

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HANSHOW AMERICA INC. and
HANSHOW TECHNOLOGY CO., LTD.,
Petitioners,

v.

SES-IMAGOTAG INC.,
Patent Owner

IPR2024-00208
U.S. Patent No. 11,010,709 B2

PETITIONERS' NOTICE OF APPEAL

Pursuant to 28 U.S.C. § 1295(a)(4)(A), 35 U.S.C. §§ 141(c), 142, and 319, 37 C.F.R. §§ 90.2(a) and 90.3(a); and Federal Circuit Rule 15(a)(1), Petitioners Hanshow America Inc. and Hanshow Technology Co., Ltd. hereby give notice of their appeal to the United States Court of Appeals for the Federal Circuit from the Final Written Decision in Case No. IPR2024-00208, concerning U.S. Patent No. 11,010,709 B2 (“the ‘709 Patent”), entered March 28, 2025 (Paper No. 52) by the Patent Trial and Appeal Board (“Board”), and all other underlying and related findings, orders, decisions, rulings, opinions, or other determinations merged into the Final Written Decision. A copy of the Final Written Decision is attached to this Notice.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Petitioners state that the anticipated issues on appeal include, but are not limited to, the following:

- 1) Whether the Board erred in determining that claims 1-5, 10-15, and 20 of the ‘709 patent are not unpatentable as obvious in light of U.S. 9,378,512 B2 (Wu);
- 2) Whether the Board erred in determining that claims 1-6, 10-16, and 20 of the ‘709 patent are not unpatentable as obvious in light of Wu and US 2009/0231135 A1 (Chavez);
- 3) Whether the Board erred in determining that claims 1-5, 7-9, 10-15, and 17-20 of the ‘709 patent are not unpatentable as obvious in light of Wu, US 2017/0293959 A1 (Itou), and US 2013/0325638 A1 (Auclair);
- 4) Whether the Board erred in determining that claims 1-5, 10-15, and 20 of the ‘709 patent are not unpatentable as obvious in light of Wu and JP 2008-77131 A (Fujiwara);
and

- 5) All other issues decided adversely to Petitioners in any order, decision, ruling, finding, determination, judgment, or opinion underlying or supporting the Final Written Decision.

Pursuant to 37 C.F.R. § 90.3, this Notice of Appeal is timely filed within 63 days of entry of the Final Written Decision dated March 28, 2025.

Per 35 U.S.C. § 142 and 37 C.F.R. § 90.2(a)(1), this notice is being filed with the Director of the U.S. Patent and Trademark Office, and a copy is also being filed with the Board. Per Federal Circuit Rule 15(a)(1) and 37 C.F.R. 90.2(a)(2), Petitioners are also electronically filing this notice with the United States Court of Appeals for the Federal Circuit through its CM/ECF System, together with the requisite filing fee.

Respectfully submitted,

Dated: May 16, 2025

/Hao Tan
Shen Wang, Reg. No. 71,847
Hao Tan, Reg. No. 73,711
Arch & Lake LLP
203 N LaSalle Street
Suite 2100
Chicago, IL, 60601
Tel. 312-558-1369

*Attorneys for Petitioners Hanshow America
Inc. and Hanshow Technology Co. Ltd.*

CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(1), the undersigned certifies that on May 16, 2025, a complete and entire copy of this Petitioners' Notice of Appeal was provided by email to the Patent Owner by serving the email correspondence addresses of record as follows:

Jessica Kaiser
Matthew J. Moffa
David Pekarek Krohn
Tyler Knox
Grant Kinsel
John C. Moulder
Christopher Marando
Olivia M. Maffei
PERKINS COIE LLP
kaiser-ptab@perkinscoie.com
moffa-ptab@perkinscoie.com
pekarekkrohn-ptab@perkinscoie.com
knox-ptab@perkinscoie.com
kinsel-ptab@perkinscoie.com
moulder-ptab@perkinscoie.com
marando-ptab@perkinscoie.com
omaffei@perkinscoie.com

Pursuant to 37 C.F.R. §§ 90.2(a)(1), I hereby certify that in addition to being filed electronically through the Board's P-TACTS System, this Petitioners' Notice of Appeal is being provided to the Director of the USPTO on May 16, 2025, by electronically filing to the email address as follows:

Director of the United States Patent and Trademark Office
c/o Office of the General Counsel
efileSO@uspto.gov

I hereby certify that on May 16, 2025, a true and correct copy of the foregoing Petitioners' Notice of Appeal, along with a copy of the Final Written Decision, was filed electronically with the Clerk's Office of the United States Court of Appeals for the Federal Circuit, at the following address:

Petitioners' Notice of Appeal
IPR2024-00208 (US. Patent No. 11,010,709 B2)

United States Court of Appeals for the Federal Circuit
717 Madison Place, N.W., Suite 401
Washington, DC 20005

Respectfully submitted,

Dated: May 16, 2025

/Hao Tan/
Shen Wang, Reg. No. 71,847
Hao Tan, Reg. No. 73,711
Arch & Lake LLP
203 N LaSalle Street
Suite 2100
Chicago, IL, 60601
Tel. 312-558-1369

*Attorneys for Petitioners Hanshow America
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HANSHOW AMERICA INC. and
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v.

SES-IMAGOTAG INC.,
Patent Owner.

IPR2024-00208
Patent 11,010,709 B2

Before JAMES P. CALVE, BRIAN J. McNAMARA, and
TERRENCE W. McMILLIN, *Administrative Patent Judges*.

McMILLIN, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining No Challenged Claim Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Hanshow America Inc. and Hanshow Technology Co., Ltd. (“Petitioner”) filed a Petition for *inter partes* review of claims 1–20 of U.S. Patent No. 11,010,709 B2 (Ex. 1001, “the ’709 patent”). Paper 2 (“Pet.”) at 1. SES-Imagotag Inc. (“Patent Owner”) filed a Preliminary Response. Paper 11 (“Prelim. Resp.”). With our authorization, Petitioner filed a Preliminary Reply (Paper 12, “Prelim. Reply”) and Patent Owner filed a Preliminary Sur-reply (Paper 13, “Prelim. Sur-reply”). We instituted the petitioned review (Paper 14, “Inst. Dec.”).

Patent Owner filed a Patent Owner Response (Paper 26, “PO Resp.”) to oppose the Petition. Petitioner filed a Reply (Paper 31, “Pet. Reply”) to the Patent Owner Response. Patent Owner filed a Sur-reply (Paper 40, “PO Sur-reply”) to the Reply. We conducted an oral hearing on February 18, 2025. A transcript has been entered into the record (Paper 51, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6(b)(4) and § 318(a). This Decision is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73 as to the patentability of claims 1–20 of the ’709 patent. We determine Petitioner has not shown by a preponderance of the evidence that any of the challenged claims are unpatentable.

II. REAL PARTIES IN INTEREST

The Petition identifies Hanshow America Inc. (“Hanshow America”) and Hanshow Technology Co., Ltd. (“Hanshow Technology”) as real parties-in-interest. Pet. 1. Patent Owner identifies SES-Imagotag SA and SES-Imagotag Inc. as real parties-in-interest. Paper 7, 2.

III. RELATED MATTERS

Petitioner and Patent Owner state that the '709 patent is asserted in the following litigation: *SES-Imagotag SA et al. v. Hanshow America Inc. et al.*, Case No. 1:23-cv-01667-BMC (E.D.N.Y.), filed March 3, 2023. Pet. 1; Paper 7, 2.

IV. THE '709 PATENT

The '709 patent is titled “Method for Updating Association Data Between Articles and Locations.” Ex. 1001, code (54). The '709 patent relates to “the association between articles of a retail area and locations of said retail area,” and more specifically, to planograms that describe such association data. *Id.* at 1:19–20, 2:6–9. The '709 patent describes that retail locations may include electronic shelf labels (ESLs) for displaying remote-controlled information on articles for sale, where ESLs may communicate with a mobile terminal, such as a mobile phone, by using, for example, “NFC (Near Field Communication) or RFID (Radio Frequency Identification).” *Id.* at 1:26–52. This arrangement enables sending location-based information to mobile terminals based on the “identification and location of at least one shelf label with which the mobile terminal starts communicating.” *Id.* at 1:56–63. The '709 patent addresses a problem, however, in which the arrangement of articles for sale deviates from a planogram, and so a “location calling on this planogram suffers from incapacity of the planogram to reflect reality.” *Id.* at 2:10–30. The '709 patent proposes “a method for keeping the planogram updated and in accordance with the real arrangement of products in the retail area.” *Id.* at 2:40–44.

Figure 1, reproduced below, illustrates an embodiment of the '709 patent.

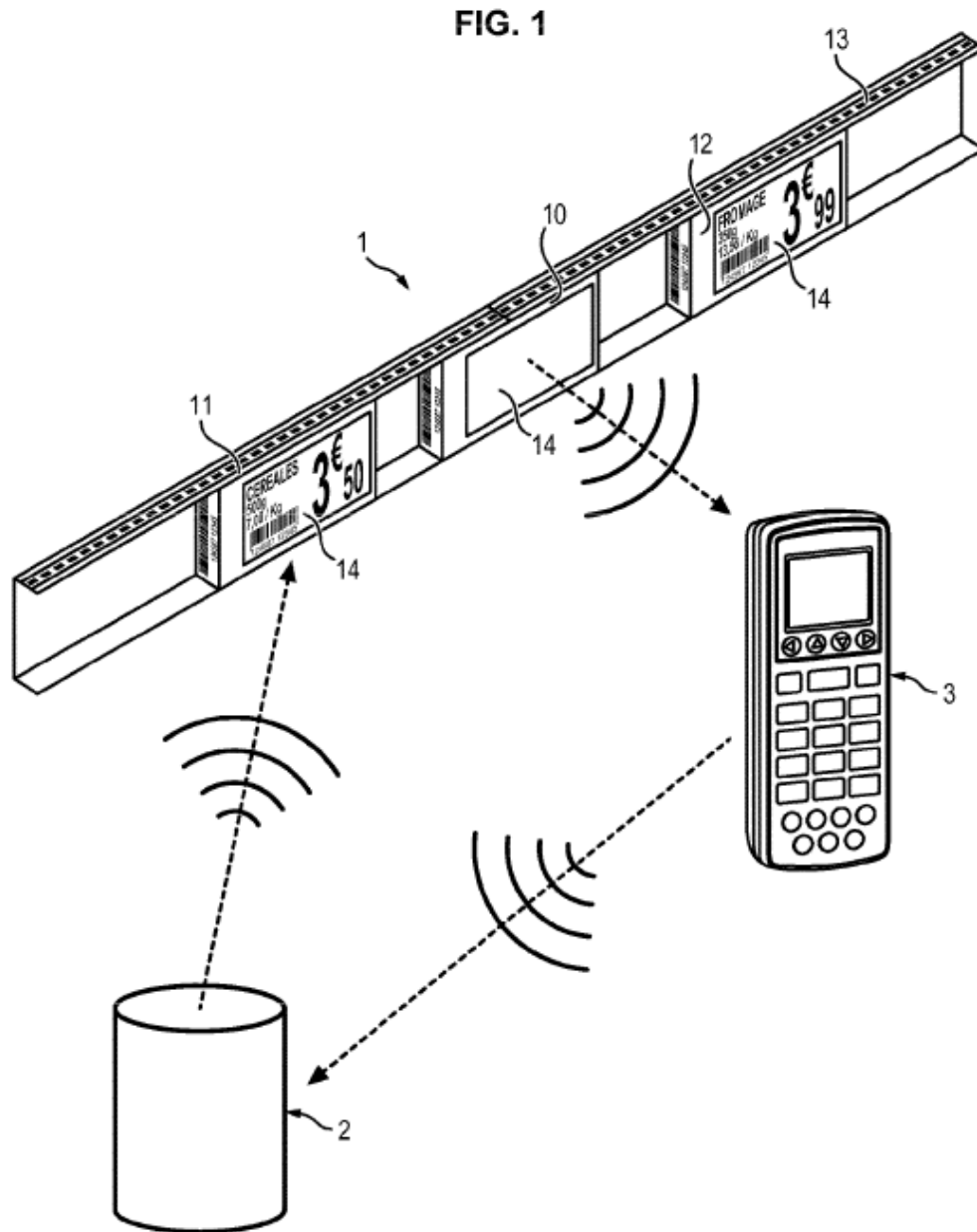


Figure 1 depicts a sequence 1 of ESLs 10, 11, and 12 on shelf rail 13, where “[e]ach ESL is identified by a unique label identifier of its own.” Ex. 1001, 4:49–50, 4:55–56. Each ESL includes display screen 14 for displaying information related to an article with which it is associated. *Id.* at 4:56–58.

Each ESL further includes a radiofrequency module for receiving data from a central station connected to computer system 2, and a radiofrequency peripheral of the RFID or NFC type for communicating with reading device 3. *Id.* at 4:64–5:12. Computer system 2 stores “data relative to the association between articles of a retail area and locations of said retail area,” which constitutes a planogram. *Id.* at 5:16–20. Computer system 2 also stores “data relative to the association between the label identifier and a location of the retail area which corresponds to the location of the ESL identified by said identifier, as well as to the article with which the ESL is associated.” *Id.* at 5:21–25.

In order to update the planogram when rearranging ESLs, for example, when adding an ESL such as ESL 10 in Figure 1, the new ESL must be located relative to the other ESLs. Ex. 1001, 5:43–51. This involves using “reading device 3 to acquire (step S1) a label identifier of an ESL 11 or 12 adjacent to the location of the added ESL 10.” *Id.* at 6:25–27. An operator then “uses the reading device 3 to acquire the label identifier of the ESL 10,” preferably by NFC. *Id.* at 6:55–57. “The reading device 3 transmits (step S2) to the computer system 2 the sequence of label identifiers comprising the identifier of the adjacent label 11, 12 and the label identifier of the added ESL 10,” and “also transmits the indication of relative positioning of said adjacent ESL 11 or 12 relative to the added ESL 10.” *Id.* at 7:9–14. An operator may use reading device 3 to acquire a reference of an article intended to be associated with ESL 10, for example, by reading a barcode or communicating with an RFID chip, or by manual entry. *Id.* at 6:57–7:8. Computer system 2 receives the information acquired by reading device 3, “and uses it to update (step S3) the association data between the

articles of the retail area and the locations of said retail area, i.e., the planogram.” *Id.* at 8:25–28.

