IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re *Inter Partes* Review of:	)
U.S. Patent No. 9,454,748	)
Issued: September 27, 2016	)
Application No.: 12/910,706	)
Filing Date: October 22, 2010	)

For: **System and Method for Data Management**

FILED VIA E2E

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 9,454,748

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I. INTRODUCTION

The instant petition respectfully requests institution of *inter partes* review of claims 1, 2, 5, 7, and 19-22 ("Challenged Claims") of U.S. Patent No. 9,454,748 to Payne ("'748 patent," Ex. 1001). USPTO records indicate that the '748 patent is assigned to Fall Line Patents, LLC ("P.O."), which is asserting the '748 patent in concurrent litigations.

II. MANDATORY NOTICES UNDER 37 C.F.R. § 42.8

A. Real Parties-in-Interest

The real parties-in-interest to this petition are Starbucks Corporation ("Starbucks"), American Multi-Cinema, Inc. and AMC Entertainment Holdings, Inc. ("AMC"), Boston Market Corporation ("Boston Market"), Mobo Systems, Inc., d/b/a OLO Online Ordering ("Olo"), McDonald's Corporation and McDonald's USA ("McDonald's"), Panda Restaurant Group, Inc. and Panda Express Inc. ("Panda"), and Papa John's International, Inc., Star Papa LP, and Papa John's USA, Inc. ("Papa John's") (collectively, "Petitioners").

B. Related Matters

The '748 patent is asserted in the following pending district court cases: *Fall Line Patents, LLC v. Zoe's Kitchen, Inc. et al.*, No. 6:18-cv-407-RWS, *Fall Line Patents, LLC v. AMC Entertainment Holdings, Inc. et al.*, No. 6:18-cv-408-RWS, *Fall Line Patents, LLC v. Boston Market Corporation*, No. 6:18-cv-409-

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The '748 patent was asserted in the following district court cases that are no longer pending: *Fall Line Patents, LLC v. American Airlines Group Inc. et al.*, No. 6:17-cv-202-RWS *Fall Line Patents, LLC v. Cinemark Holdings, Inc. et al.*, No. 6:17-cv-203-RWS, *Fall Line Patents, LLC v. Grubhub Holdings, Inc. et al.*, No. 6:17-cv-204-RWS, *Fall Line Patents, LLC v. Choice Hotels International Inc.*, No. 6:17-cv-407-RWS, *Fall Line Patents, LLC v. Uber Technologies, Inc.*, No. 6:17-cv-408-RWS.

The '748 patent was subject to an *inter partes* review petition (IPR2018-00535) ("Uber IPR") filed on January 25, 2018, by Uber Technologies, Inc. and Choice Hotels International, Inc. ("Uber Petition"). The Uber Petition challenged claims 1, 9, 11, 13, and 15-22. In contrast, the instant petition challenges claim 7, and does not challenge claims 9, 11, 13, or 15-18. The P.O. Preliminary Response was filed on May 7, 2018. On July 11, 2018, before the deadline for institution decision, the parties requested authorization to file a joint motion to terminate. On July 25, 2018, the Uber IPR was terminated. The next month, on August 15, 2018,

P.O. filed another wave of litigation against each of the Petitioners. The present petition includes some arguments set forth in the Uber Petition.

Further, the '748 patent is the subject of a pending *inter partes* review petition (IPR2018-00043) ("Unified IPR") filed on October 6, 2017, by Unified Patents Inc. ("Unified Petition"). The issues presented by this petition are substantially different than those raised by the Unified Petition. In particular, the Unified Petition challenged only claims 16-19 and 21-22, whereas this petition challenges claims 1, 2, 5, 7, and 19-22. Furthermore, this petition relies on entirely different prior art with no overlap to the prior art at issue in the Unified Petition. The Unified IPR was instituted on April 5, 2018. Oral argument was held on December 14, 2018.

The '748 patent is a continuation of U.S. Application No. 10/643,516, filed August 19, 2003, which issued as U.S. Patent No. 7,822,816 ("the '816 patent"). Claims 1-14 of the '816 patent (all claims) were the subject of an *ex parte* reexamination proceeding (U.S. Serial No. 90/012,829), which resulted in a reexamination certificate cancelling those claims. Ex. 1011, 18. Additionally, claims 1-14 of the '816 patent were the subject of an *inter partes* review petition (IPR2014-00140), which the Board instituted ("'816 Institution Decision"). Ex. 1012. Thereafter, the Board terminated IPR2014-00140 upon cancellation of the challenged claims in the aforementioned *ex parte* reexamination.

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Petitioners consent to service by email.

D. Fee for *Inter Partes* Review

The Director is authorized to charge the fee specified by 37 C.F.R. § 42.15(a) to Deposit Account No. 506269.

III. CERTIFICATION OF GROUNDS FOR STANDING

Petitioners certify that the '748 patent is available for *inter partes* review and petitioners are not barred from requesting this proceeding.

IV. IDENTIFICATION OF CHALLENGES (37 C.F.R. § 42.104(B))

Ground 1: Claims 1 and 19-22 are obvious under § 103(a) over U.S. Patent No. 6,961,586 to Barbosa et al. ("Barbosa") (Ex. 1002) alone in view of the knowledge of a person of ordinary skill in the art.

Ground 2: Claims 1 and 19-22 are obvious under § 103(a) over Barbosa (Ex. 1002) in view of U.S. Patent No. 6,332,127 to Bandera et al. ("Bandera") (Ex. 1004).

Ground 3: Claim 7 is obvious under § 103(a) over Barbosa (Ex. 1002) in view of U.S. Patent No. 5,991,771 to Falls et al. ("Falls") (Ex. 1017).

Ground 4: Claims 1, 2, 5, and 19-22 are obvious under § 103(a) over U.S. Patent No. 6,202,023 to Hancock et al. ("Hancock") (Ex. 1003) alone in view of the knowledge of a person of ordinary skill in the art.

Ground 5: Claims 1, 2, 5, and 19-22 are obvious under § 103(a) over Hancock (Ex. 1003) in view of Bandera (Ex. 1004).

Ground 6: Claim 7 is obvious under § 103(a) over Hancock (Ex. 1003) in view of Falls (Ex. 1017).

V. OVERVIEW

A. The Board Should Not Exercise Its Discretion to Deny Institution

The Board should not exercise its discretion to deny the instant petition under either 35 U.S.C. §§ 314(a) or 325(d) based on the factors identified in *General Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, No. IPR2016-01357, paper 19 (P.T.A.B. Sept. 6, 2017) (precedential). Under those factors, "[o]nce resolution of factor 1 [whether petitioners are the same] indicates that a petitioner has not previously filed a petition against the same patent, typically factors 2-5 bear little relevance unless the record evidences extenuating circumstances, such as a showing that there was a previous petitioner who challenged the same patent and the previous petitioner and the current petitioner planned the staggered petitions." *Alcatel-Lucent USA Inc. et al. v. Oyster Optics, LLC*, Case IPR2018-00070, paper 14, 14 (P.T.A.B. May 10, 2018).

As to the Uber IPR, the instant petition is filed by different petitioners, none of whom is a real party-in-interest to the Uber Petition. Importantly, Petitioners did not and could not plan staggered petitions with the prior petitioners. The prior petitioners settled with P.O. and requested authorization to file a motion to terminate on July 11, 2018. P.O. did not file suit against Petitioners until August 2018. The instant petition also addresses different claims than the Uber Petition. In particular, Petitioners challenge independent claim 7, asserted in litigation

against Petitioners but not challenged in the Uber Petition. There is also no delay; Petitioners filed the instant petition one week after P.O. served its infringement contentions, disclosing for the first time which claims it asserts against Petitioners. Further, Petitioners have not used the Uber IPR P.O. Preliminary Response as a roadmap, and have not obtained any input from the petitioners in the Uber IPR.

As to the Unified IPR, likewise, none of Petitioners here is a real party-in-interest to the Unified Petition. Further, the instant petition challenges additional claims not addressed by the Unified Petition, and relies on entirely different prior art. Petitioners have not used the Unified IPR as a roadmap, and have not obtained any input from its petitioners.

Finally, the prior art here was not distinguished during the ’748 patent prosecution. Barbosa, Hancock, and Bandera were not cited during prosecution. Falls, which is cited herein only for the “loosely networked” limitation of claim 7, was found by the Examiner to disclose the “loosely networked” limitation in the ’816 patent *ex parte* reexamination, resulting in claim cancellation. Ex. 1016, 15-23 (maintaining final rejection of all claims). In the ’748 patent prosecution, Falls was cited in a list of references from the ’816 patent reexamination but its disclosures were not substantively discussed.

A. The ’748 Patent

(i) Summary of Alleged Invention

The ’748 patent generally relates to the distribution of electronic forms via the Internet or to mobile devices. Ex. 1001, Abstract. The ’748 patent describes using computerized questionnaires to allow a user to complete a form on a wireless device for transmission to a server. *Id.*, 10:44-54. A client can design a questionnaire by creating questions, with corresponding tokens, and may include follow up questions depending on responses to other questions. *Id.*, 8:51-9:2. When the questionnaire is complete, the questions and tokens can be transmitted to a handheld device, whose user can provide responses to the questions. *Id.*, 9:3-13. The responses can be stored on the handheld device and transmitted to the server, and the server can store the data in a database. *Id.*, 9:57-10:8. Further, the ’748 patent teaches that the handheld device and server may be “loosely networked,”[1] such that the server and handheld devices are “tolerant of intermittent network connections.” *Id.*, 4:64-5:7.

The ’748 claims recite only minor differences in subject matter compared to the ’816 claims that the Board found likely obvious in the ’816 Institution Decision. Ex. 1012, 22. For example, the ’748 claims include limitations directed

[1] Claim 5 of the ’816 patent, now cancelled, recites “loosely networked.”

to requesting location information, such as by specifying that the questionnaire contain "at least one question requesting GPS coordinates." Ex. 1001, cl. 1. Further, some claims recite that the tokens be "device independent."[2] *Id.*, cl. 19. For example, the '748 patent alleges that typical data-gathering applications suffer from drawbacks, such as the requirement that "custom program[s]" must be developed in which "the same program must be tested and compiled for each type of device." *Id.*, 3:1–10. As demonstrated below, however, data collection systems that addressed these issues were well-known prior to the '748 patent.

(ii) Prosecution History

The '748 prosecution history includes double-patenting rejections over the '816 Patent[3] and claim rejections under §§ 102 and 103 over various references. To overcome some rejections, the applicant alleged conception "prior to January 1, 2002" and diligent reduction to practice from the alleged conception to the

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[2] Claims 7 and 8 of the '816 patent, now cancelled, recite the similar limitation "performing at least the steps … for at least two different remote computing device types using the same tokens."

[3] Applicant submitted a terminal disclaimer against the '816 patent, establishing that the '748 claims are not patentably-distinct from its now-canceled parent. Ex. 1007, 153.

August 19, 2002 filing of U.S. Provisional Application Number 60/404,491 ("the '491 Provisional"), which is the earliest claimed priority date. Ex. 1007, 134-136.

Although the Examiner withdrew some rejections based on applicant's prior conception arguments (*id.,* 173), the Examiner maintained the rejection under § 103. *Id.,* 159-172. To overcome the § 103 rejections, P.O. amended the claims to require that the recited questionnaire comprised "device independent tokens." *Id.,* 180-214.

Additionally, P.O. amended the claims to require at least one question requesting "location identifying information" and that the remote computing device had a "GPS integral thereto." *Id.,* 250-285.

The Examiner then issued a Notice of Allowance. *Id.,* 296. However, the grounds and references on which Petitioners seek review were not before the Examiner, and teach or suggest these additional features of the Challenged Claims.

(iii) Effective Filing Date Of Challenged Claims

The '748 patent claims the benefit of the '491 Provisional. Accordingly, the August 19, 2002 filing date ("Earliest Filing Date") of the '491 Provisional is the earliest filing date to which the Challenged Claims could be entitled, provided that P.O. is able to demonstrate that the Challenged Claims are disclosed in the '491 Provisional in the manner required by 35 U.S.C. § 112, ¶ 1. *See, e.g.*, *SAP Am., Inc. v. Pi-Net Int'l, Inc.*, No. IPR2014-00414, Paper 11, 11-14 (P.T.A.B.

August 18, 2014). This is the same priority date asserted by P.O. against Petitioners in prior litigation. Ex. 1008, 2.

B. Primary Prior Art References

(i) Barbosa

Barbosa is a U.S. patent, filed on September 17, 2001, and issued on November 1, 2005. Ex. 1002, 1. Barbosa is prior art at least under 35 U.S.C. § 102(e) (pre-AIA) because Barbosa's filing date predates the earliest invention date P.O. has claimed. Barbosa's filing date also predates the earliest invention date claimed during prosecution—January 1, 2002.

(ii) Hancock

Hancock is a U.S. patent, issued on March 13, 2001. Ex. 1003, 1. Hancock is prior art at least under 35 U.S.C. § 102(b) (pre-AIA) because Hancock predates by more than one year the Earliest Filing Date.

