

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RPX CORPORATION,
Petitioner,

v.

ROTHSCHILD CONNECTED DEVICES INNOVATIONS, LLC,
Patent Owner.

Case IPR2016-00443
Patent 8,788,090 B2

Before KALYAN K. DESHPANDE, RAMA G. ELLURU, and
SCOTT C. MOORE, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

RPX Corporation (“Petitioner”) filed a Petition (Paper 3; “Pet.”) to institute an *inter partes* review of claims 1–8 of U.S. Patent No. 8,788,090 B2 (Ex. 1001; “the ’090 patent”). Rothschild Connected Devices Innovations, LLC (“Patent Owner”) filed a Preliminary Response (Paper 7; “Prelim. Resp.”). The Board instituted a trial as to claims 1–8 of the ’090 patent. Paper 8 (“Dec. on Inst.”).

After institution of trial, Patent Owner filed a Patent Owner Response to the Petition. Paper 20 (“PO Resp.”). Petitioner subsequently filed a Reply to the Patent Owner Response. Paper 26 (“Reply”).

Petitioner relies on the Declaration of Tal Lavian, Ph.D. (Ex. 1002) in support of its Petition. Petitioner did not file a separate declaration in support of its Reply, and Patent Owner did not submit a declaration in support of its Response.

The parties also did not request an oral hearing, and no oral hearing was held. *See* Paper 27, 2.

We have jurisdiction over this dispute under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. Petitioner has shown by a preponderance of the evidence that claims 1–8 of the ’090 patent are unpatentable under 35 U.S.C. § 103(a).

II. BACKGROUND

A. *Related Proceedings*

The parties indicate that the ’090 patent is the subject of one pending lawsuit in the U.S. District Court for the Southern District of Florida, and several pending lawsuits in the U.S. District Court for the Eastern District of Texas. Pet. 2; Paper 7, 2; Paper 15, 2; Paper 25, 2. Additionally, the parties

indicate that the '090 patent has been asserted in numerous other lawsuits that have been dismissed. *Id.*

The '090 patent was challenged in a separate *inter partes* review, *Unified Patents Inc. v. Rothschild Connected Devices Innovations LLC*, Case IPR2016-00535, but that proceeding was terminated at the request of the parties prior to issuance of a final written decision. *See* IPR2016-00535, Paper 13.

B. The '090 patent

The '090 patent discloses a system and method for creating a personalized consumer product. Ex. 1001, Abstract. For example, the disclosed invention may be used to create shampoo in which the scent, hair color tint, and amount of moisturizer are customized according to a user's specific preferences. *Id.* at 2:30–35.

Figure 2 of the '090 patent is reproduced below.

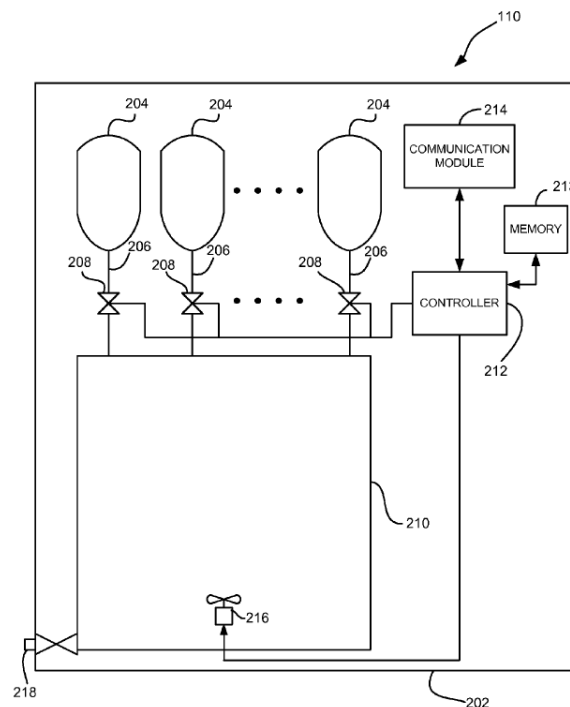


FIG. 2

Figure 2, above, depicts an example of a consumer product in accordance with the disclosed invention. Ex. 1001, 4:10–12. Product 110 includes one or more sealed compartments 204 that contain elements (e.g., fluids or solids) that will be mixed in order to create the final product. *Id.* at 4:16–21. The compartments are connected to mixing chamber 210 by tubes 206 and valves 208. *Id.* at 4:21–25. Valves 208 are actuated by controller 212 to control how much of the fluids and solids in compartments 204 are dispensed into mixing chamber 210. *Id.* at 4:21–26. Product 110 also includes communication module 214, which communicates specific valve settings to controller 212. *Id.* at 4:40–44. Product 110 includes mixing device 216 to mix the ingredients that are dispensed into mixing chamber 210, and exit port 218 that dispenses fluids or solids to the user. *Id.* at 4:50–51, 55–64.

Figure 3 of the '090 patent is reproduced below.

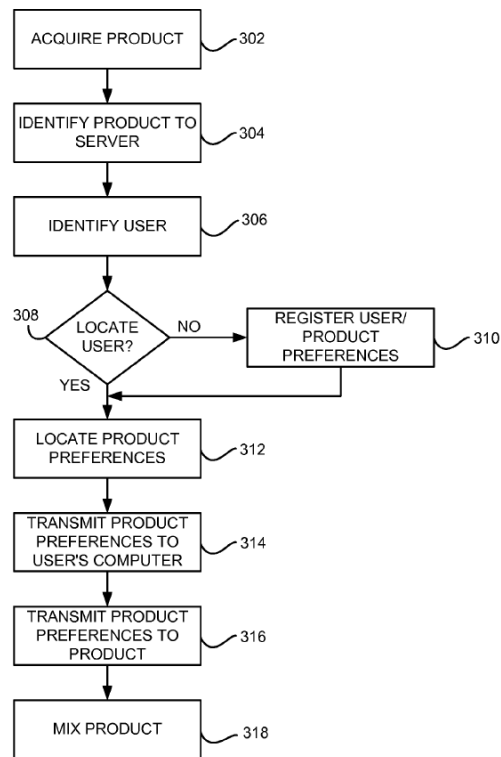


FIG. 3

Figure 3, above, is a flowchart illustrating a method for creating a customized consumer product according to the user's specific product preferences. Ex. 1001, 2:6–10. At step 302, the user purchases or acquires a product 110. *Id.* at 4:15–16. At step 304, the user takes the product to computer/terminal 102 to identify the product to a server. *Id.* at 5:5–6. The user's identity is transmitted to the server at step 306. *Id.* at 5:25–26. At step 308, the server attempts to locate the user's identity in a database that contains user preferences. *Id.* at 5:26–35. If the user cannot be identified, the user is asked to submit product preferences at step 310. *Id.* at 5:36–46. The user preferences are then located at step 312, and communicated to the user's computer/terminal at step 314. Ex. 1001, 5:54–56. At step 316, the user preferences are transmitted to communication module 214 (located within product 110). *Id.* at 5:56–62. Finally, at step 318, controller 212

controls microvalves 208 to dispense specific amounts of fluids or solids into mixing chamber 210, and the ingredients are mixed. *Id.* at 5:62–6:5. The user may then use the customized product. *Id.* at 6:5–6.

