

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STARBUCKS CORPORATION

Petitioner

v.

AMERANTH, INC.

Patent Owner

CASE: To Be Assigned

Patent No. 6,871,325 B1

**PETITION FOR COVERED BUSINESS METHOD PATENT REVIEW
OF
U.S. PATENT NO. 6,871,325 B1**

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EXHIBIT LIST

- Ex. 1001 U.S. Patent No. 6,384,850 B1 to McNally et al. (the “’850 Patent”)
- Ex. 1002 U.S. Patent No. 6,871,325 B1 to McNally, et al. (the “’325 patent”)
- Ex. 1003 Declaration of Abdelsalam Helal, Ph.D. including Appendix A (Curriculum Vitae)
- Ex. 1004 Japanese Unexamined Application No. H10-247183 to Brandt et al (“Brandt”)
- Ex. 1005 English translation of Brandt (Ex. 1004) and executed affidavit attesting to the accuracy of the English translation
- Ex. 1006 NetHopper Version 3.2 User’s Manual (“NetHopper”)
- Ex. 1007 Declaration of Wayne Yurtin with respect to NetHopper (Ex. 1006)
- Ex. 1008 Jeff Walsh, *Apple Releases MessagePad 2100 Handheld PCs*, InfoWorld, Oct. 27, 1997, at 50
- Ex. 1009 Alan Demers et al., *The Bayou Architecture: Support for Data Sharing Among Mobile Users* (“Demers”)
- Ex. 1010 IEEE Abstract for Demers
- Ex. 1011 Library of Congress catalog entry for book containing Demers
- Ex. 1012 Gustavo Alonso et al., *Exotica/FMDC: A Workflow Management System for Mobile and Disconnected Clients* (“Alonso”)
- Ex. 1013 Springer Abstract for Alonso
- Ex. 1014 Library of Congress catalog entry for book containing Alonso
- Ex. 1015 ’850 Patent Prosecution History, Nov. 29, 2000 Office Action
- Ex. 1016 ’850 Patent Prosecution History, Feb. 26, 2001 Amendment
- Ex. 1017 ’850 Patent Prosecution History, May 22, 2001 Office Action

- Ex. 1018 '850 Patent Prosecution History, July 19, 2001 Amendment
- Ex. 1019 Excerpts from John December and Mark Ginsburg, HTML & CGI Unleashed (1995)
- Ex. 1020 Excerpts from Brian Francis et al., Active Server Pages 2.0 (1998)
- Ex. 1021 Excerpts from John Rodley, Writing Java Applets (1996)
- Ex. 1022 Excerpts from Mark C. Reynolds and Andrew Woolridge, Using JavaScript (1996)
- Ex. 1023 Excerpts from Abdelsalam (Sumi) Helal et al, Any Time, Anywhere Computing, Mobile Computing Concepts and Technology (1999)
- Ex. 1024 Newton Solutions Guide, Issue 1 (1995)
- Ex. 1025 Newton Solutions Guide, Issue 2 (1996)
- Ex. 1026 Newton Connection Utilities User's Manual for the Macintosh Operating System (1997)
- Ex. 1027 Newton Connection Utilities User's Manual for Windows (1997)
- Ex. 1028 Newton MessagePad 2100 User's Manual (1997)
- Ex. 1029 Nokia 9000i Communicator Owner's Manual (1997)
- Ex. 1030 Excerpts from Douglas Boling, Programming Microsoft Windows CE (1998)
- Ex. 1031 Excerpts from Terence A. Goggin, Windows CE Developer's Handbook (1999)
- Ex. 1032 Excerpts from Evaggelia Pitoura and George Samaras, Data Management for Mobile Computing (1998)
- Ex. 1033 Excerpts from Michael L. Kasavana and John J. Cahill, Managing Computers in the Hospitality Industry (1997)
- Ex. 1034 Excerpts from Gary Inkpen, Information Technology for Travel and Tourism (1998)

- Ex. 1035 Excerpts from Paul R. Dittmer and Gerald G. Griffin, *Dimensions of the Hospitality Industry: An Introduction* (2d ed. 1997)
- Ex. 1036 Excerpts from Frank Buschmann et al., *Pattern-Oriented Software Architecture: A System of Patterns* (1996)
- Ex. 1037 F. Leymann and W. Altenhuber, *Managing Business Processes as an Information Resource*, *IBM Systems Journal*, Vol. 33, No. 2, 326-348 (1994)
- Ex. 1038 Bob Stegmaier, *Image and Workflow Library: FlowMark V2.3 Design Guidelines* (Feb. 1998)
- Ex. 1039 U.S. Patent No. 5,970,479 to Shepherd (Alice Corp. patent)
- Ex. 1040 Ameranth Press Release (April 1, 2014) – Ameranth Signs a New Patent License with Taco Bell Corp. for Ameranth’s Patented 21st Century CommunicationsTM Data Synchronization Inventions
- Ex. 1041 Ameranth Press Release (July 30, 2014) – Ameranth’s 21st Century CommunicationsTM, ‘Data Synchronization’ Patent Licensing Program Expands, and Accelerates
- Ex. 1042 *Ameranth, Inc. v. Par Tech. Corp.*, Ameranth’s Opening Claim Construction Brief
- Ex. 1043 *Ameranth, Inc. v. Par Technology Corp.*, Transcript of Claim Construction Hearing held May 30, 2012
- Ex. 1044 *Ameranth, Inc. v. Par Technology Corp.*, Claim Construction Order
- Ex. 1045 Ameranth Complaint against Starbucks
- Ex. 1046 List of Patent Infringement Lawsuits filed by Ameranth
- Ex. 1047 CBM2014-00015, Paper 11 (Jan. 13, 2014) – Patent Owner Preliminary Response
- Ex. 1048 CBM2014-00015, Paper 20 (Mar. 26, 2014) – Institution Decision

- Ex. 1049 CBM2014-00014, Paper 19 (Mar. 26, 2014) – Order Denying Institution
- Ex. 1050 Excerpt from Microsoft Computing Dictionary (4th ed. 1999) (definition of “synchronous communications”)
- Ex. 1051 Tristan Richardson et al., Virtual Network Computing (Jan. / Feb. 1998)
- Ex. 1052 European Patent Application No. EP 0845748 A2 (“Carter”)
- Ex. 1053 U.S. Patent No. 5,809,415 to Rossmann (“Rossmann”)
- Ex. 1054 CBM2014-00016, Paper 10 (Jan. 13, 2014) – Patent Owner Preliminary Response
- Ex. 1055 CBM2014-00016, Paper 19 (Mar. 26, 2014) – Institution Decision
- Ex. 1056 CBM2014-00091, Paper 1 (Mar. 2, 2015) – Petition
- Ex. 1057 ’325 Patent Prosecution History, Nov. 1, 2001 Patent Application Specification
- Ex. 1058 ’325 Patent Prosecution History, Nov. 1, 2001 Preliminary Amendment
- Ex. 1059 ’325 Patent Prosecution History, Nov. 16, 2004 Terminal Disclaimer
- Ex. 1060 ’325 Patent Prosecution History, Dec. 7, 2004 Notice of Allowance
- Ex. 1061 Excerpt from Encarta World English Dictionary (1999) (definition of “order”)

I. INTRODUCTION

Pursuant to 35 U.S.C. § 321 and § 18 of the Leahy-Smith America Invents Act (“AIA”), 37 C.F.R. § 42.200 *et seq.* and 37 C.F.R. § 42.300 *et seq.*, Starbucks Corporation (“Petitioner”) petitions for covered business method patent (“CBM”) review of Claims 11-13 and 15 of U.S. Patent No. 6,871,325 B1 (the “’325 patent,” Ex. 1002), assigned to Ameranth, Inc.

This Petition shows that the ’325 patent is a covered business method patent pursuant to § 18(a)(1)(E) of the AIA, and that it is more likely than not that at least one of Claims 11-13 and 15 of the ’325 patent is not patentable (“Challenged Claims”) under pre-AIA 35 U.S.C. §§ 112, 103, and/or 101.

The ’325 patent relates generally to “an information management and synchronous communications system and method [that] facilitates database equilibrium and synchronization with wired, wireless, and Web-based systems” (Ex. 1002 at Abstract) for computerizing hospitality-related activities such as ordering food and making reservations. The ’325 patent specification lacks meaningful and sufficient description and disclosure supporting the Challenged Claims. As shown by the evidence and analyses in this Petition, the Challenged Claims are invalid under pre-AIA 35 U.S.C. § 112 for lack of enablement, for being indefinite, and for lack of written description.

The Challenged Claims are also invalid under pre-AIA 35 U.S.C. § 103 as being obvious over the prior art. The primary prior art reference relied upon is a published IBM patent application and describes technologies for making applications accessible over the Internet including to wireless handheld devices.

5 The IBM prior art discloses hospitality applications, e.g., a car rental application.

Furthermore, the Challenged Claims are also patent-ineligible under § 101 because they are directed to abstract ideas such as ordering and reservations, and because they recite only generic computer implementation of the abstract ideas.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8(b)

10 A. REAL PARTY IN INTEREST

Starbucks Corporation is the sole real party in interest and is identified as “all real parties in interest” under 35 U.S.C. §322(a)(2) and 37 C.F.R. §42.8(b)(1).

B. RELATED MATTERS

The '325 patent has been asserted against Petitioner along with U.S. Patent
15 Nos. 6,384,850 B1 (the “850 patent”, Ex. 1001) and 8,146,077 B2 (the “077
patent”) in a patent infringement lawsuit brought by Patent Owner, *Ameranth, Inc.*
v. Starbucks Corp., Case No. 3-13-cv-01072, filed in the Southern District of
California on May 6, 2013. Ex. 1045. To the best of Petitioner’s knowledge,
Patent Owner has also sued more than thirty-five other defendants in different civil
20 actions filed between September 2012 and August 2013, including Apple Inc.,
Hilton Resorts Corp., Best Western International, Inc., Expedia, Inc.,

TicketMaster, LLC , Pizza Hut, Inc. and OpenTable, Inc. Ex. 1046. These cases have been consolidated with *Ameranth, Inc. v. Pizza Hut, Inc.*, No. 3-11-cv-01810, filed in the Southern District of California on Aug. 15, 2011.

5 Claims 1-10 of the '325 patent are subject to CBM review under § 101 in instituted Case No. CBM2014-00016 filed by thirty-five parties including Petitioner Starbucks. Ex. 1055. Those claims are not challenged in this Petition.

A petition for CBM review of Claims 11-13 and 15 of the '325 patent under CBM2015-00082 was filed on Feb. 19, 2015 by Apple, Inc. et al. Petitioner Starbucks did not file that petition and is not a real party-in-interest in the
10 CBM2015-00082 proceeding. None of the invalidity grounds raised herein are raised in the CBM2015-00082 proceeding.

In addition, Petitioner has filed CBM petitions under CBM2015-00091 and CBM2014-00015 challenging the '850 patent, a parent of the '325 patent.

C. LEAD AND BACK-UP COUNSEL

15 Pursuant to 37 C.F.R. §§ 42.8(b)(3) and 42.10(a), Petitioner appoints **Bing Ai** (Reg. No. 43,312) as its lead counsel, and **Patrick J. McKeever** (Reg. No. 66,019) and **Yun L. Lu** (Reg. No. 72,766) as its back-up counsel. Petitioner also requests authorization to file a motion for **Matthew Bernstein** to appear *pro hac vice*, as Mr. Bernstein is an experienced patent litigation attorney, is lead counsel
20 for Petitioner in the district court litigation, and has an established familiarity with

the subject matter at issue in this proceeding. Petitioner intends to file such a motion once authorization is granted. Pursuant to 37 C.F.R. § 42.10(b), an executed Power of Attorney is concurrently filed.

D. SERVICE INFORMATION

5 Petitioner identifies the following service information for its counsel and hereby consents to electronic service under 37 C.F.R. §§ 42.8(b)(4) and 42.6(e): Perkins Coie LLP, 11988 El Camino Real, Suite 350, San Diego, CA 92130, 858-720-5700 (Phone), 858-720-5799 (Fax), and PerkinsServiceStarbucks-CBM@perkinscoie.com (E-mail).

10 **III. REQUIREMENTS FOR COVERED BUSINESS METHOD PATENT REVIEW**

This Petition complies with all requirements for CBM under relevant sections of 37 C.F.R. § 42, *et seq.* and should be accorded a filing date as the date of filing of this Petition because requirements under 37 C.F.R. §§ 42.304, 42.205 and 42.15 are satisfied pursuant to 37 C.F.R. § 42.206. The Director is authorized to charge all applicable fees under 37 C.F.R. § 42.15(b) and any additional fees to Perkins Coie Deposit Account No. 50-5252.

A. GROUNDS FOR STANDING

20 Pursuant to 37 C.F.R. § 42.304(a), Petitioner hereby certifies that the '325 patent is a covered business method patent under AIA §§ 18(a)(1)(B) and 18(d)(1) as further explained in this Petition, that Petitioner meets the eligibility

requirements of 37 C.F.R. § 42.302, and that Petitioner is not barred or estopped from requesting CBM review challenging Challenged Claims of the '325 patent on the grounds identified herein. Specifically, Petitioner has the standing, and meets all requirements, to file this Petition under 35 U.S.C. §§ 325(a)(1), 325(b), 5 325(e)(1) and 315(e)(1); and 35 C.F.R. §§42.72(d)(1), 42.302 and 42.303.

1. Eligibility Based on Infringement Suit

Patent Owner Ameranth has sued Petitioner Starbucks alleging that Starbucks' mobile payment technology and its online store infringes the '325 patent in Case No. 3-13-cv-01072. Ex. 1045. Pursuant to AIA § 18(a)(1)(B) and 10 37 C.F.R. § 42.302(a), Petitioner is eligible to file this Petition.

2. Eligibility Based on Lack of Estoppel by Other AIA Trials

Petitioner is not barred or estopped from requesting CBM review of the Challenged Claims of the '325 patent on the grounds identified in this Petition. Nor is Petitioner estopped from pursuing this petition under 35 U.S.C. §§ 325(e)(1) 15 and 315(e)(1) and 37 C.F.R. §§ 42.73(d)(1) and 42.302(b). Case No. CBM2014-00016 by this Petitioner was instituted for trial only as to Claims 1-10 of the '325 patent (Ex. 1055), whereas this Petition challenges Claims 11-13 and 15.

