

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HANSHOW AMERICA INC.,
HANSHOW TECHNOLOGY CO., LTD.,
Petitioner,

v.

SES-IMAGOTAG INC.,
Patent Owner.

IPR2024-00189
Patent 10,674,340 B2

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

McNAMARA, *Administrative Patent Judge*.

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

I. INTRODUCTION

Hanshow America Inc. and Hanshow Technology Co., Ltd. (collectively, “Petitioner”) filed a petition, Paper 2 (“Petition” or “Pet.”), to institute an *inter partes* review (“IPR”) of claims 1–9 (the “challenged claims”) of U.S. Patent No. 10,674,340 B2 (“the ’340 patent”). 35 U.S.C. § 311. Petitioner also filed a Ranking and Explanation of Material Differences Between Petitions concerning a petition Petitioner filed in IPR2024-00190. Paper 3 (“Ranking”). SES-Imagotag SA (“Patent Owner”) filed a Preliminary Response, Paper 10 (“Prelim. Resp.”), contending that the Petition should be denied as to all challenged claims. We have jurisdiction under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.”

A decision to institute under § 314 may not institute on fewer than all claims challenged in the petition. *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018). In addition, per Board practice, if the Board institutes trial, it will institute “on all of the challenged claims and on all grounds of unpatentability asserted for each claim.” *See* 37 C.F.R. § 42.108(a).

Having considered the arguments and the associated evidence presented in the Petition and the Preliminary Response, for the reasons described below, we institute *inter partes* review.

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 its real parties-in-interest. Paper 4, 2.

III. RELATED MATTERS

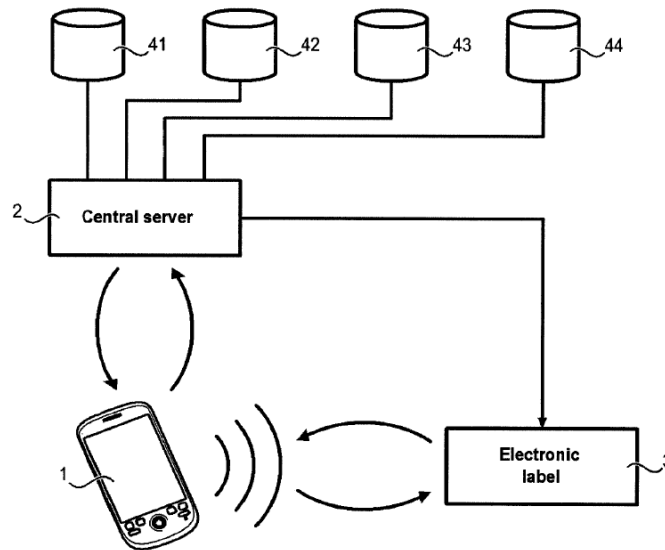
Petitioner and Patent Owner state that the '340 patent is asserted in the following litigation: *SES-Imagotag SA et al. v. Hanshow America Inc. et al.*, Case No. 1:23-cv-01667-BMC (E.D.N.Y.), filed March 3, 2023. Pet. 1; Paper 4, 2.

Patent Owner also identifies *Hanshow America Inc. et al. v. SES-Imagotag SA*, IPR2024-00190, filed November 14, 2023. Paper 4, 2.

IV. THE '340 PATENT

The '340 patent concerns systems and methods that communicate data representing spatially localized information in a sales area. Ex. 1001, 3:59–62. An overview of the system is shown in Figure 1, reproduced below.

FIG. 1



Ex. 1001, Fig. 1. In Figure 1, mobile terminal 1, e.g., a user's mobile telephone, wirelessly communicates with central server 2 and electronic label 3. *Id.* at 4:1–24. Electronic label 3 has a unique identifier, allowing unambiguous identification of each single unique label within a sales area. *Id.* at 4:25–28. Electronic label 3 communicates with mobile device 1

through radio-frequency peripheral 36, antenna 38, and electronic chip 37 using near-field communication (NFC) or radio-frequency identification (RFID). *See id.* at 4:25–53; Fig 3. Electronic label 3 includes RF communication module 32 and memory 33 to receive and store information to be displayed on screen 31, e.g., the price of items associated with the label at a particular location. *Id.* at 4:29–45. Central server 2 communicates with user information databases, e.g., databases 41 and 44 that store a user’s previous shopping lists or user supplied health data, and databases relating to the sales area, e.g., databases 42 and 43 that store a planogram and other item related information. *Id.* at 7:4–18.

The ’340 patent states that, because 10% of the items in a store may be present at several locations, an identifier such as a barcode or Electronic Product Code (EPC) does not allow determining the precise location of mobile terminal 1. *Id.* at 6:38–42. A planogram lists the locations of all the electronic labels and the items in the sales area. *Id.* at 6:35–37. Each location is defined by a vertical and horizontal position within a plane perpendicular to a floor of a predetermined area. *Id.* (code 57). The uniqueness of the label identifier and the location associated with each electronic label 3 allows unambiguous determination of the location of electronic label 3 from its identifier, making it possible to determine the location of mobile terminal 1. *Id.* at 6:43–47.

When a user brings a mobile terminal within range of an RF peripheral 36, electronic label 3 communicates the corresponding label identifier to the mobile terminal. Ex. 1001, 6:1–18. Mobile terminal 1 communicates the label identifier to central server 2. *Id.* at 6:19–28. Central server 2 determines the location of mobile terminal 1 from the unique label identifier using stored planogram data that associates the label with the

identifier. *Id.* at 6:29–37, 6:43–47. Knowing the location of the user’s mobile device, the user’s past purchase history, and the spatially localized information, the system can guide the user to specific items. *Id.* at 7:40–59. The method facilitates guiding the user to an item’s placement; for example, by identifying the height of the shelf where the sought-after item is located or by displaying an arrow indicating the direction the user should look toward to find the item (e.g., the top/right diagonal direction).

V. ILLUSTRATIVE CLAIM

Claim 1, reproduced below with paragraph designators used in the Petition, is illustrative of the subject matter of the ’340 patent:

1[pre]. A method for communicating spatially localized information to a mobile terminal, the method being performed by a central server configured to access a planogram associating a plurality of unique identifiers of radio-frequency peripherals with a plurality of locations within a predetermined area, each of the plurality of locations being defined by a vertical and horizontal position within a plane perpendicular to a floor of the predetermined area, and each of the plurality of locations being associated one-to-one with a corresponding unique identifier, the method comprising:

1[a] receiving a communication from a mobile terminal, the communication comprising a unique identifier received by the mobile terminal from a radio-frequency peripheral located in the predetermined area, the unique identifier being particular to the radio-frequency peripheral, wherein the radio-frequency peripheral includes an antenna and an electronic chip configured for near-field communication, and is configured to be activated by the mobile terminal when the radio-frequency communication peripheral is within a communication range of the mobile terminal, wherein the communication range is less than twenty centimeters;

1[b] determining a location of the mobile terminal within the predetermined area based on the location associated with the unique identifier of the received communication in the

planogram, the location of the mobile terminal comprising the vertical and horizontal position of said location; and
1[c] transmitting to the mobile terminal spatially localized information associated with the location of the mobile terminal.

VI. ASSERTED GROUNDS

The Petition asserts claims 1–9 would have been unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	Reference(s)
1–9	103 ¹	Fujiwara ²
1–9	103	Fujiwara, Arntzen ³
1–5, 8–9	103	Bandy, ⁴ Fowler ⁵
1–5, 8–9	103	Bandy, Fowler, Arntzen

Petitioner cites that Declaration of Dr. Marcos M. Tentzeris (“Tentzeris Decl.”) (Ex. 1009) as evidence supporting its challenges to the claims of the ’340 patent.

VII. MULTIPLE PETITIONS

On the same day, Petitioner filed two petitions citing different references against the challenged claims. Ranking 2. Petitioner’s chart

¹ See The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. §§ 102, 103, and 112. Because the priority application of the ’340 patent was filed before March 16, 2013 (the effective date of the relevant amendments), the pre-AIA versions of §§ 102, 103, and 112 apply.

² Japan Patent Application Publication No. 2008-77131A, publ. Apr. 3, 2008 (Ex. 1004); certified translation (Ex. 1003)

³ International Patent Application Publication No. WO 2010/082835A1, publ. Jul. 22, 2010 (Ex. 1005)

⁴ U.S. Patent Application Publication No. 2007/024436A1, publ. Feb. 1, 2007 (Ex. 1006)

⁵ U.S. Patent Application Publication No. 2008/0231228A1, publ. Sept. 25, 2008 (Ex. 1007)

showing the grounds of each petition and Petitioner's ranking of its petitions is reproduced below.

Rank	Petition	Grounds/References
1	IPR2024-00189 (the -189 IPR)	Ground 1 (§ 103): Cl. 1–9 (Fujiwara) Ground 2 (§ 103): Cl. 1–9 (Fujiwara/Amtzen) Ground 3 (§ 103): Cl. 1–5, 8–9 (Bandy/Fowler) Ground 4 (§ 103): Cl. 1–5, 8–9 (Bandy/Fowler/Arntzen)
2	IPR2024-00190 (the -190 IPR)	Ground 1 (§ 103): Cl. 1–5, 8 (Siotia, ⁶ Sakata ⁷) Ground 2 (§ 103): Cl. 6–7, 9 (Siotia, Sakata, Akao ⁸) Ground 3 (§ 103): Cl. 8–9 (Siotia, Sakata, Akao, Chen ⁹) Ground 4 (§ 103): Cl. 1–3, 5, 8 (Ghosh, ¹⁰ Sakata) Ground 5 (§ 103): Cl. 6–7, 9 (Ghosh, Sakata, Akao) Ground 6 (§ 103): Cl. 8–9 (Ghosh, Sakata, Akao, Chen)

Id. For the reasons discussed herein, we institute trial in this proceeding, which Petitioner ranked as its first preference. We address the issues of

⁶ U.S. Patent Application Publication No. 2010/0070365A1 (-190 IPR Ex. 1003)

⁷ Certified translation of Japan Patent Application Publication No. 2007-155383A (-190 IPR Ex. 1008)

⁸ Certified translation of Japan Patent Application Publication No. 2009-064316A (-190 IPR Ex. 1004)

⁹ U.S. Patent No. 7,283,036B2 (-190 IPR Ex. 1006)

¹⁰ U.S. Patent Application Publication No. 2012/0095805A1 (-190 IPR Ex. 1007)

discretionary denial of multiple petitions in our Decision on Institution in the -190 IPR.