V. ILLUSTRATIVE CLAIM

Petitioner challenges claims 1–20 (all) of the ’709 patent. Pet. 2–3. Claims 1, 10, and 11 are independent. Claim 1 is illustrative, and recites:

1. [1a] A method for updating a planogram registered in a computer system, to reflect an addition of a shelf label in a shelf of a retail area, [1b] wherein the planogram comprises association data between articles of the retail area and locations of the retail area, the method comprising:

[1c] **acquiring, by a reading device, a sequence of label identifiers comprising a label identifier of an added shelf label reflecting an addition of the shelf label in the shelf of the retail area, and also comprising a label identifier of an adjacent shelf label which is adjacent to the added shelf label** [1d] according to a scrolling direction of the locations of the retail area,

[1e] the retail area having a plurality of shelf labels distributed in the retail area, [1f] each of the shelf labels being associated with a respective article and being disposed near a respective location associated with the article, [1g] each of the shelf labels being associated with a label identifier of its own,

[1h] wherein the adjacent shelf label is either the preceding shelf label or the following shelf label in the shelf according to the scrolling direction and in relation to the added shelf label,

wherein [1i] a location of the adjacent shelf label is preliminarily known in the planogram;

[1j] identifying a location corresponding to the added shelf label in the shelf of the retail area, comprising:

[1k] **transmitting, by the reading device, the sequence of label identifiers to the computer system,**

[1l] updating, by the computer system, the planogram on the basis of the sequence of label identifiers, by determining:

[1m] articles associated with the labels of the sequence of label identifiers, and

[1n] locations of the articles, on the basis of an obtained location of the added shelf label, wherein [1o] the obtained location is a location in the planogram which is adjacent to the preliminarily known location of the adjacent shelf label.

Id. at 10:11–48 (bracketed designators added to reflect Petitioner’s parsing of the claim (*see* Pet. v) and in order to follow the arguments of the parties; the original formatting from the issued patent has been retained) (emphasis added).

VI. ASSERTED GROUNDS

Petitioner challenges claims 1–20 of the ’709 patent based on the grounds set forth in the table below (Pet. 2–3).

Claims Challenged	35 U.S.C. §	Reference(s) Cited ¹
1–5, 10–15, 20	103 ²	Wu ³

¹ Petitioner contends that the cited art qualifies as prior art under applicable law. *See* Pet. 3–4. Patent Owner does not dispute the prior art status of the cited art. *See* Prelim. Resp. We determine that the cited art qualifies as prior art.

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), amended 35 U.S.C. § 103, was effective on March 16, 2013. The application for the ’709 patent is based on a PCT application filed on July 25, 2016, which entered the national stage on Jan. 25, 2018, and which claims priority to a foreign application filed July 27, 2015. Ex. 1001, codes (22), (86), (30), 1:8–13. Because the date of the priority claim is after the effective date of the applicable AIA amendment, the AIA version of § 103 applies for purposes of institution.

³ US 9,378,513 B2, issued June 28, 2016; filed July 17, 2014 (Ex. 1003).

Claims Challenged	35 U.S.C. §	Reference(s) Cited ¹
1–6, 10–16, 20	103	Wu, Chaves ⁴
1–5, 7–9, 10–15, 17–20	103	Wu, Itou ⁵ , Auclair ⁶
1–5, 10–15, 20	103	Wu, Fujiwara ⁷

Petitioner relies on the Declaration of Manos M. Tentzeris, Ph.D. (Ex. 1009) and Patent Owner relies on the Declaration of Rajeev Surati, Ph.D. (Ex. 2010).

VII. CLAIM CONSTRUCTION

In *inter partes* reviews, the Board construes claims using the same claim construction standard employed in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (2023). The “words of a claim ‘are generally given their ordinary and customary meaning,’” as would have been understood by a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek*,

⁴ US 2009/0231135 A1, published Sept. 17, 2009 (Ex. 1006).

⁵ US 2017/0293959 A1, published Oct. 12, 2017; filed Sept. 28, 2015, with a priority claim to a foreign application filed Sept. 30, 2014 (Ex. 1004).

⁶ US 2013/0325638 A1, published Dec. 5, 2013 (Ex. 1005).

⁷ JP 2008-77131 A, published Apr. 3, 2008 (Ex. 1007).

Inc., 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner contends, at this stage, that “no claim construction is necessary to resolve the controversy involved in this IPR, and the terms of the ’709 Patent should be given their ordinary and customary meaning.” Pet. 4. In the claim construction section of its Response, Patent Owner discusses the claim terms “location(s)” and “planogram.” *See* PO Resp. 16–29.

As discussed in our analysis below, we determine that Petitioner has failed to show that the prior art teaches or suggests certain limitations of the claims that do not include either the term “location(s)” or “planogram.” Accordingly, no need exists to expressly construe any claim terms to resolve the parties’ disputes. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe 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))). Our decision relies on the plain and ordinary meaning of the limitations on which our decision is based and no need exists to expressly construe any claim term to make our decision.⁸

VIII. OBVIOUSNESS ANALYSIS

A. Principles of Law

Under 35 U.S.C. § 103(a), “[a] patent claim is unpatentable if the differences between the subject matter sought to be patented and the prior art

⁸ We note that, in the Response, Patent Owner states that “even without any claim construction, all Grounds fail because Wu does not disclose a label reader that acquires and transmits a *sequence* of label identifiers.” PO Resp. 30; *see also id.* at 43 (“Regardless of any claim construction, Petitioners

are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (similar language). The question of obviousness involves resolving underlying factual determinations including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and when presented (4) objective evidence of non-obviousness (not presented here). *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). Further, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *See KSR*, 550 U.S. at 418.

B. Level of Ordinary Skill in the Art

Petitioner contends that

A person having ordinary skill in the art relating to the subject matter of the ’709 Patent as of the Critical Date (“POSITA”) would have had at least a Master of Science Degree in an academic area emphasizing electrical engineering, computer engineering, wireless telecommunication systems, or an equivalent field (or a similar technical Master’s degree, or higher degree).

Pet. 6 (citing Ex. 1009 ¶ 31). Petitioner further contends, in the alternative, that “a POSITA would have had a Bachelor’s Degree (or higher degree)” in one of the fields noted above, with “two or more

cannot demonstrate unpatentability of any claim of the ’709 Patent because Petitioners fail to identify a ‘reading device’ that acquires and transmits the ‘sequence of label identifiers’ recited by the claims.”). Our decision is based on our determination that Petitioner has failed to establish that the cited art teaches or suggests acquiring and transmitting a sequence of label identifiers as recited in the independent claims of the ’709 patent.

years of work experience” in one of those fields. *Id.* According to Petitioner, “[a]dditional education in a relevant field or relevant industry experience may compensate for a deficit in one of the other aspects of the requirements stated above.” *Id.* Patent Owner applies Petitioner’s definition of the level of ordinary skill in the art. PO Resp. 16.

Determining the level of ordinary skill in the art involves various factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citation omitted). The prior art of record also reflects the level of ordinary skill in the art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). We adopt the assessment offered by Petitioner, as it is not disputed by the Patent Owner and is consistent with the ’709 patent and the asserted prior art.

C. Overview of the Asserted Prior Art

1. Wu (Ex. 1003)

Wu is titled, “Electronic Shelf Label Controlling System, Electronic Shelf Label Installing Method and Electronic Shelf Label Updating Method.” Ex. 1003, code (54). Figure 1 of Wu is reproduced below.

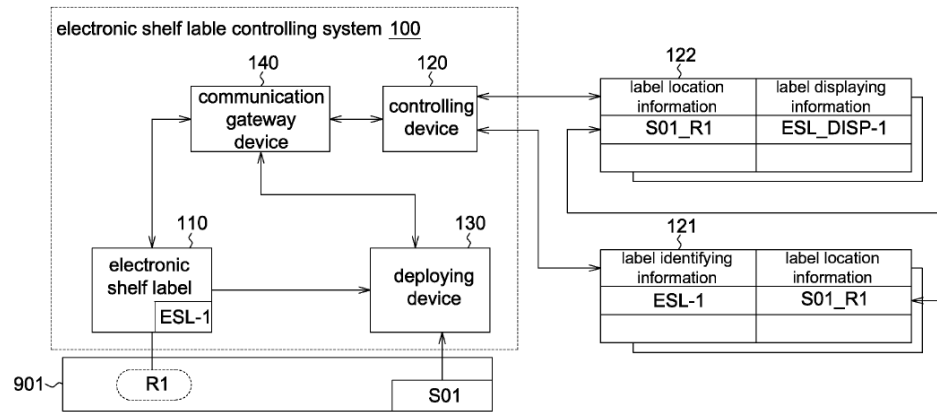


FIG. 1

Figure 1 depicts an “an electronic shelf label controlling system 100.” *Id.* at 2:51–52. System 100 includes electronic shelf label 110, controlling device 120, deploying device 130, and communication gateway device 140. *Id.* at 2:52–55. Label 110 is placed on shelf 901, and displays certain product information. *Id.* at 2:56–63. Deploying device 130 can be a smart phone or other handheld device “for reading the information of the shelf 901 or the electronic shelflabel 110.” *Id.* at 3:10–13. Gateway device 140 enables communication between deploying device 130 and controlling device 120, which “stores a label location table 121 and a label content table 122.” *Id.* at 2:64–3:5, 5:16–17.

Figure 2 of Wu is “a flowchart of an electronic shelflabel installing method” (Ex. 1003, 3:43–44), and is reproduced below.

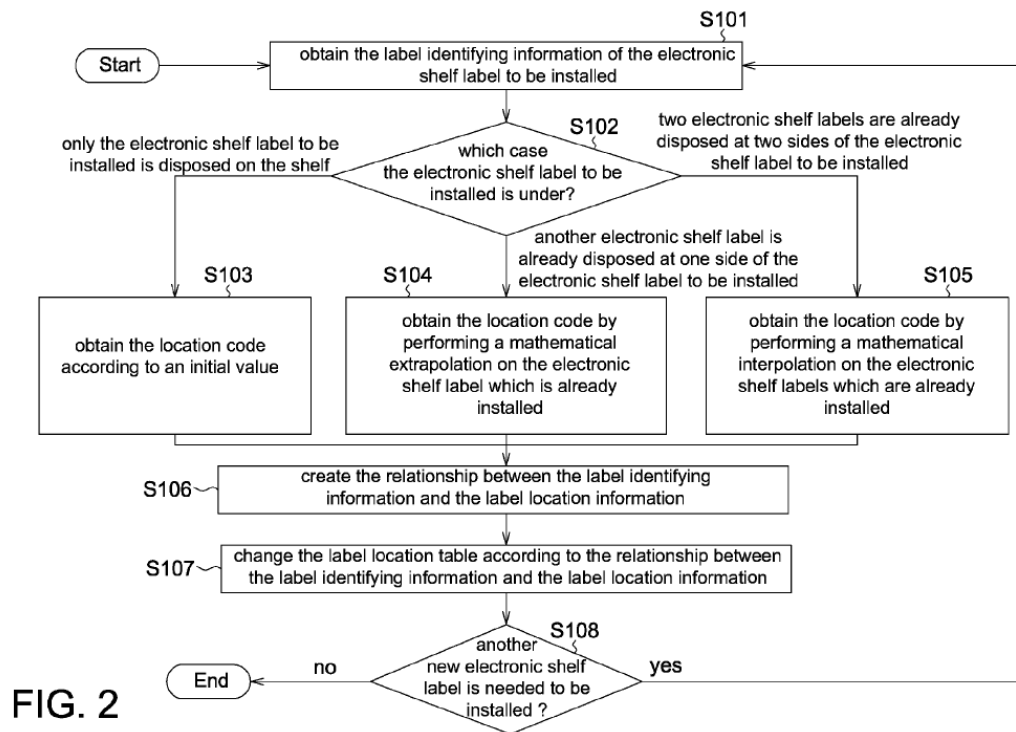


FIG. 2

Figure 2 depicts several different cases for installing an electronic shelf label 110, depending on the number of other labels already disposed on a shelf, specifically, whether there are no labels yet installed on the shelf other than the label 110 to be installed, a single label disposed to one side, or two labels disposed on two sides. *Id.* at 3:44–58. In each of these three cases, “the deploying device 130 obtains the label identifying information of the electronic shelf label 110” (step S101). *Id.* at 3:59–60. After determining which case to install label 110 under (step S102), either “the deploying device 130 or the controlling device 120 creates the label location information of the electronic shelf label 110” (steps S103, S104, S105). *Id.* at 3:62–63, 4:9–11. Specifically, for the case in which one label is already installed on the shelf, “the location code is obtained by performing a mathematical extrapolation on the electronic shelf label which is already installed,” and “[t]he shelf code of the electronic shelf label which is already

installed and the location code are combined to be the label location information.” *Id.* at 4:14–20. Thereafter, “the deploying device 130 or the controlling device 120 creates the relationship between the label identifying information and the label location information” (step S106), and “the controlling device 120 changes the label location table 121 according to the relationship” (step S107). *Id.* at 4:26–32.

2. *Itou (Ex. 1004)*

Itou is titled, “Information Processing Apparatus, Shelf Label Management System, Control Method, and Program.” *Ex. 1004*, code (54). *Itou* discloses apparatus including a product recognition unit and a shelf label recognition unit that recognizes an electronic shelf label (ESL) from an image. *Id.*, code (57). Figure 2 of *Itou* is reproduced below.

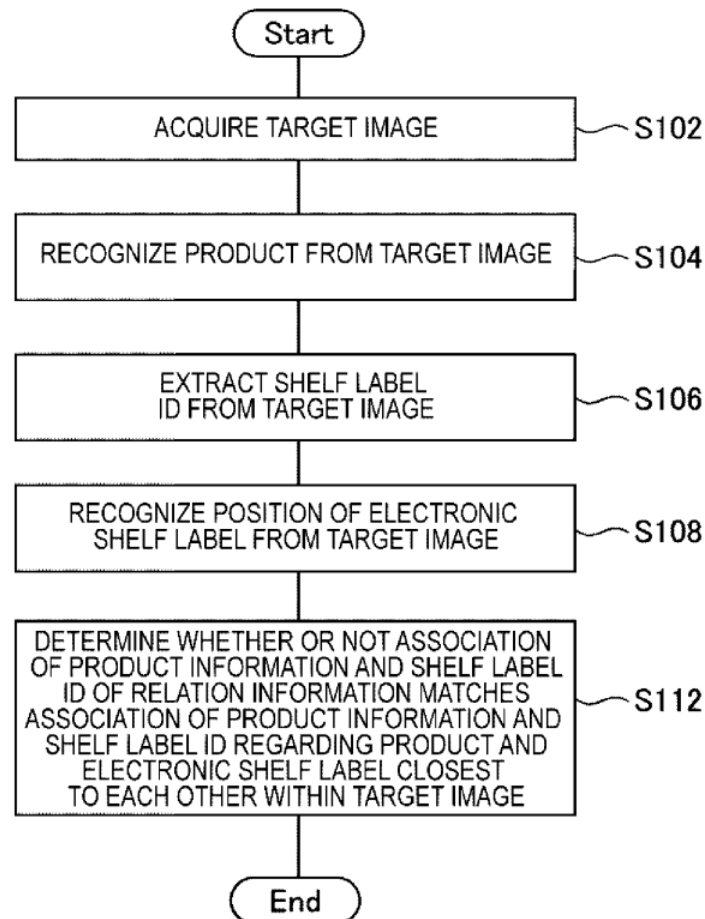


Figure 2 of Itou depicts a block diagram of a process illustrating the usage of an exemplary embodiment of Itou. *Id.* ¶¶ 13–14. Itou discloses a process to check whether the product information displayed on an ESL matches the product closest to the ESL. Itou’s process involves: (1) taking a picture of shelves with one or more ESLs; (2) identifying the product(s) in the picture using image processing; (3) extracting the “label ID” of each ESL also using image processing; (4) identifying which ESL is closest to each product in the picture; and (5) comparing the products identified in the picture to the products associated with the closest ESL to ensure there is a match between the two. Ex-1004, [0005], [0007]–[0009], [0044]–[0050], Figs. 2, 10.