Accordingly, there can be no final written decision from an AIA trial involving this Petitioner on the Challenged Claims requested in this Petition.

20 **3. The '325 Patent is a Covered Business Method Patent**

The '325 patent is eligible for CBM review because it constitutes a covered

business method patent as defined under AIA § 18(d)(1) and 37 C.F.R. § 42.301.

A “covered business method patent” is a patent that “claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration or management of a financial product or service, except that the term does not include patents for technological inventions.” AIA § 18(d)(1). This definition encompasses patents “claiming activities that are financial in nature, incidental to a financial activity or complementary to a financial activity.” Final Rule, 77 Fed. Reg. 48,734, 48,735 (Aug. 14, 2012). A single claim directed toward a covered business method makes every claim of the patent eligible for CBM review. *Id.* at 48,736.

As explained below, because at least Claims 1 and 11 establish that the ’325 patent satisfies the covered business method patent definition under Section 18(d)(1) of the AIA, all claims of the ’325 patent, including Claims 11-13 and 15 that are challenged in this Petition, are eligible for CBM review.

a. Claim 1 Establishes that the ’325 Patent is a CBM Patent

(i) Claim 1 Relates to a Financial Product or Service

As the Board previously found in CBM2014-00016, Claim 1 of the ’325 patent is directed to an apparatus that corresponds to an activity that is at least incidental or complementary to an activity financial in nature and the claim therefore meets the “financial product or service” components under the definition

in Section 18(d)(1) of the AIA. *See* Ex. 1055 at 10-14. Specifically, Claim 1 is directed to a “system for generating and transmitting menus.” Ex. 1002 at 14:60-61. Further, Claim 1 specifies that the generated second menu is “applicable to a predetermined type of ordering.” *Id.* at 15:22-23. Claims 2-6 recite that the type of ordering is “customer ordering” and “table-based,” “drive-through,” “via Internet,” “via telephone,” and “via wireless device,” respectively. *Id.* at 15:24-33. The ’325 patent specification illustrates that the claimed menus and ordering are used for purchasing of food and merchandise, as well as paying. *Id.* at 3:44-63, 14:25-29; 14:35-38. The specification describes the use of the claimed invention to facilitate ordering and purchasing merchandise over the Internet: “The user may select multiple items in this manner and then enter a credit card number to pay for the purchases. The retailer processes the transaction and ships the order to the customer. As can be appreciated, ordering merchandise can also be done from menus. The generation of menus of items or merchandise for sale over the internet is readily accomplished by the menu generation approach of the present invention.” *Id.* at 13:1-11. Menus are generated and downloaded to point-of-sale (POS) terminals. *Id.* at 6:33-36, 10:27-46. The ’325 patent further describes the generation of menus for “remote ordering” and purchasing. *Id.* at 14:25-41.

In view of the above, the system for generating and transmitting menus recited in Claim 1 is for facilitating ordering and purchasing of food and

merchandise using menus. The ordering and purchasing generates revenue. Ex. 1055 at 11 (“The ‘ordering’ pertains to the sale of a product, which generates revenue.”). Such revenue generation is clearly “financial in nature, incidental to a financial activity or complementary to a financial activity.” *Id.* at 10-11.

5 Therefore, Claim 1 satisfies the first requirement of AIA § 18(d)(1). *Id.* at 11.

(ii) Claim 1 Does Not Recite a “Technological Invention”

Claim 1 of the ’325 patent does not fit within the exception to a covered business method patent review because the claimed subject matter as a whole is not directed to a technological invention. To qualify as a technological invention, the claimed subject matter as a whole must (1) recite a technological feature that is novel and unobvious over the prior art, and (2) solve a technical problem using a technical solution. 37 C.F.R. § 42.301(b). In the CBM2014-00016 proceeding, the Board correctly found that neither prong applies to Claim 1. Ex. 1055 at 14.

Claim 1 fails under the first prong because it does not recite a novel or unobvious technological feature. *Id.* at 13. The claim recites known technologies to achieve normal, expected, and predictable results. *Id.* at 12-13. Claim 1 recites a CPU, a data storage device, an operating system including a graphical user interface (“GUI”), and application software. Ex. 1002 at 14:60-15:23. The recited software enables a user to generate a menu using the GUI and then transmit it. *Id.* at 15:12-23; Ex. 1055 at 12. The specification admits that GUI-based applications for

manipulating data items are conventional. Ex. 1002 at 4:64-5:38, 5:62-6:3. The specification suggests the use of off-the-shelf software such as a Windows operating system on the workstations and server (*id.* at 5:50-61), Windows CE on the handheld devices (*id.* at 11:9-16), and Microsoft’s ActiveX Data Objects API for database access (*id.* at 10:47-52). The ’325 patent specification states that any other necessary software is generic: “The software applications for performing the functions falling within the described invention can be written in any commonly used computer language. The ***discrete programming steps are commonly known*** and thus programming details are not necessary to a full description of the invention.” *Id.* at 11:56-61 (emphasis added). Therefore, Claim 1 recites a known combination of known prior art components and features and does not recite a technological feature that is novel and unobvious over the prior art.

Claim 1 also fails under the second prong of the “technological invention” test because the claimed subject matter as a whole does not solve a technical problem using a technical solution. Claim 1 is directed to a system for generating and transmitting menus to solve a ***business problem***. The claimed system purportedly “solv[es] the problem of converting paper-based menus or Windows® PC-based menu screens to small PDA-sized displays and Web pages” (*id.* at 3:36-40) and thus “provides a way to turn a complicated, time-consuming task into a simple process” (*id.* at 3:57-63). As discussed above, to the extent Claim 1 recites

any technological limitations, they were all well-known in the prior art. Therefore, Claim 1 does not provide a technical solution to solve a technical problem.

In view of the above, Claim 1 fails both requirements for a “technological invention” and is a covered business method patent claim under AIA § 18(d)(1).

5 **b. Claim 11 Establishes that the '325 Patent is a CBM Patent**

(i) Claim 11 Relates to a Financial Product or Service

Claim 11 of the '325 patent meets the “financial product or service” aspect of the CBM definition. Claim 11 is directed to “an information management and synchronous communications system for use with wireless handheld computing
10 devices and the internet ... wherein the synchronized data relates to *orders*.” Ex. 1002 at 17:4-26.

The “orders” recited in Claim 11 are part of the purchasing process which generates revenue. *Id.* at 3:48-51 (wireless handhelds enable “shorter order taking and check paying times”); 10:43-45 (“[T]he POS interface provides for billing,
15 status and payment with respect to orders”). *See also* Ex. 1055 at 11 (“[O]rdering pertains to the sale of a product, which generates revenue.”). Such revenue generation is clearly “financial in nature, incidental to a financial activity or complementary to a financial activity.”

In addition, Patent Owner has accused Petitioner’s “mobile payment
20 processing” application of infringement. Ex. 1045 at ¶¶ 35, 38. In prior litigation,

Patent Owner argued that “hospitality applications” should be construed to include payment processing, and the court agreed. Ex. 1042 at 13, 15; Ex. 1044 at 6-7.

Payment processing is financial in nature. Ex. 1049 at 11 (payment processing claim satisfies the “financial product or service” aspect of CBM definition).

5 Thus, Claim 11 satisfies the first requirement of the CBM definition.

(ii) *Claim 11 Does Not Recite a “Technological Invention”*

The technological invention exception does not apply to Claim 11. The claim does not recite a novel and unobvious technological feature, but instead recites well-known computer technologies such as a central database, a wireless
10 handheld computing device, a web server, a web page, an application program interface (API) and a communications control module. Those recited features of Claim 11 are disclosed by the cited prior art references in this Petition and the claimed subject matter of Claim 11 as a whole is obvious and invalid as discussed in detail in § V(B) of this Petition. As noted above, the specification confirms that
15 any software necessary to practice the purported invention can be implemented using “commonly known” programming steps. Ex. 1002 at 11:56-61. The components recited in Claim 11 achieve nothing more than “the normal, expected, or predictable result of [their] combination.” 77 Fed. Reg. at 48,763-64.

Claim 11 also fails the second prong of the technological invention
20 exception because it does not solve a technical problem using a technical solution.

Claim 11 is directed to a system for computerizing paper-based hospitality activities such as ordering, waitlists, and reservation management to improve efficiency. Ex. 1002 at 3:48-51 (“With the proper wireless handheld system in place, restaurants can experience increased table turns from improved server [*i.e.*,
5 waiter] productivity and shorter order taking and check paying times.”). As noted above, Claim 11 uses typical hardware elements and software programmed using commonly known programming steps. Therefore, Claim 11 does not solve a technical problem using a technical solution. Claim 11 thus fails both requirements for a “technological invention” under AIA § 18(d)(1).

10 In view of the above, at least Claims 1 and 11 of the ’325 patent are CBM-eligible claims and do not fall within the technological invention exception. Therefore, all the Challenged Claims (11-13 and 15) are eligible for CBM review.

B. IDENTIFICATION OF CHALLENGE

Pursuant to 37 C.F.R. §§ 42.304(b) and 42.22, the precise relief requested by
15 Petitioner is that the Board institute a CBM trial on, and cancel Claims 11-13 and 15 because they are invalid on the grounds and evidence presented in this Petition.

1. Claims Challenged

The Challenged Claims are Claims 11-13 and 15 of the ’325 patent.

2. The Prior Art

20 The prior art references relied upon are briefly described below.

Brandt (Ex. 1004). Japanese Published Appl. No. H10-247183 (“Brandt”) is a publication of a patent application filed in Japan by IBM on December 16, 1997. Exhibit 1005 is a certified English translation of Brandt. Brandt claims priority to U.S. Patent Application No. 08/780,015, which was earlier filed on Dec. 23, 1996 (and which later issued as U.S. Patent No. 5,892,905). Brandt was published in Japan on Sept. 14, 1998 and is prior art under 35 U.S.C. § 102(b).

NetHopper (Ex. 1006). NetHopper Version 3.2 User’s Manual (“NetHopper”) is a user manual for the NetHopper web browser which was included on Apple Newton PDA devices. NetHopper was publicly available in 1997 and is prior art under 35 U.S.C. § 102(b). *See* Ex. 1007 and Ex. 1008.

Demers (Ex. 1009). Alan Demers et al., The Bayou Architecture: Support for Data Sharing Among Mobile Users (“Demers”) is a 1994 conference paper that was published by IEEE in 1995 and is prior art under 35 U.S.C. § 102(b). *See* Ex. 1010 (IEEE abstract); Ex. 1011 (Library of Congress record).

Alonso (Ex. 1012). Gustavo Alonso et al, Exotica/FMDC: A Workflow Management System for Mobile and Disconnected Clients (“Alonso”) is a paper published in a book in 1996 and is prior art under 35 U.S.C. § 102(b). *See* Ex. 1013 (publisher abstract); Ex. 1014 (Library of Congress record).

Carter (Ex. 1052). EP 0845748A2 is a publication of a European patent application filed by IBM. Carter published on June 3, 1998 and is prior art under §

102(b). Issued U.S. Patent No. 5,926,798 claims foreign priority to Carter.

Rossmann (Ex. 1053). U.S. Patent No. 5,809,415 to Rossmann issued on Sep. 5, 1998 and is prior art under § 102(b).

3. Statutory Grounds of Challenge and Legal Principles

5 The review of invalidity of Claims 11-13 and 15 of the '325 patent requested in this Petition is governed by 35 U.S.C. §§ 101, 102, 103, and 112 that were in effect before March 16, 2013 (pre-AIA). Further, AIA § 18 and relevant statutory provisions 35 U.S.C. §§ 321-329 that took effect on Sept. 16, 2012 govern this CBM review. In accordance with 35 U.S.C. § 321 and 37 C.F.R. § 42.304(b),
10 CBM review of the Challenged Claims is requested on the following grounds:

A. Grounds 1 - 3: The Challenged Claims are unpatentable and invalid under pre-AIA 35 U.S.C. § 112 for lack of enablement, indefiniteness, and lack of written description because of the “hospitality applications and data” limitations;

B. Grounds 4-6: The Challenged Claims are unpatentable and invalid
15 under pre-AIA 35 U.S.C. § 112 for lack of enablement, indefiniteness, and lack of written description because of the “communications control module” limitations;

C. Ground 7: The Challenged Claims are unpatentable and invalid under pre-AIA 35 U.S.C. § 112 for lack of enablement for failing to describe the software libraries necessary to make and used the claimed invention;

20 D. Ground 8: The Challenged Claims are unpatentable and invalid under

pre-AIA 35 U.S.C. § 112 for lack of enablement for failing to describe how to make and use the claimed systems;

E. Grounds 9 and 10: The Challenged Claims are unpatentable and invalid under pre-AIA 35 U.S.C. § 103(a) as obvious over Brandt in view of
5 NetHopper, Carter and Rossmann;

F Grounds 11 and 12: The Challenged Claims are unpatentable and invalid under pre-AIA 35 U.S.C. § 103(a) as obvious over Brandt in view of Demers, Alonso, Carter and Rossmann;

G. Ground 13: The Challenged Claims are unpatentable under pre-AIA
10 35 U.S.C. § 101 for claiming non-statutory subject matter.

4. Supporting Evidence Relied Upon For The Challenge

This Petition includes the Declaration of Dr. Abdelsalam (Sumi) Helal (Ex. 1003) which provides support for each ground of rejection raised herein and other supporting evidence in the Exhibit List which are filed herewith.

15 5. Claim Construction

The '325 patent is an unexpired patent. In a CBM review, a claim in an unexpired patent shall be given by the Patent Office “its broadest reasonable construction in light of the specification of the patent in which it appears” to one of ordinary skill in the art. 37 C.F.R. § 42.300(b); *In re Cuozzo Speed Techs. LLC*,
20 No. 2014-130, 2015 WL 448667 (Fed. Cir. Feb. 4, 2015).