VIII. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner identifies a person of ordinary skill in the art (“POSITA” or “ordinarily skilled artisan”) as one having “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. 9 (citing Ex. 1009, Tentzeris Decl. ¶ 34). Petitioner also states that “[a]lternatively, a POSITA would have had a Bachelor’s Degree (or higher degree) in an academic area emphasizing electrical engineering, computer engineering, wireless telecommunication systems, or an equivalent field with two or more years of work experience in electrical engineering, wireless telecommunication systems, computer engineering, or an equivalent field” and that “[a]dditional education in a relevant field or relevant industry experience may compensate for a deficit in one of the other aspects of these requirements.” *Id.* (citing Ex. 1009, Tentzeris Decl. ¶ 34). Patent Owner does not comment of the level of ordinary skill in the art.

The level of ordinary skill in the art usually is evidenced by the references themselves. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995); *In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978). As the subject matter of the ’340 patent and the references appears to be consistent with the level of ordinary skill in the art described by Petitioner, we apply Petitioner’s description for purposes of the Decision.

IX. CLAIM CONSTRUCTION

We interpret claim terms using “the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b). In this context, claim terms “are generally given their ordinary and customary meaning” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (citations omitted) (en banc). “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, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317 (citations omitted).

Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” *Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Petitioner proposes that the terms of the ’340 patent claims should be given their plain and ordinary meaning as understood by a person of ordinary skill in the art. Pet. 3.

Although Patent Owner does not propose any claim constructions, Patent Owner contends that Fujiwara does not use the term “planogram” and that Petitioner has not demonstrated Fujiwara discloses the claimed planogram. Prelim. Resp. 19–22. The ’340 patent states “[a] planogram lists the locations of all the electronics labels [3] and of the items on sale in a sales area.” Ex. 1001, 6:35–37. Patent Owner also notes that Fowler states that “[a] planogram is a diagram of fixtures and products that illustrates how and where retail products should be displayed, usually on a store shelf, bin or counter in order to influence consumer selection.” Prelim. Resp. 30 (citing Ex. 1007 ¶ 221). In view of these descriptions of a planogram, we agree with the parties that no further construction of this term is required.

X. ANALYSIS

A. Introduction

“In an [inter partes review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (requiring inter partes review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)). This burden of persuasion never shifts to Patent Owner. *See Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (discussing the burden of proof in inter partes review).

The question of obviousness is resolved on the basis of 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 (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

The obviousness inquiry typically requires an analysis of “whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”)); see *In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)).

An obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; accord *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1259 (Fed. Cir. 2007). Petitioner cannot satisfy its burden of proving obviousness by employing “mere conclusory statements.” *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016). Instead, Petitioner must articulate a reason why a person of ordinary skill in the art would have combined the prior art references. *In re NuVasive*, 842 F.3d 1376, 1382 (Fed. Cir. 2016).

A reason to combine or modify the prior art may be found explicitly or implicitly in market forces; design incentives; the “interrelated teachings of multiple patents”; “any need or problem known in the field of endeavor at the time of invention and addressed by the patent”; and the background knowledge, creativity, and common sense of the person of ordinary skill. *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328–29 (Fed. Cir. 2009) (quoting *KSR*, 550 U.S. at 418–21).

In determining whether a claim would have been obvious in light of the prior art, when in evidence, we also consider any relevant objective

evidence of non-obviousness. *See Graham*, 383 U.S. at 17.

Notwithstanding what the teachings of the prior art would have suggested to one of ordinary skill in the art at the time of the invention, the totality of the evidence submitted, including objective evidence of non-obviousness, may lead to a conclusion that the challenged claims would not have been obvious to one of ordinary skill. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). At this stage of the proceeding, Patent Owner does not present evidence of such objective considerations.

We analyze the asserted grounds of unpatentability in accordance with these principles to determine whether Petitioner has met its burden to establish a reasonable likelihood of success at trial.

B. Petitioner’s Contention That Claims 1–9 Are Obvious Over Fujiwara

1. *Fujiwara (Ex. 1003)*

a) Adequacy of Certification

Exhibit 1003 (Fujiwara) is a translation of a Japanese Patent Application filed as Exhibit 1004. In order to rely on Fujiwara as a reference, Petitioner was required to provide “a translation of the document into English and an affidavit attesting to the accuracy of the translation.” *See* 37 C.F.R. § 42.63(b). Patent Owner correctly notes that the certification Petitioner filed does not comply with the requirements of an affidavit or declaration certifying the accuracy of the translation. Prelim. Resp. 10–11; Ex. 1003, 1. In addition, pointing to the letters “li” in paragraph 40 of the translation, Patent Owner contends that the deficiencies in the certification appear to be more than a mere technicality that can be remedied post institution, because the translation appears to contain an error. Prelim. Resp. 11. Patent Owner does not identify how, even if it is an error, the

inclusion of “li” in the translation is anything more than a typographical error or results in an inaccurate translation of the subject matter in Fujiwara that is material to this proceeding.

Patent Owner filed its Preliminary Response on February 28, 2024. On March 5, 2024, apparently spurred to action by the contents of the Patent Owner Preliminary Response, Petitioner submitted an e-mail request for authorization to file a corrected affidavit. Notably, Petitioner did not request authorization to file a Motion to Correct the Petition under 37 CFR 42.104(c). Petitioner’s e-mail request states “Petitioner conferred with Patent Owner on the above request and Patent Owner indicates it does not oppose. Patent Owner, however, has not seen the corrected exhibits Petitioners seek to file and reserves the right to contest whether they are sufficient to meet the requirements for such declarations.” Ex. 3001.

In *Zhongshan Broad Ocean Motor Co., Ltd. v. Nidec Motor Corp.*, IPR2014-01123, Paper 20 (PTAB Jan. 21, 2015) (Decision Denying Institution), the Board authorized, but ultimately denied, Petitioner’s Motion to File omitted attesting affidavits with translations. The panel stated that the excuse for a filing error under 37 C.F.R. 42.104(c) requires showing a clerical or typographical error occurred and that Petitioner’s failure to file attesting affidavits was not shown to be such a clerical error. *Id.* at 5–6. The Board found that the evidence “establishes that the mistake sought to be corrected was by Petitioners’ lead counsel and arose because incorrect assumptions were made without the necessary review.” *Id.* at 6. The Board continued “[t]his is not an instance in which attesting affidavits had been obtained but were omitted from Petitioners’ filing because of a clerical failure to collate the affidavits with other material being filed. Rather, the

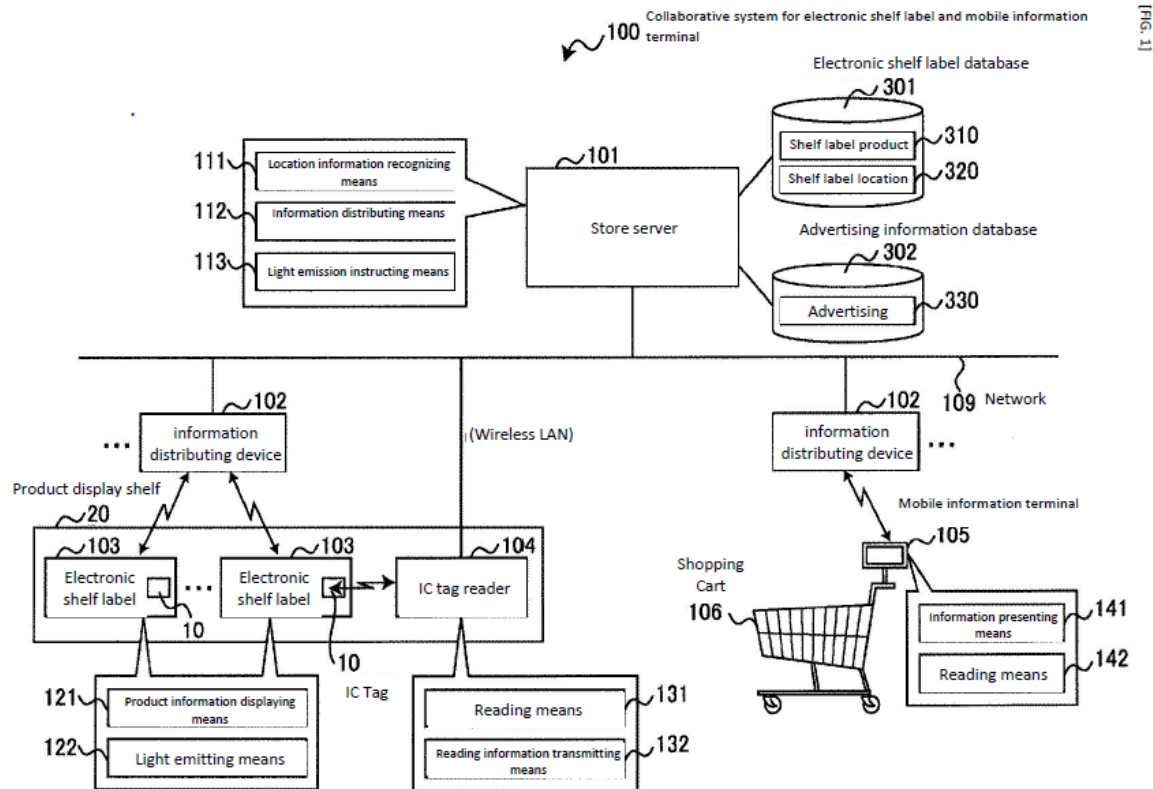
mistake resulted from a failure to obtain the attesting affidavits at all—until attention later was drawn to the error by Patent Owner.”

The error here is not typographical. Petitioner filed a translation declaration, but that declaration failed to comply with our rules. Nevertheless, in this case the error is qualitatively different from that in *Zhongshan*, where there was no evidence Petitioner attempted to comply with the rule. Given the circumstances, we conditionally exercise our discretion to waive requirements under 37 C.F.R. Part 42. *See* 37 C.F.R. 42.5(b).

For purposes of this Decision, we consider the subject matter Petitioner submitted in its translation of Fujiwara. Nevertheless, Petitioner is required to review the translation and provide a proper certification to maintain its reliance on Fujiwara in this proceeding. In the event that Petitioner identifies any errors in the translation previously submitted as Exhibit 1003, Petitioner must explain the errors and their significance relative to the subject matter of its Fujiwara based challenges.