(iii) Bandera

Bandera is a U.S. patent, filed on January 28, 1999, and issued on December 18, 2001. Ex. 1004, 1. Bandera is prior art at least under 35 U.S.C. § 102(e) (pre-AIA) because Bandera's filing date predates the earliest invention date P.O. has claimed, and Bandera issued as a U.S. patent. Bandera also is prior art under 35 U.S.C. § 102(a) (pre-AIA) because Bandera's issuance date predates the earliest claimed invention date.

(iv) Falls

Falls is a U.S. patent, issued on November 23, 1999. Ex. 1017, 1. Falls is prior art at least under 35 U.S.C. § 102(b) (pre-AIA) because Falls predates by more than one year the Earliest Filing Date.

VI. RELEVANT INFORMATION CONCERNING THE '748 PATENT

A. Person of Ordinary Skill in the Art

A person of ordinary skill in the art at and before the priority date for the '748 patent ("POSITA") would have a bachelor's degree in computer science, computer engineering, electrical engineering, or a related subject, or equivalent industry or trade school experience in programming software applications, as well as significant working knowledge of developing applications for mobile devices that provide location-based services. Ex. 1005 ¶ 104. The prior art asserted in this petition, which assume knowledge on how to program applications for mobile devices using programming languages such as Java or C++ to provide location-based services (*see, e.g.*, Ex. 1002, 12:45-47), reflect sufficiently the appropriate level of skill at the time of the claimed invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

B. Claim Construction

Under 37 C.F.R. § 42.100(b), the Challenged Claims must be given their ordinary and customary meaning as understood by a POSITA in light of the '748

specification and prosecution history. *See Phillips v. AWH Corp.,* 415 F.3d 1303 (Fed. Cir. 2005) (*en banc)*.

(i) "GPS integral thereto"

This claim phrase is recited in independent claims 7, 19 and 21 in the context of a handheld computing device that "has a GPS integral thereto." The '748 specification does not use the phrase "GPS integral thereto" or define the acronym "GPS" as used in the claims. A POSITA would have understood the term "GPS" to be the acronym for Global Positioning System. Ex. 1005 ¶ 106.

However, a POSITA would not have understood that the entire Global Positioning System, including multiple satellites, to all be "integral to" a handheld computing device. Ex. 1005 ¶ 107. Rather, a POSITA would have understood "GPS integral thereto" to reasonably refer to, for example, a GPS receiver being integral to the handheld computing device, as indicated by the '748 specification. Ex. 1001, 5:47–48, 10:56–57. The '748 specification does not refer to any hardware other than a GPS receiver for using GPS to determine GPS coordinates, and a POSITA would have understood a "GPS receiver" to be any device or module that is capable of receiving GPS signals and determining GPS coordinates therefrom. Ex. 1005 ¶ 107. Thus, a POSITA would have understood "GPS integral thereto" to mean "GPS receiver integral thereto." Ex. 1005 ¶ 107.

(ii) "token"

Challenged independent claims 1, 19, and 21 recite "tokens." The '748 patent does not provide an explicit definition for this term. In IPR2014-00140, concerning the parent '816 patent, the petitioner proposed a construction of "token" as "'a distinguishable unit of a program, such as an index, an instruction, or a command' that 'can represent something else such as a question, answer, or operation.'" Ex. 1012, 10. In the '816 Institution Decision, the Board adopted the petitioner's proposed construction of "token," determining that "Petitioner's proposed construction is the broadest reasonable construction consistent with the specification …." *Id.* The '748 and '816 patents share substantially identical specifications. Accordingly, the term "token" consistent with the '748 specification should be the same as the Board previously determined—"a distinguishable unit of a program, such as an index, an instruction, or a command that can represent something else such as a question, answer, or operation." Ex. 1012, 10.

During prosecution, the Examiner asserted the term "token" had "a special meaning (i.e., logical, mathematical or branching operation)," citing paragraph 54 of the as-filed specification ('748 Patent, 8:56-59). Ex. 1007, 297. While this portion of the specification is important context in which to understand the term, Petitioners submit that the Examiner's reference is not determinative, as the

specification explicitly states that description is merely an example or a preferred embodiment: "Each token **preferably** corresponds to a logical, mathematical, or branching operation…" Ex. 1001, 8:56–59 (emphasis added).[4]

In previous litigation concerning the parent '816 Patent, the district court construed "token" as "any non-reducible element of the computer code that is being parsed." Ex. 1013, 13–14. A POSITA would have understood a "program" to be comprised of "computer code" which may include "an index, an instruction, or a command" and, likewise, a "distinguishable unit" thereof to be a "non-reducible element." Ex. 1005 ¶ 110.

Accordingly, for purposes of construction, Petitioners propose that the term "token" should be "a distinguishable unit of a program, such as an index, an instruction, or a command that can represent something else such as a question, answer, or operation." Ex. 1005 ¶¶ 108-111.

(iii) "questionnaire"

Each challenged independent claim recites a "questionnaire." The '816 Institution Decision declined to construe "questionnaire," finding "the broadest reasonable construction of 'questionnaire comprising a series of questions' … to be apparent from [its] usage in the claims." Ex. 1012, 10. Petitioners agree for

[4] All emphases herein are added unless indicated otherwise.

purposes of this IPR, that the proper construction of "questionnaire" in the '748 patent likewise is apparent from its usage in the claims.

In the previous '816 litigation, the Court, applying the *Phillips* standard, ultimately construed "questionnaire" as "a program or form that includes a question or statement, which calls for a response." Ex. 1013, 13. Thus, to the extent the Board finds that an explicit construction is necessary, Petitioners propose the Board adopt the construction in the '816 litigation. Regardless, under either interpretation, the claims are rendered obvious by the grounds herein. Ex. 1005 ¶¶ 112-113.

(iv) "loosely networked"

Claim 7 recites "loosely networked." The specification states, "[T]he term 'loosely networked' is used to describe a networked computer system wherein devices on the network are tolerant of intermittent network connections and, in fact, tolerant of the type of network connection available." Ex. 1001, 5:3–7. If tolerant, when a connection is available, "transmissions occur normally, in real time," and when a connection is unavailable, "the information is temporarily stored in the device and later transmitted when the connection is restored." *Id.*, 5:7–12. Accordingly, the term "loosely networked" should be construed to mean "tolerant of intermittent network connections and tolerant of the type of network connection available." Ex. 1005 ¶ 114.

(v) "originating computer" / "recipient computer" / "central computer"

The '748 specification does not use these terms. Rather, the terms only appear in the claims. A POSITA would have understood, based on the context provided by the specification and dependent claims, that one computing device can perform the functions of the "originating computer," "recipient computer," and "central computer" within the scope of claims 19 and 21. Ex. 1005 ¶ 115. For example, the dependent claims recite that the "originating computer," "recipient computer," and "central computer" can be a single computer. Ex. 1001, cl. 18 ("wherein said originating computer and said recipient computer are a same computer"), cl. 22 ("wherein said central computer and said recipient computer are a same computer"). Accordingly, the terms "originating computer," "recipient computer," and "central computer" should be construed to encompass a single computer or different computers.

VII. SPECIFIC GROUNDS FOR PETITION

The Challenged Claims are unpatentable for the reasons set forth below.

A. Barbosa Renders Obvious Claims 1, 19-22

(i) Independent Claim 19

(A) *"A method for managing data comprising the steps of:"*

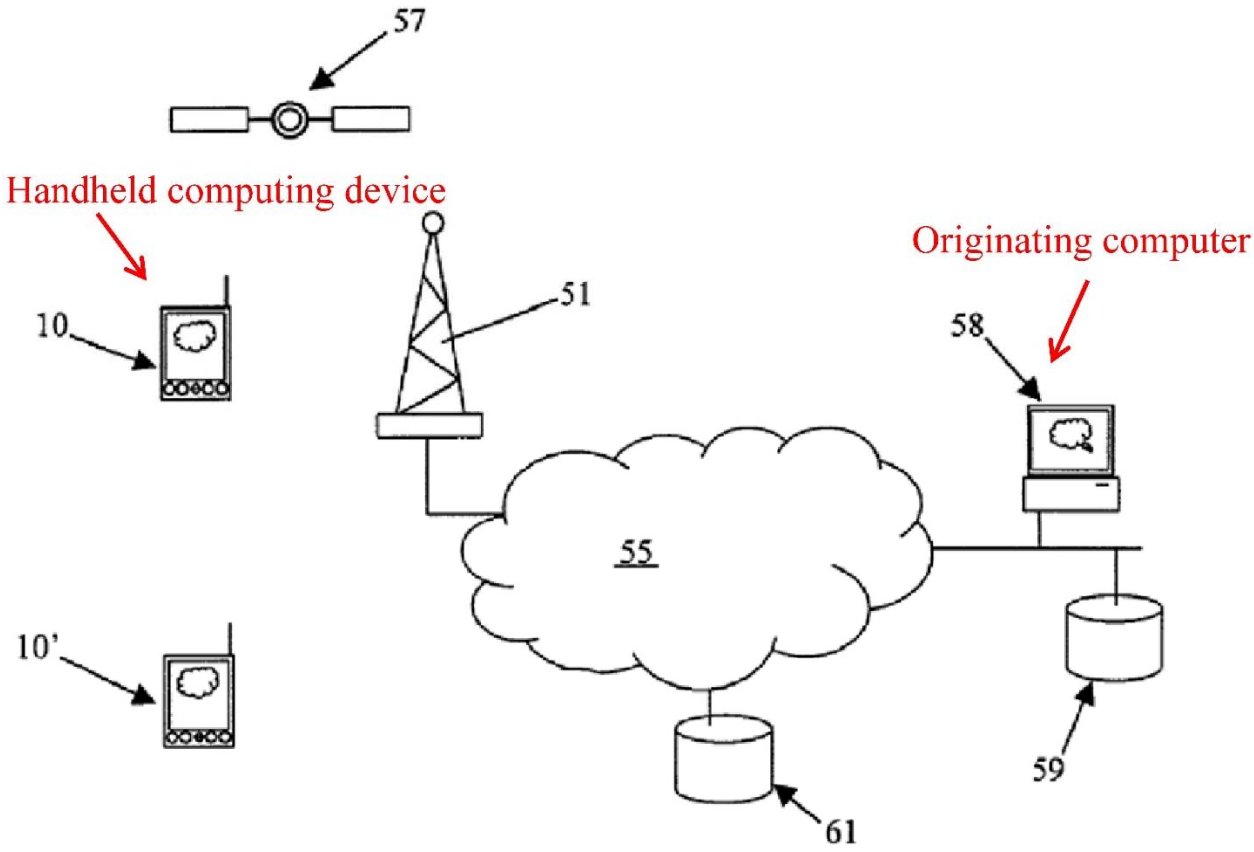
Barbosa is directed to "methods of conducting field assessments utilizing handheld data management devices." Ex. 1002, Abstract. To the extent the preamble is limiting, Barbosa discloses its limitations. Ex. 1005 ¶ 121.

(B) *"(a) establishing communications between a handheld computing device and an originating computer wherein said handheld computing device has a GPS integral thereto"*

Barbosa discloses establishing communications between a handheld computing device and an originating computer. Barbosa's "device 10" is a handheld computing device. Ex. 1002, 5:43-45 ("The device 10 [is] easily portable such that it substantially fit within the palm of a users hand."), 5:29- 34. Barbosa further discloses that its invention is implemented as "a set of instructions in a code module resident in the RAM 26 of the device" (*id.,* 6:1-2), and that the instructions are "downloaded from a server via the Internet" (*id.,* 6:2-6), which the device may do using its "[w]ireless communication module 42" (*id.,* 6:9-14). *See also id.,* 6:21-22 ("Communications module 42 provides wireless real-time access to servers."); Ex. 1005 ¶ 122.

Likewise, as to Figure 6, Barbosa discloses that "communication" is established between device 10, corresponding to the handheld computing device,

and server 58, corresponding to the originating computer, to download "templates (e.g., task/punch lists) and/or programs":



Id., Fig. 6; *see also id.*, 7:23-28, 7:31-37 ("Job templates and/or programs may also be centrally stored within one or more databases 61/59 accessible … directly by the a handheld device 10/10' … [using] wireless communications."). Accordingly, Barbosa discloses "establishing communications between a handheld computing device and an originating computer." Ex. 1005 ¶ 123.

Barbosa further discloses that a GPS receiver is integral to device 10. Ex. 1002, 6:40-44 ("the handheld device may also be equipped within a position module 46 to enable the handheld device to utilize positioning systems or methods

known in the art such as satellite position (e.g., Global Positioning System (GPS))"). As shown in Figure 5, the GPS receiver 46 is integral to the device 10. *Id.*, Fig. 5. Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 124.

(C) ***"(b) receiving within said handheld computing device a transmission of a tokenized questionnaire from said originating computer,"***

As explained above, Barbosa discloses that the handheld computing device 10 receives, from the originating computer, "a set of instructions in a code module" that "implement[]" the "invention" (Ex. 1002, 6:1-2) and/or "templates (e.g., task/punch lists) and/or programs" (*id.*, 7:27-28). The downloaded code modules, templates, and/or programs represent a questionnaire. Ex. 1005 ¶ 125. Specifically, Barbosa discloses that the "programs operated by the microprocessor ask questions or provide guidance related to a particular field problem." Ex. 1002, 6:60-61; *see also id.,* 7:47-48 ("The program would prompt the user for input of data related to the problem."), 9:54-56.