C. Challenged Claims

Challenged claim 1 is independent, and challenged claims 2–8 depend either directly or indirectly from claim 1. Challenged claim 1 is reproduced below.

1. A system for customizing a product according to a user's preferences comprising: a remote server including a database configured to store a product preference of a predetermined product for at least one user; and

a first communication module within the product and in communication with the remote server;

wherein the remote server is configured to receive the identity of the predetermined product and the identity of the at least one user, retrieve the product preference from the database based on the identity of the predetermined product and the identity of the least one user and transmit the product preference to the first communication module.

D. References Relied Upon

Petitioner relies on the following references in support of the instituted grounds of unpatentability:

References and Materials	Exhibit No.
U.S. Patent No. 7,933,968 B1 (iss. Apr. 26, 2011) (“Zimmerman”)	1004

U.S. Patent No. 7,477,950 B2 (iss. Jan. 13, 2009) (“DeBourke”)	1005
Published Int’l Patent App. WO 01/12038 A2 (pub. Feb. 22, 2001) (“Gutwein”)	1006
Marco Conti, <i>et al.</i> , “Push Driven Service Composition in Personal Communication Environments,” PERSONAL WIRELESS COMMUNICATIONS, IFIP-TC6 8 TH INT’L CONFERENCE PROCEEDINGS (2003) (“Omnisphere I”)	1007
Franck Rousseau, <i>et al.</i> , “Omnisphere: a Personal Communication Environment,” PROCEEDINGS OF THE 36 TH HAWAII INTERNATIONAL CONFERENCE ON SYSTEM SCIENCES (2003) (“Omnisphere II”)	1008
U.S. Patent No. App. Pub. 2002/0083342 A1 (pub. June 27, 2002) (“Webb”)	1009
U.S. Patent Pub. 2001/0043686 A1 (pub. Nov. 22, 2001) (“Lggulden”)	1010
U.S. Patent Pub. 2002/0052966 A1 (pub. May 2, 2002) (“Isomura”)	1012

E. Instituted Grounds of Unpatentability

We instituted trial on the following grounds:

Ground	Challenged Claim(s)	Statutory Basis	References
1	1	35 U.S.C. § 103	Zimmerman, Lggulden, and DeBourke
2	2–7	35 U.S.C. § 103	Zimmerman, Lggulden, DeBourke, and Gutwein
3	8	35 U.S.C. § 103	Zimmerman, Lggulden, DeBourke, Gutwein, and Webb
4	1	35 U.S.C. § 103	Omnisphere I, Omnisphere II, and Isomura

Dec. on Inst. 29.

III. ANALYSIS

A. *Level of Ordinary Skill in the Art*

Petitioner argued in its Petition that one of ordinary skill in the art would have had an undergraduate degree in computer science, electrical engineering, or computer engineering, or an equivalent degree, and at least two years of experience with network control systems, or have an equivalent amount of relevant work or research experience. Pet. 10. In our Decision on Institution, we declined to adopt the specific formulation set forth by Petitioner, and instead treated the cited references as being representative of the level of ordinary skill in the art. Dec. on Inst. 12 n.5 (citing *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001)). In its Response, Patent Owner does not propose a specific formulation regarding the level of skill in the art, and does not object to treating the cited references as being representative of the level of ordinary skill in the art. Petitioner also does not object in its Reply to treating the cited references as being representative of the level of skill in the art.

On this record, we decline to adopt a specific formulation regarding the level of ordinary skill in the art, and instead find that the cited references are representative of the level of ordinary skill in the art. *See Okajima*, 261 F.3d at 1355 (the level of ordinary skill in the art may be evidenced by the cited references themselves). However, our analysis of the issues below would have been the same had we adopted Petitioner's proposed formulation.

B. Claim Construction

1. Overview

We interpret claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent. 37 C.F.R. § 42.100(b); see *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (concluding the broadest reasonable construction “regulation represents a reasonable exercise of the rulemaking authority that Congress delegated to the Patent Office”). There is a presumption that claim terms are given their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art in the context of the specification. See *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). An applicant may rebut that presumption by providing a definition of the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). An applicant also may narrow the meaning of a claim term by disclaiming or disavowing claim scope; however, such a “disclaimer or disavowal of claim scope must be clear and unmistakable, requiring ‘words or expressions of manifest exclusion or restriction’ in the intrinsic record.” *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1358 (Fed. Cir. 2016) (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1327 (Fed. Cir. 2002)). In the absence of such a definition or disclaimer, limitations are not to be read from the specification into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

2. Confirmation of Undisputed Claim Construction

In our Decision on Institution, we expressly construed the claim term “predetermined product” by determining that this claim term “encompasses

a type or class of product,” and rejecting “Patent Owner’s contention that this claim term is limited to a specific, unique product in customized form.” Dec. on Inst. 9. The parties do not dispute our prior construction of this claim term. Thus, on this record and to the extent necessary for our Final Written Decision, we see no reason to disturb our prior construction of “predetermined product,” and adopt the supporting reasoning from our Decision on Institution. See Dec. on Inst. 7–9. Accordingly, the claim term “predetermined product” encompasses a type or class of product, and is not limited to a specific, unique product in customized form.

3. Preamble of Claim 1

Patent Owner asserts in its Response that the preamble of Claim 1 should be construed as a claim limitation because “[c]ustomizing is a significant element of the Instituted Claims.” PO Resp. 7. Patent Owner supports its assertion by citing several instances in which the terms “customize” and “customized” are recited in the specification, and arguing that “a claim construction that ignores “customizing” is “inconsistent with a problem the Instituted Claims attempt to solve, and should be rejected.” *Id.* at 7–8. Petitioner argues that the preamble of claim 1 is not limiting because the body of the claim sets forth a structurally complete invention, and the preamble only states a purpose or intended use for the claimed invention. Reply 3–5. We agree with Petitioner.

