 344). According to the '435 patent, optical machine-readable representation 460 "encodes identifying information or a unique identifier 462" and "is encoded in such a manner as to allow an optical scanning machine 500, such as barcode reader, to read" it. *Id.* at 11:24–25, 11:40–43.

Figure 10 of the '435 patent is reproduced below.

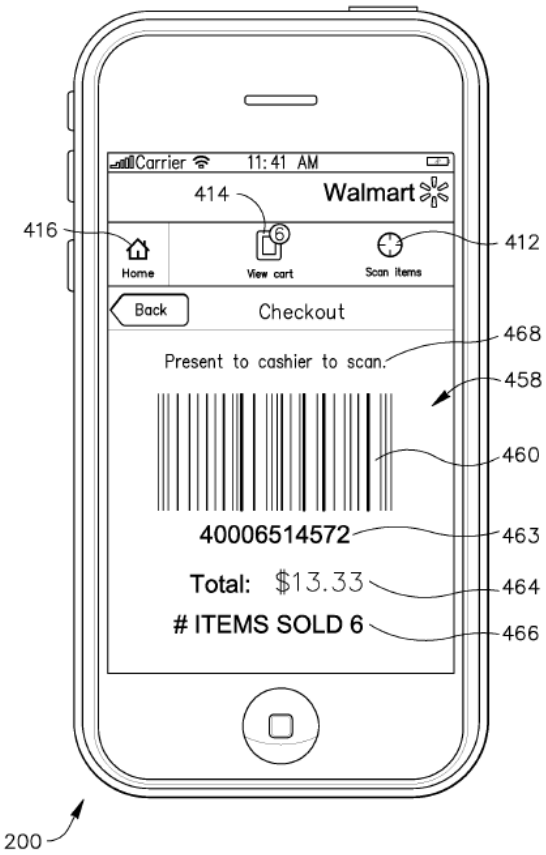


Fig.10

Figure 10 of the '435 patent depicts one representation of the mobile device 200 running the mobile self-checkout application 400 during the checkout process. Ex. 1001, 2:55–58, 11:58–61. As shown, "upon generating the optical machine-readable representation 460 of the order 452," mobile self-checkout application 400 generates machine-readable representation screen 458, which "includes an order number 463 along with the optical machine-readable representation 460 of the order 452, a total payment amount 464 for all the items 220 ordered, and a total amount 466 of items 220 sold." *Id.* at 11:58–66. The user may present machine readable representation 460 to a cashier to scan, or go to "a self-checkout station and

present[] the optical machine-readable representation 460 to an optical scanning machine 500[,] which reads the optical machine-readable representation 460, and specifically the unique identifier 462." *Id.* at 11:66–12:3, 12:12–18, Fig. 2B (block 346). The user is then prompted to tender payment by either the traditional cashier or the self-checkout station, whereupon the user can then tender total payment amount 464. *Id.* at 12:24–29, Fig. 2B (block 348).

Lastly, "an acknowledgment that payment has been received," such as a digital receipt, "is sent to the mobile device 200 from the remote server 240 and displayed to the user." Ex. 1001, 12:38–49.

D. Illustrative Claim

Petitioner challenges claims 1–14, of which claims 1 and 10 are independent. Claim 1 is representative of the claimed subject matter and is reproduced below:

> 1. A method of converting a mobile phone into a mobile point-of-sale device, the method comprising:
>
> executing a mobile self-checkout application on the mobile phone, the mobile self-checkout application allowing a user of the mobile phone to select items in a store and tender payment for the selected items via a user interface rendered by the mobile self-checkout application on a display of the mobile phone;
>
> initiating a session between the mobile phone and a server, the session managed by a session manager;
>
> rendering the user interface on a display of the mobile device by the mobile self-checkout application;
>
> in response to selection of a scanning function via the user interface, activating an imaging device of the mobile phone to

capture identification information associated with a physical object;

activating a radio transmitter of the mobile phone to transmit the captured identification information associated with the physical object to the server executing a virtual terminal sales application;

receiving, by the mobile phone, item information associated with the physical object from the server;

generating, by the mobile phone, a virtual shopping cart to save the item information associated with the physical object;

adding the item information of the physical object to the virtual shopping cart to maintain the order;

receiving instructions via the user interface of the mobile self-checkout application to check out, receiving, by the server, payment information to complete a transaction for the order in response to selection of a checkout function via the user interface;

completing, by the server, the transaction for the order based on the payment information; and

transmitting, by the server, receipt information to the mobile phone in response to completion of payment for the order;

rendering, by the mobile phone on the display, the receipt information in a machine-readable element; and

optically scanning the machine-readable element rendered on the display of the mobile phone, by an optical scanning machine in communication with the server, to confirm completion of payment for the order.

Ex. 1001, 21:19–61.

E. Prior Art and Asserted Grounds

Petitioner asserts that claims 1–14 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	References/Basis
1–14	102(a)(1)	Keith[2]
1–14	103(a)	Hanson,[3] Keith

Pet. 21. Petitioner relies on the Declaration of Michael I. Shamos, Ph.D. (Ex. 1002) to support its challenges.

II. ANALYSIS

A. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art "would have had a Bachelor's degree in computer science, computer engineering, electrical engineering, or a related field or equivalent coursework or experience, and one to two years of experience with mobile device applications and retail POS systems," also noting that "[m]ore education can supplement practical experience and vice versa." Pet. 20–21 (citing Ex. 1002 ¶ 34). Patent Owner, at this stage of the proceeding, does not dispute Petitioner's definition of the person of ordinary skill in the art. Prelim. Resp. 18.

For the purposes of this Decision, we apply Petitioner's proffered level of skill in the art because it appears consistent with the problems addressed in the '435 patent and the prior art.

[2] U.S. Patent No. 8,720,771 B2, issued May 13, 2014 (Ex. 1023, "Keith").
[3] U.S. Patent Application Publication No. US 2012/0173351 A1, published July 5, 2012 (Ex. 1024, "Hanson").

B. Claim Construction

In *inter partes* reviews, the Board interprets claim language using the district-court-type standard, as described in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). *See* 37 C.F.R. § 42.100(b). Under that standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention, in light of the language of the claims, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1313–14. Although extrinsic evidence, when available, may also be useful when construing claim terms under this standard, extrinsic evidence should be considered in the context of the intrinsic evidence. *See id.* at 1317–19.

Petitioner contends that the term "virtual terminal sales application" in claim 1 means "an application running on the server which mirrors functions of a point-of-sale (POS) terminal without the peripheral devices of a POS terminal." Pet. 22 (citing Ex. 1002 ¶ 92). Petitioner asserts that "[t]his meaning is consistent with the '435 Patent specification." *Id.* at 22–23 (citing Ex. 1001, 14:43–58, Figs. 19–21; Ex. 1002 ¶ 93). Petitioner further asserts that, "[i]n the context of the '435 Patent, a [person having ordinary skill in the art] would understand that the functions of a POS terminal mirrored in a virtual terminal sales application (VTSA) can include one or more checkout functions." *Id.* at 23 (citing Ex. 1001, 15:34–53, 19:6–9, 18:60–19:2; Ex. 1002 ¶ 94).

Patent Owner responds that "Petitioner's failure to meet the institution standard does not turn on any claim construction issue," and "the Board does not need to construe this or any other claim term in denying the Petition." Prelim. Resp. 17.

We determine that an express construction of this or any other claim term is not necessary for purposes of this Decision. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) ("The Board is required to construe 'only those terms that . . . are in controversy, and only to the extent necessary to resolve the controversy.'") (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Overview of Asserted Prior Art

1. Keith (Ex. 1023)

Keith is titled "System and Method for Facilitating Secure Self Payment Transactions of Retail Goods." Ex. 1023, code (54). Keith is directed to systems and methods for facilitating in-store and mobile retail purchases for goods and services using a secure self-payment system on a consumer's mobile device. *Id.* at 6:60–65.

Figure 3 of Keith is reproduced below.