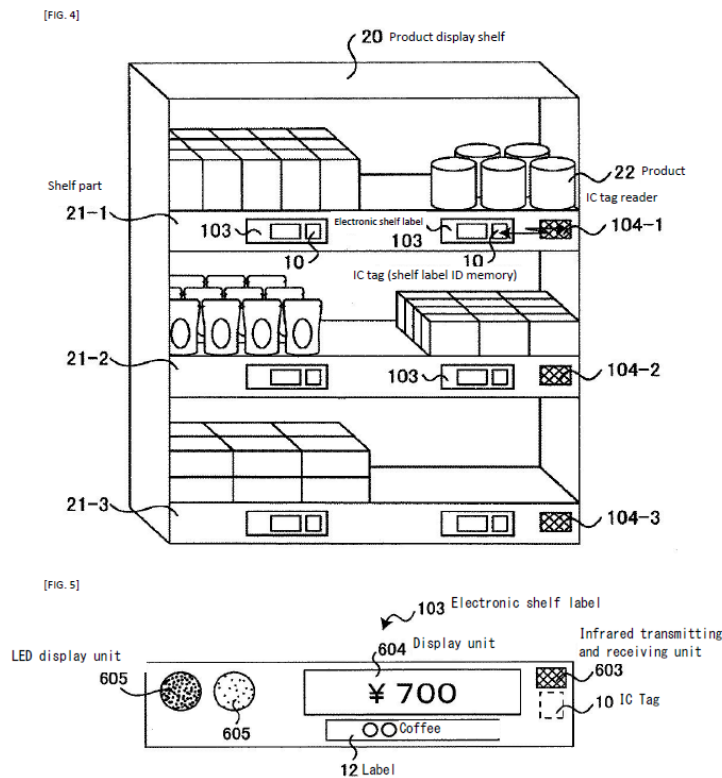
b) Substance of Fujiwara

Fujiwara discloses a system that uses electronic shelf labels and mobile information terminals to specify product locations in a store and present the products’ location. Ex. 1003 (code 57). Figure 1 of Fujiwara, reproduced below, depicts a schematic configuration of Fujiwara’s electronic shelf and mobile information terminal linking system. *Id.* ¶¶ 41–42, 113.



Ex. 1003, Fig. 1. “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, reproduced below, depicts the appearance configuration of the electronic shelf labels 103 and tag reader 104. Ex. 1003 ¶¶ 66, 113.



Id. Fig. 4. As shown in Fujiwara's Figure 4, each shelflabel 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 shelflabel 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

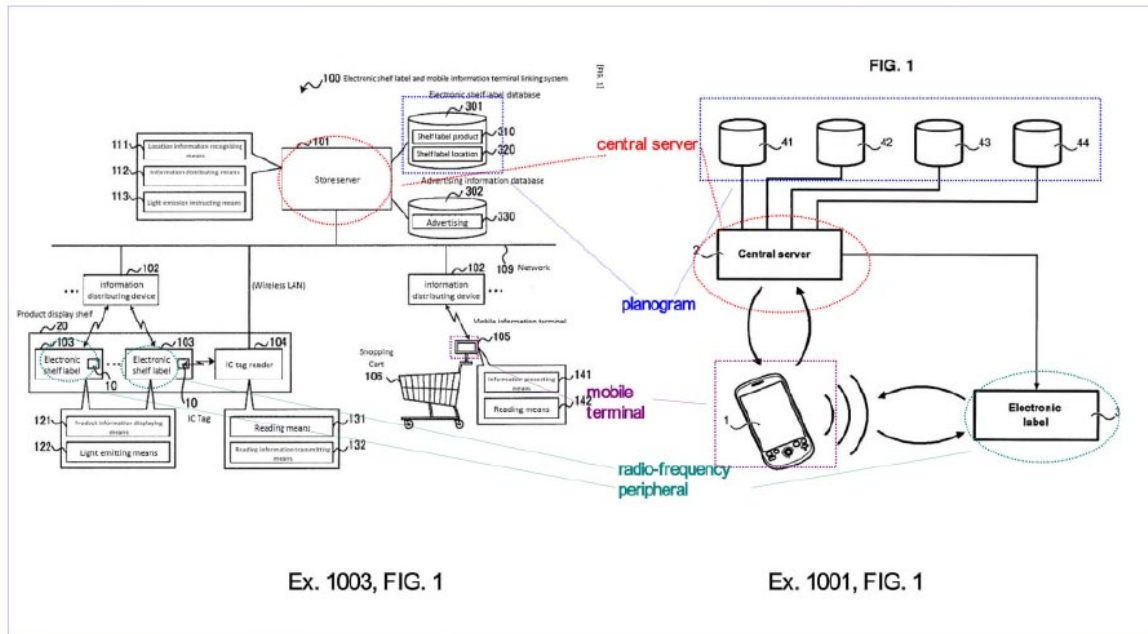
the product information to the mobile information terminal (S1407–S1409). Mobile terminal 105 then associates the received product information 312 and shelf number 313 and displays the received advertising information (S1410–S1411). *Id.*

2. *Claim 1*

a) *Petitioner's Contentions*

The preamble of claim 1 recites a method performed by a central server to access a planogram that associates unique radio frequency peripheral identifiers one-to-one with locations within a predetermined area, with each location being defined by a vertical and horizontal position within a plane perpendicular to a floor of the predetermined area. Ex. 1001, 8:18–27. Petitioner contends that the preamble is not limiting because it does not define any claim limitations that are not set forth in the body of the claim. Pet. 17–18. We note, however, that the preamble explicitly is limited to “a method for communicating spatially localized information to a mobile terminal” that is “performed by” a server that accesses a planogram associating radio frequency peripheral identifiers with locations defined by horizontal and vertical positions in a specific plane, i.e., a plane that is perpendicular to a floor of a predetermined area.

To show the correspondence between the components of Fujiwara and those of the '340 patent, Petitioner provides the Figure shown below.



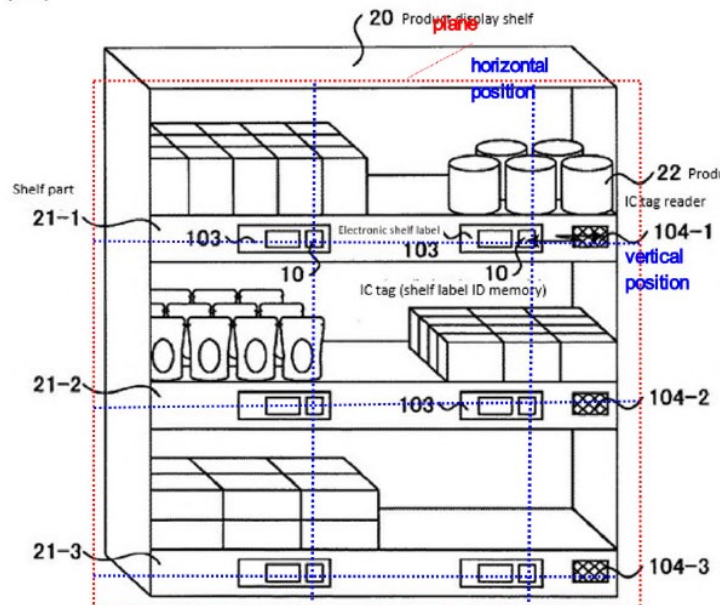
Pet. 23. Petitioner's annotated figure shows, side-by-side, Figure 1 of Fujiwara (on the left) and Figure 1 of the '340 patent (on the right).

Turning to the subject matter in the preamble, Petitioner notes that Fujiwara discloses a central server and electronic shelf labels 103 having IC tags 10 corresponding to products on a sales floor and displaying information about the product. Pet. 18 (citing Ex. 1003 ¶¶ 15, 67). Petitioner states that the non-contact IC tag 10 communicates with tag reader 104 at a distance of several to several tens of centimeters using a microwave transmitting and receiving unit. *Id.* (citing Ex. 1003 ¶¶ 71, 72, 76). Petitioner contends that an ordinarily skilled artisan would recognize the claimed radio frequency peripheral is obvious over Fujiwara’s electronic shelf label integrating an IC tag that is implemented as a conventional RFID device in conformance with ISO 14443 standards. *Id.* at 16–19 (citing Ex. 1009, Tentzeris Decl. ¶¶ 68–70).

Petitioner notes that Fujiwara's central server is capable of accessing electronic shelflabel database 301, which stores a plurality of shelf label

product information 310 and shelf label location information 320. Pet. 19–20 (citing Ex. 1003 ¶¶ 15, 62). Petitioner contends that electronic shelf database 301 teaches a planogram associating a plurality of unique identifiers (shelf label ID 311) with a plurality of locations within a predetermined area (the sales floor) that can be accessed by the server, as recited in the preamble. Pet. 19–20 (citing Ex. 1003 ¶¶ 15, 62; Ex. 1009, Tentzeris Decl. ¶¶ 72–73). Petitioner references its annotated version of Figure 4 of Fujiwara, reproduced below, as illustrating that shelf label location includes shelf label ID 311 and that shelf number 313 is the location information for each shelf part 21 of product display 20. *Id.* at 21–22

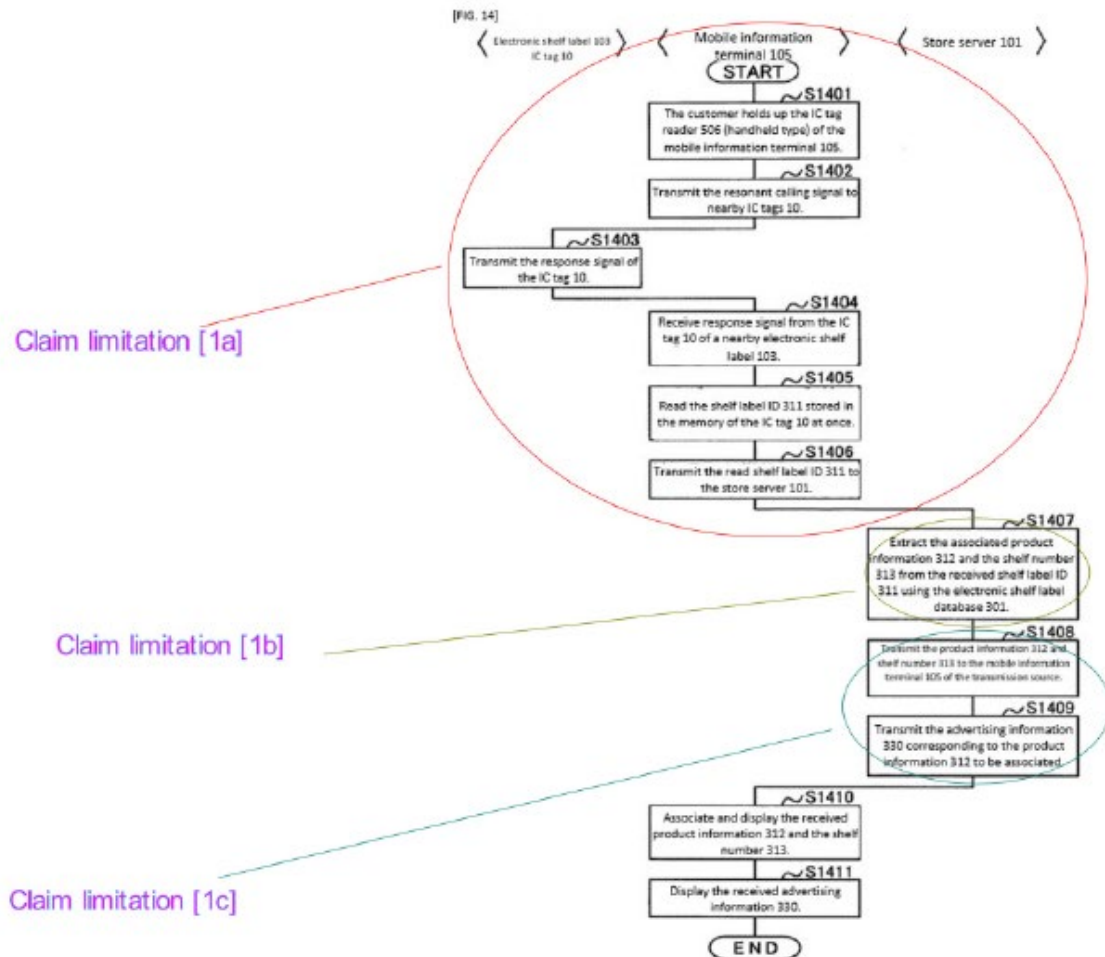
[FIG. 4]



Petitioner states that Figure 4 shows each location is defined by a vertical position represented by shelf number 313 and a horizontal position of the electronic label along horizontal shelf part 21 along the front of the shelf on the sales floor, i.e., a plane perpendicular to the floor of the predetermined area. *Id.* (citing Ex. 1003 ¶¶ 62, 84, Fig. 4; Ex. 1009, Tentzeris Decl. ¶ 75).