Further, Barbosa's questionnaire is tokenized. For example, Barbosa discloses, "Computer program code for carrying out operations of the present invention can be written in an object oriented programming language such as Java…." *Id.,* 12:45-51. A questionnaire (e.g., downloaded code modules, templates, and/or programs) written in an object oriented programming language such as Java would have included an index, an instruction, or a command that can

represent something else such as a question, answer, or operation. Ex. 1005 ¶ 126. Therefore, Barbosa discloses a tokenized questionnaire.

Moreover, Barbosa's program provides "[a]n interactive question and answer session." Ex. 1002, 6:62. To do so, the program would have included distinguishable units, such as indexes, instructions, or commands that represent the questions, answers, or operations connecting the interactive questions and answers. Ex. 1005 ¶ 127. For example, Barbosa discloses that "[t]he program may start by asking for the identification of [] the client or matter 703 (e.g., customer, or job site)," and "[t]he program may next ask the representative to identify the problem or type of assessment 704 (e.g., HVAC, plumbing, electrical, landscaping, etc.)." Ex. 1002, 8:54-59. Thus, a POSITA would have understood that Barbosa's program would have included instructions that ask these questions (e.g., identification of type of assessment), as well as indexes corresponding to the available answers (e.g., HVAC, plumbing, electrical, or landscaping), and additionally would have included instructions and operations connecting the first question to the next. Ex. 1005 ¶ 127. Accordingly, Barbosa's questionnaire is "tokenized" when applying the proper construction of the term "token," as explained in **VI.B.ii**.

Even under the construction of "token" offered by the Examiner during the '748 prosecution, Barbosa's questionnaire is still "tokenized." A POSITA would

have understood that Barbosa's program, which provides "[a]n interactive question and answer session," would have included logical, mathematical, and branching operations. Ex. 1005 ¶ 128. Such functionality also provides internal branching logic between questions. *Id.* For example, Barbosa provides an example of a questionnaire that represents an "appraisal program." Ex. 1002, 8:49-54. Barbosa explains, "[O]nly the most relevant questions and/or interaction [should] be invoked by the program." *Id.,* 8:59-60. In particular, "[t]he program may start by asking for the identification of [] the client or matter 703 (e.g., customer, or job site)," and "[t]he program may next ask the representative to identify the problem or type of assessment 704 (e.g., HVAC, plumbing, electrical, landscaping, etc.)." *Id.,* 8:54-59. Based on the responses (i.e., the "identified subject matter 705"), "[t]he program would then start asking the user specific questions, or provide initial information, related to the identified subject matter 705." *Id.,* 8:60-63. By asking specific questions based on responses to previous questions, Barbosa discloses branching logic between the questions. Ex. 1005 ¶ 128.

Accordingly, under any construction of "tokens," Barbosa discloses this limitation. Ex. 1005 ¶¶ 125-29.

(D) ***"said tokenized questionnaire including at least one question requesting location identifying information,"***

Barbosa's questionnaire includes at least one question requesting location identifying information. Ex. 1005 ¶ 130. For example, Barbosa discloses, "Once a

program is opened on the handheld device, **the assessor may be asked** (e.g., prompted) to identify the job 801 (e.g., **location**, customer name, date, type of job)." Ex. 1002, 9:54-56. Barbosa further discloses that location identifying information can be provided using GPS coordinates. *Id.,* 7:66-67, 12:30-32 ("GPS coordinate[s] associated with the collection of data [is an] important attribute[]."). Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 130.

(E) ***"said tokenized questionnaire comprising a plurality of device independent tokens;"***

As explainedin **VII.A.i.C**, Barbosa's program is a tokenized questionnaire. Barbosa further discloses that this program comprises a plurality of device independent tokens. For example, Barbosa discloses that the "computer program transmitted from the [server]" can be "in the form of a JAVA applet." Ex. 1002, 12:14-18. Likewise, Barbosa discloses that the "[c]omputer program code for carrying out operations of the present invention can be written in an object oriented programming language such as Java…." *Id.,* 12:45-47.

A POSITA would have understood that Java is a programming language that provides device independency—it runs irrespective of the particular hardware or operating system of any given device. Ex. 1005 ¶ 132. Here, the knowledge of a POSITA regarding Java is reflected in Bandera, which explains that "JAVA® is a portable and architecturally neutral language," and "**JAVA® source code is compiled into a machine-independent format** that can be run on any machine

with a JAVA® runtime system known as the JAVA® Virtual Machine (JVM)." Ex. 1004, 5:40-44; Ex. 1005 ¶ 132. A POSITA would have further understood that Java code is not only machine independent, but also operating-system independent. *Id.*, 5:47-49 ("[M]achines running under diverse operating systems, including UNIX, Windows NT, and MacIntosh having a JVM can execute the same JAVA® program."); Ex. 1005 ¶ 132. Furthermore, a POSITA would have understood that such platform independence—allowing a program to be written once but run on diverse platforms—has been a defining feature of Java. *See id.*; *see also* U.S. Patent No. 6,381,535 to Durocher[5] (Ex. 1014) ("[W]ritten in Java … making it possible to write a single program compatible with several telephones."); International Patent Application Publication No. WO 00/49530 to Parasnis[6] (Ex. 1015) ("The client function is developed in Java, which makes it platform independent ….").

Accordingly, Barbosa's disclosure that its tokenized questionnaire is implemented using the Java programming language would have informed a

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[5] Durocher is prior art at least under 35 U.S.C. § 102(e) (pre-AIA) because Durocher was filed on Mar. 20, 1998, and issued on Apr. 30, 2002. Ex. 1014 at 1.

[6] Parasnis is prior art at least under 35 U.S.C. § 102(b) (pre-AIA) because Parasnis issued on August 24, 2000. Ex. 1015 at 1.

POSITA that it comprises a plurality of device independent tokens. Ex. 1005 ¶ 133. This disclosure also is consistent with what P.O. contended met this limitation in its infringement contentions in prior litigation. *See, e.g.*, Ex. 1009, 14 ("Uber app is a tokenized questionnaire comprising a plurality of device independent tokens" because "it is downloaded as bytecode, typically a type of Java."); Ex. 1010, 13 (same). Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶¶ 131-133.

(F) ***"(c) ending said communications between said handheld computing device and said originating computer;"***

As explained in **VII.A.i.B-C**, Barbosa discloses that the handheld device 10 can download the questionnaire from a server. Barbosa explains that the questionnaire can be "downloaded from a server via the Internet **until required by the device 10**." Ex. 1002, 6:5-6. Likewise, Barbosa discloses that after "communication between a handheld device 10 (client) and remote management system 58 (e.g., server, desktop PC)" is established to download the program, the program "may be **stored locally** on a user's [device]." *Id.,* 7:23-31. To the extent that Barbosa does not expressly disclose ending communications between a handheld computing device and an originating computer, it would have been obvious to a POSITA that either the handheld device 10 or the remote management system 58 may end communications after downloading because Barbosa discloses

that the questionnaire can be stored locally on the handheld device following completion of being downloaded. Ex. 1005 ¶ 134. Accordingly, Barbosa discloses this limitation or renders it obvious. *Id.*

(G) ***"(d) after said communications has been ended, (d1) executing at least a portion of said plurality of tokens comprising said questionnaire on said handheld computing device to collect at least one response from a first user, and,"***

As explained in **VII.A.i.F**, communications with the server providing the questionnaire end when the download is complete. Further, as explained in **VII.A.i.C**, Barbosa discloses that the downloaded code modules, templates, and programs that represent the questionnaire can be executed to provide "[a]n interactive question and answer session." Ex. 1002, 6:58-64; *see also id.*, 7:43-45 ("The user can execute a industry-specific program on the handheld device 10 related to the problem being addressed."). A POSITA would understand that Barbosa discloses "after said communications has been ended," "executing at least a portion of said plurality of tokens comprising said questionnaire on said handheld computing device," as this execution cannot occur until after the questionnaire had been downloaded. Ex. 1005 ¶ 135. Further, the program collects at least one response from a first user. Ex. 1002, 7:47-48 ("The program would prompt the user for input of data related to the problem."). Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 135.

(H) ***(d2) storing within said computing device said at least one response from the first user;***

Barbosa discloses that the "handheld data management device for field assessments can include a memory for storing field assessment programs and related data." Ex. 1002, 3:44-46. Similarly, Barbosa discloses, "[D]ata collected with the device 10 … may be stored in local memory for subsequent use …." *Id.,* 8:4-8. Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 136.

(I) ***"(d3) using said GPS to automatically obtain said location identifying information in response to said at least one question that requests location identifying information;"***

As explained in **VII.A.i.D**, Barbosa discloses that the questionnaire includes at least one question requesting location identifying information. Ex. 1002, 9:54-56. Barbosa further discloses that the location can be obtained automatically using the device's GPS receiver. *Id.,* 10:14-17 ("[L]ocation information may be provided by the handheld device automatically via [the] resident GPS module."). Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 137.

(J) ***"(e) establishing communications between said handheld computing device and a recipient computer;"***

Barbosa discloses that communications are established between the handheld computing device and a recipient computer, such as a server, in order to transmit collected responses back to the server for analysis. Ex. 1005 ¶ 138. For example, Barbosa discloses, "Realtime analysis of data obtained may also be

undertaken by remote processor (e.g., server ….)." Ex. 1002, 7:54-56. Likewise, Barbosa discloses that "a transcript of the assessor's interaction with the handheld (e.g., questions and responses) may be transmitted to remote resources for further analysis." *Id.,* 9:38-40; *see also id.,* 9:3-7 ("At completion of the series of questions, … [t]he data may then be … provided [] to a remote processor 709 via a network where the data will be analyzed."). Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 138.

(K) ***"(f) transmitting a value representative of each of said at least one response stored within said handheld computing device to said recipient computer; and,"***

As explained in **VII.A.i.H,J**, Barbosa discloses that the collected responses, which are stored by the handheld device, are transmitted to the server for analysis. Ex. 1002, 7:54-56; 9:38-40. The actual responses are values that represent the responses. Ex. 1005 ¶ 139. Accordingly, Barbosa discloses this limitation. *Id.*

(L) ***"(g) after receipt of said transmission of step (f), transmitting a notice of said received value representative of each of said at least one response to a second user."***

Barbosa discloses that the server transmits a notice of the received values representative of each response back to the user of the device. For example, Barbosa discloses that the remote server that analyzes the responses can provide "a **final output, such as a report, bid, recommendation**, or the like … to the user." Ex. 1002, 7:56-58. Because the report, bid, or recommendation is generated based

on the received responses, the report, bid, or recommendation corresponds to "a notice of said received value representative of each of said at least one response." Ex. 1005 ¶ 140. A transmission of the report, bid, or recommendation back to the user therefore is a transmission of a notice of received value representative of each received response. *Id.*; *see also, e.g.*, Ex. 1002, 9:10-14.

Figure 7 of Barbosa illustrates the process:

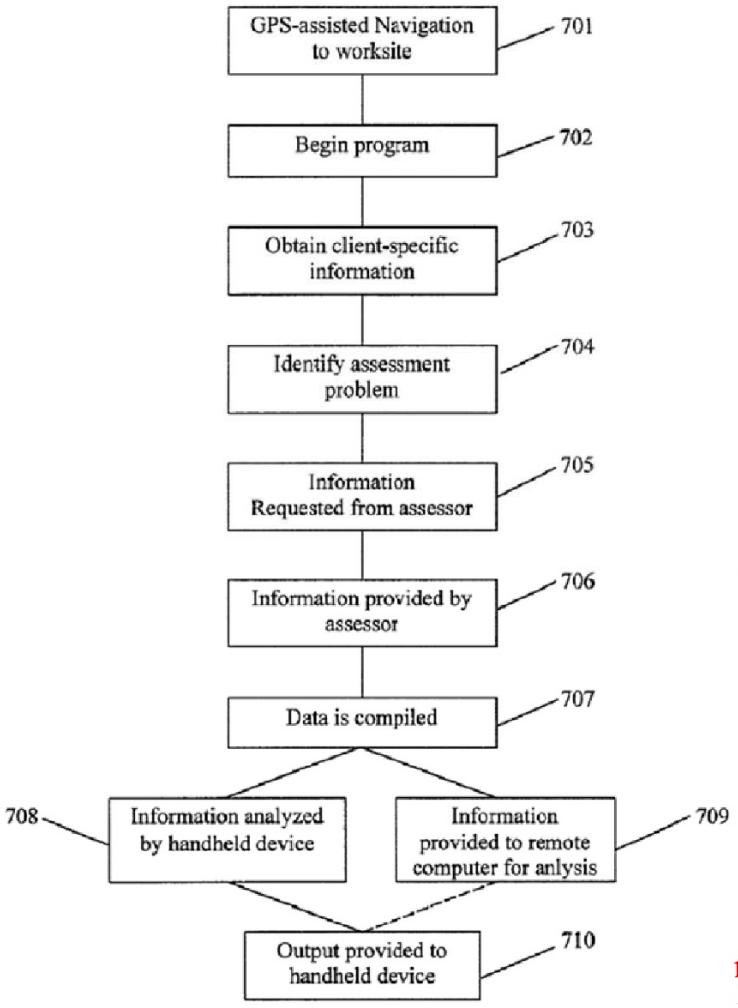


FIG. 7

Executing tokens comprising the questionnaire

Collecting responses from user

Responses sent to server for analysis

Transmitting a notice of the received value (output based on the received responses) back to the handheld device

Ex. 1002, Fig. 7 (annotated).