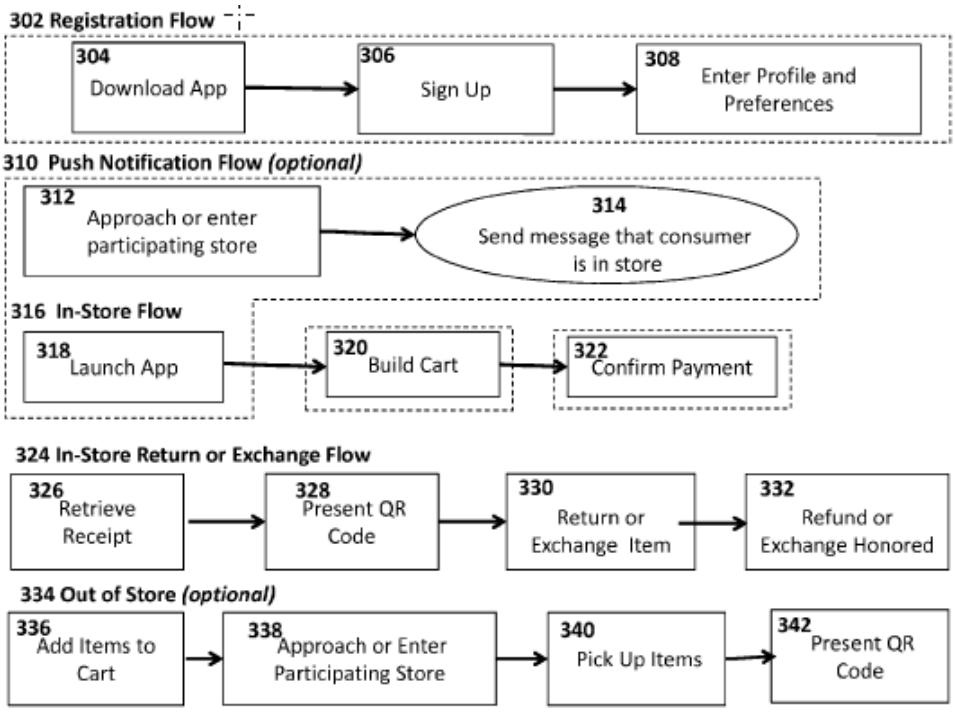


Figure 3 of Keith is "a process flow diagram showing the consumer steps to completing an in-aisle secure self-payment transaction, according to an embodiment of the invention." Ex. 1023, 5:53–55, Fig. 3. This figure "describes the actions taken by the consumer to complete a sale or return while using a secure self-payment application." *Id.* at 16:19–21.

For example, "[t]he process flow 316, 'In-Store Flow,' describes the actions taken by the consumer while in-store to complete a secure self-payment transaction" and "includes the following steps: launch app 318, build cart 320, and confirm payment 322." *Id.* at 17:44–49. "In the launch app step 318, the app is launched so that purchase and item scanning functions can be performed." *Id.* at 17:50–51. "At step 320, 'Build Cart,' the secure self-payment app keeps a tally of the items that the consumer wishes to purchase in an electronic in-app shopping cart," which "is built as the consumer scans an identifying code (such as a barcode or other unique item identifier) with the device camera or otherwise looks up and confirms items that he or she wishes to purchase or view in-app." *Id.* at 17:55–61. "The app may give the consumer an option to confirm the item for purchase and to either store it in an in-app virtual shopping cart with other previously entered items or to purchase the item alone." *Id.* at 17:65–18:2. And, "[a]t step 322, 'Confirm Payment,' the shopping cart takes the item and price data and displays a total purchase amount in-app on the consumer's device." *Id.* at 18:38–40. The secure self-payment application then "prompts the consumer to select his or her default payment method, or to select another saved payment method, or to create a new payment method," and "may also give the consumer options to change quantities, add promotional codes, remove items or to go back to step 320 to add more items to his or her in-app

virtual cart." *Id.* at 18:40–47. "[O]nce the consumer confirms his or her intent to attempt to apply his or her selected payment method to the proposed transaction," "[t]he secure self-payment application attempts a purchase through the web API and the payment processor." *Id.* at 18:47–51.

Figure 14 of Keith is reproduced below.

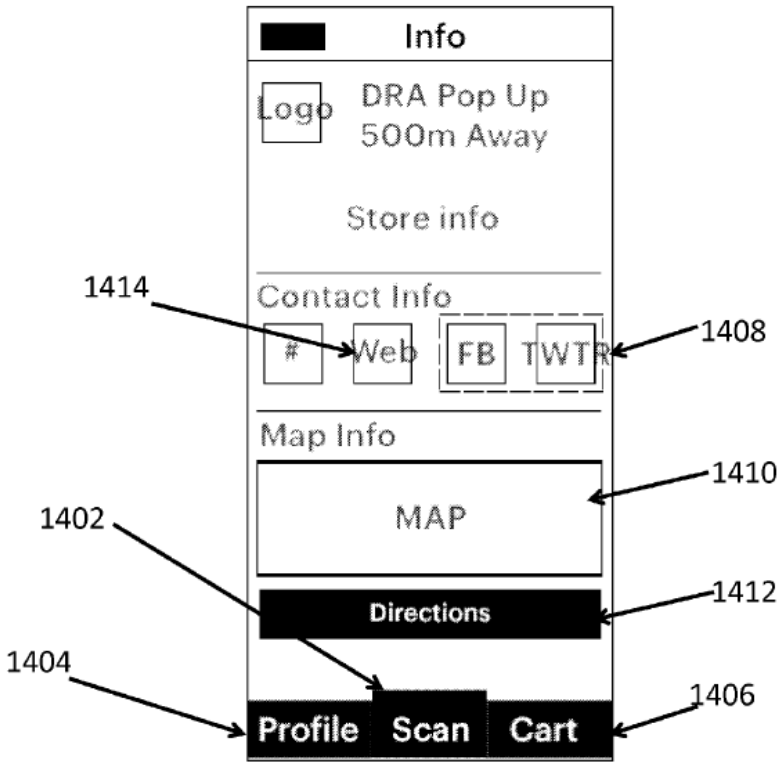


Figure 14 of Keith depicts "an example menu which may be displayed on the consumer's device in-app." Ex. 1023, 47:60–61, Fig. 14. As shown, "[a] retailer branded info screen . . . may be a first step to performing many functions possible from the secure self-payment application app," including an item scanning function 1402 "to identify an item . . . the consumer wishes to purchase 1402," a profile function 1404 "to view the consumer's previous purchases, payment methods, or to add personal information," and a cart

function 1406 "to view the items . . . the consumer has already identified as those he or she wishes to purchase." *Id.* at 47:65–48:4.

Figure 15 of Keith is reproduced below.

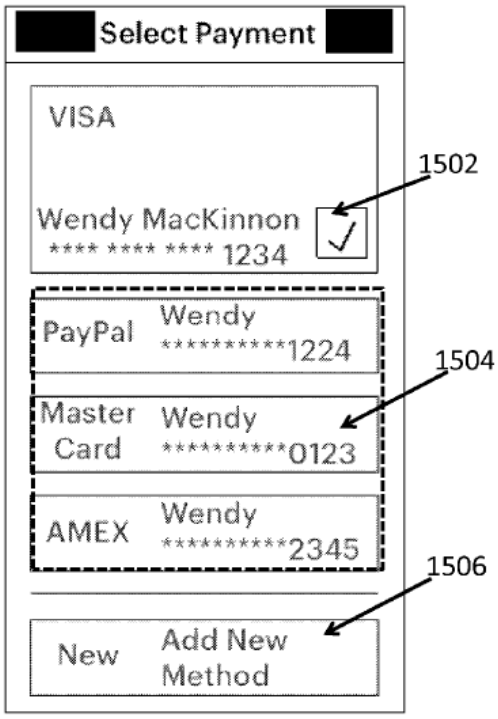


Figure 15 of Keith "is an example payment method interface which may be displayed on the consumer's device in-app." Ex. 1023, 48:10–12, Fig. 15. As shown, this "payment screen is visible upon checkout 322" and "provides . . . some possible payment methods that the service provider may offer for use in app." *Id.* at 48:12–17.

In operation, "[a] secure self-payment app prompts the consumer to provide a method of payment," and "the consumer is given the opportunity to confirm the transaction before it is completed." *Id.* at 14:33–34, 14:41–42, Fig. 2 (items 208, 210). Subsequently, "data relating to the transaction, or 'transaction data,' is verified and then transmitted by the secure self-payment app to the service provider web API for verification."

Id. at 14:56–58. "This transaction data includes information needed for the service provider and third parties to process the transaction, such as identifying information for the goods/services being purchased, the quantity thereof, the consumer's identifying information, and information about the method of payment." *Id.* at 14:59–63. "Relevant portions of the transaction data related specifically to the amount and method of payment are sent by the service provider web API to the retailer and third-party credit card processing network to process the financial transaction." *Id.* at 14:63–67. "[A]s a direct result of the consumer's inputs into the self-payment app," the service provider web API may send data to each relevant party including "requests for payment authorization to the payment processor, credit card issuer, issuing bank or online wallet; removal of item(s) from store inventory, consumer details; and issuance of a receipt to the consumer for later review." *Id.* at 15:4–10.

Figure 16 of Keith, reproduced below, illustrates such a receipt.