Petitioner also contends that a person of ordinary skill would understand that, when multiple display shelves 20 are placed side by side within an aisle, the position of the product display shelf within the aisle is the horizontal position in the preamble, the shelf number is the vertical position in the preamble, and the plane in the preamble is the front plane of the whole aisle. Pet. 22 (citing Ex. 1009, Tentzeris Decl. ¶ 76).

To illustrate the correspondence between Fujiwara and the steps of the method recited in claim 1, Petitioner provides an annotated version of Figure 14 of Fujiwara shown below.



Ex. 1003, FIG. 14

Pet. 17.

Petitioner designates as limitation 1[a] the recitation

receiving a communication from a mobile terminal, the communication comprising a unique identifier received by the mobile terminal from a radio-frequency peripheral located in the predetermined area, the unique identifier being particular to the radio-frequency peripheral, wherein the radio-frequency peripheral includes an antenna and an electronic chip configured for near-field communication, and is configured to be activated by the mobile terminal when the radio-frequency communication peripheral is within a communication range of the mobile terminal, wherein the communication range is less than twenty centimeters.

Pet. iv. As Petitioner's annotated version of Figure 14 shows, Petitioner contends that steps S1401–S1406 of Fujiwara teach limitation 1[a].

Petitioner states that in Fujiwara, when acquiring the location of a product while moving, handheld IC tag reader 506 of mobile terminal 105 on shopping cart 106 is held over product display shelf 20 (step S1401); IC tag reader 506 transmits a resonant call up signal to the IC tag of shelf label 103 (step S1402); IC tag 10 transmits a response (step S1403) that is received and read by the tag reader 506 (steps S1404, S1405). Pet. 25–26 (citing Ex. 1003 ¶ 82 (“The IC tag reader 506 transmits a call-up signal resonant with respect to the IC tags 10, 11, reads the response signal from the IC tags 10, 11 at a distance of several to several tens of centimeters, and reads the shelf label IDs, shelf numbers, and the like, which are the information recorded in the IC tags 10, 11.”). *Id.* Petitioner further argues that, as the '340 patent does not ascribe any criticality to its arbitrary cutoff range of 20 cm, Fujiwara's disclosure of a range that significantly overlaps that mentioned in the '340 patent is *prima facie* evidence of obviousness of the claimed range. *Id.* at 27. Petitioner also states that because NFC standards, such as ISO

14443, and their advantages were commonly known to ordinarily skilled artisans at the time of the invention, the use of IC tags configured for near field configurations would have been an obvious implementation approach. *Id.* at 28–29. Finally, Petitioner states that Fujiwara’s disclosure that control unit 501 of mobile information terminal 105 transmits shelf labels IDs to store server 101 (step S1406) teaches the claimed communication sequence. *Id.* at 29.

Petitioner designates as limitation 1[b], the recitation:

determining a location of the mobile terminal within the predetermined area based on the location associated with the unique identifier of the received communication in the planogram, the location of the mobile terminal comprising the vertical and horizontal position of said location.

Pet. iv. As shown in Petitioner’s annotated Figure 14 of Fujiwara, Petitioner contends that steps S1407–S1409 of Fujiwara teach limitation 1[b] of the ’340 patent. Petitioner contends that Fujiwara’s central server is configured to access an electronic shelf database (a planogram) to determine a location associated with an electronic shelf label ID (a unique identifier of the received communication). *Id.* at 31 (citing Ex. 1003 ¶ 15; Ex. 1009, Tentzeris Decl. ¶ 99). Petitioner cites Fujiwara as disclosing that control unit 201 of store server 101 extracts product information 312 and shelf number 313 from shelf labels IDs 311 received from shelf database 301 (step S1407). *Id.* Petitioner asserts that shelf number 313 and shelf label 311 form information 320, i.e., a location associated with the unique identifier of the received communication in the planogram, as claimed. *Id.* Noting that shelf label ID 311 is from IC tags 10 of surrounding electronic shelf labels 103, and tag reader 506 and shelf label 103 must be within a communication range of several to several tens of centimeters, Petitioner

contends that a person of ordinary skill would understand that retrieving the location associated with a unique identifier necessarily determines the location of the mobile terminal and the corresponding IC tag reader. *Id.* at 31–32. According to Petitioner, this location includes horizontal and vertical positions. *Id.* (citing Ex. 1003 ¶ 82; Ex. 1009, Tentzeris Decl. ¶ 101).

Alternatively, Petitioner contends that IC tag reader 506 may interact with IC tags 10 in a range of a one-third part of product display shelf 20, shown in Figure 4 as having 3 vertically spaced shelves with products. Pet. 32 (citing Ex. 1003 ¶ 104 (“IC tag reader 506 normally enables reading of the IC 10 tags in the range of one-third of the product display shelf 20”); Ex. 1009, Tentzeris Decl. ¶ 102). Referencing Figure 11, Petitioner argues that an ordinarily skilled artisan would understand Fujiwara’s reference to one-third refers to a vertical position of one shelf in product display 20 and that the horizontal position on the shelf is within a plane that is perpendicular to the floor of the predetermined area. *Id.* at 33 (citing Ex. 1009, Tentzeris Decl. ¶ 102). Thus, according to Petitioner, by extracting shelf number 313 and shelf tag label 311 the range/location is necessarily established. *Id.* (citing Ex. 1003 ¶ 105; Ex. 1009, Tentzeris Decl. ¶ 102).

Petitioner designates as limitation 1[c] the recitation “transmitting to the mobile terminal spatially localized information associated the location of the mobile terminal.” Pet. iv. As Petitioner’s annotated version of Fujiwara Figure 14 shows, Petitioner contends that steps S1410 and S1411 teach limitation 1[c]. Noting that product information 312 is information related to the product to be displayed on electronic shelf label 103, e.g., product ID, product price, etc., Petitioner cites Fujiwara as disclosing that control unit 201 transmits associated product information 312 and shelf number 313 to

mobile information terminal 105 (step S1408) and advertising information 330 corresponding to the associated product ID (step S1409). Pet. 36 (citing Ex. 1003 ¶ 105). According to Petitioner, an ordinarily skilled artisan would recognize that product information 312 and advertising information 330 are spatially localized information associated with the location of the mobile terminal, as claimed. *Id.* (citing Ex. 1003 ¶ 16; Ex. 1009, Tentzeris Decl. ¶ 107).

Petitioner also cites a second embodiment disclosed by Fujiwara that presents a product location to a customer. Pet. 37 (citing Ex. 1003 ¶¶ 95, 108). Petitioner contends an ordinarily skilled artisan would find it obvious to have the store server transmit locations of products inside product display shelf 20 relative to the determined position of the mobile display terminal and the relative direction to locate such products. *Id.* According to Petitioner, this capability would require no more than a small addition to the product and advertising information already set to be transmitted to the mobile terminal, using nothing more than known elements to achieve predictable results. *Id.* (citing Ex. 1003 ¶ 63; Ex. 1009, Tentzeris Decl. ¶ 108).

b) Patent Owner's Contentions

Patent Owner contends that Petitioner fails to show Fujiwara discloses or renders obvious the “planogram” recited in the preamble of claim 1 and in limitation 1[b]. Prelim. Resp. 19–22. Noting that Fujiwara does not use the term “planogram,” Patent Owner contends that Petitioner’s argument is insufficient because Petitioner either assigns no meaning to the term “planogram” or argues that any organization of data is a “planogram.” *Id.* at 19–21. According to Patent Owner, although Petitioner asserts that Fujiwara’s electronic database teaches a planogram, neither the Petition nor

the Declaration of Petitioner's expert explains why. *Id.* at 20. Noting Petitioner's discussion of Figures 11 and 12 of Fujiwara, Patent Owner acknowledges Petitioner's discussion of how a person in charge of a store could update Fujiwara's electronic shelf label database 301, which stores a shelf number 313 and shelf label ID 311, but contends Petitioner says nothing about that database teaching a planogram. *Id.*

Patent Owner further argues that Petitioner fails to show Fujiwara discloses or renders obvious the "horizontal position" recited in the preamble of claim 1 and in limitation 1[b]. Prelim. Resp. 22–28. Patent Owner argues that Petitioner has not shown that Fujiwara's database associates a unique identifier with a horizontal position or that Fujiwara's store server determines a horizontal position, as recited in claim limitation 1[b]. *Id.* at 23, 25. Patent Owner acknowledges that the Petition points to Figure 4 of Fujiwara as illustrating shelf number 313 having a vertical and horizontal position, but argues Petitioner's identification of a horizontal position of IC tag 10 in Figure 4 is not sufficient to satisfy the requirement of claim 1. *Id.* at 23–24. According to Patent Owner, Petitioner "needed to show that Fujiwara *associates* the unique identifier for each IC tag with its horizontal location in the electronic shelf database . . . so that Fujiwara's store server can determine the horizontal position from that database when it later receives the unique identifier of that IC from the mobile terminal." *Id.* at 24–25.

As to Petitioner's alternative theories, Patent Owner argues that, "by arguing the whole shelf can be the horizontal position," Petitioner conflates the recited horizontal and vertical positions, rendering the horizontal position limitation meaningless. *Id.* at 25. Patent Owner further asserts that Petitioner provides no support for its assertion that an ordinarily skilled

artisan would find it obvious that multiple product display shelves 20 can be placed side by side within an aisle. *Id.* at 26.

c) Analysis

The Specification of the '340 patent states that “[a] planogram lists the locations of all the electronic labels 3 and of the items on sale in a sales area.” Ex. 1001, 6:35–37. Thus, the planogram of the '340 patent is merely a list of locations of labels and associated locations and the items on sale. *Id.* Although Fujiwara does not use the term “planogram,” Fujiwara discloses such a list. *See* Ex. 1003 ¶ 13 (disclosing a store server with an electronic shelf label database that stores shelf label product information as well as the shelf label location information identifying the location of the electronic shelf label); *see also id.* ¶¶ 15, 42–44, 62.