The claims do not include a limitation requiring that the "second user" be different from the "first user." To the contrary, dependent claim 20 clarifies that the "second user" may be the same as the "first user." Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶¶140-42.

(ii) Claim 20

Claim 20, which depends from claim 19, recites "wherein the first user and the second user are a same user." Barbosa satisfies this limitation. *See* **VII.A.i.L**.

(iii) Independent Claim 21

As explained below, Barbosa also renders obvious claim 21.

(A) ***"A method for managing data comprising the steps of:"***

Barbosa discloses a method for managing data. *See* **VII.A.i.A**; Ex. 1002, Abstract.

(B) ***"(a) within a central computer, accessing at least one user data item stored in a recipient computer, wherein said at least one data item is obtained via the steps of:"***

As explained in **VI.B.iv**, the "central computer" and "recipient computer" may be the same computer. *See also* '748 patent, cl. 22. As explained in **VII.A.i.J-K**, Barbosa's remote server that receives responses from the user device corresponds to a "recipient computer." *See, e.g.*, Ex. 1002, 7:54-56; 9:3-7; 9:38-40. Barbosa further explains that user responses may be stored by the server. *Id.*,

8:46-48 ("server … may be used as a centralized data collection and analysis facility for input received from more than one handheld device/user"). Accordingly, Barbosa discloses that the server may access at least one user data item stored within it. Ex. 1005 ¶ 146. As explained below, Barbosa discloses obtaining the user data item via the claimed steps.

(C) ***"(1) establishing communications between a handheld computing device and an originating computer wherein said handheld computing device has a GPS integral thereto;"***

Barbosa discloses this limitation. *See* **VII.A.i.B**.

(D) ***"(2) receiving within said handheld computing device a transmission of a tokenized questionnaire, including at least one question requesting GPS coordinates and at least one additional question, said tokenized questionnaire comprising a plurality of device independent tokens;"***

As explained in **VII.A.i.C** and **VII.A.i.E**, Barbosa discloses "receiving within said handheld computing device a transmission of a tokenized questionnaire," where "said tokenized questionnaire comprising a plurality of device independent tokens." Further, as explained in **VII.A.i.D**, Barbosa discloses that the tokenized questionnaire includes "one question requesting GPS coordinates" and "at least one additional question." For example, Barbosa discloses that "[o]nce a program is opened on the handheld device, **the assessor may be asked** (e.g., prompted) to identify the job 801 (e.g., **location**, **customer**

name, date, type of job)." Ex. 1002, 9:54-56. Barbosa further discloses identifying the location using GPS coordinates. *Id.,* 12:30-32 ("GPS coordinate[s] associated with the collection of data [is an] important attribute[].."). It would have been obvious to a POSITA that such GPS coordinates may have been entered in response to a question requesting them. Ex. 1005 ¶ 148. Moreover, Barbosa discloses asking and receiving responses to additional questions, such as "customer name, date, type of job," and others, such as "ask[ing] the representative to identify the problem or type of assessment." Ex. 1002, 6:59-67, 8:54-63, 9:54-56. Accordingly, Barbosa discloses this limitation.

(E) ***"(3) ending said communications between said handheld computing device and said originating computer;"***

Barbosa discloses or renders obvious this limitation. *See* **VII.A.i.F**.

(F) ***"(4) after said communications has been ended, (i) executing at least a portion of said plurality of tokens comprising said questionnaire on said handheld computing device,"***

Barbosa discloses this limitation. *See* **VII.A.i.G**.

(G) ***"(ii) automatically entering the GPS coordinates into said questionnaire:"***

Barbosa discloses this limitation. *See* **VII.A.i.I**, **VII.A.iii.D**.

(H) ***"(iii) presenting said at least one additional question to a user; (iv) receiving at least one response from the user to each of said presented at least one additional question,"***

As explained in **VII.A.iii.D**, Barbosa discloses presenting at least one additional question to a user and receiving at least one response to the additional question. Ex. 1002, 6:59-67, 8:54-63, 9:54-56; Ex. 1005 ¶ 152.

(I) ***"(v) storing at least one value representative of said GPS coordinates and said at least one response within said handheld computing device;"***

As explained in **VII.A.i.H**, Barbosa discloses that "data collected with the device 10 … may be stored in local memory for subsequent use …." *Id.,* 8:4-8. As explained in **VII.A.i.I** and **VII.A.iii.D**, the data collected by the device, which is stored by the device, includes values representative of GPS coordinates as well as responses to questions. Ex. 1005 ¶ 153. Accordingly, Barbosa discloses this limitation. *Id.*

(J) ***"(5) establishing a communications link between said handheld computing device and a recipient computer;"***

Barbosa discloses this limitation. *See* **VII.A.i.J**.

(K) ***"(6) transmitting said stored at least one value representative of said GPS coordinates and said at least one response stored within said handheld computing device to said recipient computer; and,"***

As explained in **VII.A.i.K**, Barbosa discloses transmitting the responses stored by the handheld device to the remote server. As explained above, the

responses stored by the handheld device, which are transmitted to the remote server, include values representative of GPS coordinates as well as responses to questions. Ex. 1005 ¶ 155. Further, Barbosa explicitly discloses, "GPS coordinates associated with the collected data may also be transmitted to the server with the collected data." Ex. 1002, 12:28-30. Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 155.

(L) ***"(7) storing within said recipient computer any of said transmitted GPS coordinates and said at least one value representative of said at least one response, thereby creating said at least one user data item stored in said recipient computer; and,"***

As explained in **VII.A.iii.B**, Barbosa discloses that the remote server, corresponding to the "recipient computer," stores the user responses, including the transmitted GPS coordinates and responses to questions, thereby creating a user data item stored in the recipient computer. *See* Ex. 1002, 8:46-48 ("server … may be used as a centralized data collection and analysis facility for input received from more than one handheld device/user"). Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 156.

(M) ***"(b) forming a visually perceptible report from any of said at least one stored user data item."***

As explained in **VII.A.i.L**, Barbosa discloses that the recipient computer may form a visually perceptible report based on the stored user data item. *See* Ex. 1002, 8:46-48. For example, Barbosa discloses that the remote server that analyzes

the responses can provide "a final output, such as a report, bid, recommendation, or the like … to the user." Ex. 1002, 7:56-58. Likewise, Barbosa discloses that the "the handheld device may provide **output** to the [user] (**which may have been received from the remote processor**) that can be in the form of an estimate or analysis and may be provided to the client." Ex. 1002, 9:10-14. A POSITA would have understood Barbosa's "report" to be visually perceptible so that a user could see the information. Ex 1005 ¶ 157. Accordingly, Barbosa discloses this limitation. *Id.*

(iv) Claim 22

Claim 22, which depends from claim 21, recites "wherein said central computer and said recipient computer are a same computer." As explained in **VII.A.iii.B**, the "recipient computer" and "central computer" disclosed by Barbosa are the same computer. Accordingly, Barbosa discloses this limitation. Ex 1005 ¶ 158.

(v) Independent Claim 1

As explained below, Barbosa also renders obvious claim 1.

(A) *"A method for managing data including the steps of:"*

Barbosa discloses a method for managing data. *See* **VII.A.i.A**.

(B) ***"(a) creating a questionnaire comprising a series of questions customized for a location;"***

As explained in **VII.A.i.C-E**, Barbosa discloses creating a questionnaire comprising a series of questions. Ex. 1005 ¶ 161. Further, Barbosa discloses that its questionnaire may be customized for a location. As to an "environmental catastrophe," Barbosa discloses, "Assessors equipped with handheld devices are assigned/deployed to **specific positions** of the affected environment." Ex. 1002, 12:1-3. Further, Barbosa discloses, "**At their respective positions**, assessor[s] are provide[d] a **template** from the remote server 1302 **comprising unique/updated instructions** for their respective assessment of the position (e.g., data collection instructions)." *Id.,* 12:11-14. Because the assessors are at different positions, and each is provided with a unique template/questionnaire, Barbosa discloses this claim limitation. Ex. 1005 ¶ 161.

(C) ***"(b) said questionnaire including at least one question requesting GPS coordinates;"***

Barbosa discloses this limitation. *See* **VII.A.i.D**, **VII.A.iii.D**,

(D) ***"(c) tokenizing said questionnaire, thereby producing a plurality of device indifferent tokens representing said questionnaire;"***

Barbosa discloses this limitation. *See* **VII.A.i.C-E**.

(E) ***"(d) transmitting said plurality of tokens to a remote computing device;"***

Barbosa discloses this limitation. *See* **VII.A.i.B-C**.

(F) ***"(e) when said remote computing device is at said location, executing at least a portion of said plurality of tokens representing said questionnaire at within said remote computing device to collect a response from a user;"***

Barbosa discloses this limitation. *See* **VII.A.i.G**.

(G) ***"(f) automatically entering the GPS coordinates into said questionnaire;"***

Barbosa discloses this limitation. *See* **VII.A.iii.G**.

(H) ***"(g) transmitting at least a portion of said response from the user to a server in real time via a network; and"***

Barbosa discloses transmitting user responses in real time via a network to the remote server. Specifically, Barbosa discloses, "**Realtime** analysis of data obtained may also be undertaken by remote processor (e.g., server …)." Ex. 1002, 7:54-56; *see also id.,* Abstract ("[T]wo-way communication between remote computing means (e.g., servers, desktop computers) and handheld data management devices to facilitate **real-time** access to remote programs, assistance and/or information related to the field assessment being undertaken by using a handheld data management device user."). Accordingly, Barbosa discloses this limitation. Ex. 1005 ¶ 167.

(I) ***"(h) storing said response at said server."***

Barbosa discloses this limitation. *See* **VII.A.iii.L**.

B. Barbosa In View of Bandera Renders Obvious Claims 1, 19-22

Barbosa renders obvious claims 1 and 19-22 as discussed in **VII.A** above. For example, as explained in **VII.A.i.E**, a POSITA would have known that code written in Java corresponds to the recited "device independent tokens," as reflected by Bandera, Durocher, and Parasnis. To the extent the Board does not find that Barbosa alone renders these claims obvious, a POSITA would have considered those claims obvious over Barbosa in view of Bandera. Ex. 1005 ¶¶ 169-71.

(i) A POSITA Would Have Been Motivated to Combine Barbosa With Bandera

A POSITA would have been motivated to combine Barbosa with Bandera for several reasons. Ex. 1005 ¶ 170. For example, Barbosa and Bandera are in the same field of endeavor, as both relate to providing location based services to mobile devices. *See, e.g.* Bandera, 2:13-15 (disclosing "hand-held devices" in the background of the invention). In particular, as explained in **VII.A.iii.J-M**, Barbosa discloses that a user's handheld device may collect a user's GPS location, transmit it to a server along with other data, and receive a report. Likewise, Bandera discloses that a mobile web client may collect a user's GPS location, transmit it to a server, and receive targeted advertisements based on the user's GPS location. *See* Bandera, Abstract, 2:63-64, 4:46-47. Further, as to the problem of providing programs on mobile devices, Barbosa and Bandera provide the same solution—using the Java programming language. *See, e.g.*, Ex. 1004, 5:37-49. *See also PGS*

Geophysical AS v. Iancu, 891 F.3d 1354, 1363-66 (Fed. Cir. 2018) (finding motivation to combine, in part, based reference's statement that system could use "any desired type of coding" and secondary reference disclosed a type of coding). Further, Bandera expressly discloses the use of GPS for location-based advertising. *See, e.g.*, Bandera, 6:40-42. Thus, combining Barbosa and Bandera to use, for example, a GPS with location-based advertising and a computer language that was device-independent (*e.g.,* Java) would have been within the ordinary knowledge, creativity, or common sense of a POSITA at the time of the alleged invention. There is also a design incentive to make use of GPS for location-based advertising, and a design incentive to use a computer language that is device-independent; each of these disclosed solutions would make a device more effective and efficient and make use of known technology which solved similar problems. Barbosa and Bandera teach similar and interrelated subject matter and disclose solutions to similar and interrelated challenges. Further, Bandera was developed at IBM; a POSITA would have looked at the teachings of industry leaders like IBM to develop solutions. Accordingly, a POSITA would have been motivated to combine the teachings of Barbosa and Bandera.