6. How Claims Are Unpatentable Under Statutory Grounds

Pursuant to 37 C.F.R. § 42.204 (b)(2), Section V explains how Claims 11-13 and 15 of the '325 patent are unpatentable, and includes the analyses of invalidity based on failure to meet requirements under pre-AIA 35 U.S.C. § 112, invalidity under pre-AIA 35 U.S.C. § 103(a) and the identification of where each element of the claim is found in the prior art of patents or printed publications, and invalidity for claiming non-statutory subject matter under pre-AIA 35 U.S.C. § 101.

IV. OVERVIEW OF THE '325 PATENT

A. SUMMARY OF THE '325 PATENT

The '325 patent issued from a continuation of the application that issued as the '850 patent. The '325 patent is directed to computerizing hospitality-related activities using the Internet and handheld wireless devices. The Challenged Claims (11-13 and 15) each recite “[a]n information management and synchronous communications system for use with wireless handheld computing devices and the internet.” *Id.* at 17:4-18:32, 18:36-38.¹ Although the '325 patent specification provides some discussion related to the Challenged Claims, much of the specification deals with “menu generation” subject matter that relates to Claims 1-

¹ The '325 patent uses “synchronous communications” to refer generally to communications in a system which synchronizes applications and data, despite its different and well-established meaning in the art. *See* Ex. 1050 at 430.

10 of the '325 patent which are not challenged in this Petition.

The specification of the '325 patent provides context for understanding the claimed invention. The specification acknowledges that “[t]he use of wireless handheld devices in the restaurant and hospitality industry [was] becoming increasingly pervasive.” Ex. 1002 at 3:45-48. On the other hand, “software for fully realizing the potential for handheld wireless computing devices [had] not previously been available.” *Id.* at 2:3-12. As a result, “paper-based ordering, waitlist and reservations management [had] persisted in the face of widespread computerization in practically all areas of commerce.” *Id.* at 2:38-41.

10 The '325 patent purports to describe software and features that the hospitality industry had been waiting for: “The information management and synchronous communications system of the present invention features include fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API” *Id.* at 3:64-4:9. The specification of the '325 patent, however, provides no disclosure of any new technologies or new combinations of known technologies for achieving the above features. The specification merely lists out purported features of the alleged invention and refers to conventional uses of technologies that were well known in the art.

20 The '325 patent specification fails to describe any specific computer-based

approach or system that achieves synchronization between a central database, a wireless handheld computer device, a web server and a web page as recited in Claims 11-13 and 15. None of the seven figures in the '325 patent shows an embodiment of “an information management and synchronous communications system for use with wireless handheld computing devices and the internet” recited by each of the Challenged Claims. Ex. 1002 at 16:1-47.

The '325 patent specification states that a “communications control module” provides a “single point of entry [that] works to keep all wireless handheld devices and linked web sites in synch with the backoffice server applications so that the different components are in equilibrium at any given time and an overall consistency is achieved.” *Id.* at 4:10-23 and 11:37-49. Yet the specification provides almost no information as to the implementation of the communications control module other than that it runs on a “desktop pc” and “monitors and routes all communications to the appropriate devices.” *Id.* at 9:35-54.

The Challenged Claims each recite a “wireless handheld computing device” but the '325 patent specification does not disclose any novel technologies or features to enable or improve wireless synchronization. The specification briefly discusses wireless messaging between the handhelds and beepers (*id.* at 11:62-12:13), but no specifics are provided as to how the handheld devices communicate wirelessly with any of the components recited in Claims 11-13. The description of

downloading a menu to a handheld “in conformance with the preferred embodiment” is of a user-guided download process, and it is unclear whether the device is connected wirelessly to the “desktop PC” or not. *Id.* at 6:33-36, 8:59-9:6.

5 The '325 patent specification admits that the components of the claimed system are nothing new: “The preferred embodiment of the invention uses typical hardware elements.” *Id.* at 5:39-43. The server runs a Windows operating system and includes unspecified “web server software” and “database software.” *Id.* at 5:58-61. Other than noting that hyperlinks will probably be used (*id.* at 12:54-56), no explanation is given as to how the claimed web technologies are used in the
10 claimed system. The handheld wireless devices run the Windows CE operating system which “provides ... built-in synchronization between handheld devices [and] internet and desktop infrastructure.” *Id.* at 11:9-16.

The '325 patent specification states that “a set of software libraries described herein ... not only enhances the basic Windows CE® functionality by adding new
15 features but also maximizes the full potential of wireless handheld computing devices.” *Id.* at 11:20-25. The features supposed to be achieved by the software libraries include “fast synchronization” between a database, handheld devices, and a web server and other features recited in the Challenged Claims. *Id.* at 11:25-36. However, the specification provides no description of any software libraries, let
20 alone software libraries that achieve the recited features. Indeed, the specification

admits that the “discrete programming steps” for practicing the invention are “commonly known” and that a description of the software is thus “not necessary to a full description of the invention.” *Id.* at 11:56-61.

In summary, the '325 patent describes no technology solution to address or
5 overcome the supposed obstacles to computerization in the hospitality industry. Instead, the '325 patent merely claims a generic system composed of generic computers and software and leaves it to others to work out the implementation details. As shown by the evidence in this Petition, Claims 11-13 and 15 simply recite the same generic system and require it be applied to orders, waitlists, and
10 reservations. *Id.* at 17:4-18:32, 18:36-38. Therefore, the Challenged Claims are invalid and must be canceled on multiple statutory grounds.

B. SUMMARY OF PROSECUTION FILE HISTORY

The file history of the '325 patent shows that the Challenged Claims were erroneously allowed just like the similar claims in the '850 patent. On Nov. 1,
15 2001, a continuation of the application that issued as the '850 patent was filed. The continuation included 93 claims. Ex. 1057 at 28-47; Ex. 1058 at 1. Application Claims 69-83 ultimately issued as Claims 1-15 of the '325 patent. Application Claims 79-81 were independent claims, each reciting the same limitations as Claim 12 of the '850 patent and adding one limitation: “wherein the
20 synchronized data relates to orders” (Claim 79); “wherein the synchronized data

relates to waitlists” (Claim 80); and “wherein the synchronized data relates to reservations” (Claim 81). Ex. 1057 at 43-46.

During a telephone interview, prior to any office action, the applicants authorized cancellation of 78 of the 93 claims. Ex. 1060 at 2. The applicants then
5 filed a terminal disclaimer and a notice of allowance issued. Ex. 1059; Ex. 1060.

In the notice of allowance, the Examiner paraphrased application Claim 69, and then identified a limitation of that claim as the reason for allowance: “The present invention is directed to an information management and synchronous communications system for generating and transmitting menus. Each independent
10 claim is identified the uniquely distinct features ‘wherein the application software facilitates the generation on the second menu by allowing selection of categories and items from the first menu, addition of menu items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of operating system, parameters being selected from the modifier and
15 sub-modifier menus, wherein second menu is applicable to a predetermined type of ordering’. The closest prior art, Cupps (US Patent No. 5,991,739) and Chen (US Patent No. 5,724,069) discloses convention of user interactive interface providing an on-line ordering distribution, either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.” Ex. 1060 at 2-3.

Contrary to the Examiner's assertion, the cited menu generation software limitation was *not* part of "each independent claim." The cited limitation was not present in any of application Claims 79-83 which issued as Claims 11-15. Ex. 1057 at 39-46. Thus, the Challenged Claims were erroneously allowed.

5 **C. SUMMARY OF CBM2014-00016 PROCEEDING**

Thirty-five parties, including Petitioner Starbucks, sought CBM review of all claims (Claims 1-15) of the '325 patent under 35 U.S.C. §§ 101 and 112 in the CBM2014-00016 proceeding. The Board instituted review of Claims 1-10 under the § 101 ground but denied institution of the other grounds because that petition
10 failed to make the proper showing for those grounds. Ex. 1055 at 27.

As shown by the evidence and analysis in this Petition, compelling new grounds of invalidity under 35 U.S.C. §§ 101, 103, and 112 are raised herein that were not presented before the Board in the CBM2014-00016 proceeding.

15 **D. PATENT OWNER'S INTERPRETATION OF CHALLENGED CLAIMS IN LITIGATION**

In litigation, Patent Owner broadly interprets the claims to cover conventional client/server configurations in which application data is pulled from a central database and displayed on a client device. For example, Patent Owner framed the invention as follows during a claim construction hearing: "On this slide,
20 we see the client server nature of the invention. We have a central database, central computer, central server that communicates out through the internet to

provide different types of users on different types of devices the same information that's maintained back at this central database server. *This client server system provides a mechanism which results in the same information presented to any one of these users, no matter the kind of device.*" Ex. 1043 at 11:3-11.

5 Patent Owner asserts that the "synchronized" limitation simply requires that consistent data is displayed on different client devices. Ex 1042 at 28 ("Synchronized" in the claims means that the same information provided to users via the display of user interfaces is presented consistently to different client devices in a client/server system."); *id.* at 29 ("[S]ynchronizing" hospitality applications and data in the claimed system is the maintenance of consistency of information presented to user for 'use' on disparate devices in the system.").

10 Patent Owner contends that the claims cover handheld devices which access web-based hospitality applications. Ex. 1043 at 22:17-21 ("[F]or example, a single wireless handheld device using a web browser delivering HTML-based web pages connected into the central database over the internet, would satisfy the explicit claim recitations. Nothing more than that is required."). Patent Owner has accused mobile websites of infringement.

E. PROPOSED CLAIM CONSTRUCTION

20 Petitioner proposes construction of certain claim terms below pursuant to the broadest reasonable interpretation (BRI) standard for covered business method

patent review. The proposed BRI claim constructions are offered only to comply with 37 C.F.R. § 42.300(b) and for the sole purpose of this Petition, and thus do not necessarily reflect appropriate claim constructions to be used in litigation and other proceedings where a different claim construction standard applies.

5 The proposed BRI construction of each term is the ordinary meaning of the term, including “communications control module” (e.g., Ex. 1002 at 9:35-54, 11:37-55, 4:10-28, 4:54-56) and “hospitality applications” (e.g., *Id.* at 1:56-60, 1:64-2:37, 4:10-13, 11:37-55).

F. STATE OF THE ART PRIOR TO THE '325 PATENT

10 The '325 patent specification offers an inaccurate and incomplete characterization of the state of the art around its priority date of September of 1999. As shown by the evidence provided in this Petition, including the cited prior art references and Declaration of Dr. Abdelsalam (Sumi) Helal (Ex. 1003), the claimed technologies were developed and in use well before 1999.

15 By the mid-to-late 1990s, a variety of technologies were being used to build web-based applications. The Common Gateway Interface (CGI) enabled interaction between web servers and other programs in order to process user input, dynamically generate web pages, and interface with application databases. Ex. 1019 at 382-390. Microsoft's Active Server Pages (ASP) was a server side
20 scripting technology that included similar capabilities. Ex. 1020 at 51-78.

A variety of handheld computing devices were also available. Ex. 1023 at 32-42. The Apple Newton PDAs supported PCMCIA card-based wireless modems and synchronization with computers. Ex. 1024 at 5-7, 36, 38; Ex. 1026 at 59-66; Ex. 1027 at 51-58; Ex. 1028 at 125-129. The Nokia 9000i Communicator was a
5 combined handheld computer and cell phone. Ex. 1023 at 40-41. The 9000i included a web browser and could transfer files and data with a PC. Ex. 1029 at 7-1 – 7-4 and 10-6 – 10-10. In 1996, Microsoft released Windows CE, an operating system for portable computers and PDAs. Ex. 1030 at xii – xv; Ex. 1031 at 12-38. Windows CE-compatible software supported database functionality, including
10 synchronization of local data with network databases. Ex. 1031 at 335 – 358.

The Internet and handheld computers were widely used in the hospitality industry by the mid-to-late 1990s. Wireless handheld ordering terminals were well known. Ex. 1033 at 168-169. Numerous web-based resources existed for making reservations. *Id.* at 103-107; Ex. 1034 at 196-206. The use of client/server system
15 architectures in the hospitality industry was also well known. Ex. 1033 at 285-287.

See also Ex. 1003 at § V(B) (further discussing the state of the relevant art).

G. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art of the '325 patent (POSITA) would have had a Bachelor's degree in computer science, computer engineering, or electrical
20 engineering and two years of experience developing web-based software or other

software for client/server systems. The POSITA would be familiar with relational databases, handheld computing devices, and basic wireless technologies. This description is approximate and additional programming experience could make up for less education and vice versa. Ex. 1003, Helal Decl., § V(C).

5 **V. IT IS MORE LIKELY THAN NOT THAT THAT AT LEAST ONE CLAIM OF THE '325 PATENT IS UNPATENTABLE**

This Petition meets the CBM threshold set forth in 35 U.S.C. § 324(a) because “at least 1 of the claims challenged in the petition is unpatentable.” 35 U.S.C. § 324(a). As explained below pursuant to 37 C.F.R. §§ 42.304(b)(4) and
10 42.304(b)(5), Claims 11-13 and 15 are unpatentable under pre-AIA 35 U.S.C. §§ 112, 103(a), and 101 at least for the thirteen grounds listed in Section III(B)(3).

A. INVALIDITY OF THE CHALLENGED CLAIMS UNDER 35 U.S.C. § 112

The Challenged Claims suffer multiple fatal defects and thus are invalid
15 under pre-AIA 35 U.S.C. §112. Because the same claim limitations implicate multiple grounds of invalidity, Petitioner will address the invalidity grounds on a limitation-by-limitation basis. Dr. Helal provides additional analysis and support for these grounds in his declaration, Ex. 1003, at § VIII(A).

1. The “Hospitality Applications and Data” Limitations (Grounds 1-3)

20 Each of the Challenged Claims recites “an information management and synchronous communications system for use with wireless handheld computing devices and the internet.” The first four claim elements recite that “hospitality

applications and data” are stored in four locations: (1) in “a central data base,” (2) on “at least one wireless handheld computing device,” (3) on “at least one Web server,” and (4) on “at least one Web page.” Ex. 1002 at 17:4-17, 17:27-39, 18:10-23 (Claims 11-13). Another limitation recites “wherein application and data are

5 synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page.” *Id.* at 17:18-20, 18:1-3, 18:24-26 (Claims 11-13).

a. Ground 1: The Challenged Claims are Invalid for Lack of Enablement Because of the “Hospitality Applications and Data” Limitations

10 “To be enabling the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.” *Magsil Corp. v. Hitachi Global Storage Techs, Inc.*, 687 F.3d 1377, 1380 (Fed. Cir. 2012); 35 U.S.C. § 112, ¶ 1. ***“It is the specification, not the knowledge of one skilled in the art, that must supply the novel aspects of an***

15 ***invention in order to constitute adequate enablement.”*** *Genentech, Inc. v. Novo Nordisk, A/S*, 108 F.3d 1361, 1366 (Fed. Cir. 1997).