The '340 patent Specification further states that, because a location is associated with each label, the label's unique identifier allows unambiguous determination of the label's location, allowing the central server to determine the location of the mobile terminal. Ex. 1001, 6:29–51. Claim 1 recites that the locations are defined by a vertical and horizontal position within a plane perpendicular to the floor of a predetermined area. Figure 4 of Fujiwara, discussed above, shows display shelf 20 with vertically separated shelf parts 21-1 through 21-3, and electronic tags 103 horizontally spaced along each vertically spaced shelf part, such that the tags are placed under and correspond to different products. Ex. 1003, Fig. 4. Although Fujiwara does not explicitly discuss vertical and horizontal positions as defining the location of an electronic tag, we agree with Petitioner that, based on Fujiwara's illustrations of uniquely numbered electronic tags positioned at spaced locations along vertically separated shelves, an ordinarily skilled artisan would have understood that listing the vertical and

horizontal position of each tag in the database would define the position of the tag as claimed. As Figure 4 of Fujiwara illustrates, the tags are positioned at locations on the shelves in a two-dimensional plane perpendicular to the floor. We are persuaded that an ordinarily skilled artisan would have understood that, because defining a location in a two-dimensional plane requires specifying at least two coordinates, e.g., a Y coordinate (vertical position) and an X coordinate (horizontal position), listing the horizontal and vertical position of each of Fujiwara's uniquely numbered tags in a database would define the location of each such tag.

As to Petitioner's alternative theory, we agree with Petitioner that a person of ordinary skill would have understood that a plurality of shelf units can be placed side-by-side in an aisle, and that each shelf unit is at a location within the aisle that defines its horizontal position.

Patent Owner does not explicitly dispute that the remaining limitations of claim 1 are disclosed in Fujiwara. Having reviewed Petitioner's contentions concerning the limitations of claim 1, we determine Petitioner has demonstrated that Fujiwara would have disclosed or suggested all the limitations of claim 1 to a person of ordinary skill in the art.

3. *Claim 2*

Claim 2 recites that when a mobile terminal is positioned within a communication range of the RF communication peripheral, electromagnetic waves emitted by the mobile terminal activate the RF communication peripheral to set up RF communication between the terminal and the peripheral. Ex. 1001, 8:50–59. Referencing its discussion of limitation 1[a], Petitioner notes that Fujiwara's IC tag 10 includes a coil shaped antenna and an IC chip having a communication range of several to several tens of centimeters and that the lower end of this range is within the range of near-

field communications, as defined in NFC standards, such as ISO-14443. Pet. 27–28 (citing Ex. 1003 ¶¶ 71, 82; Ex. 1009, Tentzeris Decl. ¶¶ 46–53, 92–93). Petitioner further notes that in Fujiwara step S1404, control unit 501 of mobile information terminal 105 transmits one or more shelf label IDs 311 that were read to store server 101. Pet. 29 (citing Ex. 1003 ¶ 104; Ex. 1009, Tentzeris Decl. ¶¶ 96–98).

Patent Owner does not explicitly dispute Petitioner’s contentions concerning claim 2. We determine that Petitioner has demonstrated Fujiwara would have disclosed or suggested all the limitations of claim 2 to a person of ordinary skill in the art.

4. *Claim 3*

Claim 3 depends from claim 1 and recites that the central server receives communication from the mobile terminal or via the Internet. Ex. 1001, 8:60–62. Petitioner cites Fujiwara as disclosing collaborative system 100 of electronic shelf labels and mobile information terminals includes network 109, such as a local area network can be wired or wireless. Pet. 39 (citing Ex. 1003 ¶¶ 41–42). Noting that Fujiwara discloses network 109 can be any of a broad range of wired or wireless networks, Petitioner contends that a person of ordinary skill would have been motivated and able to modify Fujiwara’s network 109 to use the conventional Internet for communication between the mobile terminal and the store server. Pet. 39–40 (citing Ex. 1003 ¶¶ 54, 116; Ex. 1009, Tentzeris Decl. ¶ 116).

Patent Owner does not explicitly dispute Petitioner’s contentions concerning claim 3. We determine that Petitioner has demonstrated Fujiwara would have disclosed or suggested all the limitations of claim 3 to a person of ordinary skill in the art.

5. *Claim 4*

Claim 4 depends from claim 1 and recites that the spatially localized information is associated with account data that is specific to the user of the mobile terminal and is previously stored in a database accessible to the central server via a communication network. Ex. 1001, 8:63–67. Petitioner contends that Fujiwara discloses attribute information, i.e., customer information that corresponds to the claimed account data specific to the user of the mobile terminal, may be acquired from a customer card. Pet. 41 (citing Ex. 1003 ¶ 98; Ex. 1009, Tentzeris Decl. ¶ 119). Petitioner further cites Fujiwara’s disclosure that when a customer holds a customer card over an IC tag reader 506 of portable information terminal 105 on shopping cart 106, such that data previously stored in a database of portable information terminal 105, the customer’s attribute information is now accessible to the store server via the communication network. *Id.* (citing Ex. 1003 ¶ 98; Ex. 1009, Tentzeris Decl. ¶ 120).

Patent Owner does not explicitly dispute Petitioner’s contentions concerning claim 4. We determine that Petitioner has demonstrated Fujiwara would have disclosed or suggested all the limitations of claim 4 to person of ordinary skill in the art.

6. *Claim 5*

Claim 5 is an independent apparatus claim that recites a mobile terminal configured to communicate with a central server that can access a planogram associating unique identifiers of RF peripherals distributed at a plurality of locations defined by a vertical and horizontal positions within a vertical plane of a predetermined area; the peripherals include an antenna and an electronic chip configured to be activated by the mobile terminal for near-field communication. Ex. 1001, 9:1–21. The central server is

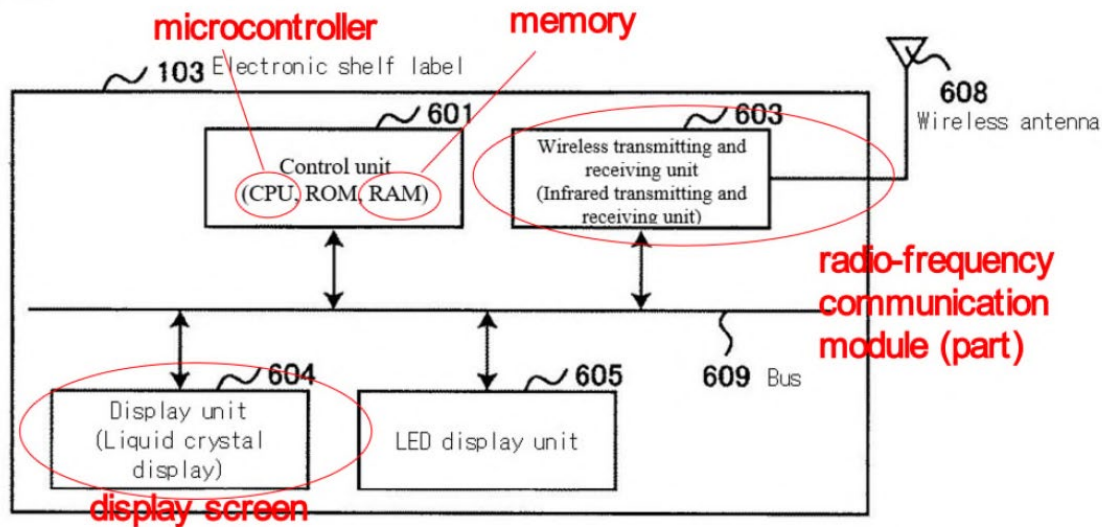
configured to receive from the mobile terminal communications that include a unique identifier particular to the RF peripheral, determine the location of the mobile terminal based on the location associated with the unique identifier, and transmit back to the mobile terminal spatially localized information associated with the location of the mobile terminal. *Id.* at 9:22–10:6.

Petitioner contends that claim 5 recites a system analogous to that recited in method claim 1 and is unpatentable for the same reasons. Pet. 42–44 (citing Ex. 1009, Tentzeris Decl. ¶¶ 122–130). Patent Owner does not explicitly address Petitioner’s contentions concerning claim 5. We agree with Petitioner that the apparatus recited in the limitations of claim 5 performs substantially the same functions that are performed in method claim 1. We therefore determine Petitioner has demonstrated for purposes of this Decision that Fujiwara would have disclosed or suggested the limitations of claim 5 to a person of ordinary skill in the art.

7. *Claim 6*

Claim 6 depends from claim 5 and recites that the RF peripheral is an electronic label that comprises an RF communication module configured to receive data representing information relating to an item from a central server, a memory to store the data, a microcontroller to control the display of the information, and a display screen. Ex. 1001, 10:7–17. Petitioner’s annotated version of Figure 6 of Fujiwara is reproduced below.

[FIG. 6]



Pet. 45. Petitioner's annotations to Figure 6 of Fujiwara illustrates Petitioner's mapping of the limitations recited in claim 6 of the '340 patent to the features of Fujiwara's electronic shelf label 103. Petitioner notes that, although Fujiwara discloses an exemplary wireless communication embodiment using infrared communications, a person of ordinary skill would have been familiar with the widespread use of low-cost RFID techniques and electronic shelf labels and would have found it obvious to substitute such RFID techniques for Fujiwara's infrared communications and to implement the IC tag integrated as a module into the electronic shelf label in an NFC tag conforming with NFC standards. Pet. 46–47 (citing Ex. 1003, Fig. 5; Ex. 1009, Tentzeris Decl. ¶¶ 67, 135). Petitioner further notes that Fujiwara discloses the wireless transmitting and receiving unit is configured to communicate with information distributing device 102 to wirelessly transmit product information (product price and the like) to the electronic shelf label 103 from the store server number 101. *Id.* at 47 (citing Ex. 1003 ¶¶ 45–46).

Patent Owner does not explicitly dispute Petitioner's contentions concerning claim 6. We determine that Petitioner has demonstrated Fujiwara would have disclosed or suggested all the limitations of claim 6 to a person of ordinary skill in the art.

8. *Claim 7*

Claim 7 depends from claim 6 and further recites that the mobile terminal is adapted to transmit data to the electronic label of the RF communication module of the electronic label. Ex. 1001, 10:18–21. Petitioner cites Fujiwara's disclosure that IC tag reader 506 of mobile information terminal 105 transmits a resonant call-up signal to IC tag 10. Pet. 49 (citing Ex. 1003 ¶ 103 (step S1402)). According to Petitioner, a person of ordinary skill would have found it obvious to include IC tag 10 as part of the RF communication module, such that the mobile terminal is adapted to transmit data (the resonant call-up signal) to the electronic label via the RF communication module. *Id.* at 49–50 (citing Ex. 1009, Tentzeris Decl. ¶ 144).