In general, preambles are not construed as claim limitations. *Allen Eng’g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). “[W]here a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation.” *Rowe v. Dror*, 112 F.3d

473, 478 (Fed. Cir. 1997). We find, on this record, that the body of claim 1 defines a structurally complete invention. In particular, the body of claim 1 defines a system that includes a remote server, and a predetermined product that includes a first communication module, wherein the remote server is configured to perform certain recited actions and to interact with the first communication module in the recited manner. Furthermore, the preamble of claim 1 recites “[a] system for customizing a product according to a user’s preferences.” That is, claim 1 recites a system with the intended purpose of customizing a product. We determine on this record that the preamble of claim 1 is a non-limiting statement of intended use.

Patent Owner’s argument concerning the use of the terms “customize” and “customized” in the specification does not persuasively demonstrate that the preamble of claim 1 should be construed as a claim limitation. The portions of the specification cited by Patent Owner (see PO Resp. 8–9) are a description of related prior art (see Ex. 1001, 1:41–51), and a description of certain aspects of an “illustrative” embodiment (see *id.* at 2:30–55, 5:54–6:6). Patent Owner does not cite any language in the specification that limits the scope of the claims to a system that customizes a product according to a user’s preferences. Patent Owner also does not cite any explicit definition or disclaimer of claim scope that would limit the claims in this manner.

For the foregoing reasons, and having considered the evidence and arguments presented by both parties (see PO Resp. 7–10, Reply 3–5), we determine that the preamble of claim 1 does not limit the scope of claim 1.

4. Other Claim Terms

Petitioner does not ask us to construe any other claim terms. Patent Owner asks us to construe the term “customizing” (see PO Resp. 7), but this

term only appears in the preamble of claim 1. As discussed above, the preamble of claim 1 is not a claim limitation. Accordingly, we decline to construe the preamble term “customizing,” or any other claim terms, because it is not necessary to do so in order to resolve the parties’ disputes. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“claim terms need only be construed ‘to the extent necessary to resolve the controversy’”) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

C. Instituted Grounds of Unpatentability

1. Overview

Petitioner argues that challenged claims 1–8 are unpatentable under 35 U.S.C. § 103. *See* Pet. 5. A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art 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 such subject matter pertains.” 35 U.S.C. § 103(a). The question of obviousness under 35 U.S.C. § 103 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 skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

2. Objective Indicia of Nonobviousness

In a portion of its Response regarding how one of ordinary skill in the art would understand the specification, Patent Owner makes reference to

“objective evidence of non-obviousness.” PO Resp. 4–5. Patent Owner cites to papers from the field of “mass customization” as evidence of a recognized need in the art to keep products affordable, argues that the claims “attempt to solve the same problem,” and asserts that mass customization literature “describing the state of the art” is thus “objective evidence of non-obviousness which must be considered.” *See* PO Resp. 4–5, n.3–6.

Petitioner asserts in its Reply that Patent Owner has not “articulated which secondary consideration it is applying, so it is unclear how it applies to show the claims are nonobvious.” Reply 18. Petitioner also asserts that Patent Owner has failed to show a nexus between this evidence in the claimed invention because it has not tied this evidence to “the actual limitations of the claims” or “any features that were not in the prior art.” *Id.* at 18–19. We agree with both of Petitioner’s assertions.

We determine that Patent Owner has not identified objective indicia of nonobviousness. For example, Patent Owner does not allege, much less persuasively show, that the cited mass customization literature demonstrates a long-felt but unresolved need that is satisfied by the claimed invention, or the failure of others to solve a problem addressed by the claimed invention. *See* PO Resp. 5–7. Patent Owner uses the cited mass customization literature to bolster its claim construction arguments, but does not offer any coherent or persuasive explanation of how this literature would constitute objective evidence that the claims of the ’090 patent are nonobvious. *See id.* at 4–7, 11–21.

Patent Owner also has failed to establish any nexus between this alleged objective evidence of nonobviousness and the claims of the ’090 patent. Our reviewing court has held that objective evidence of

nonobviousness must be “reasonably commensurate with the scope of the claims.” *In re Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011). Patent Owner does not sufficiently explain how the mass customization literature relates to the claimed invention, or to any problem addressed by the claimed invention. For example, Patent Owner does not persuasively explain how the challenged claims relate to the specific need that is allegedly identified in the mass customization literature, i.e., to “kee[p] the products affordable.” PO Resp. 4. Patent Owner does not cite sufficient persuasive evidence that the inventor of the ’090 patent was attempting to address the issue of cost, or that the claimed invention would result in less-costly product as compared to the prior art. *See id.* at 4–7. Accordingly, even if Patent Owner had identified a specific secondary consideration that is evidenced by the cited mass customization literature, this evidence would not be entitled to substantial weight in the obviousness analysis. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010) (“For objective evidence of secondary considerations to be accorded substantial weight, its proponent must establish a nexus between the evidence and the merits of the claimed invention.”); *In re Kao*, 639 F.3d at 1068 (same).

3. Ground 1: Obviousness of Claim 1 over Zimmerman, Lggulden, and DeBourke

a. Teachings of Zimmerman

Zimmerman discloses the use of a radio frequency identification (“RFID”) token to access profile data and personalize an appliance. Ex. 1004, Abstract.

Figures 3 and 4 of Zimmerman are reproduced below.

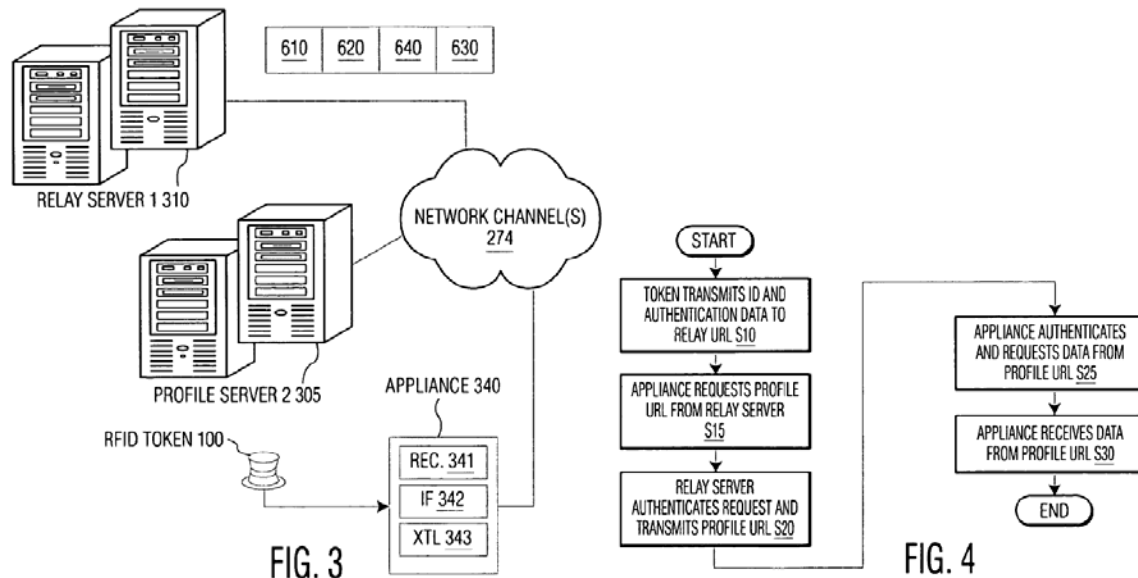


Figure 3, above, is an illustration of connections used by an appliance to obtain profile data; and Figure 4, above, is a flow chart describing a procedure for obtaining profile data. Ex. 1004, 5:42–46.