The ‘325 patent specification does not describe any system in which hospitality applications and data are stored in the four different locations recited in the Challenged Claims and synchronized between those locations. None of the

20 figures depict any such system. *See In re Wands*, 858 F.2d, 731, 737 (Fed. Cir. 1988) (“absence of working examples” indicates that undue experimentation would

be required to practice claims). The “hospitality applications and data” limitations are not discussed individually either. For example, the specification includes no mention of any hospitality applications that are contained in a database, stored on a web server, or stored on a web page. The specification briefly mentions

5 “synchronization” between devices (*e.g.*, Ex. 1002 at 3:64-4:1, 4:19-28; 11:3-8; 11:11-14), but the discussion is so vague that it fails to explain what it means for “applications and data” to be synchronized between the four different locations recited in the claims, let alone teach how such synchronization can be achieved.

Given the lack of guidance in the ’325 patent specification, a POSITA would
10 not understand how to make and use a system in which “hospitality applications and data” are stored in the four recited locations and synchronized between those locations. The ’325 patent specification fails to teach how hospitality applications can be stored *in a database*. Databases typically contain application data, not applications themselves. The notion of storing applications *on a web page* is also
15 ambiguous. Web pages can be part of an application but web pages do not typically store applications on them.

The ’325 patent specification also fails to teach how hospitality data is stored on a web page as claimed. Some web pages are static and include content that does not change. On the other hand, when web pages are used to display
20 information that does change, the standard approach has long been to dynamically

generate the web page. When web pages are generated dynamically, the data is retrieved and inserted into the page at the time the client requests the page—the data is not stored on a web page or on the web server.

The specification also does not explain synchronizing *both applications and data* as claimed. *See* Ex. 1055 at 15-16 (“synchronized” limitation refers to “system’s ability to synchronize applications and data”). Synchronizing applications—as opposed to just application data—is ambiguous. Synchronizing applications between a database, a handheld device, a web server, and a web page is bewildering to a POSITA. The specification neither explains what synchronization of applications means nor teaches how it can be accomplished.

Claims 11-13 and 15 are thus invalid for lack of enablement under pre-AIA 35 U.S.C. § 112, ¶ 1 with respect to the “hospitality applications and data” limitations. *See also* Helal Decl., Ex. 1003, at § VIII(A)(1)(a).

b. Ground 2: The Challenged Claims are Invalid for Being Indefinite Because of the “Hospitality Applications and Data” Limitations

“[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.”

Nautilus Inc. v. Biosig Instr., Inc., 134 S. Ct. 2120, 2124 (2014); 35 U.S.C. § 112, ¶

2. In view of the numerous ambiguities associated with the “hospitality applications and data” limitations, the Challenged Claims fail to particularly point

out and distinctly claim the subject matter of the claimed invention.

The Challenged Claims do not specify any relationships between the “hospitality applications and data” at one location and the “hospitality applications and data” at another location. For example, there are no antecedent basis
5 relationships among the “hospitality applications and data” stored at the four different locations. It is unclear whether the “hospitality applications and data” stored at the four different recited locations are associated with the same hospitality applications or different hospitality applications. For example, if the hospitality application in the central database were an ordering application, must
10 there be ordering applications stored at the other three locations as well?

Assuming the four separately recited “hospitality applications and data” stored at the four locations in the Challenged Claims are understood to refer to the same hospitality applications, Claims 11-13 and 15 would still be indefinite. Under this interpretation, Claims 11-13 and 15 fail to particularly point out and
15 distinctly claim the subject matter related to the four separately recited “hospitality applications and data” at the four locations, *e.g.*, whether the four separately recited “hospitality applications and data” at the four locations are different components of some larger scale hospitality applications or whether they are replicas of the same hospitality applications. Given this ambiguity in Claims 11-13
20 and 15, it is also unclear what the additional limitation requiring “wherein

applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page” in the Challenged Claims would mean.

On the other hand, if the four separately recited “hospitality applications and data” stored at the four locations in the claimed system are understood as referring to different hospitality applications, Claims 11-13 and 15 would still be indefinite. Under this interpretation, The Challenged Claims fail to particularly point out and distinctly claim the subject matter, *e.g.*, whether the four separately recited “hospitality applications and data” stored at the four locations have any relationships with one another. Under this interpretation, the meaning of the limitation “wherein applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page” in the Challenged Claims is again ambiguous. For example, how would hospitality applications and data be synchronized between the central database, the handheld device, the web server, and the web page if there were different types of hospitality applications stored at those locations?

For at least these reasons, Claims 11-13 and 15 fail to inform those skilled in the art about the scope of the claimed invention with reasonable certainty and fail to particularly point out and distinctly claim the subject matter. Claims 11-13 and 15 are therefore invalid under pre-AIA 35 U.S.C. § 112, ¶ 2 for being indefinite

and must be canceled. *See also* Helal Decl., Ex. 1003, at § VIII(A)(1)(b).

c. Ground 3: The Challenged Claims are Invalid for Lack of Written Description Because of the “Hospitality Applications and Data” Limitations

5 The written description of the ’325 patent does not “reasonably convey[] to those skilled in the art that the inventor[s] had possession” of the claimed system wherein hospitality applications and data are stored in the four recited locations and synchronized between those locations. *See Ariad Pharma, Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).

10 As discussed above, there is no description of any system in which hospitality applications and data are stored in the four recited locations and synchronized between those locations. *See Boston Sci. Corp. v. Johnson & Johnson*, 647 F.3d 1353, 1364 (Fed. Cir. 2011) (“Although examples are not always required to satisfy the written description requirement, the lack of any disclosure of examples may be considered when determining whether the claimed
15 invention is adequately described.”). Further, the vague references to “synchronization” in the specification do not describe synchronization of **both applications and data** between the four locations recited in the Challenged Claims. *See* Ex. 1002 at 2:31-37; 4:23-28; 11:49-55.

20 The Challenged Claims recite almost identical subject matter to Claim 12 of the ’850 patent which was an originally filed claim in the parent application. Original claims **do not** automatically satisfy the written description requirement,

however. *Ariad*, 598 F.3d at 1349-51. Where original claims reflect only than a “wish” or “plan” for obtaining the claimed invention, the claims themselves do not provide a sufficient written description. *Id.* at 1351.

Claim 12 of the '850 patent does not provide an adequate written description for the Challenged Claims of the '325 patent, because Claim 12 of the '850 patent amounts to nothing more than a “wish” or “plan” to achieve the claimed system. That claim indicates that the inventors might have wished for a system that synchronized hospitality applications and data between a database, a handheld device, a web server, and a web page. However, nothing within the “four corners of the specification” (*Ariad*, 598 F.3d at 1351) reasonably conveys that the inventors “possessed” any actual solution that achieved their vision. “[A] patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion.” *Id.* at 1353.

Claims 11-13 and 15 are thus invalid for lack of written description under pre-AIA 35 U.S.C. § 112, ¶ 1. *See also* Helal Decl., Ex. 1003, at § VIII(A)(1)(c).

2. The “Communications Control Module” Limitations

Like the “hospitality applications and data” limitations discussed above, the “communications control module” limitations of the Challenged Claims implicate multiple grounds of invalidity under pre-AIA 35 U.S.C. § 112, ¶ 1 and ¶ 2.

“Communications control module” is recited in each of the Challenged Claims as

“an interface between the hospitality applications and any other communications protocol.” Ex. 1002 at 17:17-26, 17:39-18:9, 18:23-32 (Claims 11-13).

a. Ground 4: The Challenged Claims are Invalid for Lack of Enablement Because of the “Communication Control Module” Limitations

5 The '325 patent specification fails to provide an enabling disclosure of the claimed “communications control module.” The specification suggests that the communications control module is the key to synchronization: “The synchronous communications control module discussed above provides a single point of entry The single point of entry works to keep all wireless handheld devices
10 and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved.” Ex. 1002 at 11:37-55; 4:10-28.

Despite its seeming importance, the communications control module is only briefly discussed in a few places in the '325 patent specification. Ex. 1002 at 9:35-
15 54, 11:37-55, 4:10-28. The specification states that the communications control module runs on a “desktop PC” and “monitors and routes all communications to the appropriate devices.” *Id.* at 9:35-54. However, the specification offers no teachings as to (a) how the module knows which device(s) should receive any given message, and (b) how the module actually communicates with a database, a
20 web server, a web page, or a handheld device.

The specification of the '325 patent does not teach how “the communications control module is an interface between the hospitality applications and any communications protocol” as claimed. Regarding this limitation, the specification states that the communications control module is a “layer that sits on

5 top of any communication protocol and acts as an interface between hospitality applications and the communication protocol and can be easily updated to work with a new communication protocol without modifying the core hospitality applications.” Ex. 1002 at 4:14-18; 11:40-45. The claim language and specification suggest a software configuration like the one shown here in which

10 hospitality applications run on top of the communications control module “layer” and rely on that communications control module layer to handle communications.



A POSITA would recognize that the communications control module is

15 characterized as an “abstraction layer” which shields the applications from the details of, and changes to, the communication protocols. Abstraction layers were well known in the art. *See* Ex. 1036 at 31-51. Implementing the communications control module as an abstraction layer that manages communications for the hospitality applications would explain why the module “can be easily updated to

20 work with a new communication protocol without modifying the core hospitality

applications.” Ex. 1002 at 4:16-18.

In a vacuum, there is no problem with the communications control module being an abstraction layer that manages communications and deals with communication protocols. Such a design would require the communications control module layer to be present on every device and computer that runs the hospitality applications, however, because without that layer, the applications would have no ability to communicate. The suggestion that the communications control module is a software layer that is included on all devices and computers that run hospitality applications *contradicts* the clear indications in the specification and claims that the communications control module is a centralized system component. Ex. 1002 at 9:35-54 (runs on “desktop PC”); 11:37-49 (provides a “single point of entry for all hospitality applications”); Fig. 6.

Assuming the communications control module is a centralized software component, the '325 patent specification does not explain *how* to make it “an interface between the hospitality applications and any other communications protocol” as claimed. For example, how would hospitality applications on a wireless handheld device communicate with the centralized communications control module if those applications do not understand communication protocols? How would the web server communicate with the communications control module without the use network communication protocols? How could the communication

protocols within the distributed system be updated “without modifying the core hospitality applications” on the client devices and web server? *Id.* at 4:14-18; 11:40-45. The specification of the ’325 patent answers none of these questions.

Even if the Challenged Claims might be construed to only require server-side applications that are accessible to web-based clients and handheld devices (*see supra* § IV.D), the ’325 patent specification fails to explain how the server-side applications would run on top of the communications control module such that the module provides an interface between the applications and a communication protocol. How would the applications communicate with the communications control module? Would the module reside on the web server? Would it provide an interface between the web-based application and the HTTP protocol? How?

The only figure in the ’325 patent related to the communications control module is Figure 6 which merely depicts a GUI window that is virtually empty. The brief discussion of this figure indicates that the GUI window allows for viewing a log of communications which is “possibly useful for troubleshooting, or maintenance, but not necessary for normal operation.” *Id.* at 9:43-54. Thus, the only figure related to the “communications control module” is tangential to its design and operation.

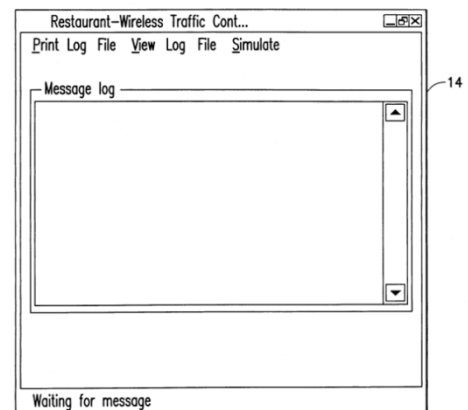


FIG.6

Nothing about Figure 6 would inform or teach those skilled in the art how to make an operational communications control module, let alone one that provides the claimed interface. In *Auto. Techs. Int'l, Inc. v. BMW of No. Am., Inc.*, the Federal Circuit invalidated claims because the specification failed to provide an enabling disclosure of electronic sensors. 501 F.3d 1274, 1282 (Fed. Cir. 2007). There, the patent included one figure with a “conceptual” view of an electronic sensor and a brief description which “provide[d] little detail concerning how the electronic sensor is built or operated.” *Id.* at 1282-83. The '325 patent's teachings are even more deficient, and the '325 patent thus fails to teach a POSITA how to make and use the claimed communications control module.

For the above reasons, the “communications control module” limitations render Claims 11-13 and 15 invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 for lack of enablement with respect to the claimed “communications control module.” *See also* Helal Decl., Ex. 1003, at § VIII(A)(2)(a).

b. Ground 5: The Challenged Claims are Invalid for Being Indefinite Because of the “Communication Control Module” Limitations

As discussed above, the claim language and specification provide conflicting characterizations of the communications control module as (i) a centralized software component, and (ii) an abstraction layer on each computer containing hospitality applications. A POSITA would not understand from the specification and prosecution history whether the communications control module is a

centralized module or an abstraction layer. As a result, Claims 11-13 and 15 fail to inform those skilled in the art about the scope of the invention with reasonable certainty and thus fail to particularly point out and distinctly claim the subject matter. Claims 11-13 and 15 are therefore indefinite under pre-AIA 35 U.S.C. § 112, ¶ 2 and invalid. *See also* Helal Decl., Ex. 1003, at § VIII(A)(2)(b).

c. Ground 6: The Challenged Claims are Invalid for Lack of Written Description Because of the “Communication Control Module” Limitations

Nothing in the specification describes how a “communications control module” actually serves as “an interface between the hospitality applications and any other communications protocol.” Indeed, as discussed above, this limitation is at odds with the statements in the specification indicating that the communications control module is a centralized system component. As such, the written description of the ’325 patent fails to reasonably convey that the applicants possessed the claimed system in which a “communication control module is an interface between the hospitality applications and any other communications protocol.” That the limitation was recited in an original claim merely reflects a “wish” or “plan” to obtain a communications control module that provides the claimed interface and is not sufficient. *See Ariad*, 598 F.3d at 1351. The Challenged Claims are therefore invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 for lack of written description. *See also* Helal Decl., Ex. 1003, at § VIII(A)(2)(c).