(ii) Claims 1, 19-22

As explained in **VII.A**, a POSITA would have found the "device independent tokens" limitation to have been obvious in view Barbosa's disclosure

that its program was implemented using Java. Bandera explicitly teaches that Java is used to provide device-independent code. In particular, Bandera explains that "JAVA® is a portable and architecturally neutral language," and "**JAVA® source code is compiled into a machine-independent format** that can be run on any machine with a JAVA® runtime system known as the JAVA® Virtual Machine (JVM)." Ex. 1004, 5:40-44. Not only is Java code machine independent, it also is independent of the operating system. *Id.,* 5:47-49 ("[M]achines running under diverse operating systems, including UNIX, Windows NT, and MacIntosh having a JVM can execute the same JAVA® program."). Accordingly, to the extent Barbosa's disclosure that its program was implemented using Java does not expressly disclose or render obvious the "device independent tokens" limitation, it would have been obvious over Barbosa in view of Bandera. Ex. 1005 ¶ 171.

C. Barbosa In View of Falls Renders Obvious Claim 7

(i) A POSITA Would Have Been Motivated to Combine Barbosa With Falls

A POSITA would been motivated to combine Barbosa with Falls to arrive at the combination discussed below. Ex. 1005 ¶ 173. For example, Barbosa and Falls are in the same field of endeavor, as both relate to the use of a mobile computer ("such as a laptop, palmtop, notebook, or personal digital assistant") and a computer network to which that mobile computer may connect. *See, e.g.* Falls, 3:16-35 (disclosing mobile computers and related networks in the summary of the

invention). As explained in **VII.A.i.C**, Barbosa discloses that a user's handheld device may connect or synchronize to a related computer network. Likewise, Falls discloses that a mobile computer may connect, then disconnect from a computer network, and later synchronize upon reconnection to the network. *See* Falls, Abstract; 3:16-35; 7:16-21; 16:35-37; 37:9-32. Further, Falls expressly discloses synchronizing the mobile computer with the network "following a period of disconnection." *See, e.g.*, Falls, 16:35-37. Thus, combining Barbosa and Falls to use, for example, a mobile computer to ensure proper synchronization with a computer network following a period of disconnection would have been within the ordinary knowledge, creativity, or common sense of a POSITA at the time of the alleged invention. Here, there is also a design incentive to make use of synchronization following a period of disconnection between a mobile computer and a network; such a solution would make a device more effective and efficient considering the known issues of remote computers occasionally having a less than continuous connection with a home network, and this would make use of known technology which solved a similar problem. A POSITA looking to improve synchronization between a mobile device and a server, would be motivated to combine Barbosa and Falls to achieve the predictable results of synchronized data. Barbosa and Falls also teach similar and interrelated subject matter and disclose solutions to similar and interrelated challenges. Further, Falls was developed at

Novell, a well-known computer software company. A POSITA would look at the teachings of industry leaders like Novell to develop solutions. Accordingly, a POSITA would have been motivated to combine the teachings of Barbosa and Falls and its teachings for handling intermittent data connections. Ex. 1005 ¶ 173.

(ii) Independent Claim 7

As explained below, Barbosa in view of Falls renders obvious claim 7.

(A) *"A method for collecting survey data from a user and making responses available via the Internet, comprising:"*

Barbosa provides "[a]n interactive question and answer session." Ex. 1002, 6:62, 9:38-40, 12:55-57; *see also* 7:12-22, 7:41-63, FIGs. 6 and 7 (steps 709, 710). To the extent the preamble is limiting, Barbosa discloses its limitations. Ex. 1005 ¶ 174.

(B) *"(a) designing a questionnaire including at least one question said questionnaire customized for a particular location having branching logic on a first computer platform wherein at least one of said at least one questions requests location identifying information;"*

As explained in **VII.A.i.B-D**, Barbosa discloses this limitation. Ex. 1005 ¶ 175. For example, Barbosa discloses designing a questionnaire including at least one question. Ex. 1002 at 6:40-62. That questionnaire is customized for a particular location with branching logic such that at least one of said at least one

questions requests location identifying information. *Id*., 8:49-63; 7:51-66; 9:50-10:31.

(C) ***"(b) automatically transferring said designed questionnaire to at least one loosely networked computer having a GPS integral thereto;"***

As explained in **VII.A.i.B-C**, Barbosa discloses transferring the designed questions to at least one computer having a GPS integral thereto. Ex. 1005 ¶ 176. The transfer occurs automatically as disclosed, for example, at 3:28-43; 6:24-39; 6:64-67.

Further, Barbosa discloses "at least one loosely networked computer." Barbosa discloses, "Field assessment data synchronization and/or delivery is enabled using wireless capabilities resident in handheld personal computing devices." Ex. 1002, Abstract. A POSITA would understand that during synchronization on a wireless network, data is automatically transferred when a connection is available, and temporarily stored for later transmission when a connection is unavailable, as this was a well-known characteristic of network communication protocols that relied on synchronization for transmission and delivery over a wireless network at the time. Ex. 1005 ¶ 177. Through such synchronization, networked computers coordinate their transmission of data to one another, sending data when appropriate and storing data for later transmission when a connection is established. *Id.* Such techniques for handling unreliable

network connections were necessary at that time given the unreliable nature of existing wireless data connections. *Id.*

To the extent Barbosa is not found to expressly teach the various aspects of "loosely networked" computers, such details are expressly taught by Fall. Ex. 1005 ¶ 178. Falls discloses a loosely connected network and provides further details for handling intermittent network connections, and discloses techniques for synchronization between a mobile device which connects, disconnects, and reconnects with a computer network. *Id.*; Ex. 1017, 3:16-35.

Falls teaches that the computers are synchronized upon being reconnected. Ex. 1017, 16:35-37. Specifically, Falls provides an overview of how the synchronizing of transactions between disconnectable computers can be applied in a variety of situations. Ex. 1017, 37:9-32.

Accordingly, to the extent Barbosa's disclosure does not expressly disclose or render obvious the "loosely networked" limitation, this claim requirement would have been obvious in view of Falls and its disclosure of techniques for managing intermittent connections over networks, including wireless networks. Ex. 1005 ¶¶ 176-181.

(D) ***"(c) when said loosely networked computer is at said particular location, executing said transferred questionnaire on said loosely networked computer, thereby collecting responses from the user;"***

Barbosa discloses this limitation. *See* **VII.A.i.I**. Further, Barbosa in view of Falls discloses "the loosely networked computer," as discussed as to step (b) of this claim.

(E) ***"(d) while said transferred questionnaire is executing, using said GPS to automatically provide said location identifying information as a response to said executing questionnaire;"***

Barbosa discloses this limitation. *See* **VII.A.i.I**.

(F) ***"(e) automatically transferring via the loose network any responses so collected in real time to a central computer; and,"***

Barbosa discloses this limitation. *See* **VII.A.v.H**.

(G) ***"(f) making available via the Internet any responses transferred to said central computer in step (e)."***

Barbosa discloses this limitation. *See* **VII.C.ii.A**. Further, Barbosa discloses making the responses available via the Internet. Ex. 1002, 12:55-57, 7:12-22, 7:41-63, FIGs. 6 and 7 (steps 709, 710); Ex. 1005 ¶ 185.

D. Hancock Renders Obvious Claims 1, 2, 5, 19-22

(i) Independent Claim 19

(A) ***"A method …"***

Hancock discloses a "method for automatically providing services over a computer network" in which "[t]he application program builds a data packet

comprising location information and user information." Ex. 1003, Abstract. Accordingly, Hancock discloses a method of managing data. Ex. 1005 ¶ 186.

(B) ***"(a) establishing communications …"***

Hancock discloses establishing communications between a handheld computing device and an originating computer. With respect to Figure 18, Hancock discloses that in step 1802, "the client 1404 connects with the server 1314." Ex. 1003, 30:32-34. Hancock's client 1404 corresponds to a handheld computing device, and the server 1314 corresponds to an originating computer. *Id.*, 25:9-10 ("[P]ortable-computing device 1302 comprises a client computer 1404."); 24:39-41 ("A primary server 1314 is coupled to the Internet 1318" and "is used to interface with the portable-computing device 1302."); Ex. 1005 ¶ 187.

Hancock's portable-computing device 1302 has a GPS receiver integral thereto. Hancock explains that "the portable-computing device 1302 comprises … an ALI device 1406 …." *Id.*, 25:9-13. Hancock further explains that "well-known ALI devices are GPS systems …." *Id.*, 26:15-16. Hancock explicitly recognizes that "the ALI device 1406 … may be **imbedded within** the portable-computing device 1302." *Id.*, 25:15-17. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 188.

(C) *"(b) receiving within said handheld computing device …"*

Hancock discloses that "an application program is installed on the client computer system." Ex. 1003, 3:15-16. This application program asks the user a series of questions that call for responses from the user. *Id.,* 3:15-20 ("The application program prompts the user to select a category of interest, a preference for specifying location information (i.e., via manual input, or automatically through an attached ALI device), and other user preferences."). Thus, the application program corresponds to the questionnaire. Ex. 1005 ¶ 189.

Hancock refers to the application program as the Go2 Application program. Ex. 1003, 25:59-61. As shown with respect to Figure 18, in step 1824, Hancock explains, "[T]he Go2 Application software is downloaded to the client 1404." *Id.,* 30:45-46. Accordingly, Hancock discloses that the portable-computing device 1302 receives transmission of the Go2 Application from the primary server 1314. Ex. 1005 ¶ 190.

Hancock further discloses that its questionnaire—the Go2 Application—is tokenized. Figure 17 illustrates a flowchart that can be used to implement a portion of the Go2 Application. Ex. 1003, 5:30-32. First, in step 1702, the Go2 Application asks a question requesting a user's location. *Id.*, Fig. 17; 28:9-23. Next, "once location information is specified in step 1702, control passes to step 1703," where the Go2 Application proceeds to ask additional questions. For

example, as shown in Figure 17, the Go2 Application first asks a user to select a category, such as restaurants or banks. Next, the Go2 Application asks the user to specify "one or more features associated with the selected category," which "narrow or drill-down the subsequent database search." *Id.,* 28:66-29:2. For example, as shown in Figure 17, a user could select only establishments that accept Visa. To provide this functionality, a POSITA understands that the Go2 Application includes distinguishable units, such as indexes, instructions, or commands, that represent the questions, answer choices, and operations connecting the questions and answer choices. Ex. 1005 ¶ 191. Such indexes, instructions, and commands representing the questions, answer choices, and operations are apparent from Figure 17 of Hancock:

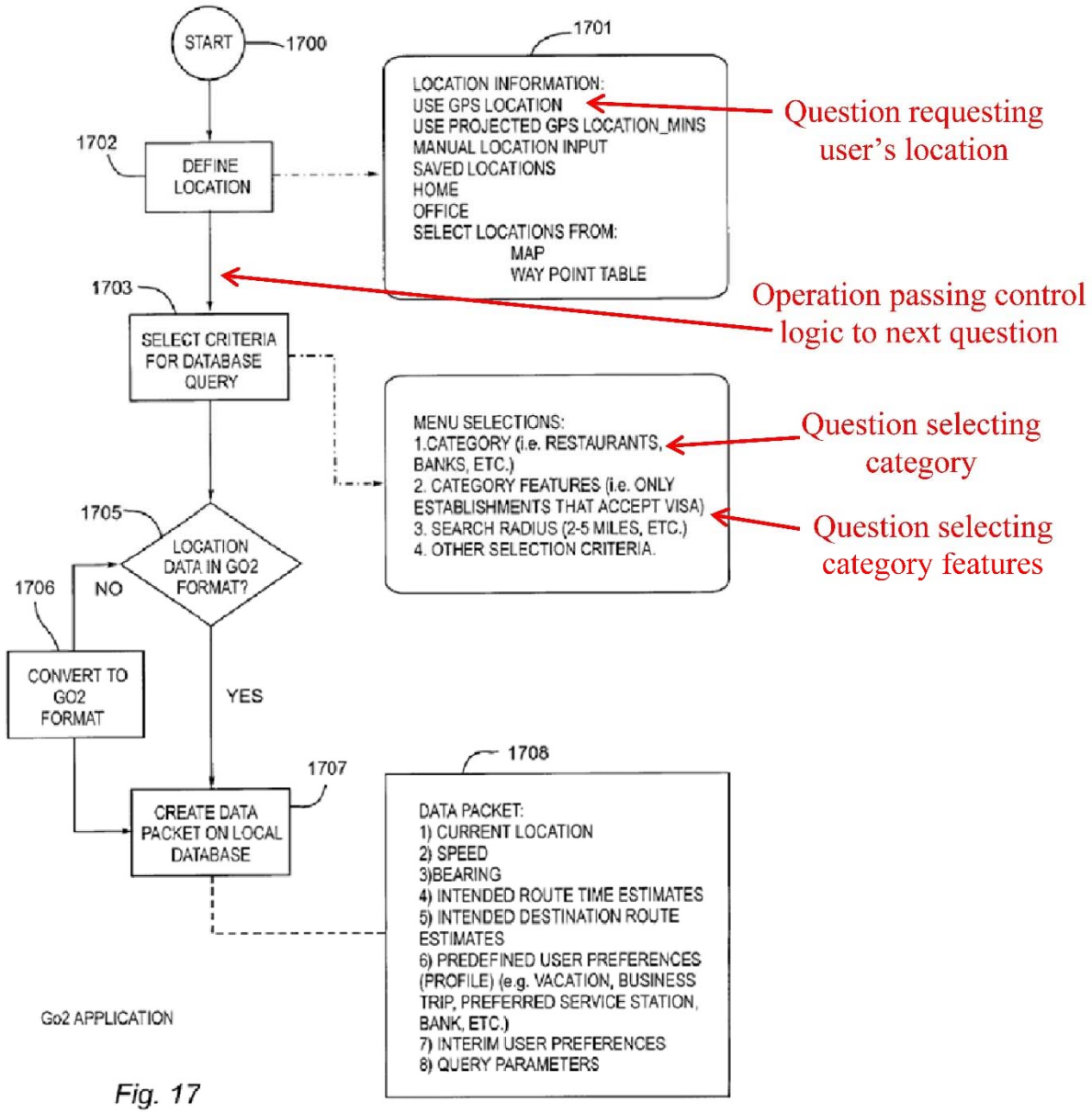


Fig. 17

Ex. 1003, Fig. 17 (annotated). Accordingly, Hancock's questionnaire is "tokenized" when applying the proper construction of the term "token," as explained in **VI.B.ii**.