The user first places RFID Token 100 near appliance 340, which “may be a set top box or any other appliance.” Ex. 1004, 7:19–23. At step S10, the token transmits relay URL information and authentication data to appliance 340. *Id.* at 7:24–27. At step S15, appliance 340 uses the relay URL information and authentication data to contact relay server 310. *Id.* at 7:28:32. Relay server 310 authenticates the data request (at step S20), and then provides the appliance with the address of profile server 305 containing profile information for the appliance. *See id.* Next, at Step S25, appliance 340 generates a request to profile server 305, which may contain authentication/authorization data. *Id.* at 7:34–37. Finally, at Step S30, profile server 305 transmits the relevant profile data to appliance 340. *Id.* at 7:37–43.

b. Teachings of Lggulden

Lggulden is directed to an interactive interface that facilitates the setting of preferences and other programmable parameters of an appliance. Ex. 1010, Abstract. Lggulden discloses that an appliance may incorporate a modem in order to communicate with a remote server. *Id.* ¶ 35.

c. Teachings of DeBourke

DeBourke is directed to a system for controlling a plurality of appliances. Ex. 1005, Abstract. DeBourke discloses that individual appliances may be provided with client control stations 30 having unique IP addresses. *Id.* at 10:39–54; Fig. 5.

d. Analysis of Zimmerman as Applied to Claim 1¹

Petitioner contends that the preamble of claim 1 is not limiting. In the alternative, Petitioner contends that Zimmerman discloses a “system for customizing a product according to a user’s preferences,” as recited in the preamble. Pet. 11–12. Patent Owner alleges in response that Zimmerman does not disclose customizing, i.e., “modifying to fit the specific needs of the user.” PO Resp. 11–12.

For the reasons discussed above (*see* § III.B.3, *supra*), we determine that the preamble of claim 1 is a non-limiting statement of intended use.

¹As discussed below, we are persuaded by Petitioner’s arguments that Zimmerman teaches or suggests all limitations of claim 1, including the “predetermined product” and first communication module “within the product” limitations. Accordingly, we do not reach Petitioner’s alternative arguments that DeBourke and Lggulden teach or suggest a “predetermined product” and a first communication module “within the product,” respectively. *See* Pet 15–17.

Accordingly, we reject Patent Owner’s argument that the claims require “customizing.” Moreover, even if the claims did require “customizing,” Patent Owner’s argument would remain unpersuasive because Zimmerman teaches customization as defined by Patent Owner (i.e., modifying to fit the specific needs of the user (*see* PO Resp. 11)). Zimmerman discloses an embodiment in which a set-top box (i.e., a product) displays an electronic program guide (“EPG”), wherein the guide can be customized according to user preferences stored on a profile server. *See* Ex. 1004, 2:25–28 (Zimmerman’s system permits a token to be “used with appliances to access profile data to personalize the appliance”), 6:7–11 (“[i]n an embodiment, a computer (or ‘set-top box’) 240 displays program information on a television or monitor”), 11:20–25 (teaching that a set-top box may “derive rules” that can be used to customize the set-top box by “observing user-interaction with the appliance” and then upload these rules “to the user’s personal profile server”), 7:19–45 (describing the process by which profile information is requested from a profile server and transmitted back to the appliance (e.g., set-top box)); *see also* Ex. 1002 ¶¶ 97–98, 100–103.

Patent Owner argues that Zimmerman does not teach “customization” because it does not “understand the concept of ‘postpon[ing] the task of differentiating a product for a specific customer until the latest possible point.’” PO Resp. 12 (emphasis omitted). But even if the preamble were limiting, claim 1 still would not require postponing the task of differentiating a product “until the latest possible point.” Patent Owner’s proposed construction of “customizing” does not contain such a requirement, and Patent Owner does not identify any definition or disclaimer in the specification that would limit the claims in this manner. *See id.* 12, n.9–10.

Patent Owner also asserts in its Response that Zimmerman does not “disclose . . . a ‘predetermined product’ as argued in Patent Owner’s preliminary response.” PO Resp. 11. However, our rules do not allow Patent Owner to incorporate arguments by reference from its Preliminary Response (see 37 C.F.R. § 42.6(a)(3) (“Arguments must not be incorporated by reference from one document into another document”)), and our Scheduling Order provides that any arguments and evidence not contained in the Patent Owner Response will be “deemed waived” (Paper 9, 3). On this record, we determine that Patent Owner has waived its argument that Zimmerman does not disclose a “predetermined product,” as recited in claim 1. Even if Patent Owner had not waived the “predetermined product” argument from its Preliminary Response, this argument would be unpersuasive because it is based on a construction of “predetermined product” that we have rejected. See Paper 7, 12–13 (setting forth Patent Owner’s proposed construction of “predetermined product”); Dec. on Inst. 7–9, 12–13 (rejecting Patent Owner’s proposed construction, and determining that Patent Owner’s argument that Zimmerman fails to disclose this limitation is not persuasive under our construction of this claim term); § III.B.2, *supra* (confirming the construction of “predetermined product” from the Decision on Institution).

As discussed above, the claim term “predetermined product” encompasses a type or class of product, and is not limited to a specific, unique product in customized form. See § III.B.2, *supra*. On this record, we are persuaded by Petitioner’s argument that Zimmerman’s appliances are “predetermined products” As required by claim 1. See Pet. 11–12, Ex. 1002 ¶¶ 108, 109. In particular, we credit Dr. Lavian’s testimony that a person of

ordinary skill in the art would understand that Zimmerman’s ability to identify the “type of appliance” to the profile servicer would have constituted a “predetermined product” because “the server would be aware of the ‘type’ of product such as its make, model or brand, and thus identify the appropriate data for that product.” Ex. 1002 ¶ 108 (citing Ex. 1004 9:60–65). In view of our finding that Zimmerman teaches the “predetermined product” limitation, we do not reach Petitioner’s alternative argument that DeBourke teaches or suggests a “predetermined product.” See Pet. 15–17.