Patent Owner does not explicitly dispute Petitioner's contentions concerning claim 7. We determine that Petitioner has demonstrated Fujiwara would have disclosed or suggested all the limitations of claim 7 to a person of ordinary skill in the art.

9. *Claim 8*

Claim 8 depends from claim 5 and recites that the chip and the antenna are arranged at different points on the RF peripheral and that the RF peripheral comprises connections configured to ensure a communication link between the antenna and the chip. Ex. 1001, 10:22–26. Petitioner cites Fujiwara as disclosing that the IC chip is connected to both inputs of the antenna; accordingly, the antenna and the chip are arranged at different parts

of the RF peripheral such that the chip and the antenna are not arranged at the same point. Pet. 50 (citing Ex. 1003 ¶ 71; Ex. 1009, Tentzeris Decl. ¶ 146).

Patent Owner does not explicitly dispute Petitioner's contentions concerning claim 8. We determine that Petitioner has demonstrated Fujiwara would have disclosed or suggested all the limitations of claim 8 to a person of ordinary skill in the art.

10. *Claim 9*

Claim 9 depends from claim 8 and recites that the chip is connected to the microcontroller of the RF peripheral and the antenna is arranged on or within a case inside which the microcontroller is housed. Ex. 1001, 10:27–30.

Petitioner cites Fujiwara as disclosing the CPU or microcontroller connected through bus 609 with parts of electronic shelf label 103, such as the wireless transmitting and receiving unit 603. Pet. 50 (citing Ex. 1003 ¶ 69; Ex. 1009, Tentzeris Decl. ¶ 148). Noting that IC tag 10 is an integrated part of electronic shelf label 103 and forms the radio-frequency communication module together with the wireless transmitting and receiving unit 603, Petitioner contends that an ordinarily skilled artisan would find it obvious that the CPU is connected through bus 609 with IC tag 10 and its chip. *Id.* at 50–51 (citing Ex. 1009, Tentzeris Decl. ¶ 148). According to Petitioner, in such an arrangement, old elements would be performing known functions and it would simplify the design of the electronic shelf label by integrating all needed control functionalities for the IC tag inside the CPU. *Id.* (citing Ex. 1009, Tentzeris Decl. ¶ 148). Petitioner further cites Figure 5 of Fujiwara as illustrating the electronic shelf label enclosed inside a case with the antenna (part of IC tag 10) being arranged inside the

case in which the microcontroller is also housed. *Id.* at 51 (citing Ex. 1003, Fig. 5; Ex. 1009, Tentzeris Decl. ¶¶ 150, 152).

Patent Owner does not explicitly dispute Petitioner's contentions concerning claim 9. We determine that Petitioner has demonstrated Fujiwara would have disclosed or suggested all the limitations of claim 9 to a person of ordinary skill in the art.

C. Petitioner's Contention That Claims 1–9 Are Obvious Over Fujiwara and Arntzen

1. *Arntzen (Ex. 1005)*

Arntzen discloses a system for displaying and updating price and product information using electronic product labels. Ex. 1005, 1:1–21, 3:21–29.¹¹ The system includes a wireless mesh network for internal communication among a number of electronic displays and at least one data unit containing price and product information. *See id.* at (code 57), 5:21–6:11, 8:21–24. The electronic display includes equipment for remote, contactless near field communication with handheld units, such as mobile phones, personal digital assistants (PDAs), and point-of-sale (POS) scanners. *Id.* at 8:31–9:4. The electronic display may include a memory that stores information, e.g., a price and product code, where the code is transmitted from a central server through the network or from a handheld unit via the near field communication. *Id.* at 9:6–10. Customer information, e.g., recipes, can be transferred to a handheld unit via the near field communication or using Bluetooth techniques. *Id.* at 9:10–15.

¹¹ Consistent with the Petition, the pages numbers used herein are the page numbers of the reference, which differ from the page number of Exhibit 1005.

2. *Claims 1–9*

For each of claims 1–9, Petitioner cites Arntzen as disclosing (1) implementing Fujiwara’s IC tag in conformance with NFC standards, e.g., ISO 14443 with a communication range of less than 20 cm and (2) implementing wireless Fujiwara’s wireless transmitting and receiving unit to use a radio frequency communication method. Pet. 52. Noting that Arntzen is directed to a system for displaying and updating price and product related information, Petitioner asserts that Arntzen is analogous art in the same field of endeavor as that of the ’340 patent. *Id.* at 53. Petitioner argues that a person of ordinary skill would have had reason to modify Fujiwara to use Arntzen’s NFC technology for communication with the mobile terminal as well as Arntzen’s RF technology for communication with the central server in Fujiwara because the combination involves known elements to achieve predictable results. *Id.* at 53–54 (citing Ex. 1009, Tentzeris Decl. ¶ 162).

Patent Owner does not explicitly dispute Petitioner’s contentions concerning Arntzen’s additional disclosure of the subject matter recited in claims 1–9. In our discussion of claim 1, we addressed Petitioner’s contentions that a person of ordinary skill would have had reason to implement Fujiwara’s exemplary infrared embodiment in an NFC compatible embodiment using well known RFID techniques and equipment. Arntzen provides further evidence supporting Petitioner’s contentions. We determine that Petitioner has demonstrated an ordinarily skilled artisan would have had reason to combine the teachings of Fujiwara and Arntzen and that their combined teachings would have disclosed or suggested all the limitations of claims 1–9 to a person of ordinary skill in the art.

D. Petitioner's Contention That Claims 1–5 and 8–9 Are Obvious Over Bandy and Fowler

1. *Bandy (Ex. 1006)*

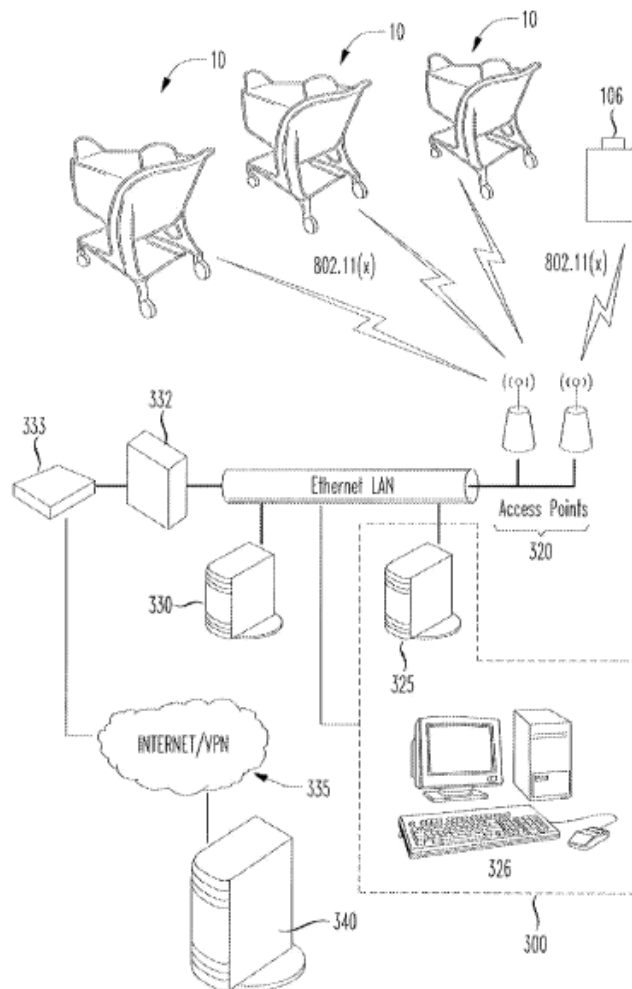
Bandy discloses an RFID device and related processes that function as a product information interface between customers and products in a warehouse or shopping environment. Ex. 1006 ¶¶ 2, 7. The system operates by downloading a product database to the mobile device (*id.* ¶¶ 45–48) or by responding to specific interrogation requests for selected items identified by interrogating an RFID tag (*id.* ¶¶ 49–54). A user's mobile device includes a reader module configured to read an RFID tag associated with an item to determine an identification number corresponding to the tag. *Id.* ¶¶ 9, 13, 34, 49–57. A communication module is configured to transmit the identification number to a merchant's computer system and receive a response that includes data about the item. *Id.*

A user can also search a network to locate an item, e.g., to identify a merchant who stocks a desired item. *Id.* ¶¶ 11, 14, 35, 58. When the user approaches the selected merchant's store, the merchant's computer system communicates with the user's mobile device to provide a location of the desired item within the merchant's store. *Id.* ¶¶ 58, 60–62, 64.

2. *Fowler (Ex. 1007)*

Fowler discloses an enhanced shopping cart system with a “locationing” component that, based on a proximity scan, determines the location of the shopping cart within a store. Ex. 1007 (code 57), ¶ 5. The system is operable to determine a location of a product within the store relative to the shopping cart and display an advertisement based on the location of the cart. *Id.* Figure 17 of Fowler, reproduced below, is a diagram of the overall system of an embodiment.

FIG. 17



Id. ¶ 28. In Figure 17, carts 10 communicate through access ports 320 over a local area network with In-Store Server (ISS) 330, e.g., a standard Microsoft server with supporting database management tools. *Id.* ¶ 259. ISS 330 stores content, such as product advertising. *Id.* ¶¶ 62, 166. Via the Internet or a virtual private network (VPN), advertising data stored in the ISS can be updated from a company's hosting facility as directed by Host Central Server (HCS) 340. *Id.* ¶ 259. Carts 10 also communicate with point-of-sale (POS) server 325 when the consumer brings cart 10 to the Point of Sale 300 checkout. *Id.* ¶¶ 249–251, 259.

Fowler's locationing component includes an aisle RFID reader 225 that works with an embedded computer module (ECM) 200 to determine the location of a cart 10 in a store by processing signals from a number of RFID tags, e.g., tags 303, 304, attached at regularly spaced intervals along shelves or other fixtures; the reader communicates with tags that are within the range of the RFID reader, using well known RFID positioning techniques. *Id.* ¶¶ 141–143, Figs. 1, 9, 12, 15–18. Fowler discloses building a base store map by placing aisle RFID tags in known locations throughout the store, taking the cart through various routes throughout the store to read each of the aisle RFID tags, and correlating the read data with known data. *Id.* ¶ 144. The base store map is saved as entries in a database or an XML document. *Id.* The base store map provides reference data for determining a location of goods or items in the store. *Id.* Each location may be a shelf, freezer fixture, aisle, or produce bin, and may be associated with one or more aisle RFID tags; for example, products such as milk, sub-categorized as whole milk and skim milk, may be correlated to a specific refrigerator having a known location within the base store map and the location of the specific product or product sub-category can be provided relative to the known location of the cart within the store, such that the consumer may be provided directions to the product. *Id.* ¶¶ 145–146, 164 (disclosing that the location of a product relative to a cart may be displayed graphically on a video display of the store floor plan or that text directions to the product may be provided).