Figure 10 of Itou is reproduced below.

FIG. 10

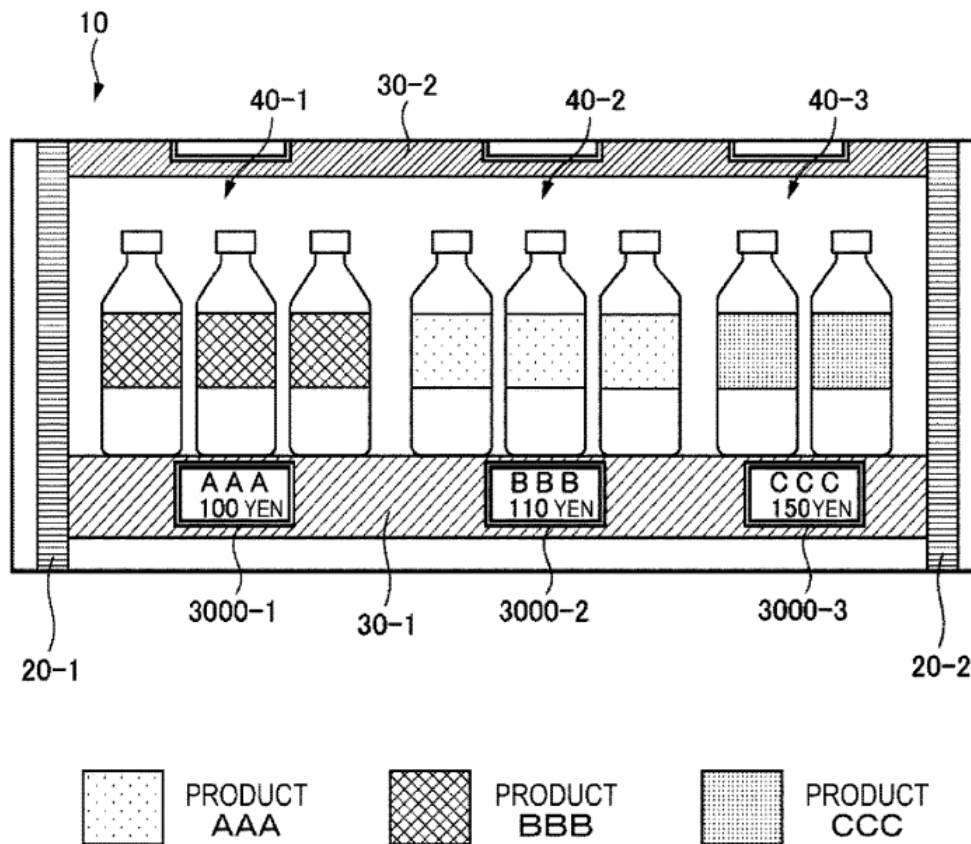


Figure 10 of Itou depicts the arrangement of three products in relation to three ESLs. In one embodiment, Itou suggests that, if there is a mismatch between a product and its closest ESL, the ESL can be updated to match the product closest to it on the shelf. *Id.*, [0139]. Itou does not envision updating a planogram after adding or removing an ESL from a shelf. *Id.* ¶ 83.

3. *Auclair (Ex. 1005)*

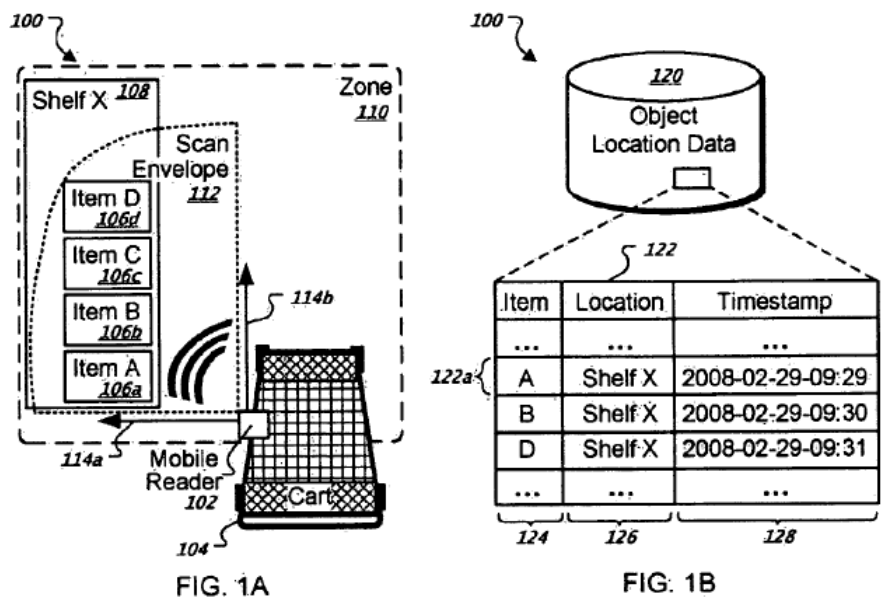
Auclair is titled, “Method, System and Computer Program for Assigning an Assortment of Products to an Existing Platform.” Ex. 1005, code (54). Auclair relates “to the automated production of store-specific product placement within shelving areas using an existing planogram and a corresponding existing assortment of products.” *Id.* ¶ 1. Auclair discloses a process of updating an existing planogram for a store to account for changes in the placement of particular products. *Id.* ¶ 63. Specifically, Auclair’s software takes an existing planogram and a user-defined “new assortment of products” as inputs; the software evaluates the organizational structure of how products are grouped together using a set of categories (such as how products are grouped together in one section of a shelf and/or brand); and then the software outputs a new planogram that accounts for the “new assortment of products” consistent with the organizational structure. *Id.* ¶¶ 63–73.

4. *Chaves (Ex. 1006)*

Chaves is titled “Enhanced Item Tracking Using Selective Querying.” Ex. 1006 ¶ 54. Chaves “generally relates to reading RFID tags,” and more specifically, to adjusting an RFID device “to selectively query those items known to be within range of the device.” *Id.* ¶ 3. In particular, Chaves

describes that “RFID data of item-level tagged goods within a retail environment, such as a grocery store or discount store, may be registered and read,” and proposes an “enhanced approach” in order “to accurately identify numerous items at a given point in time.” *Id.* ¶ 20. An RFID reader in Chaves may, in an example, “scan specifically for items, related to pets (e.g., dog treats, cat litter, fish food, etc.),” based on “the reader’s[] location and direction of travel . . . and knowledge of product locations on the shelves (e.g., using information from an ERP [Enterprise Resource Planning] system).” *Id.* ¶ 22.

Figures 1A and 1B illustrate an exemplary system according to Chaves, and are reproduced below.



As depicted in Figure 1A of Chaves, system 100 may include mobile reader 102 attached to a shopping cart 104, where mobile reader 102 includes an RFID scanner for sending and receiving signals to tags or transponders attached to multiple products or items 106a–d. Ex. 1006 ¶ 34. Mobile reader 102 may begin reading RFID tags when shopping cart 104 enters

zone 110. *Id.* ¶ 35. Specifically, “mobile reader 102 may begin scanning items within a scan envelope 112 defined in part, for example, by scan directions 114*a* and 114*b*,” where “scan direction 114*a* may be generally perpendicular to the direction of movement of the cart 104, such as toward the shelf ‘X’ 108, or it may take on another orientation,” and “scan direction 114*b* may be generally parallel to the direction of movement of the cart 104.” *Id.* ¶¶ 35–36.

Figure 1B of Chaves depicts object location data 120 resulting from mobile reader 102 scanning items 106*a–d* on shelves. Ex. 1006 ¶ 37. Object data 120 may include multiples entries 122 for the items on each shelf, for example, where “an entry 122 may include fields or values such as an item identifier 124 (e.g., A, B or D), a location 126 (e.g., ‘Shelf X’), and a timestamp 128.” *Id.* ¶ 38. “Notably, in an initial state, the object location data 120 does not include an entry for item C 106*c*.” *Id.* In an embodiment, “the item C 106*c* may not be pet-related, and therefore not included in” a query. *Id.* ¶ 40.

5. *Fujiwara (Ex. 1007 and Ex. 1008⁹)*

Fujiwara is titled, “Location recognition system, collaborative system of electronic shelflabel and mobile information terminal, store server, electronic shelflabel, product display shelf, mobile information terminal, program, and storage medium.” Ex. 1007, code (54). Fujiwara discloses a system that uses electronic shelflabels and mobile information terminals to

⁹ Exhibit 1007 is a certified English translation of Fujiwara and Exhibit 1008 is the original Fujiwara in Japanese. In this decision, we refer to and cite Exhibit 1007.

specify product locations in a store and present the products' location. *Id.* (code 57). Figure 1 of Fujiwara, is reproduced below.

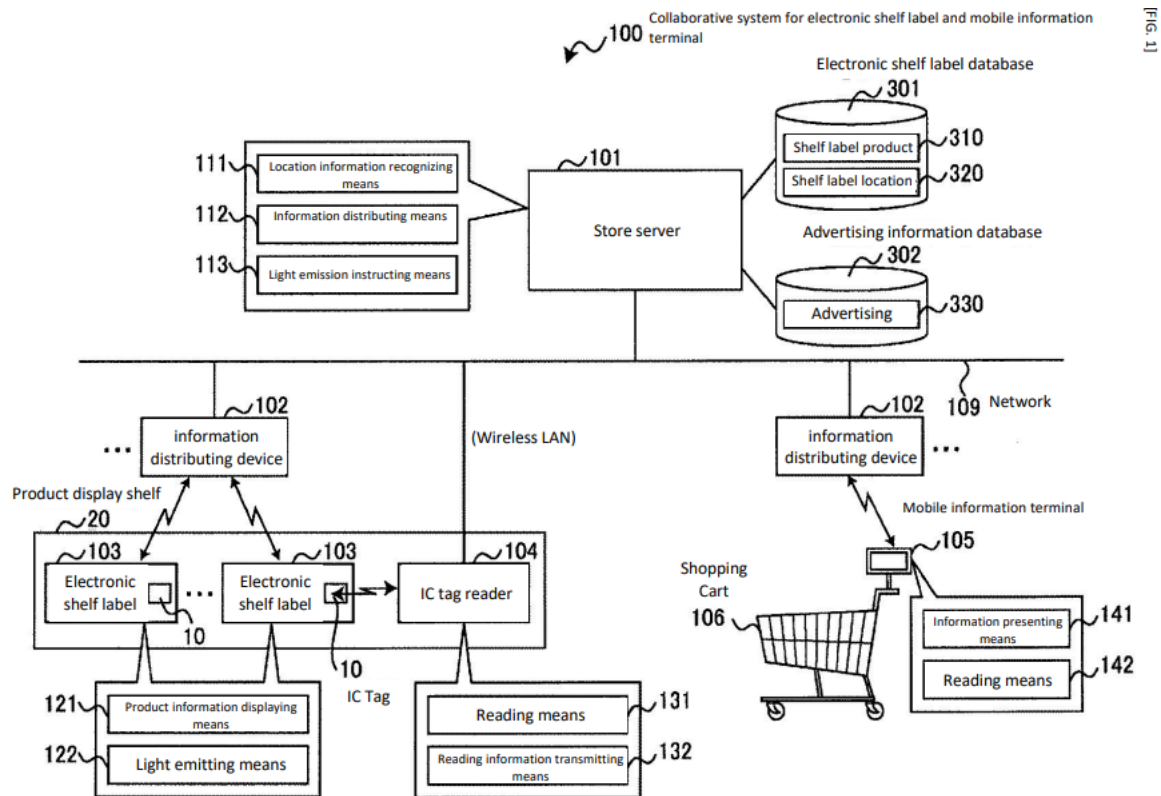
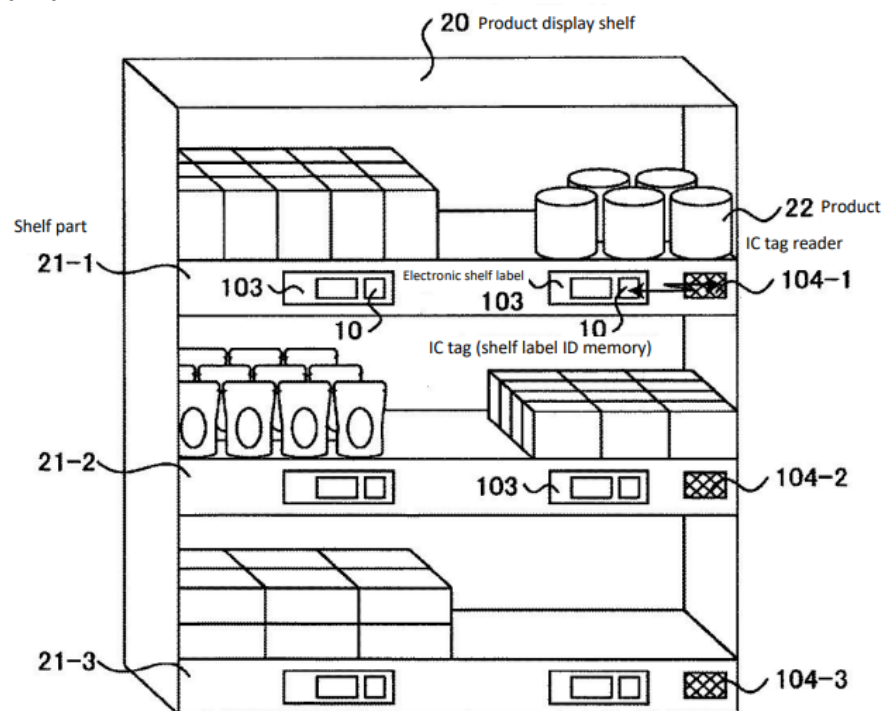


Figure 1 “depicts an example of a collaborative system 100 of electronic shelf label and mobile information terminal.” *Id.* ¶ 41. “Collaborative system 100 of electronic shelf label and mobile information terminal includes a store server 101, one or more information distributing devices 102, one or more electronic shelf labels 103, one or more IC tag readers 104, one or more mobile information terminals 105 provided on shopping carts 106, [and] a network 109.” *Id.* ¶ 41. Electronic shelf database 301 stores shelf label product information 310 associating shelf label ID 311 with product information 312 and shelf label number location information 320 with shelf number 313, identifying the location of the electronic shelf label. *Id.* ¶¶ 15, 44, 62. Advertising database 302 stores product advertising information. *Id.* ¶ 44. Information distributing device 102 provides a

communication interface that intermediates communication via network 109 with store information terminals (electronic tags) 103 and server 101. *Id.* ¶ 70.

Figure 4 of Fujiwara is reproduced below.