3. Ground 7: The Challenged Claims Are Invalid for Lack of Enablement Because the Specification Fails to Disclose the “Software Libraries” that Supposedly Enable the Claimed Subject Matter

The '325 patent states that many features recited in the Challenged Claims
5 are achieved using inventive software libraries: “a set of *software libraries*
described herein in conformance with the present invention not only enhances the
basic Windows CE® functionality by adding new features but also maximizes the
full potential of wireless handheld computing devices.” Ex. 1002 at 11:20-25. The
features purportedly added by the “software libraries” include “fast
10 synchronization between a central database and multiple handheld devices,
synchronization and communication between a Web server and multiple handheld
devices, [and] a well-defined API that enables third parties ... to fully integrate
with computerized hospitality applications” *Id.* at 11:20-25. These features
directly map to limitations of the Challenged Claims. *Id.* at 17:4-18:32 (Claims
15 11-13). Despite the statements quoted above, the specification does not describe
any software libraries that add these features. There is not a single reference to a
software library anywhere else in the specification.

If software libraries are necessary to make and use the claimed system, as
the '325 patent specification suggests, the applicants had an obligation to describe
20 those software libraries in the specification. *Union Pacific Res. Co. v. Chesapeake*
Energy Corp., 236 F.3d 684, 690-691 (Fed. Cir. 2001) (claims not enabled where

inventors excluded from the specification important programming details used to achieve the invention in order to preserve them as a trade secret). Because the software libraries that are necessary to make and use the claimed system are not described in the specification, Claims 11-13 and 15 are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 for lack of enablement with respect to such software libraries. *See also* Helal Decl., Ex. 1003, at § VIII(A)(3).

4. Ground 8: Each of the Challenged Claims, as a Whole, is not Enabled

Grounds 1, 4, and 7 above address aspects of the Challenged Claims which are not enabled by the specification. The enablement grounds must also be considered together, however, because pre-AIA 35 U.S.C. § 112, ¶ 1 requires the specification to contain a description “in such full, clear, concise, and exact terms as to enable any person skilled in the art” to make and use “the invention”—which is the entire claimed system.

In order to make and use the system actually claimed in the Challenged Claims, a POSITA would need to figure out, at least, (i) how to store applications and data in the four recited locations, (ii) how to synchronize applications between the four recited locations; (iii) how to create a communications control module that routes communications to the proper devices and/or applications; (iv) how to make the communications control module an interface between the hospitality applications and any communications protocol; and (v) how to develop the

software libraries necessary to implement such a system. As discussed above in addressing Grounds 1, 4, and 7, a POSITA would find no specific and meaningful teachings in the specification that would assist with navigating these issues.

The enablement requirement exists to prevent applicants from claiming
5 subject matter they do not teach. “The enablement requirement ensures that ‘the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims.’” *Promega Corp. v. Life Techs. Corp.*, 773 F.3d 1338, 1347 (Fed. Cir. 2014). “Enabling the full scope of each claims is ‘part of the *quid pro quo* of the patent bargain.’” *Sitrick v. Dreamworks, LLC*, 516
10 F.3d 993, 999 (Fed. Cir. 2008) (citations omitted). The specification of the ’325 patent does not provide any teachings which enrich the public knowledge, and because it fails to teach what is claimed, the ’325 patent fails to satisfy its end of the patent bargain. “Patent protection is granted in return for an enabling disclosure of an invention, not for vague intimations of general ideas that may or
15 may not be workable.” *Genentech*, 108 F.3d at 1366.

Therefore, Claims 11-13 and 15 are invalid under pre-AIA 35 U.S.C. § 112, ¶ 1 for lack of enablement. *See also* Helal Decl., Ex. 1003, at § VIII(A)(4).

B. INVALIDITY OF THE CHALLENGED CLAIMS FOR OBVIOUSNESS UNDER 35 U.S.C. § 103

1. Grounds 9 & 10: The Challenged Claims Are Obvious Over Brandt In View Of Nethopper, Carter, & Rossmann

5 Brandt teaches “an apparatus and method for providing access to software applications via the world-wide web” which was developed at IBM. Ex. 1005 at ¶¶ 1. Brandt describes client/server systems that enable “handheld” computers and “Personal Digital Assistants (PDAs)” to connect to applications over “wireless” networks. *Id.* at ¶¶ 14-15. The disclosed systems include a centralized “application gateway” which facilitates client access to and communication with the applications. *Id.* at ¶ 31. The gateway receives user input and communicates with the applications to process that input and/or respond accordingly. *Id.* at ¶¶ 54-55. The gateway also receives data from the applications and uses it to the generate web pages that are provided to the clients. *Id.*

15 At a high level, Brandt describes the basic system architecture illustrated in Figure 3. Ex. 1005 at ¶¶ 20 *et seq.* Brandt also describes additional details of the system architecture shown in Figure 4, in which the applications are associated with workflows developed using IBM’s FlowMark workflow management platform. *Id.* at ¶¶ 75 *et seq.* and description of Fig. 4 in “BRIEF DESCRIPTION OF DRAWINGS.” FlowMark was “a popular process engineering tool” that allowed business activities to be modeled and then executed “by computer systems

over communication networks.” *Id.* at ¶ 76; Exs. 1037 and 1038 (providing further background on FlowMark). Brandt also describes a FlowMark-based “car rental example” to further illustrate Brandt’s approach in the context of the architecture shown in Figure 4. Ex. 1005 at ¶¶ 89 *et seq.* The car rental example
5 describes how customers and rental agents interact with the system to facilitate rental car reservations over the Internet.

Grounds 9 and 10 described below show that Brandt discloses every limitation of the Challenged Claims. NetHopper further discloses storage of hospitality applications and data on the wireless handheld computing device in a
10 fashion that complements the IBM technology described in Brandt. Carter further discloses synchronization of orders, waitlists, and reservations. Rossmann further discloses sending order data and other data to wireless paging devices.

A POSITA would have been motivated to combine Brandt with NetHopper. Brandt discloses computer systems that enable handheld computers such as PDAs
15 with web browsers to access applications over the World Wide Web (e.g., Ex. 1005 at FIGS. 2, 3 and 4 and associated text including, e.g., ¶¶ 2-14). NetHopper describes a web browser for the Apple Newton PDA as an example of a handheld computer which could be used to access the web-based applications and interfaces described in Brandt. Ex. 1006 at 1-4. A POSITA would also be motivated to
20 combine Brandt with NetHopper because NetHopper’s caching and offline form

filling features would advantageously provide support for disconnected clients.

NetHopper's features would allow a user to fill out a car rental reservation request even while the wireless network connection was experiencing problems, for example. *See also* Helal Decl., Ex. 1003, at § VIII(B)(1).

5 Like Brandt, Carter (Ex. 1052) is a published IBM patent application. Similar to Brandt, Carter describes Internet-based e-commerce including purchasing and reservations transactions. Ex. 1052 at 2:52-57; 4:25-30. Like Brandt, Carter discloses rental car reservations and waitlisted reservations. *Id.* at 4:25-30; 10:33-35; 11:3-8. A POSITA would also be motivated to combine Brandt
10 with Carter. Both are patent applications that originated within the same company (IBM) and relate to same Internet technologies. Notably, both disclose web-based applications for reserving rental cars. Both disclose web browsers, web servers, and HTML. Those commonalities and connections between Brandt and Carter and the above described commonalities and connections between Brandt and
15 Nethopper with respect to a handheld or portable computer and accessing the web-based applications, when considered all together, provide motivations to combine Brandt, Nethopper and Carter as presented in this Petition. A POSITA would understand that the additional Internet-based e-commerce services disclosed in Carter could be implemented using the system designs and approaches disclosed in
20 Brandt and Nethopper. *See also* Helal Decl., Ex. 1003, at § VIII(B)(1).

Rossmann (Ex. 1053) discloses access to applications from basic two-way communications devices such as mobile phones and pagers. Ex. 1053 at 9:13-63; 15:46-16:23. Rossmann describes a “client module” which communicates with an application server and generates the application user interface based on data
5 received from the server. *Id.* at 4:30-47. The device-side implementation in Rossmann is generic and flexible, so the capabilities “are limited only by the availability of applications on server computers.” *Id.* at 11:57-64; 5:16-30.

A POSITA would be motivated to combine Brandt and NetHopper with Rossmann because all three references are in the same communication field and
10 address the same problem—increasing accessibility to network-based applications. As discussed above, Brandt and Nethopper disclose web-enabling applications and access from handheld or portable computing devices. Rossmann provides an approach for making business applications accessible to resource-limited handheld or portable devices such as paging devices that do not include and/or may not be
15 capable of running a web browser. Ex. 1053 at 15:46 – 16:23. Brandt and Rossmann both use same or similar web technologies, including HTTP, web servers, and CGI. *Id.* at 23:52-62, 24:39 – 27:25. Both Brandt and Rossmann use markup languages to define the device-side user interface. *Id.* at 21:35-41; 31:55-65; 32:32-42. Therefore, Brandt and Rossmann provide motivations to combine
20 them with Nethopper as presented in this Petition. A POSITA would understand

that the technology in Rossmann could be used in conjunction with the systems and technologies disclosed in the combination of Brandt and NetHopper in order to further increase accessibility to applications to devices that cannot run web browsers. *See also* Helal Decl., Ex. 1003, at § VIII(B)(1).

5 Details of Grounds 9 and 10 are provided below. *See also* Helal Decl., Ex. 1003, at § VIII(B)(1).

a. Ground 9: Claims 11-13 are obvious over Brandt in view of NetHopper and Carter

 Because Claims 11-13 recite identical limitations except for the final
10 limitation in each claim, the common limitations are addressed together below.

(i) “An information management and synchronous communications system for use with wireless handheld computing devices and the internet” (Claims 11-13)

 Brandt teaches an information management and synchronous
15 communications system for use with wireless handheld computing devices and the internet. The systems described in Brandt support the use of handheld computers and PDAs and wireless networks. *See* Ex. 1005 at ¶¶ 14-15. Fig. 3 depicts a system in which a client interacts with a software application through a web server and an Internet/application gateway over the World Wide Web. The client may
20 connect to the web server over the Internet. *Id.* at ¶ 15.

 User input is transmitted to the software applications through the web server and gateway. *Id.* at ¶ 31. Application data is retrieved by the application gateway

and used to dynamically generate web pages that are provided to the clients for display. *Id.* at ¶¶ 54-55. The features disclosed in Brandt for accomplishing this functionality are discussed in more detail below.

NetHopper discloses wireless handheld computing devices (*i.e.*, the Newton) and Internet-based communications. Ex. 1006 at 1-4. Carter discloses Internet-based communications. Ex. 1052 at 1:13-2:12. Rossmann discloses wireless handheld devices and Internet-based communications. Ex. 1053 at 4:29-37, 8:37-59. Therefore, this common or related teaching provides a reason or motivation to combine Brandt, NetHopper, Carter, and Rossmann.

10 *See also* Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(i).

(ii) ***“a central database containing hospitality applications and data” (Claims 11-13)***

Brandt discloses that applications such as software application 342 in Fig. 3 have associated databases. *Id.* at ¶¶ 26, 28, 65. The database for the car rental application includes the application data “such as which cars are available, etc.” *Id.* at ¶ 78. The database also includes customer and account information. *Id.* at ¶ 101. The database is updated, for example, to reflect that a particular car has been reserved. *Id.* at ¶ 102. The database further contains process model data for the car rental application and maintains status information as instances of the process are executed. *Id.* at ¶¶ 78, 99, 111. The database itself is also an application.

The car rental applications described in Brandt are hospitality applications.

Car rental companies fall within the “Travel and Tourism” sector of the hospitality industry. Ex. 1035 at 11-14 and 403-404.

NetHopper allows an Apple Newton PDA “to make a connection from your Newton to your Internet Service Provider (ISP) so you can perform tasks like
5 browsing the Web or retrieving email.” Ex. 1006 at 2. These web browsing and email activities involve accessing databases in the network, including accessing a central email database for retrieving emails. A POSITA would have appreciated that Brandt and NetHopper disclose or suggest a central database for web-based applications. In this regard, Rossmann discloses a central database. Ex. 1053 at
10 37:42-58, Fig. 12. These common or related teachings provide a reason or motivation to combine the references.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(ii).

(iii) “at least one wireless handheld computing device on which hospitality applications and data are stored” (Claims 11-13)

15 Brandt teaches that client workstations may be any type of computer with a web browser, including handheld computers and PDAs. Ex. 1005 at ¶ 14. Clients download web pages which are then displayed by the web browser. *Id.* at ¶ 20. As discussed below, the web pages may include hospitality applications and data.

NetHopper, in combination with Brandt and in the same context of Brandt,
20 further discloses storage of hospitality applications and data on a PDA. NetHopper discloses that web pages may be cached on a handheld wireless device. Ex. 1006

at 14-15. When pages are cached, they are persistently stored on the device and accessed from local storage. *Id.* Further, NetHopper discloses that web pages with HTML forms can be cached and the forms may be completed while the user is disconnected from the network. *Id.* at 17-18. In this scenario, both the application web pages and the data entered by the user is stored on the handheld device. It would have been obvious based on Brandt and NetHopper to cache car rental application web pages on a wireless handheld computing device and to fill out forms on the device during periods of network disconnection.

Rossmann also discloses handheld wireless computing devices. Ex. 1053 at 1:41-50, 3:27-45. Therefore, this common or related teaching provides a reason or motivation to combine Brandt, NetHopper, and Rossmann.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(iii).