Patent Owner does not dispute Petitioner’s contentions that Zimmerman discloses the remaining limitations of claim 1. On this record, we are persuaded that Zimmerman teaches or suggests all remaining limitations of claim 1.

We are persuaded that claim 1’s recitation of “a remote server including a database configured to store a product preference of a predetermined product for at least one user” is taught by portions of Zimmerman that disclose a “profile server” that stores user profile data for appliances, such as television set-top boxes or kitchen appliances. See Pet. 12–15 (citing Ex. 1004, 6:7–10, 7:34–37, 8:10–13, Fig. 3); Ex. 1002 ¶¶ 104–114; *see also* Ex. 1004, 4:54–56 (making clear that Zimmerman’s “profile server” stores user profile data in a “private profile database”), Fig. 3 (depicting the profile server as being remote from the appliance).

We find that Zimmerman teaches, or at least suggests, the presence of communications modules within the appliances (i.e., products). See Pet. 17–18; Ex. 1004, 7:28–37, 9:41–65 (indicating that Zimmerman’s appliances communicate with the profile server (i.e., remote server)); Ex. 1002 ¶ 116

(citing Ex. 1004 Fig. 3) (“[A] person of ordinary skill in the art would have understood that for the appliance to communicate with the profile server [], the appliance would necessarily have a ‘first communication module within the product,’ particularly since there is no such module shown *outside* of the product in the Figures.”) Even if Zimmerman did not teach or suggest a first communication module “within the product,” we would be persuaded by Dr. Lavian’s testimony that one of ordinary skill in the art would have been motivated to locate the communication module “within the product” because doing so would have made Zimmerman’s appliances easier to set up and use. Ex. 1002 ¶ 122; *see also KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“[D]esign incentives and other market forces can prompt variations” of a product, and “[i]f a person of ordinary skill can implement a predictable variation, [35 U.S.C.] § 103 likely bars its patentability.”) In view of our determination that Zimmerman teaches or at least suggests a communications module within a product—a determination patent Owner does not dispute in its Response—we do not reach Petitioner’s alternative argument that Lggulden teaches or suggests this claim limitation. *See* Pet. 18–19.

We also are persuaded that Zimmerman’s profile server is “configured to receive the identity of the predetermined product and the identity of the at least one user,” as recited in claim 1. In particular, Zimmerman teaches that the identity of a user may be passed to, and received by, the profile server as information within a URL. *See* Pet. 20 (citing Ex. 1004, 9:55–60 (giving an example of a URL that is passed to the profile server that includes the text “joesmith”)); *see also* Ex. 1002 ¶¶ 124–125 (“A person of ordinary skill in the art would have understood the ‘joesmith’ in the URL identifies the

user.”). Zimmerman also teaches the use of a “dynamic site” that can “request data identifying the type of appliance” so that the “profile server process” can “transmit only the relevant data for the type of appliance.” *See* Pet. 20–21 (citing Ex. 1004, 9:60–65). We find that these portions of Zimmerman teach that the profile server is configured to “receive the identity of the predetermined product.” *See* Ex. 1002 ¶ 126.

We further find Zimmerman teaches that the profile server is configured to “retrieve[s] the product preference from the database based on the identity of the predetermined product and the identity of the at least one user and transmit the product preference to the first communication module.” *See* Pet. 21–22; Ex. 1002 ¶¶ 127–130. As discussed above, Zimmerman’s profile server uses the received profile information, which may include the identity of at least one user and the identity of the predetermined product. Zimmerman’s profile server uses this information to transmit “the relevant data for the type of appliance.” Ex. 1004, 9:60–65. After Zimmerman’s profile server retrieves this profile data, “the profile data is transmitted to and received by, respectively, the appliance.” *Id.* at 9:46–48.

For the foregoing reasons, we are persuaded that Zimmerman teaches or suggests all limitations of claim 1 of the ’090 patent.

e. Legal Conclusion of Obviousness

Having reviewed and considered the arguments and evidence of both parties, and having made factual determinations outlined in *Graham*, 383 U.S. at 17–18, we determine Petitioner has established by a preponderance of the evidence that claim 1 is unpatentable as obvious over Zimmerman.

4. Ground 2: Obviousness of Claims 2–7 over Zimmerman , Lggulden, DeBourke, and Gutwein

a. Teachings of Gutwein

Gutwein is directed to providing users with individually customized fresh-brewed coffee. Ex. 1006, Abstract. Gutwein discloses a system that includes one or more “customizable beverage delivery systems,” each of which may include “a customization director 104.” Ex. 1006, 6:11–13, 27–28. Gutwein’s system can employ “a single data storage device 106 that . . . may not[] be located in physical proximity to the system component at which the user is currently located.” *Id.* at 7:16–18. This data storage device “may contain data of beverage formulations, user identification, user preferences, and the like.” *Id.* at 7:4–5.

Users of Gutwein’s beverage delivery stations identify themselves by, for example, entering a “personal identification number (PIN)” or using a “radio frequency identification [(RFID)] tags.” Ex. 1006, 26:11–13. The customization director may then retrieve the user’s profile information, and use this information to formulate and “deliver the product with the right profile,” or to present a customer with “a variety of pre-configured drinks that approximately match the consumer’s personal profile.” *Id.* at 26:6–11, 21–25.

b. Analysis of Zimmerman and Gutwein as Applied to Claims 2–7²

Petitioner contends that Gutwein discloses all additional limitations recited in dependent claims 2–7, and that one of ordinary skill in the art would have had reason to combine the teachings of Zimmerman and Gutwein in a manner that would satisfy all limitations of claims 2–7. *See* Pet. 23–34; Ex. 1002 ¶ 131–160. Patent Owner, in its Response, relies solely on its arguments concerning claim 1, and does not dispute any of Petitioner’s additional contentions regarding claims 2–7. *See* PO Resp. 15.