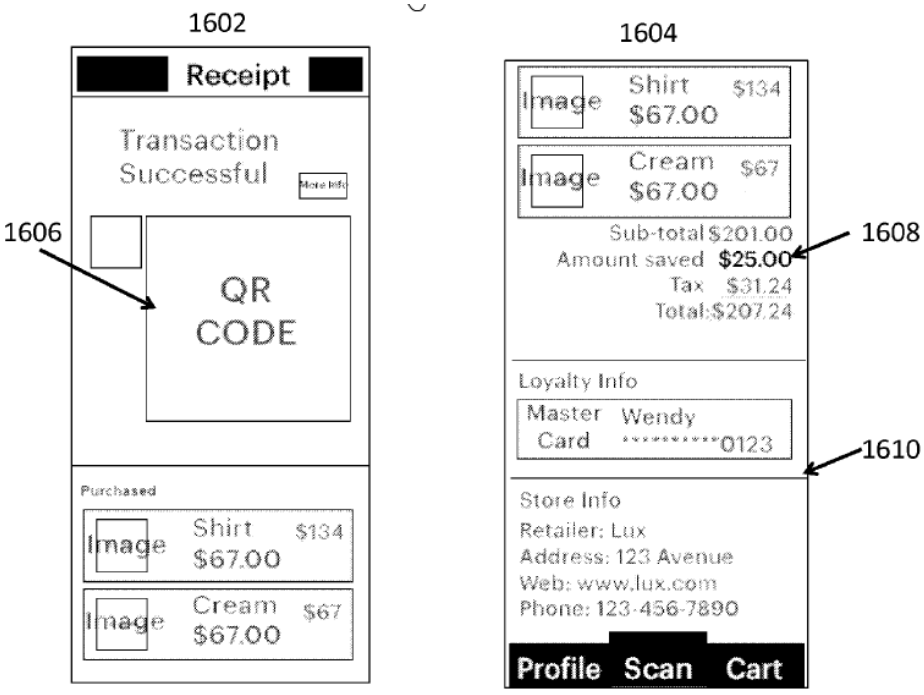


Figure 16 of Keith "is an example QR-coded receipt as displayed on the consumer's device in-app." Ex. 1023, 48:27–28. As shown, "1602 is an example of an itemized receipt along with a QR code 1606 that may be captured by the retailer's device." *Id.* at 48:42–43. "1604 is the same screen viewed on the consumer device after the consumer scrolls down," "display[ing] additional information such as the total purchase amount and applicable discounts 1608, and applicable loyalty and retailer information 1610." *Id.* at 48:56–60. According to Keith, the QR code shown in Figure 16 "is an illustrative QR-coded receipt . . . generated by the secure self-payment app after the consumer's payment method has been approved and the purchase has completed." *Id.* at 48:29–32. "This QR-coded receipt is used by the consumer as proof of the completed transaction and may also be used for record keeping purposes by the consumer and is available on demand in the consumer profile section of the secure self-payment application." *Id.* at 48:32–36.

Keith further describes that "[t]he consumer . . . and the self-payment service provider . . . communicate via a two-way data connection" "performed over a network . . . in communication with the consumer's mobile device on the one hand and the one or more servers that comprise the service provider network and host the service providers web API." Ex. 1023, 10:33–40; *see also id.* at 40:36–38. Keith also describes a "retailer network" (for example, "a retailer point of sale and inventory management system" "likely operated on a server or combination of computers") to "provide the service provider network . . . and third party network(s) . . . with the information required to perform secure self-payment system tasks." *Id.* at 34:28-40, 35:20–24. "Communications between the service provider

web API and the retailer network . . . occur via a two-way communication link . . . that routes traffic from the service provider web API . . . to the retailer network." *Id.* at 12:66–13:2.

2. Hanson (Ex. 1024)

Hanson is titled "Mobile Electronic Shopping." Ex. 1024, code (54). Hanson describes "mobile electronic shopping" in which "mobile wireless devices . . . communicate wirelessly, to interface with physical objects, discover information about those physical objects, pay for those objects via a transaction, and effect fulfillment of the transaction." *Id.* ¶ 53. Hanson also describes that "stores may operate a mobile electronic shopping fulfillment system resident on a server." *Id.* ¶ 55.

Figure 1 of Hanson is illustrative and reproduced below.

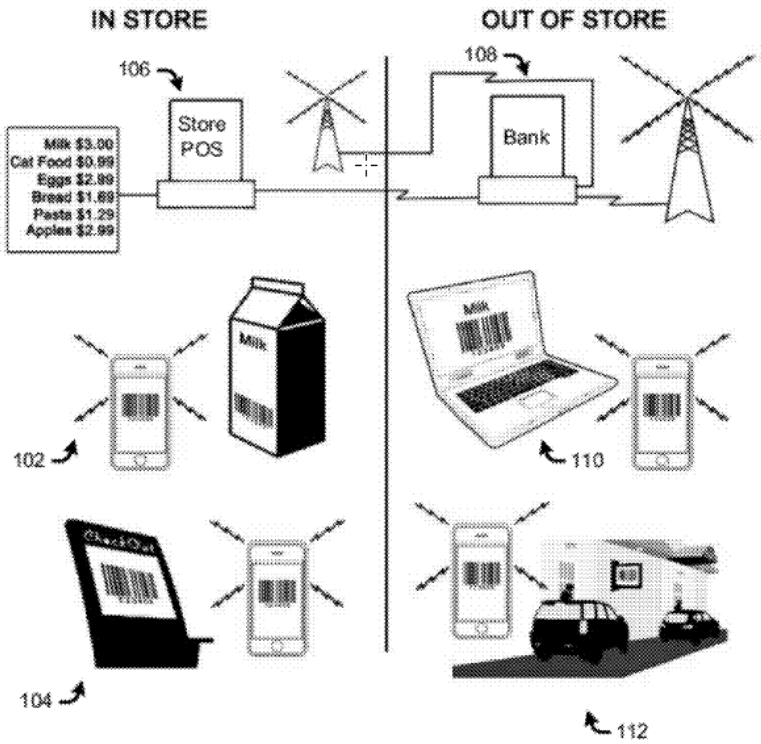


Figure 1 of Hanson depicts "an overview schematic 100 for mobile electronic shopping" in which "[a] user with a mobile wireless device could perform shopping operations both in store, such as a brick and mortar store, and out of store." Ex. 1024 ¶ 60. As shown, an "in store operation may include scanning a product via bar code 102," "[t]he wireless device . . . transmit[ting] data to a check-out kiosk 104 to effect payment," and "[t]he kiosk . . .interfac[ing] with a point of sale system ('POS') 106 and perform[ing] debits and credits on the user's account at a bank 108 or other financial institution." *Id.* ¶ 61.

Hanson also describes that "[i]n mobile electronic shopping, the wireless device can perform purchases by interfacing with a fulfillment system usually on a server, which provides interfaces with a point of sale system and the customer's funds." Ex. 1024 ¶ 67. Figure 3 of Hanson is illustrative and reproduced below.

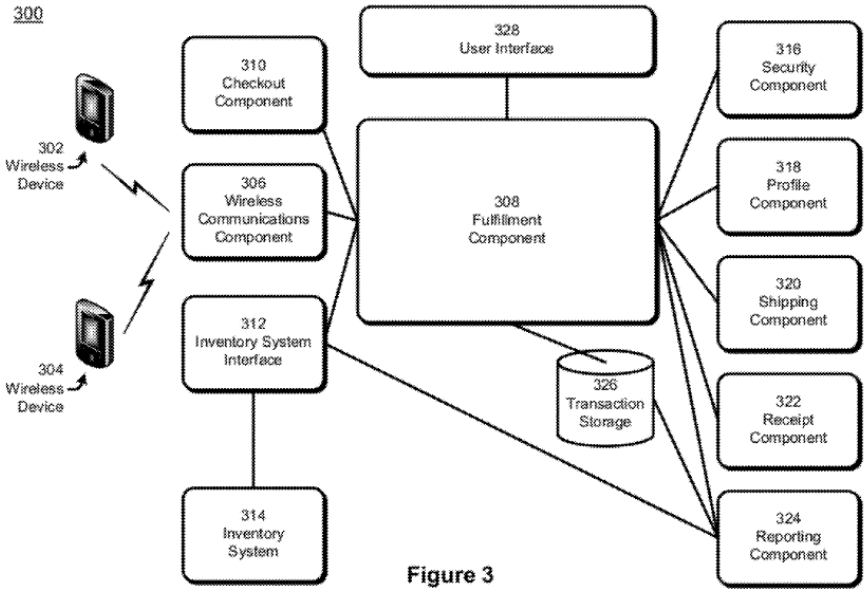


Figure 3

Figure 3 of Hanson depicts an embodiment of a fulfillment system 300 and environment. *Id.* ¶ 37. As shown, "[w]ireless devices 302 and 304

communicate via a wireless communications component 306," which "recognizes one or more wireless protocols in order to interface with a heterogeneous set of wireless devices 302 and 304." *Id.* ¶ 68. Fulfillment component 308 "segregates communications between the various wireless devices 302 and 304 into separate secure sessions" and "may maintain a virtual shopping cart for a customer," where, "for each customer, the fulfillment component may receive order requests and may store product identifier codes and item counts of products ordered." *Id.* ¶¶ 69, 74.

Figure 4 of Hanson, reproduced below, "illustrates an example of message processing 400 by fulfillment system and environment 300." Ex. 1024 ¶ 100.