(iv) “at least one web server on which hospitality applications and data are stored” (Claims 11-13)

Brandt teaches a web server. Ex. 1005. at ¶ 17; Figs. 2 - 4. The web server serves “static HTML pages” and “dynamically” generated web pages. *Id.* at ¶¶ 17, 20. The web pages and/or components thereof may be stored on the web server. *Id.* In addition, the web servers may interface with “common gateway interface” (CGI) modules or other modules to enhance their functionality and to interface with other software applications. *Id.* at ¶¶ 19, 81. These modules can be located on the web server or on a separate computer system. *Id.* at ¶¶ 19, 86; Fig. 4.

The web server receives user input data and passes it to the application gateway. *Id.* at ¶ 31. The web server also receives web pages dynamically generated by the application gateway and sends them to the client. *Id.* at ¶ 55; Fig. 7. The gateway uses HTML templates from a template library. *Id.* at ¶ 54. The template library could be stored anywhere, including on the web server, as long as it is accessible to the gateway. *Id.*; *id.* at ¶ 86; Fig. 4 (showing portion of gateway 332 on web server computer system 220).

In the FlowMark embodiment, the web server communicates with clients and with a CGI module 420 which is part of the gateway 332. *Id.* at ¶¶ 77-78; Fig. 4. In the car rental example, the web server serves application web pages such as the reservation request page (*id.* at ¶¶ 90-91; Fig. 11), the reservation confirmation page (*id.* at ¶ 108; Fig. 14), and pages used by the rental agents to manage reservations (*id.* at ¶¶ 120-121; Figs. 20-22 and 25). These pages contain application data. The web server also receives the data input by the users and passes it to the gateway via the gateway's CGI module. *Id.* at ¶¶ 31, 91, 94.

NetHopper discloses web servers. Ex. 1006 at 2. Carter discloses web servers. Ex. 1052 at 1:13-57, 6:13-18. Rossmann discloses web servers. Ex. 1053 at 23:52-63; 24:35-27:25. Therefore, this common or related teaching provides a reason or motivation to combine the references.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(iv).

(v) **“at least one web page on which hospitality applications and data are stored” (Claims 11-13)**

Brandt teaches static and dynamic web pages. Ex. 1005 at ¶¶ 17, 20. Web pages may include HTML forms for receiving user input. *Id.* at ¶ 21. Web pages
5 can include Java applets and/or JavaScript. *Id.* at ¶¶ 16, 107. Dynamically generated web pages may include application data. *Id.* at ¶¶ 55, 57, 62.

The rental car example involves several web pages on which hospitality applications and data are stored. For example, the reservation request page includes an HTML form for the customer to specify the pick-up location and date
10 and the type of car they prefer. *Id.* at ¶¶ 90-91; Fig. 11. The confirmation web page includes a confirmation number and a button for the user to confirm the reservation. *Id.* at ¶¶ 107-108; Figs. 13 and 14. The web pages for the rental agents include details of pending reservation requests and allow the agents to interact with those requests. *Id.* at ¶¶ 112-121; Figs. 20-22, 24, and 25.

15 NetHopper also describes web pages. Ex. 1006 at 2. Carter discloses hospitality-related web pages. Ex. 1052 at 2:52-3:12, 4:25-38. Rossmann discloses HTML, URLs, and mark-up based “cards” which are similar to web pages. Ex. 1053 at 23:52-63, 21:36-41, 22:4-15. Therefore, this common or related teaching provides a reason or motivation to combine the references.

20 *See also* Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(v).

(vi) “an application program interface” (Claims 11-13)

Brandt teaches that applications have application program interfaces (APIs):

“Application Programming Interfaces (APIs) are used by program developers to provide access to certain features of a given software application. Each application program will have APIs that allow third parties to access certain features, to interface the application program with other programs, and to provide access for end-users.” Ex. 1005 at ¶ 22.

In the FlowMark embodiment, Brandt describes FlowMark APIs 436 which may be used by other applications to interface with FlowMark. *Id.* at ¶ 78. Further, as discussed below, Brandt also discloses that HTML templates may include substitution variables which may be used as APIs.

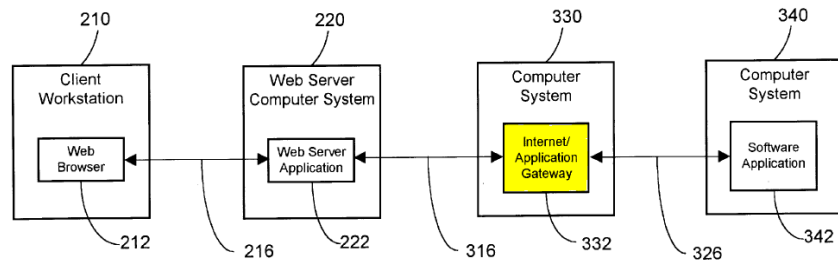
Carter discloses APIs for communicating with servers about goods, services, reservations, etc. Ex. 1052 at 10:13-11:8. Therefore, this common or related teaching provides a reason or motivation to combine Carter with Brandt.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(vi).

(vii) “a communications control module” (Claims 11-13)

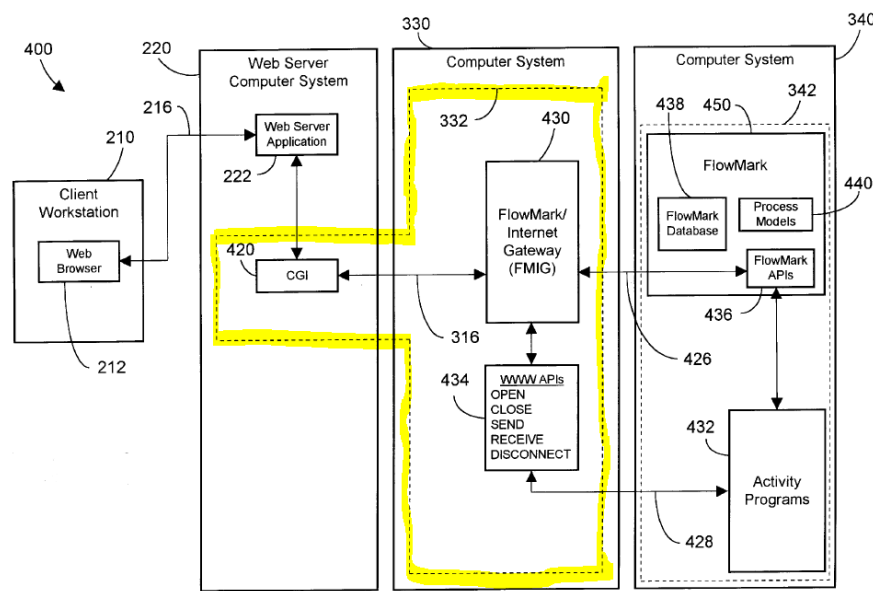
Brandt discloses a communications control module. Brandt discloses an “application gateway” module which enables users to access applications through a web browser over a network. Ex. 1005 at ¶¶ 31, 46, 56. Figure 3 shows Internet/Application Gateway module 332 between the web server and the

software application:



In the FlowMark-based embodiment of Figure 4, the gateway 332 includes multiple components a CGI module 420 and the FlowMark/Internet Gateway

5 (FMIG) module 430:



Id. at ¶¶ 77-78 (describing Fig. 4) and ¶¶ 82-83 (describing role of CGI 420 and FMIG 430). The same gateway can connect several clients to several different applications simultaneously. *Id.* at ¶ 87 and Fig. 10.

10 The gateway enables communication over a network between the clients and the software applications. *Id.* at ¶ 64 (“At this point in the process, communication

has already been established between client workstation 210 and software application 342 through gateway 332.”); ¶ 68 (gateway includes APIs to “facilitate the interaction” between browser and software application); *id.* at ¶ 56. Based on user input and actions received from a client device, the “Gateway 332 generates the appropriate commands that the software application 342 can understand and communicates the commands to software application 342.” *Id.* at ¶¶ 54-55. The gateway also communicates data from the applications to the clients. For example, the gateway uses application-provided data to generate HTML-formatted output for the clients. *Id.* at ¶¶ 55, 62, 73.

10 The ’325 patent states that the communications control module “monitors and routes all communications to the appropriate devices.” Ex. 1002 at 9:35-36. The gateway in Brandt likewise monitors and routes communications to the appropriate client devices and applications. The gateway uses “conversation identifiers” in order to ensure that each communication gets to the correct client or application. Ex. 1005 at ¶¶ 64, 83. In the context of Fig. 3, “Gateway 332 thus maintains the information necessary to control the flow of data between the various users and software application 342.” *Id.* at ¶ 64; *id.* at ¶¶ 73-74 (conversation identifiers used in routing SEND and RECEIVE requests); ¶¶ 63 and 95 (variable names used for routing input and requests to applications).

20 *See also* Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(vii).

(viii) ***“wherein applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server, and at least one Web page” (Claims 11-13)***

Brandt discloses systems wherein applications and associated application
5 data are synchronized are synchronized between a database, handheld device, web server, and web page. As discussed above, using PDAs or other client devices, users access database-driven applications through a web-based interface.

Brandt teaches several mechanisms for synchronizing dynamic application data throughout the system. First, Brandt discloses HTML templates which may
10 include input variables and/or substitution variables. Ex. 1005 at ¶ 59. Input variables are used to pass data from the client web browser to the software application. *Id.* at ¶¶ 59-60. As noted above, the HTML templates could include HTML forms with input fields to receive user input. Information entered by the user on the web page is received by the gateway, passed to the application, and
15 may be stored in the application database. *Id.* at ¶ 31, 101, 110.

Going the other direction, substitution variables “are used to provide to provide customized output from software application 342.” *Id.* at ¶ 59. The gateway identifies any substitution variables in the HTML template and requests data from the appropriate software applications. *Id.* at ¶¶ 55, 57, 62. The gateway
20 includes the data provided by the software applications when it dynamically generates the web page for the client. *Id.* at ¶¶ 55, 57.

Second, Brandt discloses a set of APIs which are used to facilitate data exchange between the applications and the clients. *Id.* at ¶ 68. For example, a SEND API is invoked by an application to send application data through the gateway to the client. *Id.* at ¶¶ 23, 73. A RECEIVE API is used to receive data from the client through the application gateway. *Id.* at ¶¶ 24, 74. Brandt also discloses OPEN and CLOSE APIs which are used to establish a “conversation” between an application and a particular client. *Id.* at ¶¶ 69, 72, 104.

The car rental example uses the above mechanisms to synchronize dynamic application data throughout the system. The central database includes application data “such as which cars are available, etc.” *Id.* at ¶¶ 78; 102. Customers submit reservation requests using a web-based form. *Id.* at ¶¶ 90-91, Fig. 11. The reservation is received by the application gateway which communicates with the car rental application. *Id.* at ¶¶ 92, 94, 98. Reservation requests are reflected in the database. *Id.* at ¶¶ 78, 99, 110. Rental agents view pending reservation requests and may select from available cars to fill the requests. *Id.* at ¶¶ 112-121; Figs. 20-22, 24-25. Customers are provided with confirmation details, including a reservation number. *Id.* at ¶¶ 103,107; Figs. 13-14.

In addition, NetHopper discloses synchronization between a web server and PDA. For example, NetHopper discloses refreshing and caching of web pages, both of which involve retrieving the current version of a web page from the web

server. Ex. 1006 at 10, 14-16. NetHopper also discloses form submission which involves transmitting data that the user has entered on the PDA to the web server. *Id.* at 17. Carter discloses synchronization of hospitality data with servers. Ex. 1052 at 10:13-11:8. Rossmann discloses synchronization of application data with servers. Ex. 1053 at 14:6-15:7 (purchase order data). Therefore, these common or related teachings provide a reason or motivation to combine the references.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(viii).

(ix) ***“wherein the application program interface enables integration of outside applications with the hospitality applications” (Claims 11-13)***

As discussed above, Brandt discloses APIs. Brandt teaches that APIs enable integration of outside applications: “Each application program will have APIs that ***allow third parties to access certain features, to interface the application program with other programs,*** and to provide access for end users.” Ex. 1005 at ¶ 22. Because Brandt discloses both (a) hospitality applications (*e.g.*, the car rental applications), and (b) that applications have APIs for integrating outside applications, Brandt discloses this claim limitation.

Additionally, in the FlowMark embodiment, the FlowMark APIs 436 enable integration with outside applications. FlowMark APIs 436 “are standard APIs that are supplied with FlowMark 450.” *Id.* at ¶ 78. These APIs support the flow of data and status information in both directions between the caller of the API and FlowMark. *Id.* at ¶ 82. FlowMark APIs can be used to create new instances of a

modeled business process (*e.g.*, a new instance of the reservation process) and to start the execution of the new instance. *Id.* Although the FlowMark APIs are used by the FlowMark Internet Gateway 430, the APIs are standard APIs capable of being used by other applications as well. *Id.* at ¶ 97. The FlowMark APIs thus enable integration between the car rental application and other applications.

Finally, the substitution variables discussed above can also serve as APIs that enable integration with outside applications. Substitution variables cause the gateway to connect to applications to retrieve data. *Id.* at ¶¶ 55, 62. A single HTML template can include multiple substitution variables in order to interface with multiple applications at the same time. *Id.* at ¶ 95 (“[B]y using the appropriate HTML variables a web client is able to work with many different applications through a single web page.”); *id.* at ¶¶ 57, 63. Thus, using the appropriate variables, the HTML templates used in the car rental application could be configured to send data to or retrieve data from outside applications.

15 *See also* Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(ix).

(x) ***“wherein the communications control module is an interface between the hospitality applications and any other communications protocol” (Claims 11-13)***

As discussed above, the gateway module disclosed in Brandt is a communications control module. Brandt further discloses that the gateway serves an interface between the applications (*e.g.*, the car rental applications) and a

communications protocol.