[FIG. 4]



[FIG. 5]

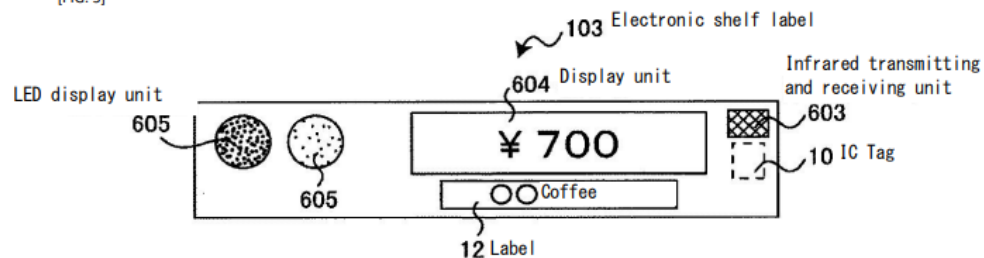


Figure 4 depicts, “the appearance configuration of the electronic shelf label 103 and IC tag reader 104.” *Id.* ¶ 66. As shown in Fujiwara’s Figure 4, each shelf label 103 corresponds to a product on the display shelf 20 and is shaped as a thin plate. *Id.* ¶ 46. Electronic shelf label 103 has a wireless infrared transmitting and receiving unit 603 that receives product pricing and information for customers from store receiver 101 through information

distributing device 102. *Id.* ¶ 67. On the front of shelf part 21 of product display 20, shelf label 103 displays information related to each product 22 on display 604. *Id.* ¶¶ 66, 67. Integrated into shelf label 103 is IC tag 10, which stores shelf label 311, and is typically formed with both parts of an IC attached to a coil shaped antenna. *Id.* ¶¶ 67, 70. IC tag readers 104-1, 104-2, etc. are provided, such that the shelf label ID in one or more tags on the same shelf can be read collectively at each shelf part 21-1, 21-2, etc., without contact. *Id.* IC tag reader 104 transmits a call-up signal resonant at a distance of several to several tens of centimeters to shelf label 103 integrated IC tag 10 and reads the shelf label ID recorded in the IC tag. *Id.* ¶¶ 47, 72. Tag reader 104 includes control unit 401 that transmits the read shelf ID 31a and the sender ID of the reading device to store server 101. *Id.* ¶¶ 7, 17, 85.

Figure 10 illustrates a process for location recognition of products using integrated IC tag 10. *Id.* ¶¶ 84–87, 113. In the process of Figure 10, communication with IC tag 10 is continuously maintained (S1001), IC tag 104 responds to a call from tag reader 104 (S1003, S1004), and tag reader 104 reads a shelf label ID 311 (S1005, 1006) that it transmits to store server 101 (S1007). Store server 101 obtains shelf number 313 from the sender ID, correlates received shelf label ID 311 with shelf number 313, stores the information in shelf location information 320 in shelf label database 301 and repeats the process until all reading has been completed by all tag readers 104 (S1008–S1011, S1002).

Figure 11 shows a configuration with IC tag 11 that stores shelf number 313. *See id.* ¶ 88. Figure 12 illustrates a process for location recognition of products using IC tag 10 and IC tag 11. *Id.* ¶¶ 90–96.

Figure 14 illustrates a process for customer acquisition of information based on the location information. *Id.* ¶¶ 102–106. A customer holds up IC tag reader 506 of mobile information terminal 105, which transmits a call signal to nearby IC tags 10, receives a response, and reads and transmits shelf label 311 to store server 101 (S1401–S1406). *Id.* Using received shelf label 311, store server 101 extracts product information 312 and shelf number 313 from shelf label database 301, and transmits the product information, shelf number, and advertising information 330 corresponding to the product information to the mobile information terminal (S1407–S1409). Mobile terminal 105 then associates the received product information 312 and shelf number 313 and displays the received advertising information (S1410–S1411). *Id.*

D. Analysis of Obviousness Arguments

The Petition presents four obviousness grounds. Pet. 2–3. The first ground is a single reference obviousness ground in which Petitioner challenges claims 1–5, 10–15, and 20 as being obvious in view of Wu. *See* Pet. 2, 6–49. In the second ground, Petitioner challenges claims 1–6, 10–16, and 20 as being obvious in view of Wu and Chaves. *See id.* at 2, 49–64. In the third ground, Petitioner challenges claims 1–5, 7–9, 10, 11–15, and 17–20 as being obvious in view of Wu, Itou, and Auclair. *See id.* at 2, 64–83. In the fourth ground, Petitioner challenges claims 1–5, 10, 11–15, and 20 as being obvious in view of Wu and Fujiwara. *See id.* at 3, 83–90.

Patent Owner argues that “Petitioners cannot demonstrate unpatentability of any claim of the ’709 Patent because Petitioners fail to identify a ‘reading device’ that acquires and transmits the ‘sequence of label

identifiers’ recited by the claims.” PO Resp. 43. This argument relates to the following claim language in independent claim 1:

*acquiring, by a reading device, a sequence of label identifiers
comprising a label identifier of an added shelf label
reflecting an addition of the shelf label in the shelf of the
retail area, and also comprising a label identifier of an
adjacent shelf label which is adjacent to the added shelf label
. . . .*

*transmitting, by the reading device, the sequence of label
identifiers to the computer system.*

Ex. 1001, 10:16–21, 10:37–38. The only other independent claims 10 and 11 contain corresponding limitations recited using very similar language. *Id.* at 10:47–52, 12:1–2, 12:33–36, 12:45–46.¹⁰ We consider the arguments and evidence of the parties in order to determine whether the cited art, alone, or in the asserted combinations, teaches or suggests these limitations.

*1. Wu Does Not Disclose Acquiring or Transmitting the
Recited Sequence*

Petitioner relies on Figures 2 and 3B and the related descriptions in Wu for allegedly teaching or suggesting acquiring and transmitting the recited sequence. *See* Pet. 13–17, 25–27. Figure 2 of Wu is reproduced below.

¹⁰ During trial, the parties argue together these limitations and all the challenged independent claims. *See* PO Resp. 43–56; Pet. Reply 15–21; PO Sur-reply 2–12. *See also* Tr. 5 (Petitioner’s counsel arguing “[T]he ’709 patent . . . has an acquiring step. It’s acquiring a sequence of . . . shelf labels, and then transmitting this sequence to a computer system;” PO Sur-reply 2 (Patent Owner arguing “Each independent claim recites ‘acquir[ing]’ and ‘transmit[ting],’ by a reading device, ‘a sequence of label identifiers,’ including the identifier of: (1) ‘an added shelf label’ and (2) ‘an adjacent shelf label’ next to ‘the added shelf label.’” (alterations in original))).

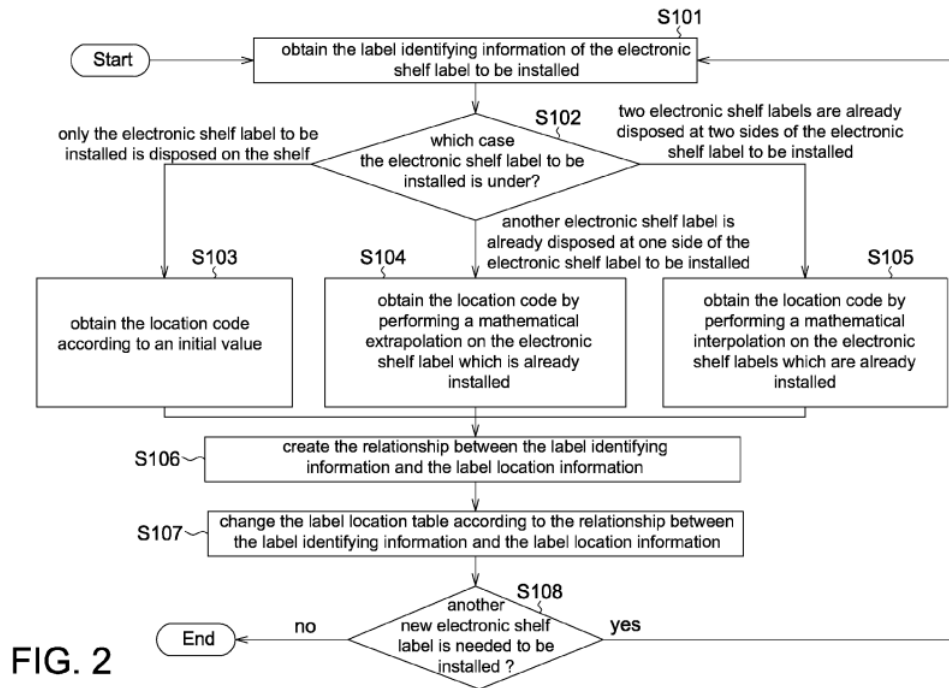


Figure 2 depicts “a flowchart of an electronic shelf label installing method.”

Ex. 1006, 2:19–20. The Petition provides:

Wu discloses a “deploying device. . . is used for reading the information of the shelf[] or the electronic shelf label.” Ex. 1003, [3:10-11]. Wu discloses that the deploying device “may be a smart phone, a tablet PC or a handheld device.” *Id.*, [3:11-13]. A POSITA would recognize that this deploying device is the claimed **reading device**. Ex. 1009, ¶77.

Wu also discloses procedures for obtaining the new location information of an ESL that is added in a shelf based on the registered location information of an adjacent ESL. *See* Ex. 1003, [2:19-20], FIG. 2. This involves **acquiring, by the reading device, the label identifier** for the ESL that is installed (the **added shelf label**). *Id.*, [3:59-61] (“the deploying device [] obtains the label identifying information of the electronic shelf label”); FIG. 2 (disclosing a first step of “obtain[ing] the label identifying information of the electronic shelf label to be installed” (S101), and steps for identifying its location based on the location of installed ESLs (S104 and S105)). . . .

Element [1c] requires that the reading device “acquir[es]” a “sequence of label identifiers[,]” one being that of the added shelf label, and another being that of an adjacent shelf label that

was already installed. Ex. 1001, [10:16-21]. The identifier of the added shelf label, as explained, is acquired by the reading device at step S101. Ex. 1003, [3:59-61] (“[i]n step S101, the deploying device [*i.e.*, reading device] obtains the label identifying information of the electronic shelf label [] to be installed”). Notably, steps S103 to S106 can be completed by either the reading device (deploying device) or the computer system (controlling device). *Id.*, [3:36-42, 4:9-28, 4:38-43]. A POSITA would recognize that, in order for the reading device (deploying device) to complete steps S103-S106, the reading device (deploying device) **acquires** the location of **an adjacent shelf label** that was already installed. Ex. 1009, ¶80. The POSITA would understand that, without acquiring this second identifier in the sequence (which is explicitly shown in FIG. 3B of Wu), the reading device could not possibly “create[] the relationship between the label identifying information and the label location information[,]” by extrapolating from the ESL that is already installed as required by steps S104 and S106. *Id.*, ¶81; Ex. 1003, [4:26-28].

Pet. 14–16 (alterations in original (except Fig. 2 omitted)). In this passage, Petitioner identifies explicit teachings of a “reading device” and “acquiring, by a reading device, a sequence of label identifiers comprising a label identifier of an added shelf label” as recited. But, Petitioner does not identify any explicit teaching in Figure 2 or its related disclosure of “acquiring, by a reading device, a sequence of label identifiers . . . comprising a label identifier of an adjacent shelf label which is adjacent to the added shelf label” as recited.

Figure 2, in step S101, discloses “obtain[ing] the label identifying information of the electronic shelf label to be installed.” *See also* Ex. 1009, 3:59–61 (“In step S101, the deploying device 130 obtains the label identifying information of the electronic shelf label 110 to be installed.”). Figure 2 and the related description do not disclose the deploying device (the

claimed “reading device”) obtaining (or acquiring) the identifier of any other shelf label. The only other data that Figure 2 discloses obtaining (or acquiring) is the “location code.” *See* Fig. 2, steps S103, S104, and S105). *See also* Ex. 1009. The location code is a value such as “R1” and is part of the label location information in Wu.¹¹ And, the label location information is distinct from the label identifying information.¹² The Petition states that “[a] POSITA would recognize that, in order for the reading device (deploying device) to complete steps S103-S106, the reading device (deploying device) **acquires** the location of **an adjacent shelf label** that was already installed.” Pet. 16 (citing Ex. 1009 ¶ 80). Figure 2 and the related description do not contain an explicit teaching that the reading device acquires the label identifying information of the adjacent shelf label.

Instead of identifying teachings that support its argument that Wu discloses acquiring a sequence comprising a shelf label identifier of an adjacent shelf label which is already installed, Petitioner asserts “[t]he POSITA would understand that, without acquiring this second identifier in the sequence (which is explicitly shown in FIG. 3B of Wu^[13]), the reading device could not possibly ‘create[] the relationship between the label

¹¹ “The label location information is used for recording the shelf 901 where the electronic shelf label 110 is disposed and the relative position on the shelf 901 where the electronic shelf label 110 is disposed, such as ‘SO1_R1.’ ‘SO1’ is a shelf code and ‘R1’ is a location code.” Ex. 1003, 3:23–28.

¹² “The label identifying information is used for identifying the electronic shelf label 110, such as ‘ESL-1.’” Ex. 1003, 3:22–23.

¹³ As discussed *infra*, Figure 3B of Wu does not explicitly show the reading devices acquiring the second identifier in the sequence. There exists no support for this contention in Wu.

identifying information and the label location information[,]' by extrapolating from the ESL that is already installed as required by steps S104 and S106.” Pet. 16 (citing Ex. 1003, 4:26-28; Ex. 1009 ¶ 81) (third and fourth alterations in original). There is no explanation or reasoning provided in the Petition to support this assertion. *See id.* We can find no support for this assertion that the method described in Wu requires this undisclosed step or that it could not otherwise possibly work¹⁴ to create the relationship between the label identifying information and the label location information of the added shelf label by extrapolation from the ESL that is already installed. The only evidence cited in support of this assertion is a short passage in Wu (Ex. 1003, 4:26–28) and paragraph 81 of the Declaration of Dr. Tentzeris (Ex. 1009). This short passage in Wu provides that, “[i]n step S106, the deploying device 130 or the controlling device 120 creates the relationship between the label identifying information and the label location information.” Ex. 1003, 4:26–28. This passage does not support Petitioner’s assertion. The cited paragraph in the Declaration of Dr. Tentzeris provides:

81. In my opinion, a POSITA would understand that, without acquiring this second identifier in the sequence (which

¹⁴ Prior art patents enjoy a presumption of enablement. *Apple Inc. v. Corephotonics, Ltd.*, 861 Fed. Appx. 443, 450 (Fed. Cir. 2021). Wu is presumed to enable what it discloses. *See Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1355 (Fed. Cir. 2003) (“a presumption arises that both the claimed and unclaimed disclosures in a prior art patent are enabled”). However, even without applying this presumption, Wu provides a disclosure that establishes how to create the relationship between the label identifying information and the label location information of the added shelf label by extrapolation or interpolation without the reading device acquiring the label identifying information of the adjacent shelf label which is already installed. *See* Ex. 1003, 3:59–4:28.

is explicitly shown in FIG. 3B of Wu), the reading device could not possibly “create[] the relationship between the label identifying information and the label location information[,]” by extrapolating from the ESL that is already installed as required by steps S104 and S106. Ex. 1003, [4:26-28].