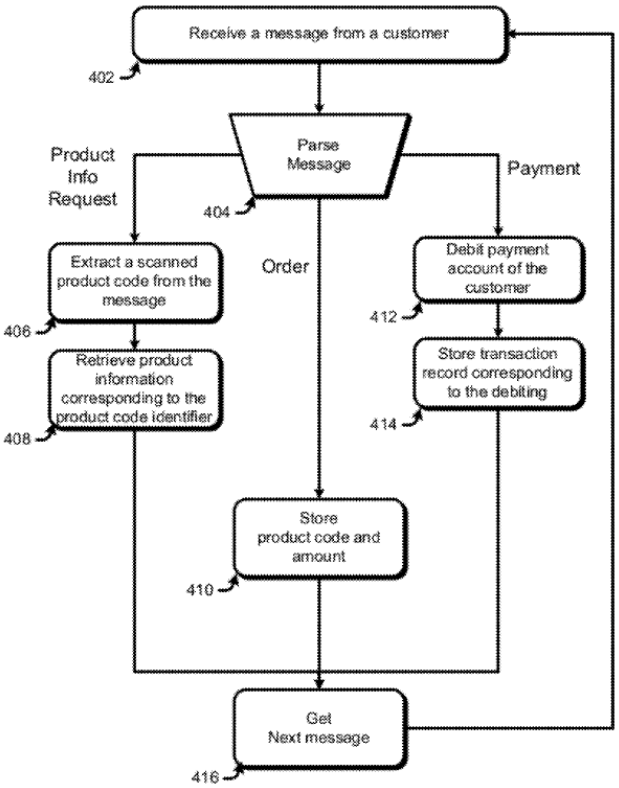


Figure 4 of Hanson is a flowchart depicting how a fulfillment system may process messages. *Id.* ¶¶ 38, 101, Fig. 4. As shown, after receiving a

message from a customer (block 402), fulfillment component 308 can then parse the message (block 404), which usually includes a command and associated information, and further execute it based on the message's command—e.g., a product info request, an order request, or a payment request. *Id.* ¶¶ 102–105.

Hanson also describes how "fulfillment system 300 may integrate with a point of sale system and with the customer's funds." Ex. 1024 ¶¶ 125–127. Figure 6 of Hanson is illustrative and reproduced below.

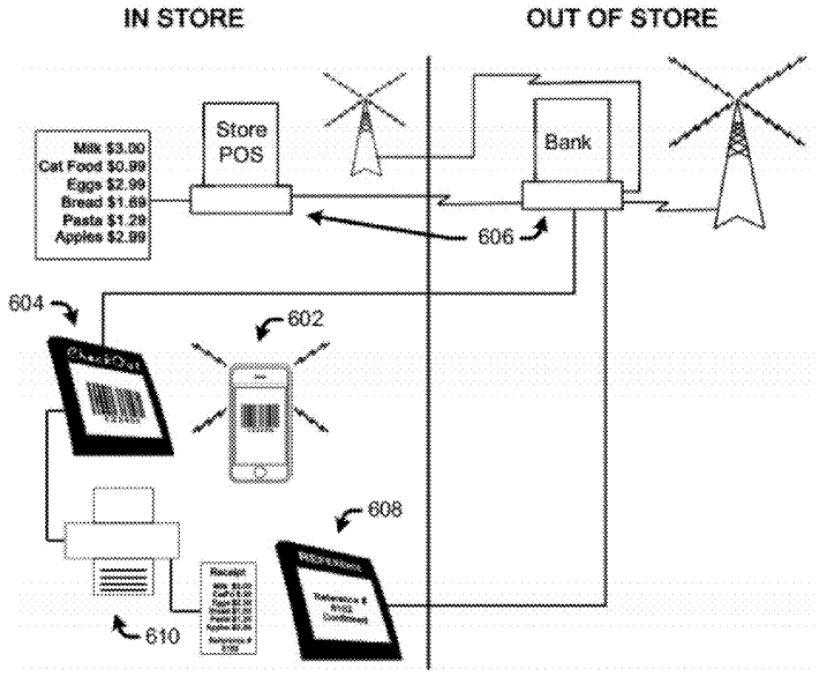


Figure 6 of Hanson "is a block diagram depicting the method of an in-store checkout where the completion of transactions occurs." *Id.* ¶ 40. As shown, "[a]fter a user has scanned products to be purchased with a wireless device 602, the customer may go to a kiosk 604 and wirelessly transmit the purchased products list along with a customer identifier via wireless communications component 306." *Id.* ¶ 125. "The kiosk 604 will then perform a transaction 606 against the customer's accounts via checkout

component 310," and "[i]f the transaction is successful, the kiosk 604 can display 608 or transmit to the wireless device 602 a confirmation code" and "may also print out a paper receipt 610 or alternatively transmit an electronic receipt to the customer via receipt component 322." *Id.*

Figure 7 of Hanson is reproduced below.

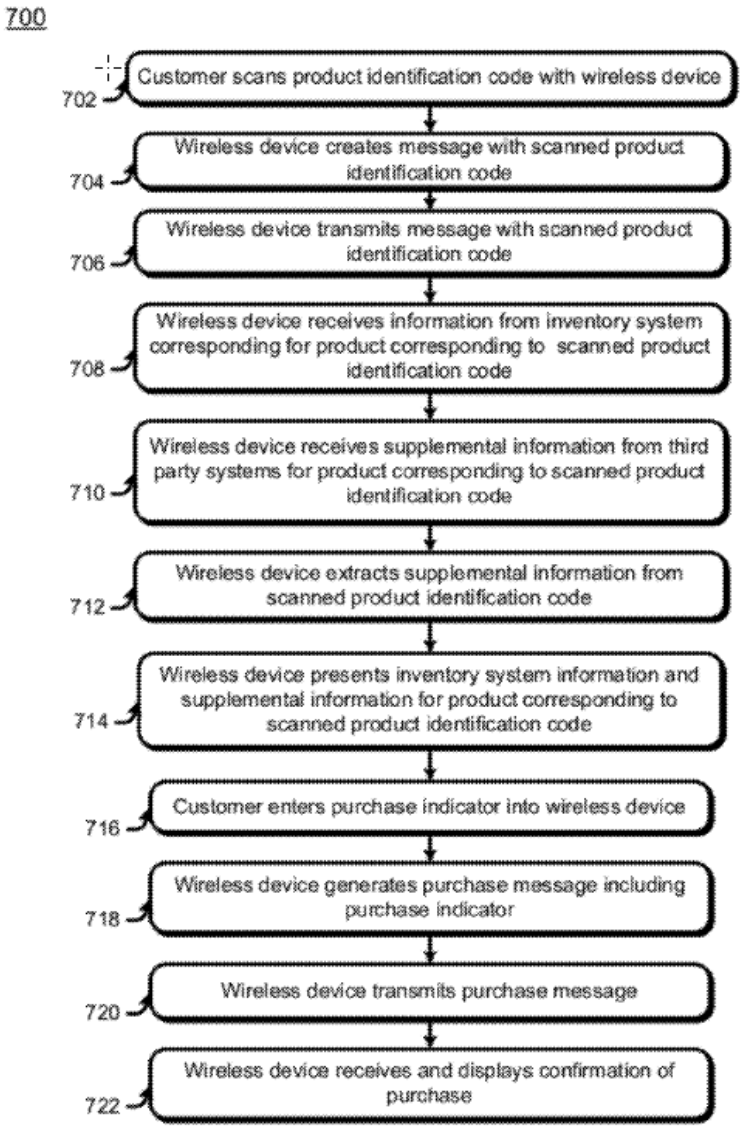


Figure 7 of Hanson depicts "a flowchart 700 of a generalized operation of the wireless device." Ex. 1024 ¶ 129. As shown, a customer scans a product identification code with the wireless device (block 702), and the

wireless device then creates a product information request message from the scanned product identification code (block 704). *Id.* "Upon message creation, . . . the wireless device will transmit the product information request message to . . . fulfillment system 300," and, "[i]n response . . . , the wireless device will receive product information corresponding to the scanned product information code in the product information request message, from . . . fulfillment system 300" (block 706). *Id.* ¶¶ 129–130. Subsequently, the wireless device may obtain supplemental information—contained, for example, in QR codes—by querying third party sources (block 710), and the wireless device may then "parse the scanned product information code for supplemental information." *Id.* ¶¶ 132–133. The purchase information and any supplemental information can then be combined and present to the customer (block 714), and the customer can then commence the purchase process (block 716). *Id.* ¶¶ 134–135.

Figure 8 of Hanson is reproduced below.