We agree, on this record, that a person of ordinary skill would have found it obvious to modify Zimmerman’s system “such that Gutwein’s coffee maker is on Zimmerman’s smart appliance network and the user’s preferences for various coffee beverages are stored in product profiles on the profile server.” Pet. 24 (citing Ex. 1002 ¶ 135). In particular, we agree with Petitioner’s assertion that Zimmerman teaches a system that may be used with “kitchen appliances,” or any other types of appliances “that can be customized,” including appliances that are “not owned by the user.” *See* Pet. 24–25 (citing Ex. 1004, 8:10–13). We credit Dr. Lavian’s testimony that Gutwein’s coffee maker is a customizable appliance of the type referred to in Zimmerman because Gutwein describes customizing a user’s coffee according to the “beverage formulation.” *See* Ex. 1002 ¶ 134 (citations omitted). Zimmerman also teaches that the data stored on the profile server may include “recipes.” Ex. 1004, 12:16. We find that the “beverage formulations” stored in Gutwein’s storage device 106, which include

² For the reasons discussed in Section III.C.3.d, above, we do not reach Petitioner’s alternative arguments regarding Lggulden and DeBourke.

information such as “strength, flavor, type of bean (coffee), temperature, and finishing options (cream, milk, etc.)” (see Ex. 1006, 23:30–31), are recipes.

On this record, we are persuaded that a person of ordinary skill in the art would have had reason to modify Zimmerman’s network to include Gutwein’s coffee maker. Specifically, Dr. Lavian’s testifies that one of ordinary skill in the art would have realized that using Gutwein’s coffee maker with Zimmerman’s network would have advantageously increased the functionality and usability of Zimmerman’s network. Ex. 1002 ¶ 135. We also are persuaded by Dr. Lavian’s testimony that such a combination would have required only routine skill, and would have constituted a combination of known elements performing their intended operations in a predictable manner yielding predictable results. *Id.* ¶ 137; see also *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) (“[W]hen a patent simply arranges old elements with each performing the same function it had been known to perform and yields no more than one would expect from such an arrangement, the combination is obvious.”) (citation and internal quotation omitted).

In addition, we are persuaded that Petitioner’s Zimmerman/Gutwein system would teach or suggest all additional limitations recited in claims 2–7. Gutwein teaches that product preferences may include “a formulation including a predetermined amount of at least one element,” as recited in claim 2. See Pet. 26; Ex. 1002 ¶¶ 138–141. For example, Gutwein’s beverage formulations may include “strength, flavor, type of bean (coffee), temperature, and finishing options (cream, milk, etc.).” Ex. 1006, 23:30–31. We find that the “strength,” as disclosed in Gutwein, refers to the amount of

coffee (i.e., a predetermined amount of at least one element) that is used to produce the final beverage. *See id.*

Gutwein also teaches that the at least one element may be “a fluid, a solid or any combination thereof,” as recited in claim 3. *See* Pet. 27; Ex. 1002 ¶¶ 142–144. For example, we find that the phrase “type of bean (coffee)” in Gutwein refers to a solid, and the phrase “finishing options (cream, milk, etc.)” refers to liquids. *See* Ex. 1006, 23:30–31.

We are persuaded that Gutwein teaches a server that is “configured to communicate at least one question to a terminal of the at least one user for prompting the user with at least one question relating to the predetermined product” and “further configured for determining the product formulation based on at least one response of the user,” as recited in claim 4. *See* Pet. 27–30; Ex. 1002 ¶¶ 145–150. Gutwein’s “customizable beverage delivery systems” may include “customization director[s].” Ex. 1006, 6:11–13, 27–28. A customization director may “be hosted on a remote device,” such as “an external server” (*id.* at 18:15–18), and may receive user input via, for example, “a computer connected to the Internet . . . and running a web browser,” i.e., a terminal (*id.* at 18:24–31). A customization director may “prompt the user to enter feedback data,” and may ask “questions [to] help deliver the product with the right profile.” *Id.* at 23:26–28; 26:6–9. The data collected in response to these questions may be used to “deliver the product with the right profile, and may allow the system to make . . . formulation modifications appropriate for the user.” *Id.* at 26:6–9.

Claim 5 requires that the server be “further configured for issuing an identity code for the user and cross-referencing the identity code to the formulation.” Claim 6 further requires that the server be “configured for

storing the identity code and cross-referenced formulation in the database.” We are persuaded that Gutwein teaches these additional limitations. See Pet. 30–32; Ex. 1002 ¶¶ 151–158. For example, after Gutwein’s customization director receives information on a new user, it “creates a new record for the consumer in the data store and associates [i.e., cross-references] the record with a new user identification.” Ex. 1006, 28:34–36. Gutwein’s user identification may consist of a “personal identification number (PIN),” i.e., an identity code. *Id.* at 17:31–32. Zimmerman’s preference server—which, in Petitioner’s combined Zimmerman/Gutwein system would maintain the cross-referenced preference and user identification information—stores user preference data in a “private profile database.” Pet. 24; Ex. 1002 ¶ 106; Ex. 1004, 4:54–56.

We also are persuaded that the combined Zimmerman/Gutwein system would be “configured to transmit the identity code to the server,” as recited in claim 7. See Pet. 33–34; Ex. 1002 ¶¶ 159–161. As discussed above, Gutwein’s customization director receives user identification information, such as a personal identification number. See Ex. 1006, 17:31–32. In Petitioner’s combined Zimmerman/Gutwein system, such data would be transmitted to and stored on Zimmerman’s profile server. See Pet. 24; Ex. 1002 ¶ 106.

c. Legal Conclusion of Obviousness

Having reviewed and considered the arguments and evidence of both parties, and having made the four factual determinations outlined in *Graham*, 383 U.S. at 17–18, we determine Petitioner has established by a preponderance of the evidence that claims 2–7 are unpatentable as obvious over Zimmerman and Gutwein.

5. Ground 3: Obviousness of Claim 8 over Zimmerman, Lggulden, DeBourke, Gutwein, and Webb

a. Teachings of Webb

Webb is directed to permitting users to access one or more devices on private networks, or via clients on public networks. Ex. 1009, Abstract. Webb discloses that it is “known to those of skill in the art” that an Internet web server can place a “cookie . . . on a client device . . . so that the server can remember something about the user for a later time.” *Id.* ¶ 39. For example, a cookie can be used to “record a user’s preferences when using a particular site, and can be used to authenticate a user.” *Id.*

b. Analysis of Zimmerman, Gutwein, and Webb, as Applied to Claim 8³

Claim 8 requires that the “identity code” of claim 7 be “stored as an Internet cookie on the terminal.” Petitioner contends that it would have been obvious in view of Webb to use an Internet cookie to authenticate a user of the combined Zimmerman/Gutwein system. *See* Pet. 35–36; Ex. 1002 ¶¶ 162–65. Patent Owner, in its Response, does not dispute Petitioner’s contentions concerning claim 8. *See* PO Resp. 15.

We are persuaded on this record that one of ordinary skill in the art would have had reason to modify the combined Zimmerman/Gutwein system to incorporate a cookie to authenticate a user, as disclosed in Webb. *See* Pet. 35–36; Ex. 1002 ¶¶ 162–165. For example, Gutwein discloses the use of a web browser (i.e., a terminal) to receive user input. Ex. 1006,

³ For the reasons discussed in Section III.C.3.d, above, we do not reach Petitioner’s alternative arguments regarding Lggulden and DeBourke.