Brandt discloses communication protocols on the client side of the gateway, *e.g.*, on the left side of gateway 332 in Figures 3 and 4. For example, Brandt notes that “[a]lthough the current preferred embodiment of the invention uses the ‘CGI Post’ (stdin) format for data transmission from web browser 212 to CGI 420, any other data transmission formats that may be generated by web browser 212 are contemplated and are within the scope of this invention.” Ex. 1005 at ¶ 81; *id.* at ¶ 91, 94. Recall that CGI 420 is part of the gateway as shown in Fig. 4. *See id.* at ¶ 78. Thus, Brandt teaches that clients use the HTTP protocol (in particular HTTP POST requests) to communicate with the gateway. The ’325 patent references HTTP as a communications protocol. Ex. 1002 at 12:17-22.

The ’325 patent states that the communications control module shields the hospitality applications from changes to the communication protocols used in the system. *Id.* at 11:40-45 (noting the communications control module “can be easily updated to work with a new communication protocol without having to modify the core hospitality applications.”). The gateway in Brandt accomplishes the same thing. The gateway uses communication protocols (*e.g.*, HTTP) to communicate with the clients, but uses a “native command interface” to communicate with the software application. Ex. 1005 at ¶ 97; *id.* at ¶ 55 (gateway “generates commands that the software application 342 can understand”). Because the gateway uses a

command interface to communicate with the software applications, that interface can “remain unchanged even if the web interface is changed.” *Id.* at ¶¶ 82, 85, 97.

In addition, lower level network communication protocols would be used on the client side of the gateway. Figure 3 depicts gateway 332 on a separate
5 computer system 330 from the web server computer system 220. Brandt states that the connections in the figures may utilize any network technology. *Id.* at ¶ 86. Network communications between the web server computer and the gateway computer would use communication protocols. In one preferred embodiment, the gateway and the software applications reside on the same computer system. *Id.* In
10 that embodiment, there would be network communication protocols (*e.g.*, TCP/IP) used between the web server and the gateway, but not between the gateway and the software application because they are on the same machine. The gateway would therefore be an interface between the applications and the network communication protocols used to communicate with the web server.

15 NetHopper discloses the HTTP communication protocol (Ex. 1006 at 7, 8) which is also disclosed in Carter (Ex. 1052 at 1:45-57) and Rossmann (Ex. 1053 at 23:52-27:25). Therefore, these common or related teachings provide a reason or motivation to combine Brandt, NetHopper, Carter, and Rossmann.

See also Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(x).

20 Therefore, Brandt and Nethopper collectively disclose all limitations of

Claim 12 and render the claimed subject matter as a whole obvious and invalid.

(xi) “wherein the synchronized data relates to orders” (Claim 11)

Brandt discloses that the synchronized data relates to orders. Requests for rental cars are orders. Ex. 1061 (defining “order” as “an instruction to bring or supply something”). Customers specify “the city where the car is to be rented, 5 desired dates for renting the rental car, the specific type of car to be rented (i.e., make, model, and size), etc.” Ex. 1005 at ¶ 90. The order data is received, stored, and relayed to rental agents. *See supra* § V(B)(1)(a)(viii).

Carter also discloses synchronization of orders data. Ex. 1052 at 10:33-35 10 (inquire as to status of order); 10:28-31 (inquire about goods and services); 11:54-12:2 (disclosed technology useful for standalone purchasing transactions).

Rossmann also discloses synchronizing order information. Ex. 1053 at 14:6-15:7. Therefore, this common or related teaching provides a reason or motivation to combine Brandt, Carter, and Rossmann.

15 Therefore Claim 11 is obvious. *See also* Helal Decl., Ex. 1003, at § VIII(B)(1)(a)(xi).

(xii) “wherein the synchronized data relates to waitlists” (Claim 12)

Brandt discloses that the synchronized data relates to waitlists. Brandt discloses that the rental process may be modeled such that the rental agent must 20 “verify the reservation request” or move a car from a different location in order to

fulfill a reservation. Ex. 1005 at ¶ 112. The rental agent sees a list of pending reservations. *Id.* ¶ 116; Figs.18-19 (template); Figs. 20-22 (example HTML generated from template). The list of pending requests is a waitlist because no car has been selected yet and it may be the case that no car will be available.

5 Carter also discloses synchronization of waitlists data. Ex. 1052 at 10:33-35 (inquire as to status of waitlisted reservation); 11:3-8 (make / cancel waitlisted reservation). This aspect of Carter also provides a reason to combine with Brandt with respect to the claimed synchronization of waitlist data.

Therefore Claim 12 is obvious. See also Helal Decl., Ex. 1003, at §
10 VIII(B)(1)(a)(xii).

(xiii) “wherein the synchronized data relates to reservations” (Claim 13)

Brandt discloses that the synchronized data relates to reservations. Ex. 1005 at ¶¶ 94. Reservation data is received from clients, stored, shown on the confirmation page, and relayed to rental agents, for example. *See supra* §
15 V(B)(1)(a)(xiii).

Carter also discloses synchronization of reservations data. Ex. 1052 at 10:33-50 (inquire as to status, make, cancel, or confirm reservation). This aspect of Carter also provides a reason to combine with Brandt with respect to the claimed synchronization of reservations data.

20 Therefore Claim 13 is obvious. *See also* Helal Decl., Ex. 1003, at §

VIII(B)(1)(a)(xiii).

b. Claim 15 is obvious over Brandt in view of NetHopper, Carter, & Rossmann

5 Claim 15 is a multiple dependent claim which depends from Claims 11, 12, and 13 and adds “wherein the data is sent to a wireless paging device.” Brandt discloses handheld computers and PDAs. Ex. 1005 at ¶ 14. Some handheld computers and PDAs would have been considered “wireless paging devices.”

Rossmann also discloses sending application data to wireless paging devices. Ex. 1053 at 3:46-52. Rossmann discloses using a wireless paging device to request and display order information from a network-based application, for example. *Id.* at 14:6 - 15:7. This aspect of Rossmann also provides a reason to combine with Brandt with respect to the claimed sending of data to a wireless paging device.

Therefore, Claim 15 is obvious. Helal Decl., Ex. 1003, at § VIII(B)(1)(b).

2. Ground 11 & 12: The Challenged Claims Are Obvious Over Brandt In View Of Demers, Alonso, Carter, & Rossmann

15 The combined teachings of Brandt, Demers and Alonso also disclose all features of Claims 12-16 and render them invalid. Dr. Helal provides additional analysis and support for this ground in his declaration, Ex. 1003, at § VIII(B)(2).

20 Demers (Ex. 1009) describes the Bayou System which is “a platform of replicated, highly-available, variable-consistency, mobile databases on which to build collaborative applications.” Ex. 1009 at 2. Like Brandt, Demers discloses

PDAs which wirelessly communicate with servers. *Id.* at 2. Demers teaches that mobile applications can read from and write to locally stored “replicated databases.” *Id.* at 3. This allows mobile applications to function properly during periods of network disconnection. *Id.* The replicated databases are synchronized with server-side databases including a “primary” database. *Id.* at 4-5.

Alonso (Ex. 1012) describes an approach for adding disconnected client support for workflow management systems, including IBM’s FlowMark system—the same FlowMark system disclosed in Brandt. Alonso explains that disconnected client support would enable increased mobile computing capabilities when devices are not always connected to the network. Ex. 1012 at Abstract, 27-28. Alonso teaches that the mobile computer would download the necessary data to allow the user to work offline and then synchronize updates with the IBM FlowMark system upon re-connection to the network. *Id.* at 34-38.

A POSITA would be motivated to combine Brandt with Demers and Alonso for several reasons. Brandt and Alonso both address how to increase accessibility to the same FlowMark workflow management system. Alonso teaches that disconnected client support is advantageous and that it requires storing some data locally and synchronizing it with the FlowMark system. Demers provides a specific approach to data replication and synchronization for use with mobile applications on mobile computing devices. The approach described in Demers

could thus be used to implement the disconnected client features discussed in Alonso. Further, Xerox PARC's work on the Bayou system was well known in the art for its contributions to mobile database replication. As such, a POSITA would have naturally looked into Bayou for useful teachings in this area.

5 As discussed above, a POSITA would also be motivated to combine Brandt with Carter and Rossmann. *See supra* V(B)(1).

a. Ground 11: Claims 11-13 are obvious over Brandt in view of Demers, Alonso, and Carter

10 (i) ***“An information management and synchronous communications system for use with wireless handheld computing devices and the internet”***

Brandt discloses this element. *See supra* § V(B)(1)(a)(i). Further, as discussed above, Carter and Rossmann disclose Internet-based communications which provides further motivation to combine those references with Brandt. *See supra* § V(B)(1)(a)(i). *See also* Helal Decl., Ex. 1003, at § VIII(B)(2)(a)(i).

15 (ii) ***“a central database containing hospitality applications and data”***

Brandt discloses this element. *See supra* § V(B)(1)(a)(ii). Demers discloses network databases including a “primary” database. Ex. 1009 at 2, 5. Alonso also discloses a central database. Ex. 1012 at 32 and Fig. 2. These aspects of Demers and Alonso provide a reason to combine the references with Brandt. *See also*

20 Helal Decl., Ex. 1003 at § VIII(B)(2)(a)(ii).

(iii) ***“at least one wireless handheld computing device on which hospitality applications and data are stored”***

Brandt discloses this element. *See supra* § V(B)(1)(a)(iii). In addition, Demers and Alonso, in combination with Brandt, further disclose storage of hospitality applications and data on a PDA. Demers discloses PDAs and mobile applications that can operate in disconnected mode using local data that is

5 synchronized periodically with a network database. Alonso suggests adding disconnected client support to extend capabilities of workflow systems that are discussed in Brandt. As such, PDA-based rental car applications that work with locally stored data and synchronize with the network-based application database when network connectivity allows would have been obvious in view of Brandt,

10 Demers, and Alonso.

Further, as discussed above, Rossmann discloses wireless handheld computing devices which provides further motivation to combine with Brandt, Demers, and Alonso. *See supra* § V(B)(1)(a)(iii). *See also* Helal Decl., Ex. 1003 at § VIII(B)(2)(a)(iii).

15 (iv) ***“at least one web server on which hospitality applications and data are stored”***

Brandt discloses this element. *See supra* § V(B)(1)(a)(iv). Further, as discussed above, Carter and Rossmann disclose web servers which provides additional motivation to combine those references with Brandt. *See supra* §

20 V(B)(1)(a)(iv). *See also* Helal Decl., Ex. 1003 at § VIII(B)(2)(a)(iv).

(v) ***“at least one web page on which hospitality applications and data are***

stored”

Brandt discloses this element. *See supra* § V(B)(1)(a)(v). Further, as discussed above, Carter and Rossmann disclose web pages which provides additional motivation to combine those references with Brandt. *See supra* §
5 V(B)(1)(a)(v). *See also* Helal Decl., Ex. 1003 at § VIII(B)(2)(a)(v).

(vi) “an application program interface”

Brandt discloses this element. *See supra* § V(B)(1)(a)(vi). Alonso also discloses APIs. Ex. 1012 at 30 and Fig. 3. This aspect of Alonso provides a reason to combine with Brandt with respect to the claimed application program
10 interface. Further, as discussed above, Carter also discloses APIs which provides additional motivation to combine Carter with Brandt and Alonso. *See supra* § V(B)(1)(a)(vi). *See also* Helal Decl., Ex. 1003 at § VIII(B)(2)(a)(vi).

(vii) “a communications control module”

Brandt discloses this element. *See supra* § V(B)(1)(a)(vii). *See also* Helal
15 Decl., Ex. 1003 at § VIII(B)(2)(a)(vii).

(viii) “wherein applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server, and at least one Web page”

Brandt discloses this element. *See supra* § V(B)(1)(a)(viii). In addition,
20 Demers and Alonso disclose synchronization with handheld computers. Ex. 1009 at 3-4 (describing “reconciliation” process); Ex. 1012 at 34-38 (describing “synchronization prior to disconnection” and communication of updates upon

reconnection). Further, as discussed above, Carter and Rossmann disclose data synchronization which provides additional motivation to combine those references with Brandt, Demers, and Alonso. *See supra* § V(B)(1)(a)(iv). *See also* Helal Decl., Ex. 1003 at § VIII(B)(2)(a)(viii).

5 **(ix) “wherein the application program interface enables integration of outside applications with the hospitality applications”**

Brandt discloses this element. *See supra* § V(B)(1)(a)(ix). *See also* Helal Decl., Ex. 1003 at § VIII(B)(2)(a)(ix).

10 **(x) “wherein the communications control module is an interface between the hospitality applications and any other communications protocol”**

Brandt discloses this element. *See supra* § V(B)(1)(a)(x). *See also* Helal Decl., Ex. 1003 at § VIII(B)(2)(a)(x).

(xi) “wherein the synchronized data relates to orders” (Claim 11)

As discussed above, Brandt and Carter both disclose synchronization of
15 order data. *See supra* § V(B)(1)(a)(xi). *See also* Helal Decl., Ex. 1003, at § VIII(B)(2)(a)(xi). Therefore, Claim 11 is obvious.

(xii) “wherein the synchronized data relates to waitlists” (Claim 12)

As discussed above, Brandt and Carter both disclose synchronization of
waitlists data. *See supra* § V(B)(1)(a)(xii). *See also* Helal Decl., Ex. 1003, at §
20 VIII(B)(2)(a)(xii). Therefore, Claim 12 is obvious.

(xiii) “wherein the synchronized data relates to reservations” (Claim 13)

As discussed above, Brandt and Carter both disclose synchronization of

reservations data. *See supra* § V(B)(1)(a)(xiii). *See also* Helal Decl., Ex. 1003, at § VIII(B)(2)(a)(xiii). Therefore, Claim 13 is obvious.

b. Ground 12: Claim 15 is obvious over Brandt in view of Demers, Alonso, Carter, & Rossmann

5 As discussed above, Brandt and Rossmann both disclose sending application data to wireless paging devices. *See supra* § V(B)(1)(b). *See also* Helal Decl., Ex. 1003, at § VIII(B)(2)(a)(b). Therefore, Claim 15 is obvious.