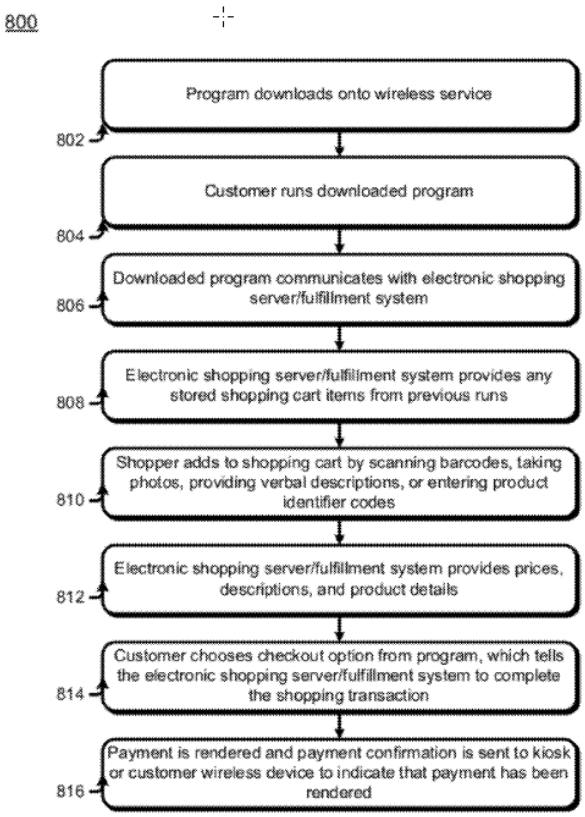


Figure 8 of Hanson depicts "an exemplary workflow 800 for mobile electronic shopping." Ex. 1024 ¶ 138. The workflow 800 begins with "a customer download[ing] a mobile electronic shopping software program to the customer's wireless device" (block 802), and the customer "run[ning] the . . . program" (block 804). *Id.* Next, "the mobile electronic shopping program will handshake with . . . fulfillment system 300, for example through the wireless communications component 306" (block 806), and "the mobile electronic shopping program may initialize by retrieving its stored state, as to indicate to a customer about previously ordered, but unpurchased items" (block 808). *Id.* ¶ 139. "Once the mobile electronic shopping program has its state reinitialized, the customer may perform shopping operations," which "include inputting additional products for purchase, removing products for purchase, price checks and obtaining product

information" (block 810). *Id.* ¶ 140. "As products are input into the wireless device, . . . fulfillment system 300 . . . will provide product information which may include prices, descriptions, product details, ratings, and user commentary" (block 812). *Id.* "After shopping operations, . . . a customer may perform checkout" (block 814). *Id.* ¶ 141. "Once the customer provides notification to checkout, . . . payment may be rendered," and "[u]pon payment, . . . the customer may receive confirmation from the electronic server or other portions of a point of sale system of a successful transaction, and/or a receipt" (block 816). *Id.*

Figure 9 of Hanson is reproduced below.

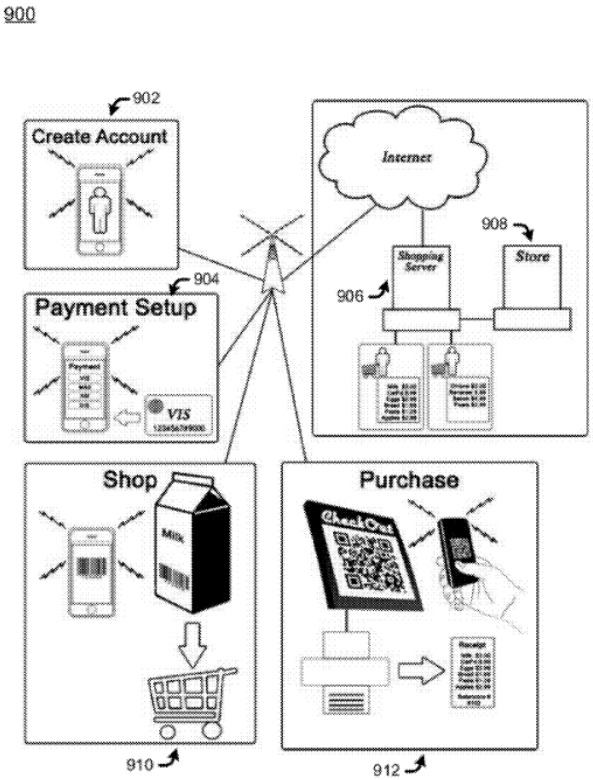
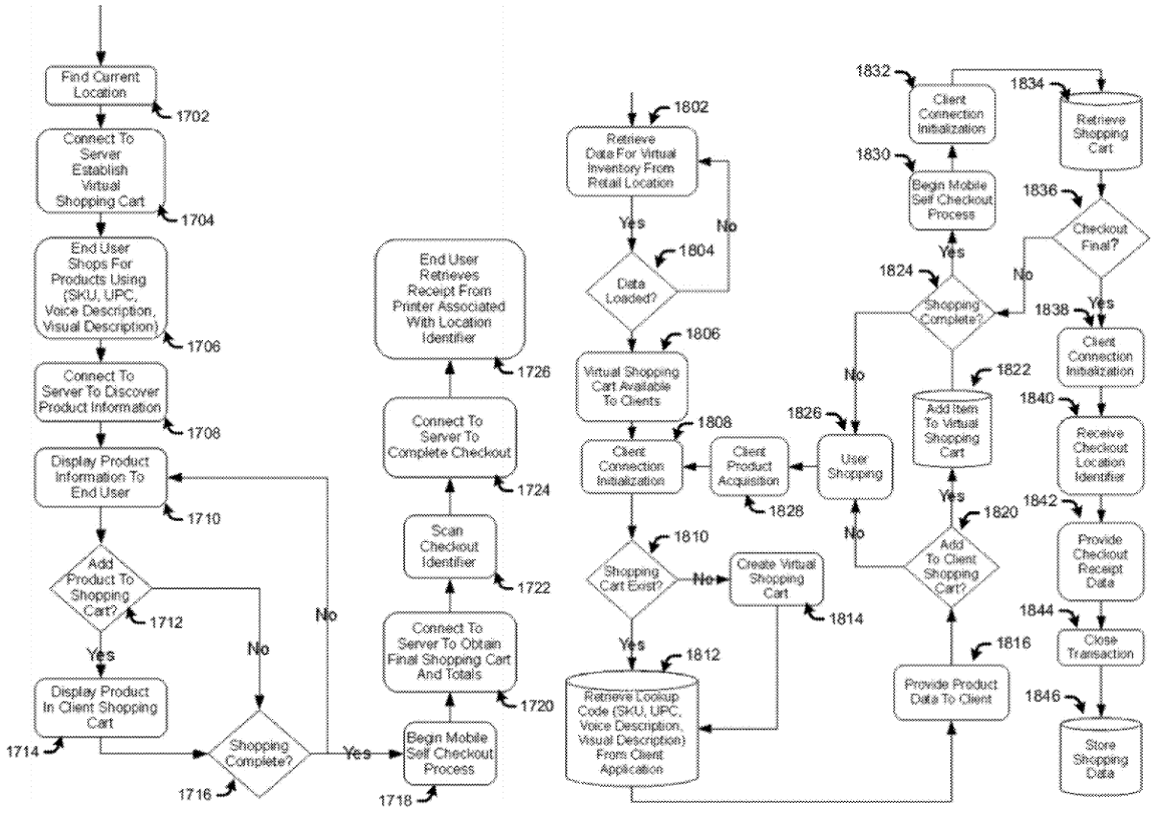


Figure 9 of Hanson depicts "mobile electronic shopping operations 900 within a brick and mortar store." Ex. 1024 ¶ 143. As shown, a mobile electronic shopping account 902 is provisioned, and "[v]arious payment

accounts 904 may be associated with the account." *Id.* Hanson also describes that "[t]he account may be stored on an electronic shopping server 906 . . . associated with one or more stores 908," and that "account 904 will be associated with the transaction histories of the user," such that "all receipts of purchases by the user may be stored on the electronic shopping server 906." *Id.* ¶ 144. "If a shopping cart 910 has been filled, but not paid, the electronic shopping server may store the shopping cart 910." *Id.* "Accordingly, the wireless device may invoke the provisioned mobile electronic shopping account 904 when performing shopping operations, purchases, and other mobile electronic shopping operations." *Id.* ¶ 145.

Figures 17 and 18 of Hanson are reproduced below.