Further, Hancock's questionnaire also is "tokenized" under the construction of "token" offered by the Examiner during prosecution of the '748 patent, as a POSITA would have understood that the Go2 Application would have included

logical, mathematical, and branching operations for the same reasons explained above. Ex. 1005 ¶ 192.

Furthermore, it would have been obvious to a POSITA that the Go2 Application provides logical, mathematical, or branching logic connecting the series of questions and permitted responses and therefore would correspond to a tokenized questionnaire. Ex. 1005 ¶ 193. As illustrated in Figure 17, after a user selects a category, such as a restaurant or bank, the Go2 Application presents a question regarding desired category features, such as selecting only establishments that accept Visa. It would have been obvious to a POSITA that such a follow-up question would only be appropriate if the user had selected the restaurant category (or another category that accepts credit card payment), and not banks. In particular, Hancock specifies that "[m]ultiple levels of category features can be presented based on the needs and requirements of each specific implementation." Ex. 1003, 29:8-10. Accordingly, to the extent Hancock does not explicitly disclose providing logical, mathematical, or branching logic connecting the series of questions and permitted responses, a POSITA would have found it obvious to provide such functionality. Ex. 1005 ¶ 193. Thus, regardless of which construction of "tokens" the Board adopts, Hancock discloses that the Go2 Application is tokenized. *Id.*

(D) ***"said tokenized questionnaire including at least one question requesting location identifying information,"***

As explained in **VII.D.i.C**, Hancock discloses that the Go2 Application includes at least one question requesting location identifying information. *See* Ex. 1003, Fig. 17; 3:16-20 ("The application program prompts the user to select a category of interest, a preference for specifying location information (i.e., via manual input, or automatically through an attached ALI device), and other user preferences."). Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 194.

(E) ***"said tokenized questionnaire comprising a plurality of device independent tokens;"***

As explained in **VII.D.i.C**, Hancock discloses that the Go2 Application is a tokenized questionnaire comprising a plurality of tokens. However, Hancock is silent regarding a programming language used to create the Go2 Application. As explained in **VII.A.i.E**, a POSITA would have understood that the Java programming language is a programming language that provides device independency. Ex. 1005 ¶¶ 132-33, 195. As such, it would have been an obvious design choice to a POSITA that the Go2 Application could have been implemented using Java. *Id.* Accordingly, because it would have been an obvious design choice to implement the Go2 Application using Java, and because a POSITA would have understood that Java provides device-independent code, a POSITA would have found it obvious to implement the Go2 Application using Java such that it would

include a plurality of device independent tokens. *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) ("When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp.").

(F) ***"(c) ending said communications …"***

As explained in **VII.D.i.B-C**, with respect to Figure 18, Hancock discloses establishing communications between portable-computing device 1302 and primary server 1314 to download the Go2 Application. As explained in **VII.A.i.F**, completion of a download is sufficient to satisfy this limitation. Moreover, Figure 18 of Hancock confirms communication between the portable-computing device and primary server ends when the Go2 Application is downloaded, as Figure 18 of Hancock illustrates that the user must reconnect to the server:

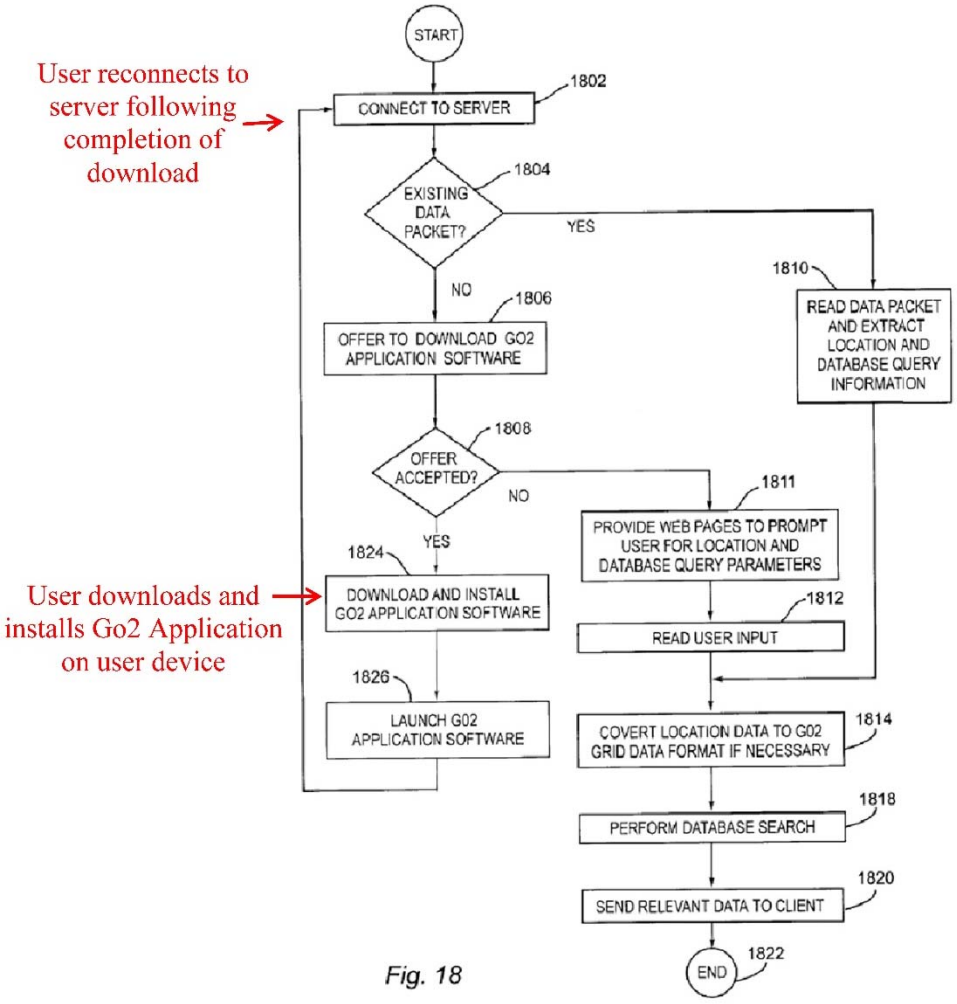


Fig. 18

Ex. 1003, Fig. 18 (annotated). Furthermore, Hancock discloses that "at least some functions provided by the U/I module 1506 are **performed without a live connection to the server**," which explicitly indicates that communications with the server have ended. *Id.*, 26:59-63. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 196.

(G) ***"(d) after said communications has been ended, (d1) executing …"***

As explained in **VII.D.i.C**, Hancock discloses that the downloaded Go2 Application can be executed on the portable-computing device 1302 to collect responses from the user to questions such as the user's location, selected category, and selected category features. *See* Ex. 1003, Fig. 17; 28:9-23, 28:66-29:10. Likewise, Hancock explicitly discloses that "in step 1826, the Go2 Application software 1500 is executed on the client 1404," and that "[d]uring the execution of the Go2 Application software 1500, the user inputs user preferences, location specifications and other database query parameters …." *Id.,* 30:47-50. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 197.

(H) ***(d2) storing within said computing device …"***

Hancock discloses that the responses collected from the user are stored within the portable-computing device 1302. For example, Hancock discloses that "the portable-computing device 1302 comprises … a persistent storage device or database 1408 …." *Id.,* 25:9-11. Hancock discloses, "After such information is entered, the Go2 Application software 1500 creates a data packet 1708 and stores it on the data storage device 1408." *Id.,* 30:51-53. Further, Hancock discloses, "The data packet 1708," which contains a user's responses, "is then stored on the local storage device 1408." *Id.,* 31:18-20. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 198.

(I) ***"(d3) using said GPS …"***

Hancock discloses that "[t]he application program prompts the user to select a category of interest, a preference for specifying location information (i.e., via manual input, or **automatically through an attached ALI device**), and other user preferences." *Id.,* 3:15-20. Further, Hancock clarifies that obtaining a user's location information automatically using the imbedded ALI device refers to using its GPS receiver. *Id.,* 26:15-16 ("Examples of well-known ALI devices are GPS systems …."). A POSITA would have understood that if a user selects a preference for specifying location information automatically through an ALI device (e.g., GPS system), the GPS receiver on the mobile device would automatically obtain location information in response to a question that requests location information. Ex. 1005 ¶ 199. Accordingly, Hancock discloses this limitation or renders it obvious. *Id.*

(J) ***"(e) establishing communications …"***

As explained in **VII.D.i.F**, Figure 18 of Hancock shows that the portable-computing device re-establishes communications with the primary server after the Go2 Application is downloaded. *See* Ex. 1003, Fig. 18; 30:30-31:10. For example, Hancock explains that after "the Go2 Application software 1500 creates a data packet 1708 and stores it on the data storage device 1408, … control passes back to step 1802 …." *Id.,* 30:31-33. Furthermore, Hancock explains, "Step 1802

represents a step where the client 1404 connects with the server 1314." *Id.*, 30:32-34. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 200.

(K) ***"(f) transmitting a value …"***

Hancock discloses that the Go2 Application transmits the stored data packet, which contains a user's responses, to the server. With respect to the process illustrated in Figure 19, Hancock discloses that after "[t]he data packet 1708 is then stored on the local storage device 1408," in the next step, 1906, "**the data packet 1708 is transmitted to the server 1314**." Ex. 1003, 31:18-21. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 201.

(L) ***"(g) after receipt of said transmission of step (f), transmitting a notice of said received value …"***

After the server receives transmission of the data packet comprising user response data, as described above in **VII.D.i.K**, Hancock discloses that the server performs a search based on the response data, then returns the results to the user. In particular, with respect to the process illustrated in Figure 19, Hancock discloses that, following receipt of the user's data packet, "the primary server 1314 searches its database 1316 and retrieves a specific Uniform Resource Locator ("URL") that satisfies the database search criteria entered by the user …." Ex. 1003, 31:28-30. Furthermore, Hancock discloses, "Next, in step 1912, **the client 1404 receives a second data packet 1914**," which "comprises the URL result from the data base query, plus any other additional information that may be required by the enhanced

server 1315 …." *Id*., 31:37-41. A POSITA would have understood that the second data packet 1914 is transmitted by the primary server 1314. Ex. 1005 ¶ 202. A POSITA would have further understood that the second data packet 1914 corresponds to a notice of a received value representative of each of at least one response, as the second data packet 1914 includes the URL that has been generated using the received user data packet. *Id.* As indicated by claim 20, "second user" may be the same person as the "first user." Hancock discloses that the second data packet 1914 is received by the client 1404 that has sent the first data packet 1708. Ex. 1003, 31:11-41. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 202.

(ii) Claim 20

As explained in **VII.D.i.L**, Hancock discloses this limitation.

(iii) Independent Claim 21

As explained below, Hancock also renders obvious claim 21.

(A) *"A method …"*

As explained in **VII.D.i.A**, Hancock discloses a method for managing data.

(B) *"(a) within a central computer …"*

As recited in claim 22, the "central computer" and "recipient computer" may be the same computer. *See also* '748 patent, cl. 22. Also, as explained in **VII.D.i.J-K**, Hancock's primary server 1314 that receives responses from the portable-computing device corresponds to the "recipient computer." *See, e.g.*, Ex.

1003, Fig. 18; 30:30-31:10; 30:31-33. Hancock further explains that the primary server includes attached storage. *See, e.g.*, Ex. 1003, 24:41-42 ("The primary server 1314 is coupled with a database or persistent storage device 1316."). Each data packet 1708, which the primary server receives from the portable-computing device (*id.*, 31:17-21), as well as the second data packets 1914, which include the URL result that is sent back to the portable-computing device (*id.*, 31:37-41), correspond to a user data item that is stored in a recipient computer. In particular, it would have been obvious to a POSITA to use the primary server's attached storage to store the data packets 1708 and second data packets 1914. Ex. 1005 ¶ 206. A POSITA would have understood that it would have been desirable to maintain a historical log of user data in order to learn the user's interests and troubleshoot any issues that users may have using the Go2 Application. *Id.* Accordingly, Hancock discloses or renders obvious that the server may access at least one user data item stored within it. *Id.* As explained below, Hancock discloses obtaining the user data item via the claimed steps.