Fowler also describes an embodiment in which the aisle RFID scanner scans individual products on the shelves that are labeled with individual RFID tags. Ex. 1007 ¶ 220. The RFID reader may scan, identify, and count individual products using the individual RFID tags and convey that

information via the ECM and transceiver to other network components thereby enabling retailers to manage store inventory. *Id.*

Fowler describes a planogram as “a diagram of fixtures and products that illustrates how and where retail products should be displayed, usually on a store shelf, bin or counter in order to influence consumer selection.” Ex. 1007 ¶ 221. Noting that many inventory management systems assign a unique Stock Keeping Unit (SKU) to each product, Fowler discloses that, because a planogram involves the location of products within the store, the RFID aisle reader can detect the location of products at the SKU level. *Id.* By moving a cart throughout a store, the RFID reader locates each product using the RFID tag, thereby enabling retailers to locate products throughout the store and manage, update and design the store planogram in an efficient and consistent manner. *See id.* ¶¶ 222–229.

3. *Claim 1*

a) *Petitioner’s Contentions Concerning Bandy and Fowler*

Petitioner cites Bandy as disclosing a mobile communications device 100 (the claimed mobile terminal) communicating with RFID tags (the claimed radio-frequency peripherals) and remote computer systems associated with the merchant (the claimed central server). Pet. 63 (citing Ex. 1006 ¶¶ 37, 56). Petitioner also cites Bandy as disclosing an RFID identification number (the claimed unique identifier) that computer system 502, after receiving the identification number, associates with item 904 to retrieve data, including location data, regarding the items in store 500 (the claimed predetermined area). *Id.* (citing Ex. 1006 ¶ 57). Petitioner argues that a person of ordinary skill would understand the identification number is associated one-to-one with a location and this association of location data

with items constitutes the claimed planogram. *Id.* (citing Ex. 1009, Tentzeris Decl. ¶ 178).

Petitioner cites Fowler as disclosing in-store server (ISS) 330 and host central server (HCS) 340, as teaching the claimed central server. Pet. 64 (citing Ex. 1007 ¶¶ 62, 259; Ex. 1009, Tentzeris Decl. ¶ 180). Petitioner further cites Fowler as disclosing shopping cart 10 (the claimed mobile terminal) and anchor RFID tags (the claimed radio-frequency peripherals) at the shelf or fixture level placed around the store in known locations. *Id.* (citing Ex. 1007 ¶ 144; Ex. 1009, Tentzeris Decl. ¶ 182).

Petitioner's expert states that Bandy alone teaches all the limitations of the preamble of claim 1, except for the vertical and horizontal position limitation. Ex. 1009, Tentzeris Decl. ¶ 192. Petitioner's expert relies on Fowler as teaching the vertical and horizontal positions. *Id.*

Petitioner cites Fowler as disclosing locating a cart by “building electronic representation of the base map of the store (the planogram) with a number of reference or anchor RFID's (e.g., shelf or fixture level tags) placed around the store in known locations.” Pet. 66 (citing Ex. 1007 ¶ 144). Petitioner also cites Fowler's disclosure of “RFID tags located at various heights and locations along the shelves.” *Id.* (citing Ex. 1007 ¶ 137). According to Petitioner's expert, an ordinarily skilled artisan would understand the known locations of anchor RFID tags, which may be associated with products and may be at different heights and locations along the shelves, necessarily comprise the claimed vertical and horizontal positions of the locations. *See* Pet. 66–67; Ex. 1009, Tentzeris Decl. ¶ 186. Petitioner further notes that Fowler's RFID tags are associated with the unique identifier and that each product may be located by means of the RFID tag, thereby enabling retailers to locate products throughout the store

to manage, update and design the store planogram. Pet. 67 (citing Ex. 1007 ¶¶ 222, 231; Ex. 1009, Tentzeris Decl. ¶ 189).

As to limitation 1[a], Petitioner states that a person of ordinary skill would understand that Bandy's identification number is particular to a tag 902 activated by an interrogation from reader module 304 of a mobile communications device 100 within a communication range, e.g., within 20 cm, using NFC protocols. Pet. 70–71 (citing Ex. 1006 ¶¶ 54–55; Ex. 1009, Tentzeris Decl. ¶¶ 194–195). Petitioner further argues that Bandy's RFID tag 1600 includes an integrated circuit (electronic chip) that performs RFID operations using related electronics 1606 that includes antenna 1614, rendering it obvious to configure Bandy for near field communication. *Id.* at 71 (citing Ex. 1006 ¶¶ 74, 77; Ex. 1009, Tentzeris Decl. ¶ 196). Petitioner cites Fowler as disclosing a cart (mobile terminal) obtaining unique identifiers of RFID tags and communicating the identifiers to the central server for processing the lookup of locations associated with the tags, such that the electronic representation of the store configuration is a planogram. *Id.* at 72–73 (citing Ex. 1007 ¶¶ 143–147).

As to limitation 1[b], Petitioner cites Bandy's computer system 502 (the claimed central server) associating the identification number (the claimed unique identifier) stored in tag 902 with item 904 and observes that the item data may include location data regarding the item in store 500. Pet. 74 (citing Ex. 1006 ¶¶ 56–57). Thus, according to Petitioner, an ordinarily skilled artisan would have known that the central server determines a location of the mobile terminal by looking up the location data of the item in a planogram, as claimed. *Id.* (citing Ex. 1009, Tentzeris Decl. ¶ 201). Petitioner cites the combined teachings of Bandy and Fowler as disclosing locating the cart in the store using data gathered and analyzed in the central

server and argues that a person of ordinary skill would have understood how to implement Fowler's placement of RFID tags in a vertical plane and at horizontal positions along a shelf in Bandy's planogram. *Id.* at 74–75 (citing Ex. 1009, Tentzeris Decl. ¶ 203).

As to limitation 1[c], Petitioner cites Bandy's disclosure that data related to an item may also include price, configuration, and other specifications, and states that such data constitutes spatially localized information associated with the item and the mobile terminal, as claimed. Pet. 75 (citing Ex. 1006 ¶ 57; Ex. 1009, Tentzeris Decl. ¶ 205). Noting that Fowler discloses the location of specific products can be provided relative to the known location of the cart within the store and the customer may be directed to such products, Petitioner also cites Fowler's graphical display of such location and direction information as spatially localized information associated with the location of the mobile terminal. *Id.* at 76–77 (citing Ex. 1007 ¶ 145; Ex. 1009, Tentzeris Decl. ¶ 207).

b) Patent Owner's Contentions Concerning Bandy and Fowler

Referencing the preamble of claim 1 and limitation 1[b], Patent Owner contends that "Petitioner has not shown that either Bandy or Fowler discloses or renders obvious the recited 'planogram.'" Prelim. Resp. 29. According to Patent Owner, Petitioner's contentions that Bandy discloses the claimed planogram because Bandy discloses item data may comprise location data regarding the item in a store does not meaningfully engage the limitation. *Id.* (citing Pet. 63). Patent Owner also argues (i) that Petitioner does not explain how Fowler's use of the term planogram is consistent with what Petitioner contends is the customary meaning of the term, (ii) that Petitioner fails to explain how Fowler discloses using the planogram to

determine the location of a mobile terminal or shopping cart and (iii) that Petitioner does not explain why Fowler would use the expressions “base store map” and “planogram” in different parts of the Specification. *Id.* at 30–31.

Patent Owner also argues that Petitioner fails to make the requisite showing that either Bandy or Fowler discloses or renders obvious a vertical and horizontal position as claimed. Prelim. Resp. 32–33. According to Patent Owner, Petitioner’s entire argument is based on its annotated version of Figure 18 of Fowler and suffers from two flaws: (1) Petitioner fails to explain why the positions in annotated Figure 18 meet the claim limitations and (2), “it makes no sense to determine the vertical position of the cart, as required in [1b]” because a cart remains at a consistent vertical position as it moves through a store. *Id.* at 35. Patent Owner does not explicitly argue that Bandy and Fowler do not teach the remaining limitations of claim 1.

Arguing that Bandy’s reader-based system and Fowler’s purported location data disclosures are fundamentally incompatible, Patent Owner also contends that an ordinarily skilled artisan would not have had reason to combine the teachings of these references. Prelim. Resp. 36–43. According to Patent Owner, “the purpose of Bandy is for the user to request, and the system to provide, information about a particular item . . . Bandy discloses using RFID technology in a reader operated by the user to gain information about specifically-scanned products, but fails to disclose anything related to the location of the reader.” *Id.* at 36–37.

c) Analysis of Bandy and Fowler

As Petitioner argues, Bandy discloses a system in a mobile terminal that communicates with uniquely identified RFID tags and a remote computer, e.g., a central server. Ex. 1006 ¶¶ 37, 54, 56. Bandy also

discloses computer system 502 that associates a unique identification number stored in tag 902 with an item 904 and that data associated with the item includes the item's location in a store. *Id.* ¶ 57. As the '340 patent states "[a] planogram lists the locations of all the electronic labels [3] and of the items on sale in a sales area," we agree with Petitioner that Bandy discloses a planogram.

Fowler explicitly discloses (1) "RFID tags located at various heights and locations along shelves" and (2) "RFID tags 303 and 304 may be attached at a shelf or fixture level, which refers to placement of tags at about regularly spaced intervals along a shelf or other product display areas." Ex. 1007 ¶¶ 137, 141. Based on this disclosure in Fowler, we agree with Petitioner that a person of ordinary skill would recognize that Fowler discloses RFID tags located at different vertical and horizontal positions in a planogram. Pet. 68 (citing Ex. 1009, Tentzeris Decl. ¶ 190).

Patent Owner's argument that Petitioner does not "explain how Fowler discloses . . . using the planogram to determine the location of any mobile terminal or even Fowler's shopping cart" is inconsistent with Fowler's actual disclosure. *See* Ex. 1007 ¶¶ 141–143, 144–145 (describing "the process of locating the cart"), ¶¶ 147–148 (describing use of an RFID reader with an antenna oriented outward from a mobile cart to read fixed RFID tags and update product inventory on shelves), ¶¶ 149–153 (stating, "[w]ith the inventory of locations in the system, locations may then be evaluated to determine cart positions as a relative x,y coordinate within [the] store map").