Figures 17 and 18 of Hanson depict "exemplary wireless client operations 1700 and server side fulfillment system 300 operations 1800." Ex. 1024

¶ 161, Figs. 17–18. As shown in Figure 17 of Hanson, after determining a client's location (block 1702), the wireless device can identify and establish connection with fulfillment system 300, and create a virtual shopping cart (block 1704). *Id.* ¶ 163. A wireless device client can then be used to shop for products, for example, using SKU and UPC identifier codes (block 1706). *Id.* ¶ 164. The wireless device displays retrieved product information to the user (block 1710), and the user can opt to add a product to the virtual shopping cart (block 1712), whose display may be updated accordingly (block 1714). *Id.* ¶ 165. Subsequently, a customer may complete his or her shopping (block 1716), and begin the mobile self-checkout process (block 1718). *Id.* Fulfillment system 300 obtains the final shopping cart cost totals (block 1720), and "the wireless device client may be used to scan a checkout identifier which notifies the wireless device client that checkout is to be performed" (block 1722). *Id.* ¶ 166. "Upon the customer indicating assent via the wireless device client, . . . the wireless device client will connect to . . . fulfillment system 300 to complete checkout" (block 1724), after which "fulfillment system 300 . . . may send an electronic receipt to the customer" (block 1726). *Id.*

As shown in Figure 18, "system 300 may interface with an inventory database via an inventory system interface" (block 1802). Ex. 1024 ¶ 167. "Once inventory data is determined to be associated with a location identified" (block 1804), "fulfillment system 300 . . . is ready to accept clients and create virtual shopping carts for that location" (block 1806). *Id.* When a client wants to start shopping, the wireless device can initiate a session with fulfillment system 300, which can check for (block 1810) and, then, restore (block 1812) or create (block 1814) a virtual shopping cart. *Id.*

¶ 168. Once the customer indicates that shopping is complete (block 1824), the checkout process may commence (block 1830). *Id.* ¶ 172. The wireless device client then connects with the fulfillment system 300 (block 1832), which receives the purchase list (or retrieves the virtual shopping cart) (block 1834). *Id.* Once the customer indicates to proceed with checkout (block 1836), the wireless device client reconnects with the fulfillment server 300 (block 1838), which receives a checkout location identifier (block 1840), the customer pays for the items in the cart, and an electronic receipt may be provided to the customer via the wireless device client (block 1842). *Id.* ¶ 173.

D. Priority Date of the Challenged Claims

One of the primary issues presented at this stage of the proceeding is the proper priority date of the challenged claims. The '435 patent issued on October 13, 2020, from U.S. Application No. 16/730,567, which was filed on December 30, 2019. *Id.* at codes (45), (21), (22). Application No. 16/730,567 was filed as a continuation of U.S. Application No. 15/956,400, filed on April 18, 2018 as a division of U.S. Application No. 12/947,545 ("the '545 application"), filed on November 16, 2010 and now U.S. Patent No. 10,121,133. *Id.* at code (60). The '435 patent claims the benefit of U.S. Provisional Application No. 61/392,908 ("the '908 provisional application"), filed on October 13, 2010. *Id.* at code (60), 1:11–14.

"To obtain the benefit of the filing date of a parent application, the claims of the later-filed application must be supported by the written description in the parent 'in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention as of the filing date sought.'" *Anascape, Ltd. v. Nintendo of Am. Inc.*, 601 F.3d 1333,

1335 (Fed. Cir. 2010) (quoting *Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997)). "[T]he hallmark of written description is disclosure," and the test "is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date" of that application. *Ariad Pharms., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc) (citing *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1562–63 (Fed. Cir. 1991)). "[T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art." *Id.* But, "[i]t is not sufficient for purposes of the written description requirement of [35 U.S.C.] § 112 that the disclosure, when combined with the knowledge in the art, would lead one to speculate as to modifications that the inventor might have envisioned, but failed to disclose." *Lockwood*, 107 F.3d at 1572.

Petitioner argues that claims 1–14 of the '435 patent are not entitled to the benefit of the '908 provisional application's filing date because "neither the '435 Patent nor the earlier-filed applications expressly or inherently disclose adequate description of the subject matter recited in Claims 1 and 10 to show that the inventors possessed the claimed invention." Pet. 8–9. Specifically, Petitioner asserts that two limitations of independent claim 1 lack support: (1) "rendering, by the mobile phone on the display, the receipt information in a machine-readable element"; and (2) "optically scanning the machine-readable element rendered on the display of the mobile phone, by an optical scanning machine in communication with the server, to confirm completion of payment for the order." *Id.* at 10–11 (citing Ex. 1002 ¶¶ 74–81; Ex. 1001, 12:1–2, 12:12–29, Fig. 11). Petitioner also

contends that analogous limitations from independent claim 10 lack adequate description. *Id.* at 11 (citing Ex. 1002 ¶¶ 74–75, 82–83).

In response, Patent Owner argues that "[b]ecause all claims of [the] '435 Patent are described and supported by earlier-filed applications including the '908 Provisional, the claims are entitled to the priority date of October 13, 2010." Prelim. Resp. 20. In particular, Patent Owner contends that claims 19 and 20 of the '908 provisional application (which are recited identically in the '545 application) provide "near-literal support" for the disputed limitations. *Id.* at 21 (citing Ex. 1007, 79; Ex. 1006, 1196). Claims 19 and 20 from the '908 provisional application and the '545 application read as follows:

> 19. The method of claim 17, wherein the tendering payment for the item includes:
>
> transmitting payment information directly from the mobile device to the remote server;
>
> generating a receipt indicating acceptance of the payment information; and
>
> providing a user of the mobile device with a receipt.
>
> 20. The method of claim 19, wherein the receipt includes an optical machine-readable representation of receipt identification information which identifies the receipt and which is displayed on the display of the mobile device.

Ex. 1007, 79; Ex. 1006, 1196.

According to Patent Owner, claim 19's recitation of "providing a user of the mobile device with a receipt" and claim 20's recitations of "the receipt includ[ing] an optical machine-readable representation of receipt identification information" that "is displayed on the display of the mobile device" provide support for "rendering, by the mobile phone on the display,

the receipt information in a machine-readable element." Prelim. Resp. 22–23.

Regarding the second disputed limitation, Patent Owner first argues that claim 20's recitation of displaying the optical machine-readable representation "necessarily teaches the concept of scanning said representation" because an optical machine-readable representation is meaningless and has no utility if it is not scanned. *Id.* at 24. Patent Owner contends that "[t]he '435 patent and its priority documents are replete with examples of scanning machine-readable representations, including machine-readable representations displayed on the user device." *Id.* at 24–25 (citing Ex. 1001, 11:66–12:3; Ex. 1007, 67; Ex. 1006, 1171–72). Thus, in Patent Owner's view, the inventors evidenced possession of scanning the optical machine-readable representation of receipt identification information recited in claim 20. *Id.* at 25.

Second, relying on the same reasoning, Patent Owner argues that "the optical machine-readable format teaches an *optical scanning machine* reading the receipt." *Id.* at 26 (citing Ex. 1007 ¶¶ 55, 56, 59; Ex. 1006, 1171–73, 1176) (emphasis added). Patent Owner further contends that a receipt confirms completion of a payment. *Id.* at 26–27 (citing Ex. 1007 ¶ 6; Ex. 1006, 1151; Ex. 2006 (providing dictionary definition of "receipt")).

Last, Patent Owner notes that the '908 provisional application and the '545 application both disclose that "[s]ales transaction and receipt information is stored on the remote server 204 and is thus accessible for a variety of purposes: including but not limited to: asset protection solutions, return validation, customer reference, and the like." *Id.* at 27 (citing Ex. 1007 ¶ 59; Ex. 1006, 1173). Patent Owner then argues that because "the

reference sales transaction and receipt information is stored on a server, the optical scanning machine communicates with the server to access the receipt details to verify completion of payment (*i.e.*, the purpose of a receipt)." *Id.* For these reasons, Patent Owner contends that the '908 provisional application (and presumably the '545 application) demonstrates that the inventors possessed the concept of using an optical scanning machine in communication with the server to scan the machine-readable receipt information to confirm completion of payment. *Id.*

Next, Patent Owner notes that the earliest possible effective filing dates of Keith and Hanson both post-date the filing dates of the '908 provisional application and the '545 application. *Id.* at 29. Thus, in view of its contention that the '435 patent is entitled to the benefit of the '908 provisional application's filing date (October 13, 2010) and to the priority date of the '545 application (November 16, 2010), Patent Owner contends that neither Keith nor Hanson are available as prior art. *Id.*

Based on the arguments and information of record at this stage of the proceeding, we agree with Petitioner that the challenged claims are not entitled to the priority date of either the '908 provisional application or the '545 application. Even if Patent Owner is correct that the '908 provisional application and the '545 application both provide written description support for the first disputed limitation,[4] we are not persuaded at this stage of the

[4] We note that Patent Owner does not address how intervening Application No. 15/956,400 provides written description support for either of the disputed limitations. Prelim. Resp. 19–29; *see Lockwood*, 107 F.3d at 1572 ("Each application in the chain must describe the claimed features.").

proceeding that the earlier applications provide written description support for the second disputed limitation.