(C) ***"(1) establishing communications …"***

Hancock discloses this limitation. *See* **VII.D.i.B**.

(D) ***"(2) receiving within said handheld computing device …"***

As explained in **VII.D.i.C-E**, Hancock discloses "receiving within said handheld computing device a transmission of a tokenized questionnaire" and "said

tokenized questionnaire comprising a plurality of device independent tokens." Hancock also discloses that its questionnaire includes at least one question requesting GPS coordinates. Specifically, Hancock discloses that the Go2 Application can include a question requesting that the Go2 Application automatically obtain a user's location using the portable device's GPS receiver. Ex. 1003, 28:18-20 ("[A]s indicated by the block 1701, the user has the option to specify that the process retrieve location information from the attached GPS receiver."). Receiving location information from Hancock's GPS receiver indicates receiving GPS coordinates. *Id.,* 2:23-24 ("This location is typically output from the GPS receiver as latitude and longitude numbers"). Further, Hancock discloses that its questionnaire include at least one additional question. For example, as illustrated in Figure 17, the Go2 Application also includes questions requesting that a user select a category, such as a restaurant or bank, and the Go2 Application additionally includes questions regarding desired category features, such as selecting only establishments that accept Visa. *Id.*, Fig. 17; 28:49-54, 28:66-29:2. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 208.

(E) ***"(3) ending said communications …"***

Hancock discloses this limitation. *See* **VII.D.i.F**.

(F) ***"(4) after said communications has been ended, (i) executing …"***

Hancock discloses this limitation. *See* **VII.D.i.G.**

(G) ***"(ii) automatically entering …"***

Hancock discloses this limitation. *See* **VII.D.i.I**. Further, Figure 12a of Hancock illustrates "the system determining and outputting corresponding lat tude and longitude coordinates," which corresponds to automatically entering GPS coordinates into the questionnaire. Ex. 1003, 20:20- 23. As Hancock explains, the system determines latitude and longitude coordinates using a GPS receiver. *Id.*, 3:56-57.

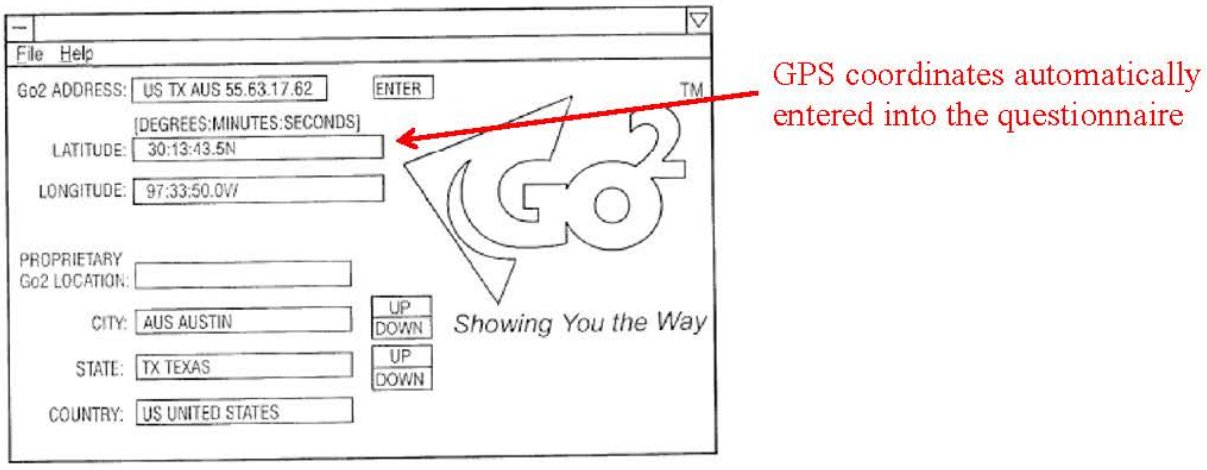


Fig. 12a

Ex. 1003, Fig. 12a (annotated). Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 211.

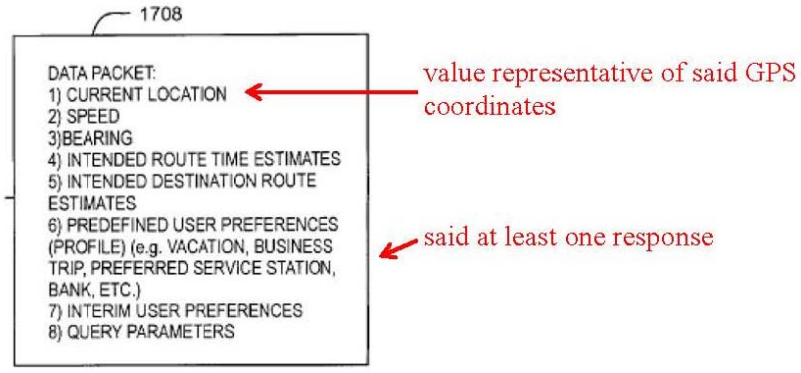
(H) ***"(iii) presenting … (iv) receiving …"***

As explained in **VII.D.iii.D**, Hancock discloses presenting at least one additional question to a user and receiving at least one response to the additional question. For example, as explained in **VII.D.iii.D** and illustrated in Figure 17, the Go2 Application also includes questions requesting that a user select a category, such as a restaurant or bank, and the Go2 Application additionally includes questions regarding desired category features, such as selecting only establishments that accept Visa. *Id.*, Fig. 17, 28:49-54, 28:66-29:2. The Go2 Application receives responses from the user to the additional presented questions. *Id.,* 28:52-54 ("In this example, the user selects a category of interest, one or more category features, a search radius and other selection criteria."). For example, the Go2 Application can present the user with a "selectable menu" for providing responses. *Id.,* 28:55-56. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 212.

(I) ***"(v) storing at least one value …"***

As explained in **VII.D.i.H**, Hancock discloses that the responses collected from the user are stored within the portable-computing device 1302. For example, Hancock discloses that "the portable-computing device 1302 comprises … a persistent storage device or database 1408 …." *Id.,* 25:9-11. Hancock discloses that "[a]fter such information is entered, the Go2 Application software 1500

creates a data packet 1708 and stores it on the data storage device 1408." As shown in Figure 17, the data packet 1708 that is stored includes the values representative of GPS coordinates as well as the responses to the other questions:



Ex. 1003, excerpt of Figure 17 (annotated). Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 213.

(J) ***"(5) establishing a communications link …"***

As explained in **VII.D.i.J**, Figure 18 of Hancock shows that the portable-computing device re-establishes communications with the primary server after the Go2 Application is downloaded. Ex. 1005 ¶ 214.

(K) ***"(6) transmitting said stored at least one value …"***

As explained in **VII.D.i.K**, Hancock discloses this limitation. In particular, Hancock discloses "**the data packet 1708 is transmitted to the server 1314**." Ex. 1003, 31:18-21. As explained in **VII.D.iii.I**, the data packet 1708 includes the values representative of GPS coordinates as well as the responses to the other questions. *Id.*, Fig. 17. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 215.

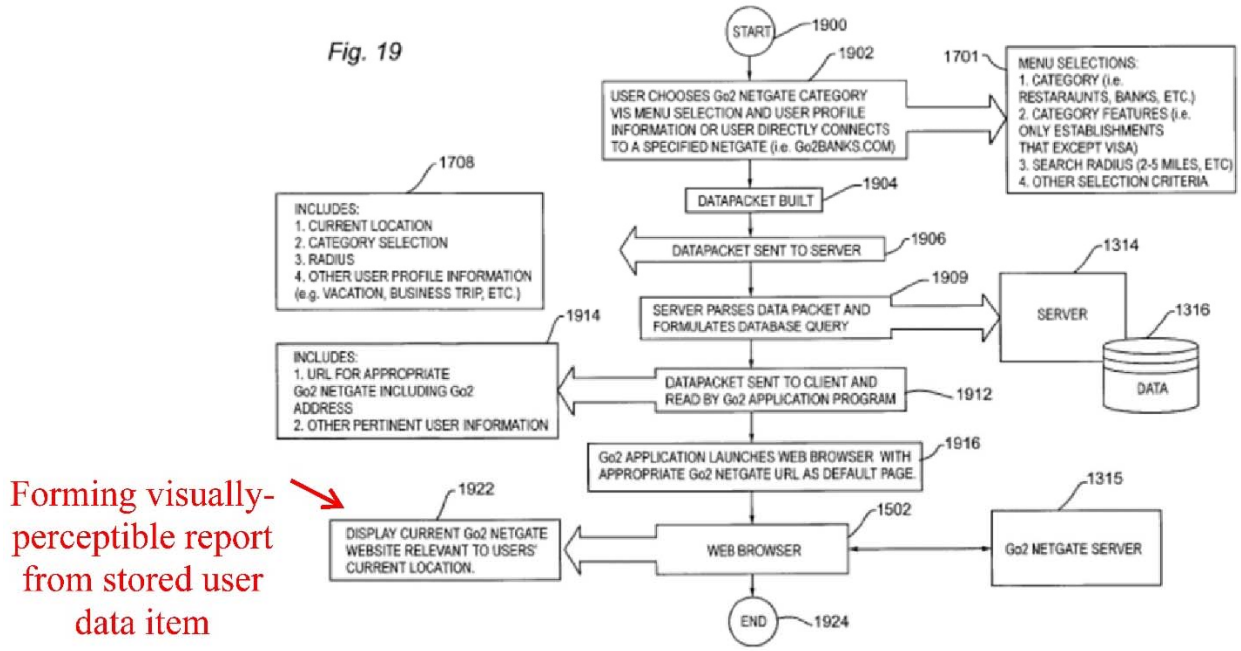
(L) ***"(7) storing within said recipient computer …"***

As explained in **VII.D.iii.I**, the data packet 1708 includes the values representative of GPS coordinates as well as the responses to the other questions. *Id.*, Fig. 17. As explained in **VII.D.iii.B**, Hancock's primary server includes attached storage (Ex. 1003, 24:41-42), and it would have been obvious to a POSITA to use the primary server's attached storage to store the data packets 1708. Ex. 1005 ¶ 216. For example, a POSITA would have understood that it would have been desirable to maintain a historical log of user data in order to learn the user's interests and troubleshoot any issues that users may have using the Go2 Application. *Id.* Accordingly, this limitation would have been obvious in view of Hancock. *Id.*

(M) ***"(b) forming a visually perceptible report …"***

As explained in **VII.D.i.L**, after the server receives transmission of the data packet comprising user response data, as described above in **VII.D.i.K**, Hancock discloses that the server performs a search based on the response data, then returns the results to the user. In particular, with respect to the process illustrated in Figure 19, Hancock discloses that, following receipt of the user's data packet, "the primary server 1314 searches its database 1316 and retrieves a specific Uniform Resource Locator ("URL") that satisfies the database search criteria entered by the user …." Ex. 1003, 31:28-30. Furthermore, Hancock discloses, "Next, in step

1912, **the client 1404 receives a second data packet 1914**," which "comprises the URL result from the data base query, plus any other additional information that may be required by the enhanced server 1315 …." *Id.*, 31:37-41. Next, the "Go2 Application launches the web browser component 1502 and automatically connects to the URL received in the data packet," thereby forming a visually perceptible report from the at least one stored user data item:



Id., Fig. 19 (annotated); *see also* 31:42-45. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 217.

(iv) Claim 22

As explained in **VII.D.iii.B**, the "recipient computer" and "central computer" disclosed by Barbosa are the same computer. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 218.

(v) Independent Claim 1

As explained below, Hancock also renders obvious claim 1.

(A) *"A method …"*

As explained in **VII.D.i.A**, Hancock discloses a method for managing data.