*d) Contentions Concerning Reasons to Combine
Bandy and Fowler's Teachings*

Petitioner contends that a person of ordinary skill would have had reason to combine Fowler's route finding and vertical positioning techniques with Bandy's system to implement Bandy's express objective of improving the interface in a retail or warehouse environment by using RFID tags associated with items to locate the items. Pet. 87 (citing Ex. 1006 ¶¶ 7, 53–57, 59–60, Fig. 6; Ex. 1009, Tentzeris Decl. ¶ 240). According to Petitioner, an ordinarily skilled artisan would recognize that modifying Bandy, such that item location data transmitted to the mobile device includes vertical and horizontal position to be displayed on the mobile device, would make it easier to find products. *Id.* at 88 (citing Ex. 1009, Tentzeris Decl. ¶ 242). Noting that both Bandy and Fowler use servers and RF peripherals that interact with mobile devices and that Bandy teaches displaying location information on the mobile device, Petitioner further argues that implementing Fowler's display of horizontal and vertical information would require only routine changes that are well within the ambit of ordinary skill. *Id.* at 89–90 (citing Ex. 1009, Tentzeris Decl. ¶ 242). According to Petitioner, an ordinarily skilled artisan, recognizing that Bandy's RFID tags communicate with nearby mobile communications devices, would have had reason to follow industry implementation trends by using passive RFID tags according to NFC standards, e.g., ISO 14443, as in Fowler. *Id.* at 90–91 (citing Ex. 1006 ¶¶ 54–55; Ex. 1007 ¶ 139; Ex. 1009, Tentzeris Decl. ¶¶ 244–245).

Emphasizing that Fowler discloses a cart with an integrated reader and video display that “determine[s] the location of the shopping cart based on the interaction of RFID antenna and the RFID tags,” using “multiple [of]

pecially-designed antennas with a particular beam shape and size in order to properly scan RFID tags without user involvement,” Patent Owner argues Fowler “uses RFID technology in an entirely different way that is incompatible with Bandy’s user-operated reader.” Prelim. Resp. 37–40 (citing Ex. 1007 ¶¶ 31–34, 136, 138, Figs. 15, 20A–20D). According to Patent Owner, Petitioner does not explain why an ordinarily skilled artisan “would be motivated to take the user-driven, location-agnostic system of Bandy and combine it with the user-passive, location-based system of Fowler.” *Id.* at 39–40.

Again arguing Bandy and Fowler have different purposes, Patent Owner contends that they use RFID tags in very different ways and that Petitioner fails to support its assertion that a person of ordinary skill would have had reason to use passive RFID tags in place of Bandy’s active RFID tags. Prelim. Resp. 41–42 (citing Ex. 1007 ¶¶ 4, 138). Although Patent Owner acknowledges that Fowler discloses the use of both active and passive RFID tags, Patent Owner asserts (i) that neither Petitioner nor Petitioner’s expert provides any basis for the purported advantages of passive RFID tags and (ii) that Fowler, in fact, teaches away from a modification of a communication range of less than 20 cm because such a reduction would reduce the effectiveness of the reader distribution pattern and prevent the reader from covering the complete height of the shelf, both of which are stated goals of Fowler. *Id.* at 42–43 (citing Ex. 1007 ¶ 137).

Patent Owner’s argument that Fowler and Bandy are incompatible because Bandy is aimed at providing product information after the user has located the product and Fowler is aimed at locating a cart is unavailing. Although Patent Owner asserts that the purpose of Bandy is for the user to request and obtain information about an item that has been scanned but

“fails to disclose anything related to the location of the reader” (Prelim. Resp. 36–37 (citing Ex. 1006 ¶¶ 23–24, 49–57, Fig. 7–8), Bandy explicitly discloses “when the user approaches or enters the store of the merchant 1106, the computer system of merchant 1106 communicates with mobile communications device 100 to provide a location of the desired item in the store or merchant 1106 to the user” (Ex. 1006 ¶ 64). The user can scan the RFID tag at the location of the item to obtain product data. Ex. 1006 ¶¶ 56–57. Thus, Bandy discloses assisting the user to locate a product in the store and, after locating the product, obtaining information about the product by scanning the tag at the designated location.

Fowler discloses similar subject matter. Fowler explicitly discloses reader 225 . . . will convey a signal comprising informational data to the ECM 200, causing the video display to present location-based content to the screen 77. The RFID enablement of the cart permits advertisers and retail stores to interact with the consumer 85 as she navigates the store.

Ex. 1007 ¶ 141. Fowler explicitly discloses that the proximity of the cart to a location causes advertisements stored in the ISS to be streamed to the cart’s ECM, causing advertisements for products at that location to be presented to the operator of the cart. *Id.* ¶ 166.

When the cart 10 enters a different area of the store and the aisle reader 225 detects different RFID tags 303 or 304, the location of the cart 10 is updated, and the advertisement 306 is changed to reflect a different one of the plurality of the stored advertisements 307 based on the updated location of the cart.

Ex. 1007 ¶ 166. We further note that claim 1 recites a method performed by a central server that can access a planogram associating unique identifiers with RFID peripherals at locations within a predetermined area—the steps performed by the central server include receiving a communication of a unique identifier from a mobile terminal, determining the location of the

mobile terminal from the unique identifier, and transmitting to the mobile terminal information associated with the location. Claim 1 does not differentiate how the customer arrives at the location or scans the RFID tag. Bandy and Fowler disclose similar techniques for storing data that associates product and location information in a physical space, such as a retail store. That Fowler may not require the user to physically remove the mobile device from the cart to scan the RFID tag is not the subject matter of claim 1. We further note that, at this stage of the proceeding, there is no evidence that the near field communication range of 20 cm (approximately 7.87 inches) for the RFID tags is incompatible with the systems proposed by Bandy and Fowler.

e) Conclusion—Claim 1

Having reviewed the evidence of record, we determine Petitioner has demonstrated that a person of ordinary skill would have had reason to combine the teachings of Bandy and Fowler and that their combined teachings would have disclosed or suggested all the limitations of claim 1 to a person of ordinary skill.

4. Claims 2–5, 8–9

According to Petitioner, the interaction between the aisle RFID reader and Fowler’s passive RFID tags in the combination of Bandy and Fowler discloses all the limitations recited in claim 2. Pet. 78 (citing Ex. 1009, Tentzeris Decl. ¶¶ 211–212). Petitioner further states that an ordinarily skilled artisan would be able to use well known, conventional NFC standards in Fowler’s passive RFID tags to modify Bandy’s RFID tag. *Id.*

As to claim 3, Petitioner contends would have been obvious in either Bandy or Fowler to have the mobile communications device communicate

with central server via the Internet as claimed. Pet. 78–79 (citing Ex. 1009, Tentzeris Decl. ¶ 214).

Claim 4 recites the spatially localized information is associated with account data specific to a user of the mobile terminal stored in a database accessible to a central server via a communication network. Petitioner cites Bandy’s disclosure of the user inputting or selecting an item via a network accessible database and/or website of the merchant. Pet. 81 (citing Ex. 1006 ¶¶ 59–60; Ex. 1009, Tentzeris Decl. ¶ 220). Petitioner also cites Fowler’s disclosure of correlating sales data and advertising data to determine the effectiveness of a loyalty card program as suggesting an association between spatially located data (advertising data) and user account data. *Id.* (citing Ex. 1007 ¶¶ 251, 256; Ex. 1009, Tentzeris Decl. ¶ 218).

Petitioner contends that claim 5 recites a system analogous to that recited in claim 1 and is unpatentable for the same reasons. Pet. 82–83 (citing Ex. 1009, Tentzeris Decl. ¶¶ 223–231).

As to the arrangement recited in claim 8, Petitioner cites Figure 16 of Bandy as disclosing die 1604 and antenna 1614 at different points of RFID tag 1600, with related electronics 1606 connected to die 1604 through a plurality of contact pads of IC die 1604. Pet. 83–85 (citing Ex. 1006 ¶ 78, Fig. 16; Ex. 1009, Tentzeris Decl. ¶ 234). As to claim 9, which depends from claim 8, citing the structure of Bandy, Petitioner contends an ordinarily skilled artisan would understand some of the related electronics 1606 are the claimed microcontroller. Pet. 85–86 (citing Ex. 1006 ¶ 78, Fig. 16; Ex. 1009, Tentzeris Decl. ¶ 236).

Patent Owner does not explicitly dispute Petitioner’s contentions concerning claims 2–5 and 8–9. Having reviewed the evidence of record, we determine that Petitioner has demonstrated that a person of ordinary skill

would have had reason to combine the teachings of Bandy and Fowler and that their combined teachings would have disclosed or suggested all the limitations of claims 2–5 and 8–9 to a person of ordinary skill.

E. Petitioner’s Contentions That Claim 1–5 and 8–9 Are Obvious Over Bandy, Fowler, and Arntzen

Petitioner cites Arntzen as disclosing price labels that are functionally and structurally analogous to two Bandy’s RFID tags and implemented using the claimed NFC technology. Pet. 92 (citing Ex. 1009, Tentzeris Decl. ¶ 248). Petitioner further states that an ordinarily skilled artisan would have had reason to implement Arntzen’s NFC technology for communication with a mobile terminal using an RFID tag as taught by the combination of Bandy and Fowler because it is well within the level of ordinary skill to combine such known elements to achieve predictable results. *Id.* (citing Ex. 1009, Tentzeris Decl. ¶ 249).

Patent Owner contends that, because Petitioner fails to explain why a person of ordinary skill would have modified the combined teachings of Bandy and Fowler to implement Arntzen’s NFC technology, Petitioner fails to demonstrate a reasonable likelihood it will succeed on its Bandy-Fowler-Arntzen based challenge. For the reasons discussed in our analysis of the combined teachings of Bandy and Fowler, we determine that Petitioner has adequately demonstrated, for purposes of institution, that a person of ordinary skill would have had reason to implement the combination using the technology disclosed in Arntzen. Thus, we find that Petitioner has demonstrated that an ordinarily skilled artisan would have had reason to combine the teachings of Bandy, Fowler, and Arntzen, and that their combined teachings would have disclosed or suggested all the limitations of claims 1–5 and 8–9.

XI. CONCLUSION

For the reasons discussed above, we are persuaded that Petitioner has demonstrated a reasonable likelihood that it will succeed on all its challenges to patentability, namely: claims 1–9 as obvious over Fujiwara; claims 1–9 as obvious over the combined teachings of Fujiwara and Arntzen; claims 1–5 and 8–9 as obvious over the combined teachings of Bandy and Fowler; and claims 1–5 and 8–9 as obvious over the combined teachings of Bandy, Fowler, and Arntzen.

XII. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a) an *inter partes* review of the '340 Patent is hereby instituted, commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial;

FURTHER ORDERED that the trial is authorized on all grounds set forth in the Petition;

FURTHER ORDERED that to maintain its reliance on its translation of Fujiwara, Petitioner must review the translation of Fujiwara, submit a proper certification of the translation, and explain any errors that may have been found in the translation previously submitted as Exhibit 1003; and

FURTHER ORDERED that the trial will be conducted in accordance with a corresponding separately issued Scheduling Order.

IPR2024-00189
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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
PERKINS COIE LLP
Kaiser-ptab@perkinscoie.com
moffa-ptab@perkinscoie.com
pekarekkrohn-ptab@perkinscoie.com
knox-ptab@perkinscoie.com