C. GROUND 13: INVALIDITY OF THE CHALLENGED CLAIMS UNDER § 101

10 The Supreme Court has outlined a two-part framework for identifying claims that fall outside §101. The first step is to determine whether the claims are directed to a patent-ineligible concept such as an abstract idea. *Alice*, 134 S. Ct. at 2355 (citing *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012)). If so, the second step is to determine whether the claims include an
15 additional element or combination of elements “sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.” *Id.* at 2355. “[W]holly generic computer implementation is not generally the sort of ‘additional featur[e]’ that provides any practical assurance that the process is more than a drafting effort designed to monopolize the [abstract idea]
20 itself.”) *Id.* at 2358.

The *Alice* framework confirms that the Challenged Claims are patent-

ineligible because (1) they are directed to abstract ideas such as ordering, reservations, and waitlists, and (2) they merely require generic computer implementation. *See also* Helal Dec., Ex. 1003, at § VIII(C).

1. The Challenged Claims Are Directed to Abstract Ideas

5 The Challenged Claims are “do it on a computer” claims. They are directed to fundamental and abstract activities in the hospitality industry such as ordering, reservations, and waitlists. Although styled as system claims, they merely recite a generic system for computerizing hospitality activities. Like the claims in *Alice*, “the system claims recite a handful of generic computer components configured to
10 implement the [abstract] idea.” 134 S. Ct. at 2360.

Like the claims deemed patent-ineligible in *Alice* and *Bilski*, the Challenged Claims here relate to “fundamental practice[s] long prevalent in our system of commerce.” *Id.* at 2356 (quoting *Bilski*, 561 U.S. at 611). Restaurants, taverns, and inns date back thousands of years and have been common in the U.S. for
15 centuries. Ex. 1035 at 33-74 (discussing origins of hospitality industry) and 79-124 (discussing evolution of hospitality industry in the U.S. during the 20th century). Activities such as ordering food have always been fundamental in the hospitality industry. *Id.* at 46, 53, 93, 96, 100-101. Moreover, these hospitality activities are much simpler and more commonplace than the risk hedging practice
20 at issue in *Bilski* or the intermediated settlement practice at issue in *Alice*. *See*

Alice, 134 S. Ct. at 2356-57; *Bilski*, 561 U.S. at 599.

The Challenged Claims and the '325 patent specification confirm the goal of the claimed invention is to computerize the “everyday” routine activities of the hospitality industry. For example, Claims 11-13 recite systems composed of
5 routine and well-known technologies for computerizing “orders,” “waitlists,” and “reservations.” Ex. 1002 at 17:4-18:32. Further, the specification states that “user-friendly information management and communication capability . . . has not heretofore been available for use in everyday life such as for restaurant ordering, reservations, and wait-list management.” Ex. 1002 at 1:38-42; *id.* at 2:38-53
10 (“[C]omputerization of [paper-based ordering, waitlist, and reservations management] functions has been largely limited to fixed computer solutions, i.e., desktop or mainframe” and has not yet extended to “wireless handheld devices.”).

In view of the above, the Challenged Claims are directed to patent-ineligible abstract ideas of such as ordering and reservations, which are long-established
15 practices in the hospitality industry.

2. The Challenged Claims Do Not Include An “Inventive Concept” That Is “Significantly More” Than the Abstract Idea

Under step two of the *Alice* framework, the Challenged Claims do not include an “inventive concept” that “ensures the claims are more than a drafting
20 effort to monopolize the abstract idea.” *Alice*, 134 S. Ct. at 2357. Notably, Patent Owner routinely states that its “pioneering web/wireless data synchronization

inventions have been patented ... and are *now essential to the modern wireless/web hospitality enterprise.*” Ex. 1040 at 1; Ex. 1041 at 1. These statements raise concerns that the claims nothing other than “a drafting effort to monopolize” the use of wireless and web technologies in the hospitality industry.

5 Rather than reciting an “inventive concept,” the Challenged Claims “merely require generic computer implementation” and thus “fail to transform the abstract idea into a patent-eligible invention.” *Alice*, 134 S. Ct. at 2357. The Challenged Claims recite generic computer technology such as a “central data base,” a “wireless handheld computing device,” a “Web server,” a “Web page,” and an
10 “application program interface.” These system components were well known and widely used long before the priority date of the ’325 patent in late 1999. As shown above, the prior art cited in this petition discloses all the system components and combinations as claimed. *See supra* § V(B). *See also CRS Advanced Techs., Inc. v. Frontline Techs, Inc.*, CBM2012-00005, Paper 17 at 9 (holding that
15 “communication link,” “website,” “database,” and “server” claim limitations were generic and not novel or unobvious in late 1999).

The specification acknowledges that the client and server computers were conventional. “The preferred embodiment of the present invention uses *typical hardware elements* in the form of a computer workstation, operating system and
20 application software elements which configure the hardware elements for operation

in accordance with the present invention.” Ex. 1002 at 5:39-43. The preferred embodiment also includes “a *typical file server platform*” with a Windows-based operating system, “e.g., Windows® 95, 98, NT, or CE, networking software (including Web server software) and database software.” *Id.* at 5:54-61.

5 The wireless handheld computers were also conventional. The specification notes that “handheld devices” were “in common use.” Ex. 1002. at 1:34-38. Indeed, “the use of wireless handheld devices in the restaurant and hospitality industry [was already] becoming increasingly pervasive.” *Id.* at 3:45-48. The specification references existing “PDA” devices such as “the Palm®” (*id.* at 1:62-
10 65), and suggests use of Microsoft’s Windows CE operating system for the wireless handheld devices in the preferred embodiment (*Id.* at 11:9-16).

 The’ 325 patent admits that e-commerce web sites were in use: “Web server application software exists that enables a user to shop for and order merchandise. Such systems are sometimes referred to as electronic merchandising systems or
15 virtual storefronts. . . . The user may select multiple items in this manner and then enter a credit card number to pay for the purchases. The retailer processes the transaction and ships the order to the customer.” *Id.* at 12:57-13:7. That no novel approach to using web technologies is discussed in the specification indicates that the recited “Web server” and “Web page” are conventional as well.

20 Application programming interfaces (APIs) were also commonplace long

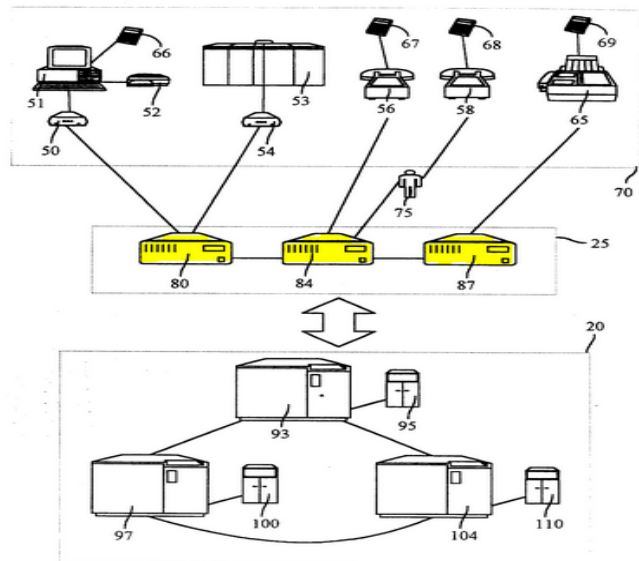
before the priority date of the '325 patent. As discussed above in Section V(B), the Brandt prior art teaches that applications typically include APIs that enable certain features and functions to be accessed by other software. Ex. 1005 at ¶ 22; Ex. 1036 at 433. The lack of any discussion in the '325 patent specification as to how the recited APIs are implemented indicates that the claimed APIs are conventional.

The “communications control module” also does not make the Challenged Claims patent-eligible because it is a generic program. The communications control module is a program that facilitates communications between the clients and servers. Exhibit 1002 at 9:35-39. It is only described at a high level with vague, functional language (*e.g.*, “single point of entry”). *Id.* at 11:37-40. That the specification provides no algorithm or other meaningful explanation of how it works confirms that it is a generic software program. Indeed, Patent Owner previously proposed to construe “communications control module” generically as “a software program that is enabled to allow communication of hospitality information between interconnected devices or different applications via one or more application program interfaces and via one or more communications protocols.” Ex. 1042 at 26. Use of a centralized module to facilitate communications between clients and servers was well known in the art. *See* Ex. 1036 at 99-122 (describing “Brokers”) and 323-337 (describing “Dispatchers”).

In *Alice*, the Supreme Court considered and rejected the patent owner’s

argument that a similar system component—a “communications controller”—
 made the claims there patent-eligible. 134 S. Ct. at 2360. Like the
 “communications control module” of the ’325 patent, the “communications
 controllers” in the Alice Corp. patents were centralized components that facilitated
 5 communications between the client devices used by the “stakeholders” and the
 “processing units” (*i.e.*, servers): “A number of communications controllers 80, 84,
 87 . . . are coupled with the processing unit 20. These controllers effect
 communications between the processing units 93, 97, 104 and the various external

hardware devices used by the
 10 stakeholders to communicate data or
 instructions to or from the processing
 units.” Ex. 1039 at 7:57-63. The
 figure here (*id.* at Fig. 2) shows the
 communications controllers
 15 numbered 80, 84, and 87.



The Supreme Court rejected the argument that the communications
 controllers were “specific hardware,” and instead found the communication
 controllers to be “purely functional and generic.” *Alice*, 134 S. Ct. at 2360. The
 “communications control module” of the ’325 patent is similarly generic computer
 20 technology for performing generic networking functions and does not make the

Challenged Claims patent-eligible. *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014) (“That a computer receives and sends the information over a network—with no further specification—is not even arguably inventive.”).

The Challenged Claims require that the hospitality applications and data are
5 “synchronized,” but the specification teaches no novel technology for achieving
synchronization. The specification admits that the Windows CE OS used on the
handheld devices includes “built-in synchronization” support: “Windows CE®
provides the benefits of a familiar Windows 95/98/NT® look and feel, ***built-in
synchronization between handheld devices, internet and desktop infrastructure,***
10 compatibility with Microsoft Exchange®, Microsoft Office 9® and TCP/IP quick
access to information with instant-on feature.” Ex. 1002 at 11:11-16.

The specification of the ’325 patent confirms that nothing more than generic
software is required to practice the invention:

The software applications for performing the functions falling within
15 the described invention can be written in any commonly used
computer language. ***The discrete programming steps are commonly
known and thus programming details are not necessary to a full
description of the invention.***

Id. at 11:56-61.

20 At most, the Challenged Claims limit the use of the abstract idea to a
technological environment that includes certain hardware and software

components such as a database, a handheld computer, and a web server. However, “limiting the use of an abstract idea ‘to a particular technological environment’” is insufficient “to transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, 134 S. Ct. at 2358; *see also buySAFE*, 765 F.3d at 1355.

5 Claim 15 also fails to include any element that transforms it into a patent-eligible invention. The claim recites no additional components beyond the generic hardware and software recited in Claims 11-13. Ex. 1002 at 18:36-38. Claim 15 merely adds “wherein the data is sent to a wireless paging device.” Communication with wireless paging devices was conventional. *See* Ex. 1053.

10 **3. The Challenged Claims Fail the “Machine-or-Transformation” Test**

 The machine-or-transformation test “can provide a ‘useful clue’ in the second step of the *Alice* framework.” *Ultramercial Inc. v. Hulu LLC*, 772 F.3d 709, 716 (Fed. Cir. 2014). A claimed process may be patent-eligible if: “(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a
15 different state or thing.” *Id.* The Challenged Claims fail both prongs.

 First, like the claims deemed patent-ineligible in *Ultramercial*, the Challenged Claims are “not tied to any particular novel machine or apparatus,” only to general purpose computers running generic software. *Id.* at 716-717. “Any transformation from the use of computers or the transfer of content between
20 computers is merely what computers do and does not change the analysis.” *Id.*

The claims therefore fail the “machine” prong.

Second, the Challenged Claims do not transform a particular article into a different state or thing. The orders, wait lists, and reservations that might be created or modified by the claimed system are merely “abstractions[,] they are not physical objects or substances, and they are not representative of physical objects or substances.” *Id.* at 717. The orders, wait lists, and reservations are also not transformed into a different state or thing. Therefore, the Challenged Claims also fail the “transformation” prong.

In view of the above, the Challenged Claims are directed to patent-ineligible subject matter under § 101 and should be canceled.

VI. THE GROUNDS OF INVALIDITY ARE NOT REDUNDANT

The thirteen grounds of invalidity raised herein are not redundant over one another and Petitioner requests that trial be instituted on all Grounds. Prior art Grounds 11 and 12 (Brandt in view of Demers, Alonso, Carter, and Rossmann) are not redundant over prior art Grounds 9 and 10 (Brandt in view of NetHopper, Carter, and Rossmann) because Grounds 11 and 12 disclose a configuration in which the wireless handheld device includes a non-browser-based application.

In addition, the grounds raised herein are not redundant in view of those raised in the CBM2014-00016 or CBM2015-00082 proceeding. None of Grounds 1-8 based on § 112 were raised in CBM2014-00016 or CBM2015-00082. Prior

Art Grounds 9-12 herein are based on prior art that does not overlap with the prior art cited in CBM2015-00082. The Brandt/IBM prior art is unique because it provides clear and comprehensive disclosure of a system that uses a communications control module (*i.e.*, the application gateway) to synchronize 5 hospitality applications (*i.e.*, the car rental application) to wireless handheld computing devices and other computers. All of the prior art used in Grounds 9-12 is prior art under § 102(b). Although a patent-eligibility challenge to Claims 11-15 was raised in CBM2015-00016, the Board denied institution on that ground prior to the Supreme Court's *Alice* decision. Under the *Alice* framework, the Challenged 10 Claims are not patent-eligible. *See supra* § V(C).

VII. CONCLUSION

This Petition has demonstrated that it is more likely than not that that Petitioner will prevail in its challenge of patentability for Claims 11-13 and 15 of the '325 patent under 35 U.S.C. §§ 112, 103(a), and 101. It is respectfully 15 requested that a trial for CBM review of the '325 patent be instituted.

In addition, this Petition has shown that, by a preponderance of the evidence as presented, Claims 11-13 and 15 are invalid and must be canceled. Cancellation of these claims will prevent Patent Owner from improperly claiming technologies that were already known in the prior art before its patent filing, and from asserting 20 invalid patent claims against Petitioner and numerous others.

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Respectfully submitted,

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