Ex. 1009 ¶ 81. Dr. Tentzeris does not support his opinion with any explanation, reasoning, facts or data, here or elsewhere. This unsupported, conclusory testimony is entitled to little or no weight. *See cxLoyalty, Inc. v. Maritz Holdings Inc.*, 986 F.3d 1367, 1378 (Fed. Cir. 2021) (“We do not accord weight to conclusory expert testimony.”); *see also* 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”). There is no evidence that supports Petitioner’s assertion that a skilled artisan would understand from Wu that the reading device acquires the label identifying information of a second shelf label that is already installed and adjacent to the added shelf label.

Moreover, the explicit disclosure in Wu of how the label location information of the added shelf label is determined contradicts Petitioner’s assertion that the label identifying information of an adjacent shelf label is required to do so. Step S104 of Figure 2 of Wu states that according to the method disclosed, it can “obtain the location code [of the electronic shelf label to be installed] by performing a mathematical extrapolation on the electronic shelf label which is already installed.” The detailed description of this method in Wu provides:

In steps S103, S104 and S105, the deploying device 130 or the controlling device 120 creates the label location information of the electronic shelf label 110 to be installed. In step S103, the location code is obtained according to an initial value. The shelf code of the shelf 901 and the location code of

the electronic shelf label 110 are combined to be the label location information. In step S104, the location code is obtained by performing a mathematical extrapolation on the electronic shelf label which is already installed. The shelf code of the electronic shelf label which is already installed and the location code are combined to be the label location information. . . .

In step S106, the deploying device 130 or the controlling device 120 creates the relationship between the label identifying information and the label location information.

Ex. 1003, 4:9–28. The method of Wu uses the shelf code and the location code of the adjacent label that is already installed and by “mathematical extrapolation” obtains the label location information of shelf label to be installed and creates the relationship between this mathematically obtained label location information and the label identifying information of the shelf label to be installed. Contrary to Petitioner’s assertion, there is no need for the label identifying information of the adjacent shelf label which is already installed in this method of Wu to be acquired in a sequence of label identifiers or transmitted to the computer system as claimed.¹⁵

¹⁵ Patent Owner argues:

Moreover, Petitioners’ reading of Wu is incorrect. Simply put, acquiring a label identifier of an existing shelf label is not necessary for Wu to add a new shelf label. Rather, when adding a shelf label, all Wu needs regarding the existing shelf label(s) is the existing “label location” code, which provides the necessary information to generate the “label location” code for the new shelf label. Ex.-2010, ¶123.

PO Resp. 49. And, Patent Owner argues:

Wu’s operation is straightforward. When installing a new shelf label next to an existing one, Wu explains that a reading device: (1) acquires the *label identifier* for the new label; (2) acquires the *location code* of the existing shelf label(s); and (3) derives a *new location code* from the existing location code for

Petitioner contends that Wu explicitly depicts the reading device acquiring the label identifying information of an adjacent shelf label which is already installed in Figure 3B. Pet. 16–17. Figure 3B of Wu is reproduced below.

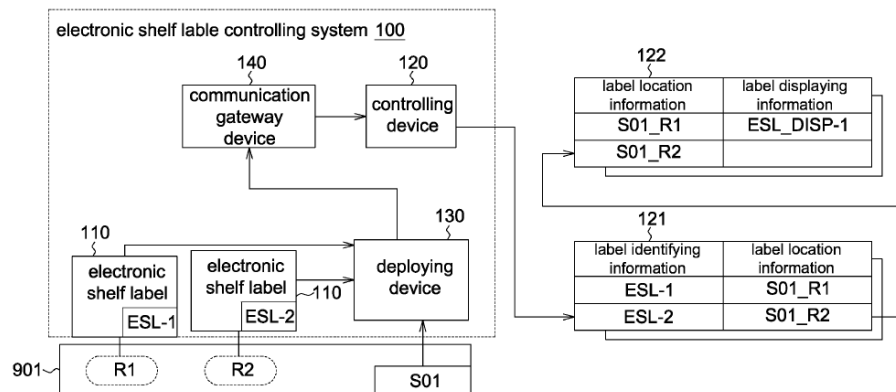


FIG. 3B

Figure 3B of Wu depicts “an example of the electronic shelf label controlling system under a second case.” Ex. 1003, 2:23–24. “In a second case, another electronic shelf label is already disposed at one side of the electronic shelf label 110 to be installed and there is no electronic shelf label disposed at another side of the electronic shelf label 110 to be installed.” *Id.* at 3:50–53. With regard to Figure 3B and this limitation, the Petition provides:

FIG. 3B of Wu shows an example of the ESL controlling system in the case where there is already another electronic shelf label “disposed at one side of the electronic shelf label 110 to be installed and there is no electronic shelf label disposed at another side of the electronic shelf label 110 to be installed[.]” *Id.*, [3:50-53]. Highlighted shelf label 2 is the

association with the new label identifier. *See, e.g.*, Ex-1003, Fig. 2 (steps S101, S104-106), Fig. 4B (step S408-410), 3:59-4:42 (describing Figure 2 operation), 7:4-18 (describing Figure 4B operation); Ex-2010, ¶¶74-76, 123-25.

PO Sur-reply 3. We agree with Patent Owner.

added ESL, with label identifying information “ESL-2[.]” *Id.*, [4:55-59]. The figure illustrates data flow from ESL-1 (already installed in the same shelf) and ESL-2 (to be installed) to the reading device (controlling device 130). . . .

As clearly shown in FIG. 3B above, two arrows flow from ESL-1 and ESL-2 to a deploying device. A POSITA would understand that this represents the **acquisition** of label identifiers of the adjacent label ESL-1 and of the added label ESL-2, which forms a **sequence of label identifiers**. Ex. 1009, ¶84.

Pet. 16–17 (alterations in original (except Fig. 3B omitted)). Thus, here, Petitioner contends, with only the testimony of Dr. Tentzeris as evidentiary support (Ex. 1009 ¶84), that the arrow depicted running from electronic shelf label 110 (ESL-1) to the deploying device 130 would be understood by a skilled artisan to represent the label identifying information of electronic shelf label 110 (ESL-1) being acquired by the deploying device 130. The cited paragraphs of the Declaration of Dr. Tentzeris provide:

83. FIG. 3B shows two arrows flow from ESL-1 and ESL-2 to deploying device.

84. In my opinion, a POSITA would understand that this represents the **acquisition** of label identifiers of the adjacent label ESL-1 and of the added label ESL-2, which forms a **sequence of label identifiers**.

Ex. 1009 ¶¶ 83–84. Here again, Dr. Tentzeris does not support his opinion with any explanation, reasoning, facts or data, here or elsewhere. Accordingly, we again determine that this unsupported, conclusory testimony is entitled to little or no weight.

We cannot find, and Petitioner does not direct attention to, any explicit disclosure in Wu of what the arrow running from electronic shelf

label 110 (ESL-1) to the deploying device 130 in Figure 3B represents. *See generally* Ex. 1003. The detailed description of Figure 3B in Wu provides:

Please referring to FIG. 3B, an example of the electronic shelf label controlling system 100 under the second case is shown. On the shelf 901, from left to right, the first electronic shelf label 110 whose label identifying information is "ESL- 1" is already installed, the second electronic shelf label 110 whose label identifying information is "ESL-2" is to be installed. Regarding the shelf code of the electronic shelf label 110 to be installed, there is another electronic shelf label 110 located at the left side of the electronic shelf label 110 to be installed. The shelf code of the label location information of the electronic shelf label 110 which is already installed is "SO1." The shelf code of the electronic shelf label 110 to be installed can be set as "SO1." Regarding to the location code of the electronic shelf label 110 to be installed, there is another electronic shelf label 110 which located at the left side of the electronic shelf label 110 to be installed. The location code of the label location information of the electronic shelf label 110 which is already installed is "R1." The location code of the electronic shelf label 110 to be installed can be "R2" by adding 1 to "R1 ." That is to say, the location code of the electronic shelf label 110 to be installed can be obtained by performing a mathematical extrapolation, such as addition or multiplication on the electronic shelf label 110 which is already installed, such that the location codes are incremented from left to right. In other embodiment, the location codes can be decremented from left to right.

Id. at 4:53–5:11. There is no support in Wu for Petitioner's contention that the arrow depicted running from electronic shelf label 110 (ESL-1) to the deploying device 130 represents the label identifying information of electronic shelf label 110 (ESL-1) being acquired by the deploying device 130. As with the earlier description of the mathematical extrapolation in Wu used to determine the shelf label location information of the added electronic

shelf label, the data needed is the shelf label location information of the adjacent shelf label which is already installed, not that shelf label's identifying information. Taking into account the whole of Wu's disclosure, we determine that the arrow depicted running from electronic shelf label 110 (ESL-1) to the deploying device 130 in Figure 3B represents the shelf label location information of the adjacent shelf label which is already installed, not that shelf label's identifying information. At any rate, Petitioner provides no persuasive evidence that its contention regarding this arrow is accurate or any other evidence that Wu teaches that the reading device acquires a sequence of shelf label identifiers comprising the shelf label identifier of an adjacent shelf label which is already installed.

Finally with regard to this limitation, Petitioner argues that "a POSITA would understand that the reading device that is equipped to read shelf label identifiers can be used to read the identifier of an adjacent shelf label in order to associate the added shelf label with a location in the retail area." Pet. 17 (citing Ex. 1009 ¶ 85¹⁶). The capability of the reading device to read shelf label identifiers does not substitute for a disclosure of the reading device acquiring a sequence of shelf label identifiers comprising the shelf label identifier of an adjacent shelf label which is already installed. *See also Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) ("[O]bviousness concerns whether a skilled artisan not only *could have*

¹⁶ Here again, the testimony of Dr. Tentzeris consists of no more than the phrase "[i]n my opinion" followed by a verbatim copy of the statement in the Petition without any explanation, reasoning, facts or data. Accordingly, we determine that this unsupported, conclusory testimony is entitled to little or no weight.

made but would have been motivated to make the combination or modifications of prior art to arrive at the claimed invention.”).

With regard to “*transmitting, by the reading device, the sequence of label identifiers to the computer system,*” Petitioner again relies on Figures 2 and 3B of Wu and the related descriptions. *See* Pet. 25–27. The Petition states:

Wu discloses **transmitting, by the reading device, the sequence of label identifiers to the computer system**. Ex. 1003, [3:6-7] (“The communication gateway device [] is used for transmitting varied information”); [3:10-11] (“The deploying device [] is used for reading the information of the ... electronic shelf label”); [3:13-15] (“The information read from the deploying device [] is transmitted to the controlling device”). As explained in Section III.E.2.a.(3), the reading device (deploying device) acquires a sequence of label identifiers, one being that of the added shelf label, and another being that of an adjacent shelf label that was already installed, to “create[] the relationship between the label identifying information and the label location information[,]” as required by step S106 of FIG. 2 (below). Ex. 1003, [4:26-28]. The reading device (deploying device) then **transmits** this sequence of label identifiers to allow the **computer system** (controlling device) to “change[] the label location table [] according to the relationship between the label identifying information and the label location information.” *Id.*, [4:29-32] (S107 in FIG. 2, below). . . .

Wu’s FIG. 3B shows an example of the ESL controlling system in the case where there is already another electronic shelf label “disposed at one side of the electronic shelf label 110 to be installed and there is no electronic shelf label disposed at another side of the electronic shelf label 110 to be installed[.]” *Id.*, [3:50-53]. Highlighted shelf label 2 is the added ESL, with label identifying information “ESL-2[.]” *Id.*, [4:55-59]. The figure illustrates data flow from ESL-1 (already installed in the same shelf) and ESL-2 (to be installed) to the reading device (deploying device 130), and, thereafter, to the

computer system (controlling device 120). A POSITA would recognize that the flow from deploying device 130 to controlling device 120 obviously **transmits the sequence of label identifiers** that the deploying device 120 obtained from ESL-1 and ESL-2 to the computer system. Ex. 1009, ¶113. . . .

Therefore, Wu discloses [1k] or at least renders [1k] obvious. Ex. 1009, ¶114.

Id. (alterations in original (except Figs. 2 and 3B omitted)). In this section of the Petition, Petitioner does not direct our attention to, and we do not discern from our independent review of Wu, any disclosure in Wu of “*transmitting, by the reading device, the sequence of label identifiers to the computer system.*” In the first paragraph of this quoted passage from the Petition, Petitioner relies on its alleged showing of the reading device acquiring a sequence of shelf label identifiers comprising the shelf label identifier of an adjacent shelf label which is already installed as support for its contention that the reading device transmits the sequence of shelf label identifiers to the computer system. As discussed above, Wu does not teach or suggest the reading device acquiring a sequence of shelf label identifiers comprising the shelf label identifier of an adjacent shelf label which is already installed so Petitioner’s reliance is misplaced and there is no support provided for its allegation that Wu discloses “*transmitting, by the reading device, the sequence of label identifiers to the computer system.*”

In the second quoted paragraph from this section of the Petition, Petitioner relies on the “data flow from ESL-1 (already installed in the same shelf) . . . and thereafter to the computer system (controlling device 120)” as depicted in Figure 3B of Wu as supporting its assertion that “[a] POSITA would recognize that the flow from deploying device 130 to controlling device 120 obviously **transmits the sequence of label identifiers** that the

deploying device 120 obtained from ESL-1 and ESL-2 to the computer system.” Pet. 26–27 (citing Ex. 1009 ¶ 113). As discussed above, Petitioner points to no teaching or suggestion in Wu for its contention that the “data flow from ESL-1 (already installed in the same shelf) . . . and thereafter to the computer system (controlling device 120)” as depicted in Figure 3B of Wu represents a reading device acquiring the shelf label identifier of an adjacent shelf label which is already installed as recited. We find that Wu does not contain any such disclosure. And, the only evidence cited in support of its assertion that “[a] POSITA would recognize that the flow from deploying device 130 to controlling device 120 obviously transmits the sequence of label identifiers that the deploying device 120 obtained from ESL-1 and ESL-2 to the computer system” is paragraph 113 of the Declaration of Dr. Tentzeris which states: “In my opinion, a POSITA would recognize that the flow from deploying device 130 to controlling device 120 obviously **transmits the sequence of label identifiers** that the deploying device 120 obtained from ESL-1 and ESL-2 to the computer system.” Ex. 1009 ¶ 113. Here again, the testimony of Dr. Tentzeris consists of no more than the phrase “[i]n my opinion” followed by a verbatim copy of the statement in the Petition without any explanation, reasoning, facts or data. Accordingly, we determine that this unsupported, conclusory testimony is entitled to little or no weight. We find that Wu does not teach or suggest *“transmitting, by the reading device, the sequence of label identifiers to the computer system.”*

As noted above, Patent Owner argues, “[r]egardless of any claim construction, Petitioners cannot demonstrate unpatentability of any claim of the ’709 Patent because Petitioners fail to identify a ‘reading device’ that

acquires and transmits the ‘sequence of label identifiers’ recited by the claims. That warrants rejecting Petitioners’ challenge as well.” PO Resp. 43 (citing Ex. 2010, ¶ 111). More specifically, Patent Owner argues that Wu does not disclose a reading device that acquires and transmits a sequence of shelf label identifiers comprising a shelf label identifier of an adjacent shelf label which is already installed on the shelf as recited in the independent claims of the ’709 patent. *Id.* at 43–51; *see also id.* at 2 (“Wu . . . does not teach a system or process in which a *sequence* of ESL *identifiers* are acquired and then transmitted when installing a new ESL on the shelf—as also required by the claims—because Wu only discloses acquiring a *single* ESL identifier during installation.”), 30 (“Wu only ever acquires a *single* label identifier and a *single* ‘label location’ code.”). For the reasons discussed above with regard to the deficiencies in the Petition, we agree with Patent Owner.