First, neither application explicitly discloses optically scanning machine-readable receipt information displayed on a mobile phone or using an optical scanning machine to do so. Patent Owner's assertion that claim 20's recitation of displaying the optical machine-readable representation necessarily teaches scanning the representation (Prelim. Resp. 24) is not persuasive because it relies on speculation as to what one of ordinary skill in the art might have envisioned the inventor to have actually invented. *See Lockwood*, 107 F.3d at 1572 ("It is not sufficient for purposes of the written description requirement of [35 U.S.C.] § 112 that the disclosure, when combined with the knowledge in the art, would lead one to speculate as to modifications that the inventor might have envisioned, but failed to disclose.") At best, claim 20 suggests a general intention to scan the machine-readable representation to a person skilled in the art, but we are not persuaded that claim 20 necessarily discloses scanning the machine-readable representation for the purpose of "confirm[ing] completion of payment for the order." *See id.* ("[I]t is 'not a question of whether one skilled in the art *might* be able to construct the patentee's device from the teachings of the disclosure. . . . Rather, it is a question whether the application necessarily discloses that particular device." (quoting *Martin v. Mayer,* 823 F.2d 500, 504, (Fed.Cir.1987))). For instance, the machine-readable receipt information could be scanned for other purposes, such as if the purchaser wanted to return one or more of the purchased items at a later time.

Second, we are not persuaded that the earlier applications provide written description support for scanning the machine-readable element with an optical scanning machine that is *in communication with the server*. Patent Owner contends that remote server 240 in the earlier applications must be in communication with an optical scanning machine because the applications disclose that sales transaction and receipt information is stored on remote server 240. Prelim. Resp. 27 (citing Ex. 1007 ¶ 59; Ex. 1006, 1173). This reasoning relies on the supposition that the earlier applications disclose scanning the machine-readable representation with an optical scanning machine to confirm completion of payment. For the reasons discussed above, however, we disagree with this supposition. Furthermore, claim 19 in the earlier applications recites direct communication of payment information between the mobile device and the remote server, suggesting that a separate optical scanning machine is not necessary to confirm completion of payment.

Accordingly, for the above reasons, we determine on the current record that the challenged claims are not entitled to the priority date of either the '908 provisional application or the '545 application, and, therefore, Keith and Hanson are both available as prior art to the challenged claims.

E. Ground 1: Alleged Anticipation of Claims 1–14 by Keith

Petitioner contends claims 1–14 are anticipated by Keith. Pet. 9–41. Patent Owner disputes Petitioner's contentions, solely based on its assertion that Keith does not qualify as prior art because it does not antedate the claimed invention, whose asserted priority date is October 13, 2010. Prelim. Resp. 19–30. As discussed above, however, we determine on the current record that the challenged claims are not entitled to the priority date of either

the '908 provisional application or the '545 application such that Keith does qualify as prior art to the challenged claims. Patent Owner does not address Petitioner's contentions regarding the limitations of claim 1 in the Preliminary Response. *See generally* Prelim. Resp.

1. Independent Claim 1

a) (Preamble): A method of converting a mobile phone into a mobile point-of-sale device, the method comprising

To the extent the preamble is limiting, Petitioner contends that Keith discloses a method for "facilitating in-store and mobile retail purchases for goods and services, including a payment verification process that utilizes the consumer's mobile device." Pet. 24 (citing Ex. 1002 ¶ 126; Ex. 1023, 6:60–63). We have reviewed these aspects of Petitioner's contentions, and determine that the Petition makes a sufficient showing, at this stage of the proceeding, that Keith discloses a method of converting a mobile phone into a mobile point-of-sale device.[5]

b) executing a mobile self-checkout application on the mobile phone, the mobile self-checkout application allowing a user of the mobile phone to select items in a store and tender payment for the selected items via a user interface rendered by the mobile self-checkout application on a display of the mobile phone

Petitioner contends that Keith discloses launching a self-payment application to enable a user to access purchase and item scanning functions on mobile device 602. Pet. 24–25 (citing Ex. 1002 ¶¶ 132–134, 137, 140–143; Ex. 1023, 17:50–54, 47:60–67, 48:15–17, Figs. 3, 9, 14, 15). Petitioner further contends that Keith discloses a user building a shopping cart by scanning items using "Scan" element 1402 or looking items up on a

[5] We do not determine at this time whether the preamble is limiting.

menu, and, upon checkout, the self-payment application prompts the user to provide a method of payment via a payment screen displayed on mobile device 602. *Id.* at 25 (citing Ex. 1002 ¶¶ 136–141; Ex. 1023, 14:33–34, 17:57–61, 24:10–40, 47:60–67, 48:10–17, 48:21–23, Figs. 14, 15).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

c) initiating a session between the mobile phone and a server, the session managed by a session manager

Petitioner contends that Keith discloses that the mobile device communicates with one or more servers that host the service provider's web application programming interface ("API") via a two-way data connection. Pet. 26–27 (citing Ex. 1002 ¶¶ 146–157; Ex. 1023, 10:33–40). According to Petitioner, one of ordinary skill in the art "would understand that the web API provides access to the server and 'that access includes managing requests or messages between the consumer's mobile device **602** and the respective server on which the API resides.'" *Id.* at 27 (citing Ex. 1002 ¶¶ 151–156; Ex. 1023, 40:36–37).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

d) rendering the user interface on a display of the mobile device by the mobile self-checkout application

Petitioner contends that Keith discloses that mobile device 602 has a display that renders the user interface, such as a "means of inputting information into the [mobile] device [**602**] such as a touch screen." Pet. 27 (citing Ex. 1002 ¶¶ 158–161; Ex. 1023, 32:32–38, 47:60–62, 48:10–12) (alterations in original).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

e) in response to selection of a scanning function via the user interface, activating an imaging device of the mobile phone to capture identification information associated with a physical object

Petitioner contends that Keith discloses that the self-payment application activates a camera on mobile device 602 to scan a bar code in response to selection of "Scan" element 1402. Pet. 28 (citing Ex. 1002 ¶¶ 162–166; Ex. 1023, 14:8–16, 47:60–67).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

f) activating a radio transmitter of the mobile phone to transmit the captured identification information associated with the physical object to the server executing a virtual terminal sales application

Petitioner contends that Keith discloses that mobile device 602 includes internet connection component 906 that transmits information associated with the bar code. Pet. 28 (citing Ex. 1002 ¶¶ 168–177; Ex. 1023, 4:22–25, 42:24–35). Petitioner adds that Keith's internet connection component 906 utilizes 3G, LTE, or Wi-Fi, which transmit over radio-wave frequencies. *Id.* at 29 citing Ex. 1002 ¶ 168; Ex. 1023, 42:24–35). In addition, Petitioner argues that Keith's "web API includes functionality of a virtual terminal sales application ('VTSA'), as properly construed, such as processing and handling of transaction data in a manner similar to functions on a traditional POS terminal." *Id.* at 29–30 (citing Ex. 1002 ¶¶ 172–175; Ex. 1023, 14:56–15:16).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

g) receiving, by the mobile phone, item information associated with the physical object from the server

Petitioner contends that Keith discloses that mobile device 602 receives product information from the web API. Pet. 30 (citing Ex. 1002 ¶¶ 178–180; Ex. 1023, 12:57–65). In particular, Petitioner asserts that "Keith discloses that '[t]he web API displays information from a linked database that includes price and may include information such as product description, images, additional recommendations or other information that may aid the consumer in making the purchase decision.'" *Id.* (citing Ex. 1002 ¶ 178; Ex. 1023, 12:57–65).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

h) generating, by the mobile phone, a virtual shopping cart to save the item information associated with the physical object

Petitioner contends that Keith discloses that mobile device 602 generates a virtual shopping cart to save product information. Pet. 30 (citing Ex. 1002 ¶¶ 182–185; Ex. 1023, 17:57–61).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

i) adding the item information of the physical object to the virtual shopping cart to maintain the order

Petitioner contends that Keith discloses that the virtual shopping cart includes product information and the secure self-payment app "keeps a tally of the items that the consumer wishes to purchase" in the virtual shopping cart, thereby maintaining the order. Pet. 31 (citing Ex. 1002 ¶¶ 187–191; Ex. 1023, 17:55–57).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

j) receiving instructions via the user interface of the mobile self-checkout application to check out, receiving, by the server, payment information to complete a transaction for the order in response to selection of a checkout function via the user interface

Petitioner contends that Keith discloses that "the consumer through the functionality provided by the self-payment app… [makes] selections that indicate he or she wishes to confirm and pay for the specified selected items," and that the secure self-payment application prompts the consumer to select a payment method, whereupon the web API receives the payment information to complete a purchase. Pet. 31 (citing Ex. 1002 ¶¶ 193–202; Ex. 1023, 18:40–51, 22:62–66, 24:10–17) (alterations in original).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

k) completing, by the server, the transaction for the order based on the payment information

Petitioner contends that Keith "discloses that 'the web API receives the payment data and verification values and passes this information forward to a payment processor' and once approved, saves the purchase data and a payment approval code to a database as an approved purchase." Pet. 32 (citing Ex. 1002 ¶¶ 203–207; Ex. 1023, 24:15–17, 24:28–40).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

l) transmitting, by the server, receipt information to the mobile phone in response to completion of payment for the order