(B) *"(a) creating a questionnaire …"*

It would have been obvious to a POSITA in view of Hancock to customize the questions presented by the Go2 Application for a location. For example, as shown in Figure 12c, Hancock discloses the ability to associate a user's location with a particular business:

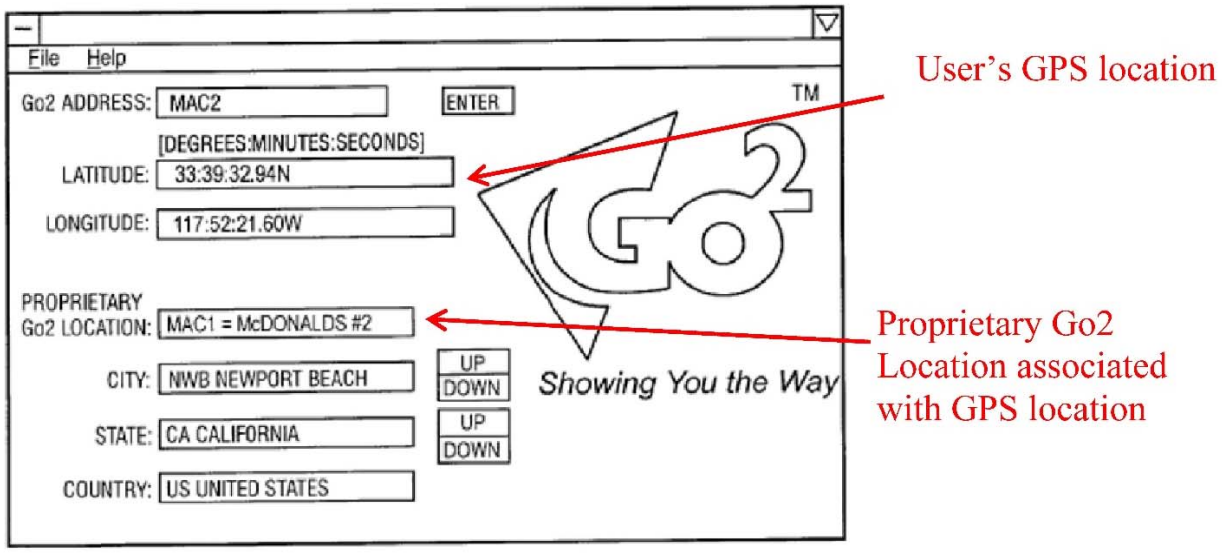


Fig. 12c

Ex. 1003, FIG. 12c (annotated). Further, as illustrated in Figure 17, Hancock discloses that the Go2 Application can prompt a user to select a category, such as a restaurant or bank, and then the Go2 Application can prompt a user to select desired category features, such as selecting only establishments that accept Visa. It

would have been obvious to a POSITA that the questions and available answer choices should be customized based on the proprietary business information associated with a user's GPS location. Ex. 1005 ¶ 221; *see also* Ex. 1003, 29:8-10 ("Multiple levels of category features can be presented based on the needs and requirements of each specific implementation."). For example, a POSITA would have understood that a permissible category feature based on type of credit card accepted may be appropriate if a user's location was determined to be a restaurant, but not a bank. Ex. 1005 ¶ 221. Accordingly, it would have been obvious to a POSITA in view of Hancock to customize the questions presented by the Go2 Application for a location. *Id.*

(C) ***"(b) said questionnaire …;"***

Hancock discloses this limitation. *See* **VII.D.iii.D.**

(D) ***"(c) tokenizing …;"***

Hancock discloses this limitation. *See* **VII.CD.i.C, E**.

(E) ***"(d) transmitting …;"***

As explained in **VII.D.i.B**, Hancock discloses that the primary server 1314 transmits the Go2 Application to the portable-computing device 1302.

(F) ***"(e) when said remote computing device is at said location, executing …;"***

Hancock discloses this limitation. *See* **VII.D.i.G**.

(G) ***"(f) automatically entering …;"***

Hancock discloses this limitation. *See* **VII.D.iii.G**.

(H) ***"(g) transmitting at least a portion …"***

Hancock discloses that "the present invention … allows for … customized information [to] be presented to users **in real-time** with minimal delays." Ex. 1003, 4:1-5. As explained in **VII.D.iii.M**, Hancock discloses that the Go2 Application presents customized information to a user that is based on the user responses in the data packet 1708 that the portable-computing device transmits to the server. A POSITA would have understood that for customized information to have been presented to users in real-time, the user responses in data packet 1708 also would have been transmitted to the server in real time. Ex. 1005 ¶ 227. Accordingly, Hancock discloses this limitation. *Id.*

(I) ***"(h) storing said response at said server."***

As explained in **VII.D.iii.L**, storing user data packets in the storage attached to Hancock's primary server would have been obvious in view of Hancock.

(vi) Claim 2

Claim 2, which depends from Claim 1, recites "(i) translating said response to a format recognizable by a particular computer program;" and "(j) accessing the translated response from a computer executing said particular computer program." Hancock discloses these limitations. For example, with respect to the process shown in Figure 17, Hancock discloses that "the process determines whether the

location information is [in] the Go2 grid system format," and, "[i]f it is not, it is converted to the Go2 grid coordinate system …" Ex. 1003, 29:30-33. As shown in Fig. 17, the translated location information is used to create data packet 1708, which, as explained in **VII.D.i.K-L**, is accessed by the Go2 Application. Ex. 1005 ¶ 229. Accordingly, Hancock discloses this limitation. *Id.*

(vii) Claim 5

Claim 5, which depends from Claim 1, recites: "wherein the transmission of said tokens in step d) occurs via the network of step g)." Hancock explains that all communication between the portable-computing device 1302 and the primary server 1314 can occur via the Internet. Ex. 1003, 24:39-41; Fig. 13. Accordingly, Hancock discloses this limitation. Ex. 1005 ¶ 230.

E. Hancock In View of Bandera Renders Obvious Claims 1, 2, 5, 19-22

Hancock renders obvious Claims 1, 2, 5, and 15-22 as discussed in **VII.D**. To the extent the Board finds that Hancock alone does not render obvious the limitations of these claims, a person of ordinary skill in the art would have considered those claims to have been obvious over Hancock in view of Bandera. Ex. 1005 ¶¶ 231-33.

(i) A POSITA Would Have Been Motivated to Combine Hancock With Bandera

A POSITA would have been motivated to combine Hancock with Bandera for several reasons. Ex. 1005 ¶ 232. For example, Hancock and Bandera are in the

same field of endeavor, as both relate to providing location based services to mobile devices. *See, e.g.*, Bandera, 2:13-15 (disclosing "hand-held devices" in the background of the invention). In particular, as explained in **VII.D.i.G-L**, Hancock discloses that a user's handheld device may collect a user's GPS location, transmit it to a server along with other data, and receive a custom URL result based on the user's location and preferences. Likewise, Bandera discloses that a mobile web client may collect a user's GPS location, transmit it to a server, and receive targeted advertisements based on the user's GPS location. *See* Ex. 1004, Abstract; 2:63-64; 4:46-47. Further, while Hancock is silent as to the programming language used to implement its Go2 Application, Bandera discloses that the Java programming language may be used to provide programs on mobile devices and that Java is machine and operating-system independent. *See* Bandera, 5:37-49. Further, Bandera expressly discloses the use of GPS for location-based advertising. *See, e.g.*, Bandera, 6:40-42. Thus, combining Hancock and Bandera to use, for example, a GPS with location-based advertising and a computer language that was device-independent (e.g., Java) would have been within the ordinary knowledge, creative, or common sense of a POSITA at the time of Hancock and Bandera. As previously mentioned, there is also a design incentive to make use of GPS for location-based advertising, and a design incentive to use a computer language that is device-independent; each of these disclosed solutions would make a device more

effective and efficient and make use of known technology which solved similar problems. Hancock and Bandera teach similar and interrelated subject matter and disclose solutions to similar and interrelated challenges. Further, Bandera was developed at IBM, and a POSITA would have looked at the teachings of industry leaders like IBM to develop solutions. Accordingly, a POSITA would have been motivated to combine the teachings of Hancock and Bandera to implement Hancock's Go2 Application using Java to yield a device-independent application. Ex. 1005 ¶ 232.

(ii) Claims 1, 2, 5, 19-22

As explained in **VII.D.i.E**, a POSITA would have found the "device independent tokens" limitation obvious in view of Hancock alone because Java is an obvious design choice to program the Go2 Application, and a POSITA understands Java would have provided device-independent code for the Go2 Application. *See PGS Geophysical AS* at 1363-66 (finding motivation to combine, in part, based on reference's statement that system could use "any desired type of coding" and secondary reference disclosed a type of coding). Bandera explicitly discloses that Java is used to provide device-independent code. *See* Ex. 1004, 5:40-44, 5:47-49. Accordingly, to the extent it would not have been obvious in view of Hancock alone to implement the Go2 Application using Java to provide

device-independent code, a POSITA would have found it obvious in view of Bandera. Ex. 1005 ¶ 233.

F. Hancock In View of Falls Renders Obvious Claim 7

(i) A POSITA Would Have Been Motivated to Combine Hancock With Falls

A POSITA would have been motivated to combine Hancock with Falls for several reasons. Ex. 1005 ¶ 234. For example, Hancock and Falls are in the same field of endeavor, as both relate to the use of a mobile computer ("such as a laptop, palmtop, notebook, or personal digital assistant") and a computer network to which that mobile computer may connect. *See, e.g.* Ex. 1017, 3:16-35 (disclosing mobile computers and related networks in the summary of the invention). As explained above in **VII.D.i.C**, Hancock discloses that "[u]pon connection, the client automatically transmits the electronic data packet to the server." Likewise, Falls discloses that a mobile computer may connect, then disconnect from a computer network, and later synchronize upon reconnection to the network. *See* Ex. 1017, Abstract; 3:16-35; 7:16-21; 16:35-37; 37:9-32. Further, Falls expressly discloses synchronizing the mobile computer with the network "following a period of disconnection." *See, e.g.* Ex. 1017, 16:35-37. Thus, combining Hancock and Falls to use, for example, a mobile computer to ensure proper synchronization with a computer network following a period of disconnection would have been within the ordinary knowledge, creativity, or common sense of a POSITA. Here, there is also

a design incentive to make use of synchronization following a period of disconnection between a mobile computer and a network; such a solution would make a device more effective and efficient considering the known issues of remote computers occasionally having a less than continuous connection with a home network, and this would make use of known technology which solved a similar problem. A POSITA looking to improve synchronization between a mobile device and a server, would be motivated to combine Hancock and Falls to achieve the predictable results of synchronized data. Hancock and Falls also teach similar and interrelated subject matter and disclose solutions to similar and interrelated challenges. Further, Falls was developed at Novell, a well-known computer software company. A POSITA would look at the teachings of industry leaders like Novell to develop solutions. Accordingly, a POSITA would have been motivated to combine the teachings of Hancock and Falls. Ex. 1005 ¶ 235.

(ii) Independent Claim 7

As explained below, Hancock renders obvious claim 7.

(A) *"A method for collecting survey data …"*

Hancock discloses collecting survey data from a user using portable-computing device 1302. *Id.*, 3:15-20. Hancock further explains that all communication between the portable-computing device 1302 and the primary

server 1314 can occur via the Internet. Ex. 1003, 24:39-41, Fig. 13. To the extent the preamble is limiting, Hancock discloses its limitations. Ex. 1005 ¶ 236.

(B) ***"(a) designing a questionnaire …"***

As explained in **VII.D.i.B-D**, Hancock discloses this limitation. For example, Hancock discloses designing a questionnaire including at least one question. Ex. 1003, 3:15-20. That questionnaire is customized for a particular location with branching logic such that at least one of said at least one questions requests location identifying information. *Id*., 28:9-23, 28:66-29:13, Fig. 17; Ex. 1005 ¶ 237.

(C) ***"(b) automatically transferring said designed questionnaire …"***

As explained in **VII.D.i.B-C**, Hancock discloses transferring the designed questions to at least one computer having a GPS integral thereto. *See, e.g.,* Ex. 1003, Abstract; Ex. 1005 ¶ 238.

Hancock addresses services provided via the Internet to users in a mobile environment. *See e.g.,* Ex. 1003, Abstract. As previously discussed, it was well known at the time that such an environment was "loosely networked" because unreliable wireless connections intermittently disconnected. While Hancock does not provide express teachings directed to handling intermittent network connections, as explained in **VII.C.ii.C**, Falls provides such additional details for

dealing with intermittent connections in such environments, disclosing a more specific teaching of a loosely connected network. Ex. 1005 ¶ 239-40.

Accordingly, to the extent Hancock's disclosure does not disclose or render obvious the "loosely networked" limitation, it would have been obvious through Hancock in view of Falls. Ex. 1005 ¶ 241.

(D) ***"(c) when said loosely networked computer is at said particular location, executing …"***

Hancock discloses this limitation. *See* **VII.D.i.I**. As explained above, Hancock in view of Falls discloses loosely networked. Ex. 1005 ¶ 242.

(E) ***"(d) while said transferred questionnaire is executing …"***

Hancock discloses this limitation. *See* **VII.D.i.I**.

(F) ***"(e) automatically transferring … any responses …"***

As explained in **VII.D.v.H**, Hancock discloses this limitation. *See, e.g.,* Ex. 1003, 4:4-5. As explained above, Hancock in view of Falls discloses loosely networked. Ex. 1005 ¶ 244.

(G) ***"(f) making available …"***

Hancock discloses this limitation. *See* **VII.F.ii.A**. Hancock explains that communication between the device and server can occur via the Internet. Ex. 1003, 24:39-41, Fig. 13; Ex. 1005 ¶¶ 245-46.

VIII. CONCLUSION

Petitioners respectfully request institution on the Challenged Claims.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that a complete copy of this Petition for *Inter Partes* Review of U.S. Patent No. 9,454,748 and all Exhibits and other documents filed together with this Petition were served on the official correspondence address for the patent shown in PAIR and a courtesy copy to Patent Owner's current litigation counsel:

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CERTIFICATE OF COMPLIANCE WITH 37 C.F.R. § 42.24

I hereby certify that this Petition complies with the word count limitation of 37 C.F.R. § 42.24(a)(1)(i) because the Petition contains 13,845 words, excluding the cover page, signature block, and the parts of the Petition exempted by 37 C.F.R. § 42.24(a)(1).

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