Based on the entire record of this proceeding, we find that Wu does not teach or suggest:

- (1) “*acquiring, by a reading device, a sequence of label identifiers . . . comprising a label identifier of an adjacent shelf label which is adjacent to the added shelf label*” as recited in independent claim 1;
- (2) “*transmitting, by the reading device, the sequence of label identifiers to the computer system*” as recited in independent claim 1;
- (3) “*acquiring, by a reading device, a sequence of label identifiers . . . comprising a label identifier of an adjacent shelf label which is adjacent to the added shelf label*” as recited in independent claim 10;
- (4) “*transmitting, by the reading device, the sequence of label identifiers to the computer system*” as recited in independent claim 10;

(5)“*the computer system being configured to receive, from the reading device, a transmitted sequence of label identifiers*” as recited in independent claim 11: and

(6)*the reading device being configured to: acquire a sequence of label identifiers . . . comprising the label identifier of an adjacent shelf label which is adjacent to the added shelf label*” as recited in independent claim 11.

Accordingly, we find that Wu does not teach or suggest two limitations recited in each of the challenged independent claims 1, 10, and 11.

Challenged dependent claims 2–5 depend, directly or indirectly, from claim 1 and challenged dependent claims 12–15 and 20 depend, directly or indirectly, from challenged claim 11. By virtue of their dependency, each of challenged dependent claims 2–5, 12–15, and 20 include two limitations that Wu does not teach or suggest. We, therefore, conclude that claims 1–5, 10–15, and 20 are not unpatentable as obvious in view of Wu and the challenge of Ground 1 in the Petition fails.

As explicitly recited (Ex. 1001, 10:16–21), and acknowledged by Petitioner (Pet. 15; Tr. 10:2–6), the claimed “sequence” comprises two shelf label identifiers and Wu teaches or suggests acquiring and transmitting only one shelf label identifier. The method disclosed in Wu does not include the reading device acquiring the shelf label identifying information of the “adjacent shelf label.” There is considerable overlap in the claims challenged and the teachings relied upon in the asserted grounds. The failure to establish that Wu teaches or suggests acquiring and transmitting a sequence of shelf label identifiers undermines Petitioner’s unpatentability challenges relating to every claim and ground. Petitioner relies heavily on

this alleged, but not present, teaching or suggestion of these limitations in Wu throughout the Petition.

2. *Chaves Does Not Disclose Acquiring or Transmitting the Recited Sequence*

With regard to Ground 2 relying on the combination of Wu and Chaves challenging claims 1–6, 10–16, and 20 of the '709 patent (*see* Pet. 2), Petitioner asserts that Chaves discloses acquiring and transmitting a sequence of label identifiers (*id.* at 53–55). Patent Owner argues that, “In Ground 2, Petitioners contend that Wu and Chaves together disclose acquiring/transmitting a sequence of label identifiers (Petition, 53), but that is wrong. . . . Chaves does not cure the deficiency of Wu.” PO Resp. 51–52.

With specific regard to “acquiring, by a reading device, as sequence of label identifiers” as recited in claim 1, the entire presentation in the Petition states:

Chaves discloses a “mobile reader” that can scan RFIDs of a sequence of items. Ex. 1006, [0036], [0037], [0040] (discussing a process by which the reader may “read the RFID tags for item A [], B [] and D []” “stored on the shelf ‘X’” in a “department of a store”). A POSITA would find this to be an explicit disclosure of a reading device that can acquire a sequence of label identifiers (as claimed by e.g. [1c]). Ex. 1009, ¶213.

Id. at 53 (alterations in original). This passage fails to state (or discuss how or why) Chaves discloses acquiring even a single shelf label identifier, much less a sequence of shelf label identifiers. Instead, Petitioner alleges that Chaves discloses a “mobile reader” that may “read the RFID tags for item[s]” “stored on the shelf ‘X’” in a “department of a store.” Petitioner does not explain, and we do not discern, how or why reading the RFID tags

for an item discloses acquiring a sequence (or even a single) shelf label identifier.

In an exemplary system, Chaves relates to a mobile reader attached to a shopping cart that reads RFID tags off products stored on store shelves. Ex. 1006 ¶¶ 33–35. Figure 8 of Chaves is reproduced below.

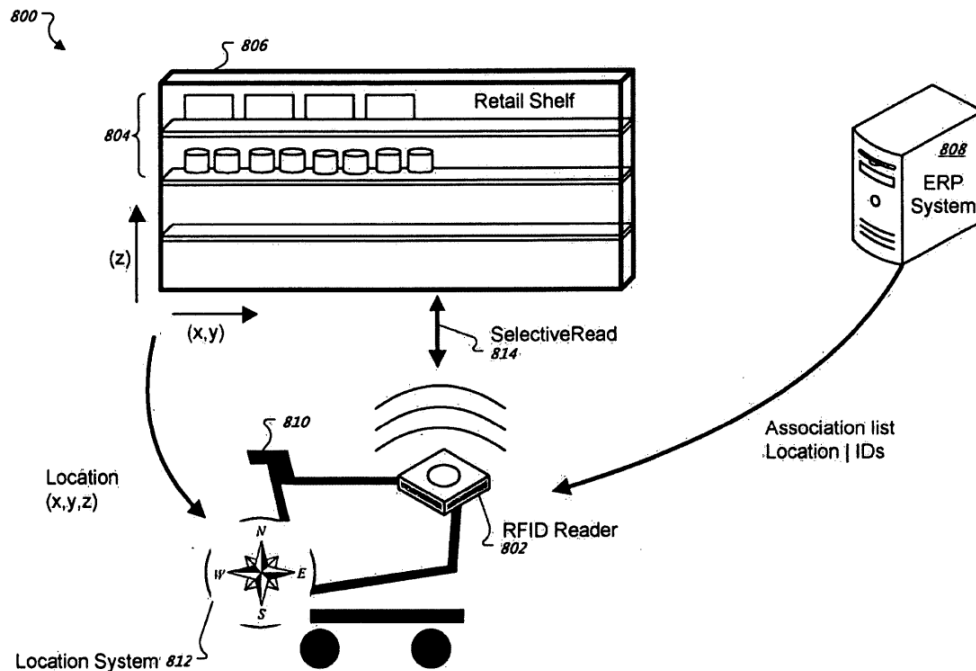


FIG. 8

Figure 8 depicts “an exemplary architecture for a system 800 using a mobile RFID reader to selectively read items based on location information obtained from an ERP system.” *Id.* ¶ 97. Electronic shelf labels (ESLs) are not part of the Chaves system.¹⁷ Figures 1A–1D of Chaves are reproduced below.

¹⁷ Patent Owner correctly states that “Chaves does not envision the use of ESLs.” PO Resp. 14.

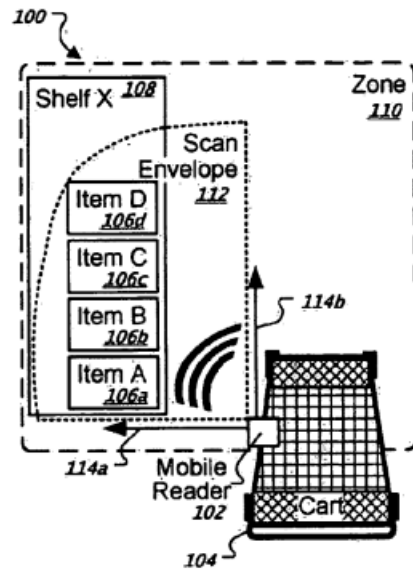


FIG. 1A

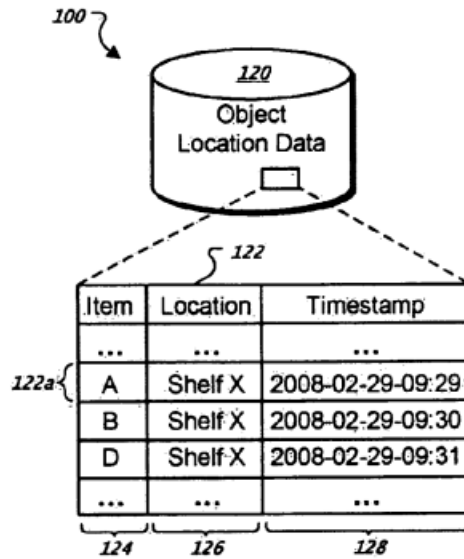


FIG. 1B

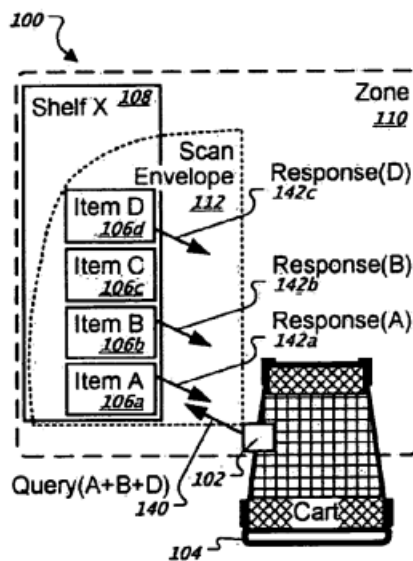


FIG. 1C

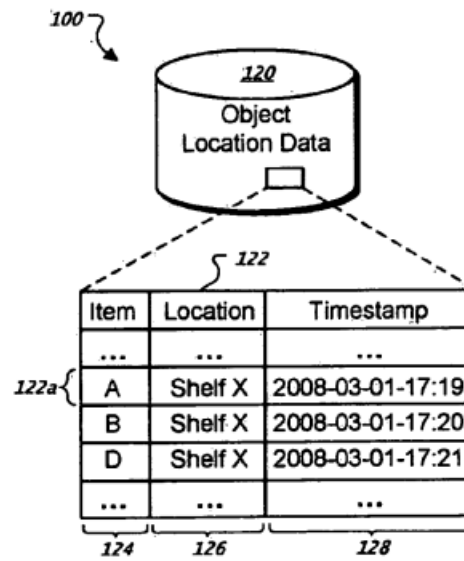


FIG. 1D

Figures 1A–1D depict, “system 100 [that] may use one or more mobile readers 102 attached to one or more shopping carts 104.” *Id.* ¶ 34. Petitioner cites paragraphs 36, 37 and 40 of Chaves in support of its contention that Chaves discloses “**acquiring, by a reading device, a**

sequence of label identifiers” as recited.” Pet. 53. Paragraphs 36, 37, and 40 of Chaves provide:

[0036] The scan direction 114*b* may be generally parallel to the direction of movement of the cart 104, such as down a store aisle that may be represented by, or adjacent to, the zone 110. Because the typical mobile reader 102 may be operable to scan in multiple dimensions, a vertical dimension (not shown) and the range of the mobile reader 102 may define a three-dimensional space, such as that consistent with the vertical or top view represented by the scan envelope 112. Such a space may include items on store shelves. Such as the items 106*a-d* on the shelf “X” 108. In some implementations, the scan envelope 112 may extend to both sides of the cart 104, such as to scan items on both the left side and the right side of a store aisle.

[0037] FIG. 1B is a block-diagram of exemplary object location data 120. Generally, the object location data 120 may identify the locations of items, such as products on the shelves within a store. Such information may be generated, at least in part, by the mobile reader 102 scanning items (e.g., items 106*a-d*) on shelves (e.g. the shelf “X” 108). In some implementations, the object location data 120 may be stored remotely from the mobile reader 102, such as in a back-end ERP system located within the store. As such, the mobile reader 102 may receive initial and updated object location data 120 from the ERP system using, wireless communication or wired downloads (e.g., via temporary connections to USB, cable, etc.) In other implementations, the object location data 120 may be stored within the mobile reader 102. . . .

[0040] FIG. 1C is a block diagram showing an exemplary low-level query 140 transmitted by the mobile reader 102 and multiple responses 142*a-c* transmitted by some of the items 106*a-d* in response to the low-level query. For example, the low-level query 140 may be “Query(A+B+D)” which the reader 102 may transmit to read the RFID tags for items. A 106*a*, B 106*b* and D 106*d*. The reader 102 may transmit the low-level query 140, for instance, at the time that the cart 104 enters the zone 110. Moreover, the specific items

106 (e.g., items. A 106*a*, B 106*b* and D 106*d*) that are queried may be based on entries 122 in the object location data 120. For example, the mobile reader 102 may scan for items A106*a*, B 106*b* and D106*d* if those items are pet-related and are identified in the object location data 120 as being stored on the shelf "X" 108 (e.g., a shelf in the "Pet" department of a store). In this case, the item C 106*c* may not be pet-related, and therefore not included in the low-level query 140 "Query(A+B+D)". Asia [sic] result of receiving the low-level query 140, each of the responsive items may return their corresponding individual responses 142*a-c*, which may be received by the mobile reader 102.

Ex. 1006 ¶¶ 36, 37, 40. These paragraphs do not refer or relate to electronic shelf labels (ESLs), shelf label identifiers, a reading device acquiring shelf label identifiers, or shelf label identifiers for an added shelf label or an adjacent shelf label. These paragraphs in Chaves lack any relation to, and do not provide any support for, the contention for which the Petitioner cites these paragraphs.

Nonetheless, Petitioner asserts that "[a] POSITA would find this to be an explicit disclosure of a reading device that can acquire a sequence of label identifiers" as recited in claim 1. Pet. 53 (citing Ex. 1009 ¶ 213). This assertion is unsupported by Chaves and or any reasoning or explanation. *Id.* The cited paragraph in the Declaration of Dr. Tentzeris provides:

213. Chaves discloses a "mobile reader" that can scan RFIDs of a sequence of items. Ex. 1006, [0036], [0037], [0040] (discussing a process by which the reader may "read the RFID tags for item A [], B [] and D []" "stored on the shelf 'X'" in a "department of a store"). In my opinion, a POSITA would find this to be an explicit disclosure of a **reading device** that can **acquire a sequence of label identifiers** (as claimed by e.g. [1c]).

Ex. 1009 ¶ 213. Here again, the testimony of Dr. Tentzeris consists of no more than a verbatim copy of the statement in the Petition without any explanation, reasoning, facts or data and the phrase “[i]n my opinion.” Accordingly, we determine that this unsupported, conclusory testimony is entitled to little or no weight.