Petitioner contends that Keith discloses that the web API generates and transmits a QR coded receipt to mobile device 602 upon completion of the transaction. Pet. 32–33 (citing Ex. 1002 ¶¶ 208–211; Ex. 1023, 15:20–24, 24:62–63, 25:11–14). As an example, Petitioner argues that Keith's "QR code is a representation of a web or network address associated with a page and/or data feed connected programmatically to the database entry corresponding to the consumer's purchase." *Id.* at 33 (citing Ex. 1002 ¶ 210; Ex. 1023, 25:11–14).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

m) rendering, by the mobile phone on the display, the receipt information in a machine-readable element

Petitioner contends that Keith discloses that the QR coded receipt is displayed on mobile device 602. Pet. 33–34 (citing Ex. 1002 ¶¶ 213–215; Ex. 1023, 25:28–32, 48:42–43, Fig. 16).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

n) optically scanning the machine-readable element rendered on the display of the mobile phone, by an optical scanning machine in communication with the server, to confirm completion of payment for the order

Petitioner contends that Keith discloses that a retail mobile device captures a QR code and queries the web API to verify a purchase. Pet. 34 (citing Ex. 1002 ¶¶ 216–220; Ex. 1023, 15:46–48, 25:33–35, 25:56–67). Petitioner further contends that "Keith discloses that '[i]f the link embedded

in the QR code points to a service provider database entry representing a valid purchase, the web API interprets the QR code as referring to a valid purchase receipt (i.e., having a 'match').'" *Id.* at 35 (citing Ex. 1002 ¶ 219; Ex. 1023, 25:62–65) (alteration in original).

We have reviewed the evidence cited by Petitioner for this limitation and find it sufficient for institution.

o) Conclusion

For the above reasons, we determine, based on the current record, that the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that claim 1 is anticipated by Keith.

2. Independent Claim 10

For independent claim 10, Petitioner largely relies on its contentions for various limitations of claim 1, adding, for example, that Keith not only discloses a method but also a system for performing such a method. Pet. 42–45 (additionally citing Ex. 1002 ¶¶ 308–338; Ex. 1023, Title, 18:40–44, 22:62–24:18, 48:16–26).

Other than asserting that Keith does not qualify as prior art, Patent Owner does not offer any arguments specifically addressing claim 10. *See generally* Prelim. Resp. We have reviewed Petitioner's contentions with respect to claim 10 and determine that the Petition provides a sufficient showing, at this stage of the proceeding, that Keith discloses each limitation. *See* Pet. 42–45.

Accordingly, we determine, based on the current record, that the Petition shows a reasonable likelihood that Petitioner would prevail in demonstrating that claim 10 is anticipated by Keith.

3. Dependent Claims 2–9 and 11–14

Claims 2–9 depend from claim 1, and claims 11–14 depend from claim 10. Petitioner has demonstrated a reasonable likelihood of success in proving that at least independent claims 1 and 10 of the '435 patent are unpatentable, and we find institution of *inter partes* review warranted. Accordingly, we institute on all grounds and all claims raised in the Petition. *See SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1354, 1359–60 (2018); *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute to require "a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition"); 37 C.F.R. § 42.108(a) ("When instituting inter partes review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim."). Therefore, it is not necessary for us to assess every claim challenged by Petitioner.

Nevertheless, we note that Petitioner provides reasonable and detailed explanations, supported with the testimony of Dr. Shamos, indicating where Keith discloses the limitations of claims 2–9 and 11–14. Pet. 35–42, 45–47. Further, Patent Owner offers no particular arguments with respect to claims 2–9 and 11–14 for us to consider at this stage of the proceeding. *See generally* Prelim. Resp. We have reviewed Petitioner's contentions with respect to these claims and determine that the information presented in the Petition establishes that there is a reasonable likelihood that Petitioner would prevail in its assertion that claims 2–9 and 11–14 are anticipated by Keith.

F. Ground 2: Alleged Obviousness of Claims 1–14 over Hanson and Keith

Petitioner contends claims 1–14 would have been obvious over the combination of Hanson and Keith. Pet. 47–69. Patent Owner's only

argument regarding this ground is that Hanson and Keith do not qualify as prior art. Prelim. Resp. 19–30. As discussed above, however, we determine on the current record that the challenged claims are not entitled to the priority date of either the '908 provisional application or the '545 application such that Hanson and Keith do qualify as prior art to the challenged claims.

Because Petitioner has demonstrated that it is reasonably likely that at least one claim of the '435 patent is unpatentable, we institute on all grounds and all claims raised in the Petition. *See SAS*, 138 S. Ct. at 1354, 1359–60; *PGS Geophysical*, 891 F.3d at 1360; 37 C.F.R. § 42.108(a).

G. Discretionary Denial of Institution Under 35 U.S.C. § 314(a)

The Board has discretion not to institute an *inter partes* review. *See* 35 U.S.C. § 314(a) (authorizing institution of an *inter partes* review under particular circumstances, but not requiring institution under any circumstances); 37 C.F.R. § 42.108(a) (stating "the Board *may* authorize the review to proceed") (emphasis added); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) ("[T]he agency's decision to deny a petition is a matter committed to the Patent Office's discretion."); *Harmonic Inc. v. Avid Tech, Inc.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016) (explaining that under § 314(a), "the PTO is permitted, but never compelled, to institute an IPR proceeding").

As discussed above, Petitioner filed four petitions challenging the '435 patent on the same day, including this proceeding, IPR2022-01564, as well as IPR2022-01528, IPR2022-01561, and IPR2022-01563. In this proceeding, IPR2022-01564, and in IPR2022-01561 and IPR2022-01563, Petitioner challenges claims 1–14 of the '435 patent over various prior art grounds. Pet. 21; Not. 2. In IPR2022-01528, Petitioner challenges claims

15–19 of the '435 patent. Not. 2. Pursuant to the Board's Consolidated Trial Practice Guide ("TPG"),[6] Petitioner's Notice provides a ranking of the four petitions in the order in which Petitioner wishes the Board to consider them on the merits and a succinct explanation of the differences between the Petitions. *See* TPG 59–60 (Nov. 2019); Not. 1–5. Petitioner ranks the instant Petition as "4," the petition in IPR2022-01528 as "1," the petition in IPR2022-01561 as "2," and the petition in IPR2022-01563 as "3." Not. 2–5. Petitioner, however, contends that "all four Petitions merit institution" because "[a]ll four Petitions present significant material differences which are not redundant and which demonstrate different substantive bases for rendering obvious or for showing anticipation of each of the challenged claims of the '435 Patent," and "[d]ue to word count limitations, Petitioner was not able to present all these grounds in a single petition." *Id.* at 1, 3. Regarding this Petition, Petitioner argues that it

> is materially different because both of the applied references, Keith and Hanson, constitute prior art under 35 U.S.C. § 102 (post-AIA) assuming a Critical Date of December 30, 2019. Institution of this fourth Petition is warranted because it provides the opportunity for the Board to address the proper Critical Date for claims 1–14 and to apply materially different prior art based on the determination of the Critical Date.

Id. at 5 (citing TPG 59).

Patent Owner argues that "the panel should, at most, address the -01528 petition on the merits, as petitioner requested, and discretionarily deny the other three petitions under § 314(a)." Prelim. Resp. 3. Patent Owner, however, does not challenge Petitioner's assertion that this Petition

[6] Available at https://www.uspto.gov/TrialPracticeGuideConsolidated.

presents a dispute regarding the proper priority date of the claims at issue; instead, Patent Owner notes that "[t]he TPG particularly notes disputes about the priority date of claims as being a circumstance where a second petition could be appropriate," and contends that this Petition should be considered "second, if at all." *Id.* at 6 (citing TPG 59).

Under the circumstances presented, where the priority date of the challenged claims is disputed, we conclude it is not unreasonable for Petitioner to present separate challenges, one of which relies on references that are prior art only if the challenged claims are not entitled to Patent Owner's claimed priority date, which has yet to be finally determined. *See* TPG 59 (stating that "a dispute about priority date requiring arguments under multiple prior art references" can be a potential reason for the Board to institute trial on multiple petitions challenging the same patent). Thus, on the present record, we decline to exercise our discretion to deny institution of this Petition on the basis of Petitioner filing multiple petitions.

III. CONCLUSION

After considering the evidence and arguments of record, we determine that Petitioner has demonstrated a reasonable likelihood of success with respect to at least one of the challenged claims. An *inter partes* review of all of the claims and all of the grounds presented in the Petition is hereby instituted. *See SAS*, 138 S. Ct. at 1354, 1359–60; *PGS Geophysical*, 891 F.3d at 1360; 37 C.F.R. § 42.108(a).

At this stage of the proceeding, the Board has not made a final determination as to the patentability of any challenged claims or any underlying factual or legal issues. The final determination will be based on the record as developed during the *inter partes* review.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of the '435 patent is instituted with respect to challenged claims 1–14 with respect to all grounds set forth in the Petition; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(a) and 37 C.F.R. § 42.4(b), *inter partes* review of the '435 patent shall commence on the entry date of this Order, and notice is hereby given of the institution of a trial.

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