18:24–31. Webb discloses that an Internet cookie may be used by a browser to remember a user’s identity and authenticate a user. *See* Ex. 1009 ¶ 39. On this record, we are persuaded that a person of ordinary skill in the art would have had reason to modify Zimmerman to include Lavian’s cookie. Specifically, Dr. Lavian’s testifies that one of ordinary skill in the art would have had reason to incorporate Webb’s cookies into the web browser of the Zimmerman/Gutwein system because doing so advantageously would have allowed Zimmerman’s system to automatically authenticate a user, and because such a modification would have constituted a use of a known and conventional technique in a way that would have yielded only predictable results. Ex. 1002 ¶ 64; *see also* KSR, 550 U.S. at 417 (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill”.)

c. Legal Conclusion of Obviousness

Having reviewed and considered the arguments and evidence of both parties, and having made the four factual determinations outlined in *Graham*, 383 U.S. at 17–18, we determine Petitioner has established by a preponderance of the evidence that claim 8 is unpatentable as obvious over Zimmerman, Gutwein, and Webb.

6. Ground 4: Obviousness of Claim 1 over Omnisphere I, Omnisphere II, and Isomura

a. Teachings of Omnisphere I and Omnisphere II

Omnisphere I and Omnisphere II (collectively, the “Omnisphere references”) are two separate publications that describe the same localized personal communication environment known as “Omnisphere.” *See* Ex. 1007, 7⁴; Ex. 1008, 1. Both references were written by the same authors. Ex. 1007, 7; Ex. 1008, 1. The Omnisphere references disclose that Omnisphere is a “communication and information universe surrounding wireless appliances” in a particular area. *See* Ex. 1007, 8; Ex. 1008, 1. The goal of Omnisphere is to “mediate communications on behalf of the user in a proactive way.” Ex. 1007, 8; *see* Ex. 1008, 3.

⁴ Our citations to Exhibits 1007 and 1008 refer to the page numbers that Petitioner has added as footers to those exhibits.

Figure 7 of Omnisphere II is reproduced below.

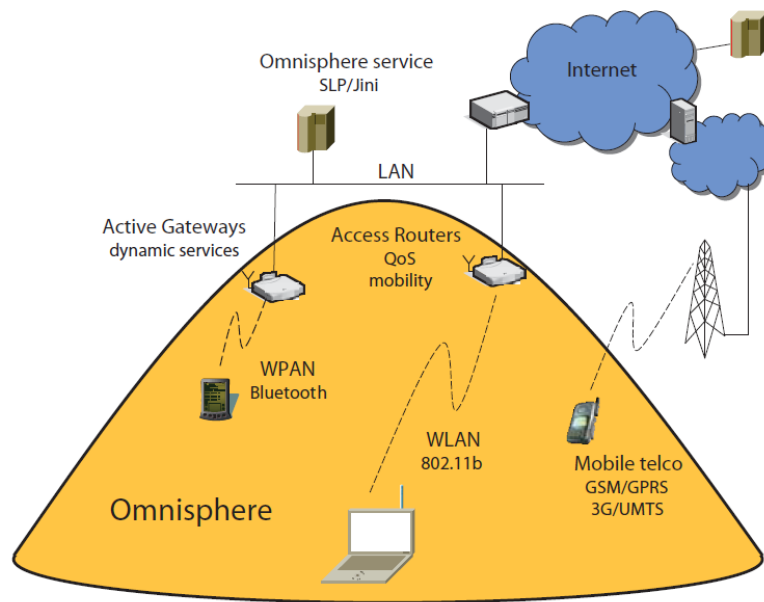


Figure 7. Sketch of the implementation platform.

Figure 7, above, is a sketch of the Omnisphere platform. Ex. 1008, 8. This figure depicts various wireless devices, including a telephone and a laptop computer, located within an Omnisphere. *Id.* When a user's appliance enters an Omnisphere, the appliance receives a "BEACON" command, and replies with a "REGISTER" command that includes a "User ID and Appliance ID for authentication." *Id.* The "Omnisphere service" then uses "existing service discovery protocols" such as "SLP" and "JINI" to "discover[] the best matching services," i.e., the services that best fit "the user preferences, the contents available on the network, . . . and the characteristics of the device." *Id.* at 3, 8. Once Omnisphere has determined matching services, it may then use an "ACTIVATE" command to "activate[] services on the appliance." *Id.* at 8.

b. Teachings of Isomura

Isomura is directed to a server that discovers a service provided by an apparatus using a service delivery protocol. Ex. 1012, Abstract. Isomura's service discovery server includes a common database for storing service information on a plurality of service discovery protocols. *Id.*

c. Analysis of Omnisphere I and Omnisphere II⁵

Petitioner asserts that the Omnisphere references teach or suggest all limitations of claim 1. Pet. 38–50. Patent Owner argues that the Omnisphere references do not teach “customizing” as recited in the preamble of claim 1, but does not dispute that the Omnisphere references teach or suggest the limitations recited in the body of claim 1. *See* PO Resp. 15–20. Patent Owner also does not dispute that a persona of ordinary skill in the art would have had reason to combine the teachings of the Omnisphere references. *See id.* The disputed preamble language is discussed first, followed by the undisputed limitations of claim 1.

Patent Owner argues that the Omnisphere references do not teach “customizing,” as recited in the preamble, because they are “not directed to mass customization of consumer products as claimed in the Instituted Claims and, therefore, d[o] not make obvious the Preamble of claim 1.” *See* PO Resp. 19–20. As discussed above, however, the preamble of claim 1 is not limiting. *See* § III.B.3, *supra*. And even if the claims did require “customizing,” Patent Owner's argument would still fail because the

⁵ As discussed below, we are persuaded by Petitioner's arguments that Omnisphere I and Omnisphere II teach or suggest all limitations of claim 1. Accordingly, we do not reach Petitioner's alternative argument concerning Isomura.