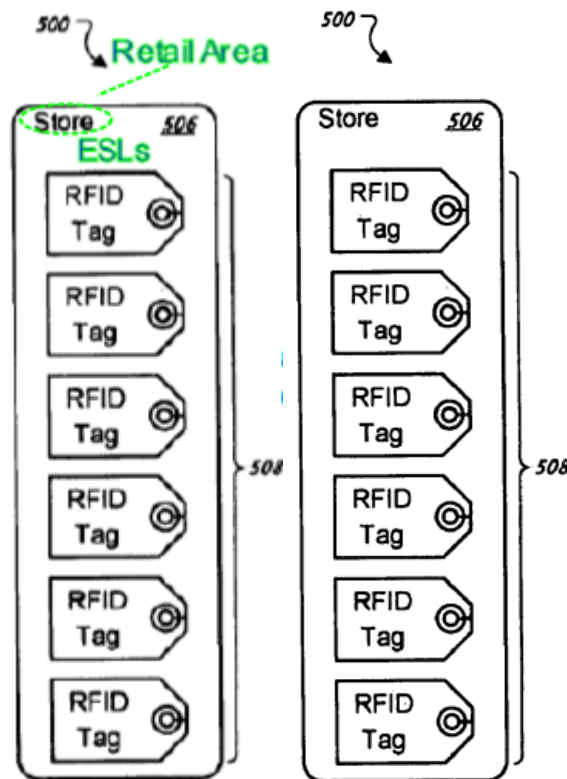
With regard to “transmitting, by the reading device, the sequence of label identifiers to the computer system,” Petitioner asserts:

Chaves discloses this limitation (as claimed by e.g. [1k]) through the disclosures that “object location data [] may be transmitted to the ERP system” (Ex. 1006, [0042]), that “exemplary object location data. . . may identify the locations of items, such as products on shelves within a store” (*Id.*, [0037]) and that “[t]he object location data [] may include multiple entries. . . that include location information for items” and “an item identifier.” (*Id.*, [0038]). Ex. 1009, ¶214. FIG. 1B of Chaves depicts this data in tabular form. A POSITA would find it obvious that this object location data, with multiple entries, comprises a sequence of label identifiers. *Id.*

Pet. 53–54 (alterations in original). This passage fails to state (or discuss how or why) Chaves discloses transmitting even a single shelf label identifier, much less a sequence of shelf label identifiers. Instead, Petitioner alleges that Chaves discloses transmitting object location data. Petitioner does not explain, and we do not discern, how or why transmitting object location data relates to transmitting a sequence of shelf label identifiers (or even a single shelf label identifier).

The Petition includes an annotated Figure 5 of Chaves that it purports “shows the **transmission** of such sequence from mobile reader 502 (**reading device**) to EPR System 504 (**computer system**). Pet. 55. However, we find that Petitioner has annotated Figure 5 in a misleading and inaccurate

manner. Reproduced below are a portion of annotated Figure 5 from the Petition (left) and the same portion of Figure 5 as in Chaves (right).



The annotated Figure 5 in the Petition (left) identifies RFID tags 508 as ESLs (electronic shelf labels) and the original Figure 5 (right) does not. This added identification of RFID tags 508 is misleading and inaccurate. Chaves identifies the RFID tags as being attached to, or embedded within, items (products). Ex. 1006 ¶ 77 (“The mobile reader 502 may be operable to scan multiple RFID tags 508 that are attached to (or embedded within) items in the store 506.”). RFID tags 508 attached to or embedded within products are not ESLs (electronic shelf labels). Petitioner provides no explanation or support for this annotation to Figure 5.

We find that Chaves does not teach or suggest the following claim limitations in independent claim 1:

acquiring, by a reading device, a sequence of label identifiers comprising a label identifier of an added shelf label reflecting an addition of the shelf label in the shelf of the retail area, and also comprising a label identifier of an adjacent shelf label which is adjacent to the added shelf label

transmitting, by the reading device, the sequence of label identifiers to the computer system.

Ex. 1001, 10:16–21 (the “acquiring” limitation), 10:37–38 (the “transmitting” limitation).

For the claims challenged in Ground 2, Petitioner relies on its alleged showing in Ground 1 that Wu teaches or suggests the “acquiring” and “transmitting” limitations of the claims and the additional alleged explicit disclosure of these limitations by Wu in combination with Chaves. The Petition provides:

As discussed [above], claims 1-5, 10, 11-15, and 20 are disclosed or rendered obvious by Wu. Further, the same claims are additionally disclosed or rendered obvious by Wu in combination with Chaves because Chaves also makes explicit disclosures of certain limitations of these claims, and a POSITA would have been motivated and able to combine these disclosures by Chaves into Wu. Ex. 1009, ¶206. In addition, a POSITA would have been further motivated and able to combine the disclosures of Chaves related to the limitations of claims 6 and 16 into Wu, thus rendering claims 6 and 16 also obvious over the combination of Wu and Chaves (Wu-Chaves). *Id.*, ¶207.

Pet. 49. However, we reject this contention as Petitioner fails to show either Wu or Chaves teaches or suggests the “acquiring” and “transmitting” limitations.

Petitioner contends that a skilled artisan would have been motivated to combine the teachings of Wu and Chaves as recited in these claim

limitations. *See* Pet. 60–61. However, Petitioner bases this argument on allegations that both Wu and Chaves include teachings that they do not include. With regard to Wu, the Petition states, “Wu already discloses acquiring, by a reading device, label identifiers of a label to be added as well as of at least one adjacent label, and transmitting these label identifiers to the computer system.” *Id.* at 60. As discussed above, this statement is incorrect because Wu does not disclose acquiring, by a reading device, the label identifier of an adjacent label or transmitting this label identifier to the computer system. With regard to Chaves, the Petition states, “Chaves expressly discloses acquiring, by a reading device, a sequence of label identifiers, and transmitting these label identifiers to the computer system.” *Id.* As discussed above, Chaves does not disclose acquiring, by a reading device, any label identifiers or transmitting any label identifiers to a computer system. Thus, Petitioner’s motivation to combine argument is based on combining teachings that do not exist. Petitioner’s motivation to combine argument fails because it is based on both Wu and Chaves including teachings that they do not include.

We, therefore, conclude that claims 1–6, 10–16, and 20 of the ’709 patent are not unpatentable as obvious in view of the combination of Wu and Chaves and the challenge of Ground 2 in the Petition fails.

3. *Itou Does Not Disclose Acquiring or Transmitting the Recited Sequence*

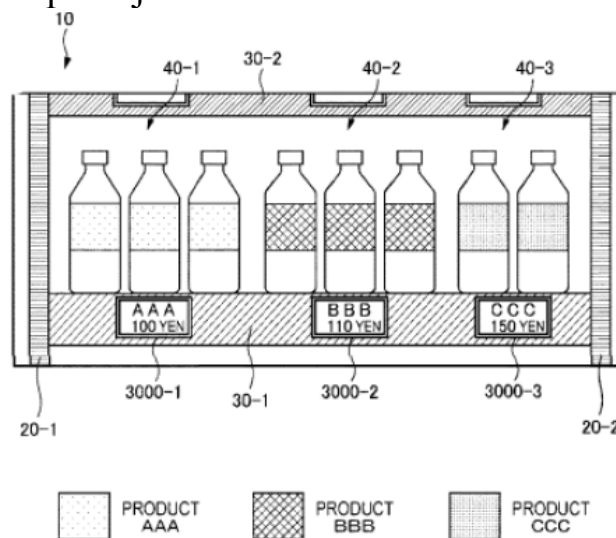
With regard to Ground 3 relying on the combination of Wu, Itou, and Auclair¹⁸ challenging claims 1–5, 7–15, and 17–20 of the ’709 patent (*see* Pet. 2–3), Petitioner asserts that Itou discloses acquiring and transmitting a

¹⁸ Auclair is cited by Petitioner only for teaching the additional limitations recited in dependent claims 7–9 and 17–19. *See* Pet. 72–78.

sequence of label identifiers (*id.* at 70–72). Patent Owner argues that, “In Ground 3, Petitioners combine Wu with Itou and Auclair, and contend that Itou discloses acquiring and transmitting a sequence of label identifiers. Petition, 70-72. This is wrong for several reasons.” PO Resp. 52.

With regard to “acquiring, by a reading device, as sequence of label identifiers” as recited in claim 1, the entire presentation in the Petition states:

Itou discloses an information processing apparatus that includes a reading device that recognizes products and ESLs from an image. Ex. 1004, [0007]. As shown in FIG. 4, this can include multiple adjacent ESLs.



Ex. 1004, FIG. 4.

A POSITA would find this to be an explicit disclosure of a reading device that **can acquire** a sequence of label identifiers (as claimed by e.g. [1c]). Ex. 1009, ¶240.

Pet. 70 (emphasis added). The last sentence of this passage includes an allegation as to what “a reading device **can acquire**” and does not include an allegation that a skilled artisan would find an explicit disclosure in Itou that a reading device **does acquire** a sequence of label identifiers. This passage fails to allege (or discuss how or why) Itou discloses “*acquiring . . . a sequence of label identifiers comprising a label identifier of an added shelf*

label reflecting an addition of the shelf label in the shelf of a retail area” as recited in claim 1. Itou may disclose recognizing a sequence of ESLs but the sequence is not the claim 1 sequence “*comprising a label identifier of an added shelf label reflecting an addition of the shelf label in the shelf of a retail area.*” And, Petitioner does not explain, and we do not discern, how or why “recogniz[ing] ESLs from an image” is “an explicit disclosure of . . . acquir[ing] a sequence of label identifiers” as claimed in claim 1 of the ’709 patent.

Petitioner cites paragraph 7 of Itou in support of its contention that Itou discloses the “acquiring” limitation but we have reviewed the cited paragraph in Itou and can find no disclosure of “*acquiring . . . a sequence of label identifiers comprising a label identifier of an added shelf label reflecting an addition of the shelf label in the shelf of a retail area*” as recited in claim 1. The concept of “*an addition of a shelf label in a shelf*” (see preamble of Claim 1 (Ex. 1001, 10:11–13)) to which claim 1 is directed is not discussed in this paragraph of Itou.

Petitioner also cites paragraph 240 of the Declaration of Dr. Tentzeris (Ex. 1009). But, here again, the testimony of Dr. Tentzeris consists of no more than a verbatim copy of the statement in the Petition without any explanation, reasoning, facts or data and the phrase “[i]n my opinion.” Accordingly, we determine that this unsupported, conclusory testimony is entitled to little or no weight.

With regard to “transmitting, by the reading device, the sequence of label identifiers to the computer system” as recited in claim 1, the entire presentation in the Petition states:

Itou discloses an information processing apparatus that includes a reading device that recognizes products and ESLs

from an image. Ex. 1004, [0007]. The reading device extracts product and ESL identifiers from the image and determines a position of the products relative to their respective ESLs. *Id.* The system analyzes associations between products and ESLs to confirm information in a planogram, transmitting information acquired by the reading device to a central server. *Id.*, [0007], [0045], [0048]. Thus Itou provides an explicit disclosure of this limitation (claimed by *e.g.* [1k]). Ex. 1009, ¶241.

Pet. 71–72. In this passage, Petitioner fails to even allege that Itou discloses transmission by a reading device of a sequence of label identifiers. And, Petitioner does not explain, and we do not discern, how or why “Itou provides an explicit disclosure of this limitation.” Moreover, the cited paragraphs of Itou (Ex. 1004 ¶¶ 7, 45, 48) do not disclose or discuss “a central server” or any equivalent or like apparatus and do not disclose or discuss “transmitting information acquired by the reading device to a central server” or any equivalent or like step. Stated differently, Itou provides no support for Petitioner’s contentions as to this limitation.

The cited paragraphs in Itou provide:

[0007] An information processing apparatus provided by the present invention includes: a product recognition unit that recognizes a product from an image on which the product and an electronic shelf label are imaged; a shelf label recognition unit that extracts a shelf label ID of the electronic shelf label from the image, and recognizes a position of the electronic shelf label; and a determination unit that determines whether or not association of a closest product within the image, and product information and the shelf label ID of the electronic shelf label matches association of product information and a shelf label ID of relation information acquired by associating product information of the product and the shelf label ID based on the recognized product and shelf label ID.

[0045] <Flow of Processes>

[0048] Here, the electronic shelf label 3000 is configured to display the product information in advance that is associated with this electronic shelf label 3000 by the relation information. By doing so, it is possible to determine whether or not the product information displayed by the electronic shelf label 3000 is product information of the product closest to this electronic shelf label 3000. As a result, it is possible to detect the electronic shelf label 3000 that does not display the product information to be displayed. By using the information processing apparatus 2000 as stated above, since a salesperson does not need to manually check whether or not the association of the product with the electronic shelf label 3000 is correct, workload for managing the electronic shelf label 3000 is reduced. Therefore, according to the information processing apparatus 2000, it is possible to reduce effort, time, and cost necessary to manage the electronic shelf label 3000.

Ex. 1004 ¶¶ 7, 45, 48. In the cited paragraphs of Itou, there is no disclosure of “a central server” or any equivalent or like apparatus, no disclosure of transmitting information from a reading device to a computer system or any equivalent or like step, and no disclosure of transmitting a sequence of label identifiers comprising an added electronic shelf label. Petitioner provides no explanation or reasoning as to how or why this evidence supports its contention that Itou discloses this limitation and it is clear that the cited evidence does not support Petitioner’s contentions as to this limitation.

For the claims challenged in Ground 3, Petitioner relies on its alleged showing in Ground 1 that Wu teaches or suggests the “acquiring” and “transmitting” limitations of the claims and the additional alleged explicit disclosure of these limitations by Wu in combination with Itou and Auclair. The Petition provides:

As discussed [above], claims 1-5, 10, 11-15, 20 are disclosed or rendered obvious by Wu. Further, the same claims are additionally rendered obvious by Wu in combination with Itou and Auclair because Itou and Auclair make explicit disclosures of certain limitations of these claims, and a POSITA would have been motivated and able to combine these disclosures by Itou and Auclair into Wu. Ex. 1009, ¶231. In addition, a POSITA would have been further motivated and able to combine the disclosures of Itou and Auclair related to the limitations of claims 7-9 and 17-19 into Wu, thus rendering claims 7-9 and 17-19 also obvious over the combination of Wu, Itou, and Auclair (Wu-Itou-Auclair). *Id.*

Pet. 64. We reject this contention as Petitioner fails to show either Wu or Itou teaches or suggests the “acquiring” and “transmitting” limitations.

Petitioner contends that a skilled artisan would have been motivated to combine the teachings of Wu and Itou as recited in these claim limitations. *See* Pet. 79–80. However, Petitioner bases this argument on allegations that both Wu and Itou include teachings that they do not include. With regard to Wu, the Petition states, “Wu already discloses acquiring, by a reading device, label identifiers of a label to be added as well as of at least one adjacent label, and transmitting these label identifiers to the computer system.” *Id.* at 79. As discussed above, this statement is incorrect because Wu does not disclose acquiring, by a reading device, the label identifier of an adjacent label or transmitting this label identifier to the computer system. With regard to Itou, the Petition states, “Itou expressly discloses acquiring, by a reading device, a sequence of label identifiers, and transmitting these label identifiers to the computer system.” *Id.* As discussed above, Itou does not disclose acquiring, by a reading device, label identifiers for any added electronic shelf label or transmitting any label identifiers to a computer system. Thus, Petitioner’s motivation to combine argument is based on

combining teachings that do not exist. Petitioner’s motivation to combine argument fails because it is based on both Wu and Itou including teachings that they do not include.

We, therefore, conclude that claims 1–5, 7–15, and 17–20 of the ’709 patent are not unpatentable as obvious in view of the combination of Wu, Itou, and Auclair and the challenge of Ground 3 in the Petition fails.

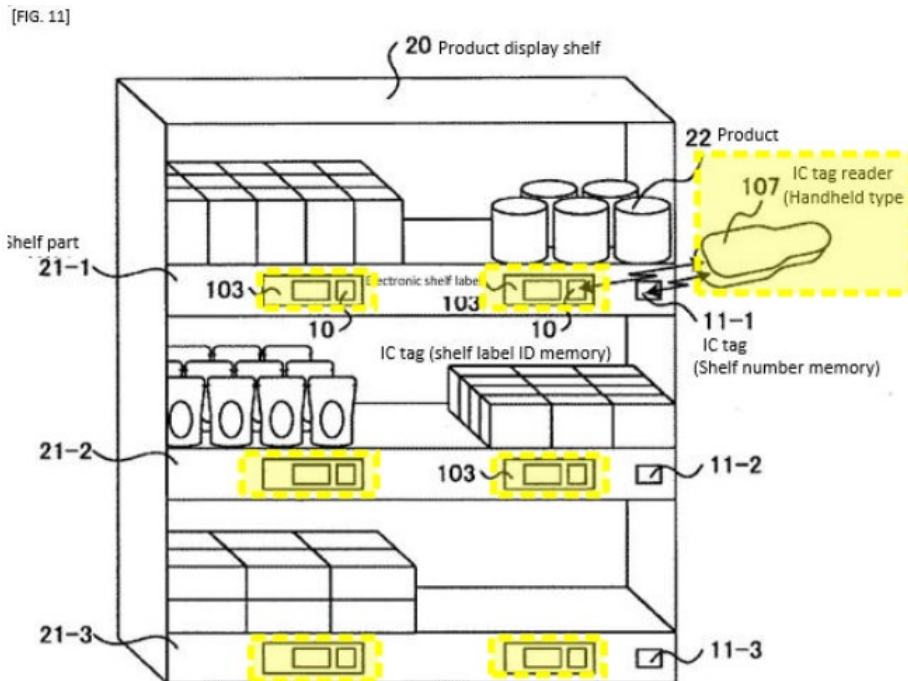
4. Fujiwara Does Not Disclose Acquiring or Transmitting the Recited Sequence

With regard to Ground 4 relying on the combination of Wu and Fujiwara challenging claims 1–5, 10–15, and 20 of the ’709 patent (*see* Pet. 3), Petitioner asserts that Fujiwara discloses acquiring and transmitting a sequence of label identifiers (*id.* at 84–87). Patent Owner argues that, “Fujiwara says nothing of acquiring and transmitting a sequence of label identifiers as part of an installation procedure to register a new shelf label relative to one or more existing shelf labels.” PO Resp. 55.

With regard to “acquiring, by a reading device, as sequence of label identifiers” as recited in claim 1, the entire presentation in the Petition states:

Fujiwara discloses such forms of acquisition. Ex. 1007, [0047] (“An IC tag reader. . . includes reading means 131 and read-information transmitting means 132. The reading means 131 collectively reads the shelf label IDs stored in the IC tags 10 which are prepared for one or more electronic shelf labels 103 installed in the shelf part 21”).

FIG. 11 of Fujiwara, annotated below, further shows a handheld IC tag reader reading a plurality of shelf label IDs collectively from a plurality of shelf labels. A POSITA would find that such a plurality of shelf label IDs forms a **sequence of label identifiers**. Ex. 1009, ¶281.



Ex. 1007, FIG. 11 (annotated).

A POSITA would find this to be an explicit disclosure of a **reading device** that can **acquire a sequence of label identifiers** (as claimed by e.g. [1c]). Ex. 1009, ¶282.

Id. at 84–85 (alteration in original). The last sentence of this passage includes an allegation as to what “a reading device **can acquire**” and does not include an allegation that a skilled artisan would find an explicit disclosure in Fujiwara that a reading device **does acquire** a sequence of label identifiers. This passage fails to allege (or discuss how or why) Fujiwara discloses “*acquiring . . . a sequence of label identifiers comprising a label identifier of an added shelf label reflecting an addition of the shelf label in the shelf of a retail area*” as recited in claim 1. Indeed, the quoted passage from Fujiwara’s paragraph 47 explicitly states that “[t]he reading means . . . reads the shelf label IDs . . . for one or more electronic shelf labels 103 **installed** in the shelf part 21” (emphasis added). Fujiwara may disclose reading a sequence of ESLs but the sequence is not the claim 1

sequence “*comprising a label identifier of an added shelf label reflecting an addition of the shelf label in the shelf of a retail area.*” And, Petitioner does not explain, and we do not discern, how or why reading the shelf label IDs of shelf labels already installed on a shelf is “an explicit disclosure of . . . acquir[ing] a sequence of label identifiers” as claimed in claim 1 of the ’709 patent.

Petitioner cites paragraph 47 of Fujiwara in support of its contention that Fujiwara discloses the “acquiring” limitation but the cited paragraph in Fujiwara contains no disclosure of “*acquiring . . . a sequence of label identifiers comprising a label identifier of an added shelf label reflecting an addition of the shelf label in the shelf of a retail area*” as recited in claim 1. Cited paragraph 47 of Fujiwara provides:

An IC tag reader 104 is installed on each shelf part 21 forming a product display shelf 20, and includes reading means 131 and read-information transmitting means 132. The reading means 131 collectively reads the shelf label IDs stored in the IC tags 10 which are prepared for one or more electronic shelf labels 103 installed in the shelf part 21. The read-information transmitting means 132 wirelessly transmits the read shelf label IDs and the sender ID to the store server 101.

Ex. 1007 ¶ 47. The concept of “*an addition of a shelf label in a shelf*” (see preamble of Claim 1 (Ex. 1001, 10:11–13)) to which claim 1 is directed is not discussed in this paragraph of Fujiwara.

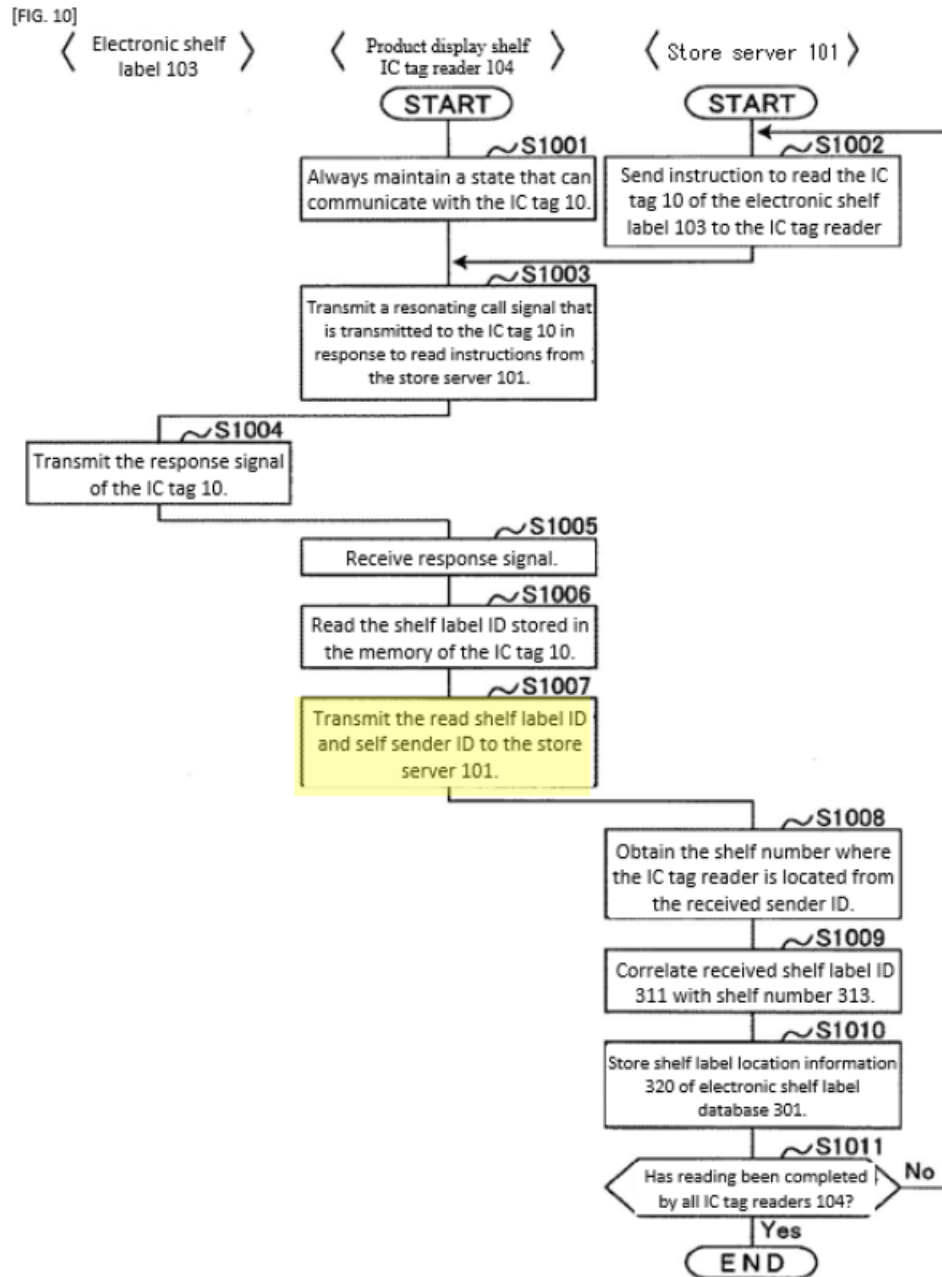
Petitioner also cites paragraphs 281 and 282 of the Declaration of Dr. Tentzeris (Ex. 1009). But, the testimony of Dr. Tentzeris consists of no more than a verbatim copy of the statements in the Petition without any

explanation, reasoning, facts or data.¹⁹ Accordingly, we determine that this unsupported, conclusory testimony is entitled to little or no weight.

With regard to “transmitting, by the reading device, the sequence of label identifiers to the computer system” as recited in claim 1, the entire presentation in the Petition states:

Fujiwara discloses such forms of transmission. Ex. 1007, [0047] (“The read-information transmitting means [] wirelessly transmits the read shelf label IDs and the sender ID to the store server”). FIG. 10 of Fujiwara, annotated below, shows the transmission of such shelf label IDs. As Fujiwara explicitly discloses that the reading means read *collectively* shelf label IDs (note the plural) from IC tags, this is the claimed **transmission of sequence of label identifiers**. Ex. 1009, ¶283.

¹⁹ In paragraphs 281 and 282, the Declaration of Dr. Tentzeris (Ex. 1009) does not include the phrase “in my opinion.”



Ex. 1007, FIG. 10 (annotated)

A POSITA would find this to be an explicit disclosure of a **reading device** that can **acquire**^[20] **a sequence of label identifiers** (as claimed by *e.g.* [1k]). Ex. 1009, ¶284.

²⁰ The Petition states “acquire,” but this passage is discussing the “transmission” limitation. Pet. 87. We are, therefore, assuming the use of “acquire” was in error and we are interpreting this statement (in Petitioner’s favor) as if “transmit” was used.

Pet. 85–87. In this passage, Petitioner fails to even allege that Fujiwara discloses transmission by a reading device of a sequence of label identifiers comprising the label identifier of an added shelf label. And, Petitioner does not explain, and we do not discern, how or why “Fujiwara provides an explicit disclosure of this limitation.” Moreover, the cited paragraph of Fujiwara (Ex. 1007 ¶ 47) does not disclose or discuss transmitting the label identifier of an added shelf label. Stated differently, Fujiwara does not support Petitioner’s contention as to this limitation.

For the claims challenged in Ground 4, Petitioner relies on its alleged showing in Ground 1 that Wu teaches or suggests the “acquiring” and “transmitting” limitations of the claims and the additional alleged explicit disclosure of these limitations by Wu in combination with Fujiwara. The Petition provides:

As discussed [above], claims 1-5, 10, 11-15, and 20 are disclosed or rendered obvious by Wu. Further, the same claims are additionally rendered obvious by Wu in combination with Fujiwara because Fujiwara makes explicit disclosures of certain limitations of these claims, and a POSITA would have been motivated and able to combine these disclosures by Fujiwara into Wu.

Pet. 83. However, we reject this contention as Petitioner fails to show either Wu or Fujiwara teaches or suggests the “acquiring” and “transmitting” limitations.

Petitioner contends that a skilled artisan would have been motivated to combine the teachings of Wu and Fujiwara as recited in these claim limitations. *See* Pet. 89. However, Petitioner bases this argument on allegations that both Wu and Fujiwara include teachings that they do not

include. With regard to Wu, the Petition states, “Wu already discloses acquiring, by a reading device, label identifiers of a label to be added as well as of at least one adjacent label, and transmitting these label identifiers to the computer system.” *Id.* As discussed above, this statement is incorrect because Wu does not disclose acquiring, by a reading device, the label identifier of an adjacent label or transmitting this label identifier to the computer system. With regard to Fujiwara, the Petition states, “Fujiwara then expressly discloses acquiring, by a reading device, a sequence of label identifiers, and transmitting these label identifiers to the computer system.” *Id.* As discussed above, Fujiwara does not disclose acquiring, by a reading device, label identifiers for any added electronic shelf label or transmitting the label identifiers for any added shelf label to a computer system. Thus, Petitioner’s motivation to combine argument is based on combining teachings that do not exist. Petitioner’s motivation to combine argument fails because it is based on both Wu and Fujiwara including teachings that they do not include.

We, therefore, conclude that claims 1–5, 10–15, and 20 of the ’709 patent are not unpatentable as obvious in view of the combination of Wu and Fujiwara and the challenge of Ground 4 in the Petition fails.

IX. CONCLUSION

After considering the evidence and arguments presented, we determine that Petitioner has not shown by a preponderance of the evidence that claims 1–20 are unpatentable. A summary of our conclusions is set forth in the table below.

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not shown Unpatentable
1–5, 10– 15, 20	103	Wu		1–5, 10–15, 20
1–6, 10– 16, 20	103	Wu, Chaves		1–6, 10–16, 20
1–5, 7–9, 10–15, 17–20	103	Wu, Itou, Auclair		1–5, 7–9, 10– 15, 17–20
1–5, 10– 15, 20	103	Wu, Fujiwara		1–5, 10–15, 20
Overall Outcome				1–20

X. ORDER

Accordingly, it is

ORDERED that claims 1–20 of the U.S. Patent No. 11,010,709 B2 are not determined to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2024-00208
Patent 11,010,709 B2

FOR PETITIONER:

Shen Wang
Hao Tan
ARCH & LAKE LLP
shenwang@archlakelaw.com
haotan@archlakelaw.com

FOR PATENT OWNER:

Jessica Kaiser
Matthew J. Moffa
David Pekarek Krohn
Tyler Knox
Grant Kinsel
John C. Moulder
Christopher Marando
Olivia M. Maffei
PERKINS COIE LLP
kaiser-ptab@perkinscoie.com
moffa-ptab@perkinscoie.com
pekarekkrohn-ptab@perkinscoie.com
knox-ptab@perkinscoie.com
kinsel-ptab@perkinscoie.com
moulder-ptab@perkinscoie.com
marando-ptab@perkinscoie.com
omaffei@perkinscoie.com