Omnisphere references teach “customizing,” under the construction proposed by Patent Owner (i.e., modifying to fit the specific needs of the user (*see* PO Resp. 11)). For example, according to Petitioner, Omnisphere II teaches that services available to a user’s wireless appliance are customized “[b]ased on the User ID and Appliance ID.” Pet. 38–39 (citing Ex. 1008, 4). Omnisphere II discloses that based on the User ID and Appliance ID, Omnisphere “retrieves the information that restricts the set of possible services.” Ex.1008, 4. This information includes “[u]ser preferences,” which “define what are the most common needs of the user in terms of ambient services and different types of data.” *Id.* Based on Omnisphere II’s disclosure of utilizing “user preference” to restrict the set of possible services, we find Omnisphere II teaches modifying a product (i.e., a user’s wireless appliance) to fit the specific needs of the user. Even assuming, *arguendo*, that the claims require “customizing,” Patent Owner has not cited any definition or disclaimer in the specification that would justify further limiting the scope of this preamble term so as to require “mass customization of consumer products.” In addition, on this record, we are sufficiently persuaded by Petitioner’s remaining contentions, as discussed below.

We are persuaded that the Omnisphere references teach a remote server including “a database configured to store a product preference of a predetermined product for at least one user,” as recited in claim 1. *See* Pet. 40–42; Ex. 1002 ¶¶ 177–186. For example, Petitioner has made a persuasive showing that a person of ordinary skill would have understood the “Omnisphere service SLP/JINI” device depicted in Figure 7 of Omnisphere II to be a server. *See* Pet. 41; Ex. 1002 ¶ 181; Ex. 1008, 9. We

credit Dr. Lavian’s testimony that a person of ordinary skill would have understood the term “server” to include “[a] computer or software package that “sends requested information to a client or clients in a network.”

Ex. 1002 ¶ 179 (citing Ex. 1011, 3). As discussed above, the “Omnisphere service” is hardware and/or software that receives a “REGISTER” command from a wireless appliance, uses subsequently issues an “ACTIVATE” command to activate services on the wireless appliance. *See* § III.C.6.a, *supra*; Ex. 1008, 8.

We also are persuaded that the Omnisphere references teach, or at least suggest, storage of a “product preference” in a “database.” *See* Pet. 40–41; Ex. 1002. We credit Dr. Lavian’s testimony that one of ordinary skill in the art would have understood that structured information of the type stored by Omnisphere’s SLP/JINI device likely would have been stored in a database. Ex. 1002 ¶¶ 183–186. In particular, we are persuaded that the tabular form of the exemplary “User Preference” data depicted in Omnisphere II (*see* Ex. 1008, 7) suggests that this data is stored in a database. Ex. 1002 ¶ 1893. In view of our determination that the Omnisphere references teach or suggest the storage of produce preferences in a database, we do not reach Petitioner’s alternative argument that Isomura teaches this limitation. *See* Pet. 44–45.

We find that the Omnisphere references teach or suggest “a first communication module within the product and in communication with the remote server,” as recited in claim 1. *See* Pet. 46–47; Ex. 1002 ¶¶ 190–193. For example, Figure 7 of Omnisphere II depicts a mobile phone that communicates with the Omnisphere service using “GSM/GPRS/3G/UMTS” protocols, and a laptop computer that communicates with the Omnisphere

service using “WLAN 802.11b.” Ex. 1008, 9. We agree that one of ordinary skill in the art would have understood “802.11b” and “GSM.GPRS/3G/UMTS” to refer to protocols commonly used by internal modems of wireless devices. *See* Pet. 46–47; Ex. 1002 ¶¶ 191–192.

We also find that the Omnisphere references teach a remote server that “is configured to receive the identity of the predetermined product and the identity of the at least one user, retrieve the product preference from the database based on the identity of the predetermined product and the identity of the least one user and transmit the product preference to the first communication module.” *See* Pet. 47–50; Ex. 1002 ¶¶ 194–198. For example, Omnisphere’s wireless appliances respond to a “BEACON” command by sending the Omnisphere service data that includes a “User ID and Appliance ID for authentication” (i.e., “the identity of the predetermined product and the identity of the at least one user”). Ex. 1008, 8. The “Omnisphere service” then uses “existing service discovery protocols” to retrieve services that best fit “the user preferences, the contents available [on] the network, . . . and the characteristics of the device[]” (i.e., “retrieve the product preference from the database based on the identity of the predetermined product and the identity of the at least one user”). *Id.* at 3, 8. Once the Omnisphere service has determined matching services, it may use an “ACTIVATE” command to “activate[] services on the appliance.” *Id.* at 8. We credit Dr. Lavian’s testimony that this “ACTIVATE” command would be transmitted “to the first communication module” within wireless appliances (e.g., mobile phones or laptop computers). *See* Ex. 1002 ¶ 198. Specifically, Dr. Lavian explains that “[o]nce ‘the Omnisphere service discovers the best matching services by using existing service discovery

protocols,’ a person of ordinary skill in the art would have understood that those services may then be provided to the communication unit on the appliance [i.e., the recited “first communication module”].” *Id.* (citing Ex. 1008, 8).

Furthermore, we find on this record that a person of ordinary skill in the art would have been had reason to combine the teachings of Omnisphere I and Omnisphere II. *See* Pet. 37–38. As noted above, Patent Owner does not dispute that a person of ordinary skill in the art would have had a rationale to combine these references. Moreover, we credit Dr. Lavian’s testimony that “[a] person of ordinary skill in the art would have readily combined the teachings of Omnisphere I with Omnisphere II given the respective disclosures of the references and the knowledge held by a person of ordinary skill in the art.” Ex. 1002 ¶ 171. Dr. Lavian explains that both Omnisphere references have the same authors, describe the same system, and have similar descriptions of the functionality of the Omnisphere system. *Id.* at ¶ 172. Based on this testimony, we are sufficiently persuaded that a skilled artisan would have had reason to combine the teachings of the Omnisphere references. Such a combination would have been a “predictable use of prior art elements according to their established functions.” *See KSR*, 550 U.S. at 417.

d. Legal Conclusion of Obviousness

Having reviewed and considered the arguments and evidence of both parties, and having made the four factual determinations outlined in *Graham*, 383 U.S. at 17–18, we determine Petitioner has established by a preponderance of the evidence that claim 1 is unpatentable as obvious over Omnisphere I and Omnisphere II.

IV. ORDER

Accordingly, it is

ORDERED that claims 1–8 of the '090 patent have been shown to be unpatentable;

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.

Case IPR2016-00443

Patent 8,788,090 B2

For PETITIONER:

Andrew R. Sommer

Alexandra B. McTague

James Lin

WINSTON & STRAWN LLP

asommer@winston.com

amctague@winston.com

jaline@winston.com

For PATENT OWNER:

Eugenio J. Torres-Oyola

Victor Rodriguez

Rafael Rodriguez-Muriel

Jose Medina-Cruz

FERRAIUOLI LLC

etorres@ferraiuoli.com

vrodriquezreyes@ferraiuoli.com

rrodriguez@ferraiuoli.com

jmedina@ferraiuoli.com